

SPRING/SUMMER 2017

UNIVERSITY OF PITTSBURGH

FACETS

SCHOOL OF HEALTH AND REHABILITATION SCIENCES

THIS ISSUE:

MOBILITY & ACTIVITY THE NEED TO KEEP MOVING



**DANCING IS
POETRY WITH
ARMS AND LEGS**

**A NOVEL APPROACH TO
MUSCULOSKELETAL INJURIES**

**MAKING WHEELCHAIR
USERS STRONGER FASTER**

CONTENTS

SPRING/SUMMER 2017



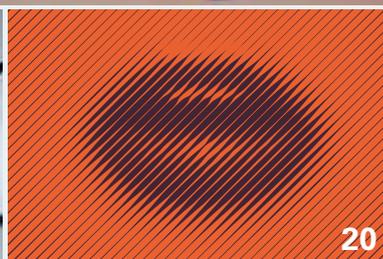
30



32



26



20

1	From the Dean Dr. Anthony Delitto	14	FACETS Feature Mobility and the Pursuit of Happiness	26	Occupational Therapy Dancing Is Poetry with Arms and Legs	Publisher Dr. Anthony Delitto
2	Giving Greta Daniels	18	Sports Medicine and Nutrition A Novel Approach to Musculoskeletal Injuries	28	Rehabilitation Science and Technology HERL's MEBot Rolls into Finals at Cybathlon	Executive Editor Patty Kummick
3	Calendar of Events	20	Communication Science and Disorders Movement: Essential to Communication. Communication: Essential to Quality of Life.	29	Rehabilitation Science and Technology Making Wheelchair Users Stronger Faster	Writing and Design Red House Communications
4	Alumni News	22	Health Information Management HIM and UPMC Collaborate on a New Clinical Alert Tool	30	Prosthetics and Orthotics Capstone Projects Earn Recognition on International Stage	Photography Janelle Bendycki Photography
5	Faculty News	24	Physical Therapy Making Every Step Count	32	The Real World Alicia Ferrara	
8	Student News					University of Pittsburgh
10	Scholarships					
11	Alumni Profile Benjamin Gross					SCHOOL OF HEALTH AND REHABILITATION SCIENCES
12	Clinical Instructor Profile A Balanced Diet of Clinical Experiences—Tom Hritz					



Greetings,

Movement and mobility are fundamental to a life free of barriers, which explains why studies of movement and mobility are ubiquitous throughout the School of Health and Rehabilitation Sciences. Our teaching and research in movement and mobility infiltrate every SHRS department and program in one way or another.

When I think of movement with respect to SHRS, I envision a spectrum where, on one end, there is movement in its most elemental form—intricate workings of the inner ear's miniscule parts that enable us to hear, or fine motor control of the hand of a person after a stroke. On the other end of the spectrum, we see whole body movement and mobility—walking, running, or simply getting from point A to point B.

With movement and mobility serving as a focus of the work we do at SHRS, the driving force behind our research, academics, and clinical pursuits is that of optimizing performance ... enhancing life experiences. This optimization is evident as we endeavor to enable a person with Parkinson's disease, whose vocal projection may be compromised, to clearly articulate a bedtime story to his grandchild. Or where our faculty and students innovatively fabricate prosthetic and orthotic devices that provide ambulation for wounded warriors. Very simply, we're breaking through or removing barriers to encourage full participation.

An old Yiddish proverb, "Better has no limit," defines the academic and research philosophy at SHRS. What was once touted as a better therapy, a better technology, a better approach is being improved upon each day in our labs, classrooms, and clinical settings. We are determined to continually be the innovators of what is better and best in health and rehabilitation. We challenge ourselves to first set the standards and then exceed them where performance optimization and quality of life are concerned. It's our way of promoting activity in its various forms to help ensure a healthier, more fulfilling life.

Anthony Delitto
Professor and Dean

giving



Thank you all for the warm welcome! Since joining the incredible SHRS team in September, I have already had the great fortune to meet with alumni, former and current faculty and staff, and friends of SHRS in the Pittsburgh area and around the country and hear about the school's impact on countless lives during its 48-year history. I look forward to connecting with more of you as I travel to your cities and when you return to visit us here on campus.

Whenever I meet someone new, the first question they always ask is how I got into fundraising. This question is typically followed by a rapid assertion that "I could never do what you do." Believe me, I completely understand the sentiment. It is in these moments, however, that I am reminded of something Robert F. Kennedy once said: "The purpose of life is to contribute in some way to making things better." It is no coincidence that this ideal, which drives me every day, is the bedrock upon which SHRS programs and practices have been built.

The clinicians, researchers, and educators who come out of SHRS programs live this ideal every day through their caring and compassionate work. The term "patient-centered care" has long been the locus of clinical practice, education, and research in SHRS rather than the novel approach being bandied about in health care discussions today.

The theme of this issue of FACETS focuses on movement and mobility, a truly fitting topic given the incredible work that our students, faculty, and alumni do to help patients gain access and ability through diligent care, remarkable innovation, and stalwart advocacy.

The impact of our ever-growing network of alumni clinicians, researchers, educators, and advocates is also on the move. Through their clinical work in the field, SHRS grads are moving the health science professions forward into uncharted heights, moving their communities to address issues of equal access and treatment, and moving others to get involved and help those in need.

By making a gift to SHRS, our loyal and generous supporters are also helping to move our programs and students forward with their contributions. Your support goes directly to educating tomorrow's health care professionals and funding the ground-breaking research that will change our world.

While my work as a fundraiser may look a bit different on the surface, the motivations that get us all out of bed in the morning are actually very similar. We are all working to make things better, and together we can move mountains.

Thank you all for your support of SHRS. I look forward to meeting each of you in person soon!

A handwritten signature in cursive script that reads "Greta Daniels". The signature is written in black ink on a light-colored background.

Greta Daniels
Director of Development

412-383-4084, grd17@pitt.edu
4049 Forbes Tower, Pittsburgh, PA 15260

Calendar of Events

JUNE

Wednesday–Saturday, June 21–24, 2017
APTA NEXT Conference & Exposition, Boston, Mass.

Tuesday, June 27, 2017
Athletic Training and Sports Medicine Alumni Reception, Lucky's Lodge, Houston, Texas, 6-8 p.m., held in conjunction with the NATA National Convention. For details, contact Bill Ankrom at ankromwk@pitt.edu.

JULY

Friday, July 28, 2017
Human Engineering Research Laboratories Open House, Bakery Square, East Liberty, 1-5 p.m. Speakers include HERL alumnus Mark Baldwin (MSBEG '99) who is currently working on NASA's Orion spacecraft. For more information, contact Michael Lain at michael.lain@pitt.edu.

SEPTEMBER

Thursday, September 14, 2017
Pitt OT 35th Anniversary Celebration
Plan to join us for a night celebrating the Department of Occupational Therapy in concurrence with the Occupational Therapy Centennial. More details to come.

OCTOBER

Friday–Saturday, October 6–7, 2017
Pennsylvania Occupational Therapy Association Annual Conference, State College, Pa.

Monday, October 9, 2017
Health Information Management Alumni Reception, Los Angeles, Calif., held in conjunction with the AHIMA Convention & Exhibit.

Monday–Saturday, October 9–14, 2017
University of Pittsburgh Homecoming

Sunday, October 22, 2017
Nutrition and Dietetics Alumni Reception, Chicago, Ill., location and time TBD, held in conjunction with the Food and Nutrition Conference and Expo. For details, contact Corey Flynn at coreyflynn@pitt.edu.

NOVEMBER

Thursday, November 9, 2017
Communication Science and Disorders Alumni, Students, Faculty, and Friends Open House, Los Angeles, Ca., location TBD, 7-9 p.m., held in conjunction with the Annual Conference of the American Speech-Language-Hearing Association.

SHRS Appointments



Debora Miller has been named Vice Dean for the School of Health and Rehabilitation Sciences. In this capacity, she has leadership responsibility for several strategic initiatives including but not limited to master facilities planning for SHRS, chairing the SHRS Space Planning and Utilization Committee, strategic planning, and partnership initiatives.

With her new school-based role, Miller will be transitioning from her responsibilities in the Department of Physical Therapy.

Miller has nearly 20 years of experience in rehabilitation and health care leadership, leadership development, and in health care corporate ethics and compliance program development and oversight in integrated health care systems. She also has extensive experience with space design and construction project management, both new construction and renovations of existing structures for health care institutions and educational programs. Miller has been a full-time faculty member since 2004 and an adjunct professor for several years prior to joining SHRS. She has taught in the undergraduate Rehabilitation Science program, SHRS Master of Science program, and most extensively in the Doctor of Physical Therapy program in content areas related to health policy, health care compliance and regulations; business ethics and risk management; leadership and management skills; practice management; and current issues in health care.

Miller has served the American Physical Therapy Association in leadership roles at all levels of the organization. She earned Fellow status (FACHE) with the American College of Healthcare Executives and both her Master of Business Administration and Bachelor of Science in Physical Therapy degrees from the University of Pittsburgh.



Dr. Rory Cooper, distinguished professor and FISA/Paralyzed Veterans of America chair, Department of Rehabilitation Science and Technology, has been named associate dean for Inclusion for SHRS. Dr. Cooper also serves as the director of the Human Engineering Research Laboratories (HERL), a joint venture of SHRS, the University

of Pittsburgh, and the U.S. Department of Veterans Affairs. He has worked diligently, dedicating his career to improving the quality of life for people with disabilities.

“Dr. Cooper is a most appropriate choice to fill the role of associate dean for Inclusion in our school,” noted SHRS Dean Anthony Delitto. “He has a personal and professional understanding of and appreciation for the needs of people with disabilities and has worked tirelessly to improve access to services, education, housing, and transportation and is a strong, visible advocate for the disabilities community.”

“Through the years, disabilities services have been a major focus of SHRS and we are pleased Rory has accepted the charge to lead and expand disabilities initiatives on behalf of the school,” Delitto continued.

Highly decorated and honored, Dr. Cooper has faced many personal challenges following an accident resulting in a spinal cord injury. He has 20 patents awarded or pending, has authored or co-authored over 300 peer-reviewed journal publications, and has co-authored two books and co-edited three others including the award-winning *Care of the Combat Amputee*.



Alumni News

Communication Science and Disorders



▲ **Dr. Megan Ford** (BA '96, MA '98) was awarded the Ellen Kurtzer-White Award for her dedication to supporting children with hearing loss and their families. She received the recognition from the Decibels Foundation during its Annual Awards Dinner at Emerson College, Boston, Ma., September 2016.

Shahnaz Terzi (BA '16) was one of ten University of Pittsburgh graduates to win a 2016 Fulbright U.S. Student Program grant because of her academic and professional achievement and record of service and leadership. She is serving as a teaching assistant in Jordan.

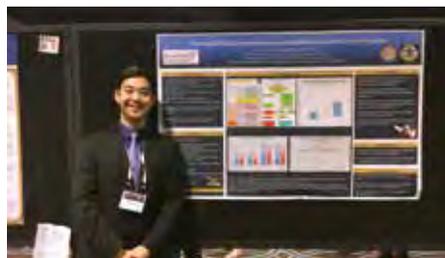
Dr. Susy Keller (CScD '16) was appointed assistant professor in residence at the University of Connecticut. She also works clinically at Moss Rehab, a division of Einstein Medical Center, Philadelphia, Pa.

Dr. Miranda Babiak, (CScD '16) is co-author of "The Perisylvian Cortical Network Underlying Single Word Repetition Revealed by Electrocortical Stimulation and Direct Neural Recordings" published in *Brain and Language*. She is also co-author on the manuscript "Connected Speech in Transient Aphasia after Left Hemisphere Resective Surgery" published in *Aphasiology*.

Dr. Lisa Evangelista (CScD '14) was appointed director of Speech-Language Pathology in the Department of Otolaryngology at University of California, Davis Medical Center. She presented on radiation-associated dysphagia at the California Speech-Language-Hearing Association Annual Convention in Los Angeles, Calif. To promote the development of cancer services in developing countries, she was an invited speaker at Seminario Internacional Trastornos de la Deglucio at the University of Talca, Chile. Dr. Evangelista provided input for rehabilitative services in the developing cancer center and lectured on dysphagia in the head and neck cancer population in Talca.

Dr. Kendrea L. (Focht) Garand, (CScD '10) received the Quality Improvement Innovation Award from the Department of Speech-Language Pathology, Medical University of South Carolina in December, 2016. She made presentations at the 2016 Convention of the American Speech-Language-Hearing Association, Philadelphia, Pa; the 2016 ALS Clinical Conference, San Diego, Calif., and the 15th Northeast ALS Consortium (NEALS) Meeting, Clearwater, Fla.

Emergency Medicine



▲ **Tung-Lin "Jesse" Yuan** (BS '14) presented a poster titled "Prehospital Quality Improvement and Education in Care for PARCA Patients" at the National Association of EMS Physicians Annual Meeting, New Orleans, La., January 2017.

Health Information Management

Denise Dunyak French (HIM '81) accepted a new position as senior manager, Solutions Marketing for HIM at nThrive.

Karen Collins Gibson (HIM '74) was elected as commissioner on the Commission on Certification for Health Informatics and Information Management (CCHIIM).

Samantha Jakiel (HIS '16) accepted a position with UPMC/University of Pittsburgh Physicians and serves in the Electronic Health Record Department as operations analyst III.

Wayan Sugiantara (HIS '05) is head of the Health Information Management Program, Institute of Health Sciences, Persada Medika Bali, Indonesia.

Andrew Tran (HIS '16) accepted a position as systems analyst on OhioHealth's HIM Applications build team. Tran is also working to become Epic certified and passed the Epic Certification Exam and the first of four modules.

Physical Therapy

Steven George (MS '97, PhD '02) joined Duke Orthopaedics as professor and vice chair of Clinical Research and director of Musculoskeletal Research for Duke Clinical Research Institute. His primary research interest involves biopsychosocial models for the prevention and treatment of chronic musculoskeletal pain disorders.

Kern Rebello (MS '11) presented a poster on an interventional model for a child with hearing impairment with vestibular concerns at the National Conference of Developmental Pediatrics in India.



▲ Kern Rebello

Kathleen McClain Zack (BS '73) was awarded the Charles M. Magistro Distinguished Service Award by the California Physical Therapy Association (CPTA) during its annual conference in October 2016. The award was presented in recognition of Zack's consistent, valuable, and exceptional service which has positively affected CPTA and the American Physical Therapy Association (APTA).

Rehabilitation Counseling

Maggie Casteel (MS '07) was appointed to serve as a special government employee to the Veterans' Advisory Committee on Rehabilitation for the U.S. Department of Veterans Affairs. Casteel has been serving the vocational rehab needs of veterans for ten years and has been nationally recognized for unusual initiative and creativity in developing and administering a service program for people with disabilities. She holds certifications in Rehabilitation Counseling and Marriage and Family Therapy, and has a clinical certification as a trauma professional.

Sports Medicine and Nutrition

Elizabeth Henry (CMND '13) was the recipient of the Pennsylvania Academy of Nutrition and Dietetics Recognized Young Dietitian Award. This award is presented to members of the Academy who are 35 years of age or younger who have demonstrated leadership qualities and performance in public relations, research, community outreach, management, legislation, education, and other areas related to the profession, on the job and in the community.

Erin (Lenhart) Pover (CMND '09) received the Pennsylvania Academy of Nutrition and Dietetics Emerging Dietetic Leader Award. This award recognizes the activities and competence of dietitians who have made distinctive contributions early in their career to the Academy.

Undergraduate Program in Rehabilitation Science



▲ Emily Wiercinski (BS '16), left, and Jill Rooney, rehabilitation science student, presented posters at the Pennsylvania Physician Assistant Conference.

Emily Wiercinski (RS '16) presented a poster titled "Transmission Knowledge of Hepatitis C in Opioid Dependent Pregnant Patients" at the 2016 Pennsylvania Society of Physician Assistants Conference, Pittsburgh, Pa., October 2016.

Faculty News

The School of Health and Rehabilitation Sciences welcomes the following new faculty members: **N. Alex Cutsumbis**, instructor, Emergency Medicine program; **Dr. Janet Freburger**, professor, Department of Physical Therapy; and **Dr. Courtenay Dunn-Lewis**, visiting assistant professor, Department of Sports Medicine and Nutrition.

Communication Science and Disorders

Associate Professor **James Coyle** was a recipient of the University of Pittsburgh's 2016 Chancellor's Distinguished Teaching Award recognizing teaching excellence. Dr. Coyle also presented several international lectures on dysphagia in Kelowna, British Columbia, Canada; Roermond, the Netherlands; and at the University of Montreal for the International Conference of the School of Speech Language Pathology and Audiology.



▲ Dr. James Coyle, second from left, is congratulated by Chancellor Patrick Gallagher, Vice Chancellor Arthur Levine and Provost Patricia Beeson.



Faculty News *(continued)*

Dr. Frank R. Lin, associate professor of Otolaryngology, Geriatric Medicine, Mental Health, and Epidemiology, Johns Hopkins University, presented the annual Jack Matthews–Herbert Rubin Lecture for the Department of Communication Science and Disorders in September 2016. He spoke on “Hearing Loss in Older Adults: A Public Health Perspective.”



▲ *Joining Matthews-Rubin Lecture guest speaker Dr. Frank R. Lin (second from left) are Dr. Anthony Delitto, SHRS professor and dean, Dr. Herbert Rubin, professor emeritus, and Dr. Malcolm McNeil, professor and chair, Department of Communication Science and Disorders.*

Dr. Malcolm McNeil, distinguished service professor, is currently on sabbatical and will step down from his position as chair of the department in July 2017. **Dr. Cheryl Messick**, associate professor, was named acting chair effective January 1, 2017, as a new chair is recruited.

Dr. Connie Tompkins, professor, who provided leadership, mentorship, and excellence in research, retired in December 2016. She will remain on faculty as professor emeritus.

Dr. James Coyle, associate professor, made several presentations on topics related to dysphasia. Dr. Coyle presented for Northern Arizona Healthcare, Flagstaff, Az.; the Illinois Speech-Language-Hearing Association Annual Convention, Rosemont, Ill.; and the California Speech-Language-Hearing Association Annual Convention, Los Angeles, Calif.

Dr. Coyle also presented a two-day SLP continuing education conference in Kelowna, British Columbia, for Interior Health Authority of British Columbia, September 2016, and was the keynote speaker at the International Conference on Speech-Language Pathology and Audiology, University of Montreal, November 2016.

Dr. Paula Leslie, professor, was awarded the American Speech-Language-Hearing Foundation Louis M. DiCarlo Award for Recent Clinical Achievement. The award was presented at the American Speech-Language-Hearing Association’s annual convention, Philadelphia, Pa., November 2016. The award recognizes significant accomplishments in the advancement of clinical service in audiology and/or speech-language pathology.

Dr. Leslie delivered “Complex Decision Making and End of Life Issues,” the first seminar in a series, to The College of Audiologists and Speech-Language Pathologists of Manitoba as they prepare their membership and other health professionals for practice following the Supreme Court of Canada’s 2015 decision finding that the criminalization of assisted suicide deprived some of “life, liberty, and security of the person.”

Associate professors **James Coyle**, **Cheryl Messick**, **Elaine Morner**, **Susan Shaiman**, and **Barbara Vento** along with assistant professors **Dawna Duff** and **Deborah Moncrieff** presented sessions, workshops, and posters at the 2016 Convention of the American Speech-Language-Hearing Association, Philadelphia, Pa., November 2016.

Health Information Management



Dr. Mervat Abdelhak, associate professor and chair, had her paper titled “Towards Developing a Reference Scheme

for Informatics Recommendations: The TIGER, IFHIMA, and AHIMA Joint Action,” accepted by the Scientific Committee of MIE: Informatics for Health 2017.

Dr. Dilhari DeAlmeida, assistant professor, presented “UPMC AKI Alert” at the 6th Annual AKI Symposium, Pittsburgh, Pa., October 2016. Drs. DeAlmeida and **Suzanne Paone**, assistant professor, presented “Transforming HIM Education to Align with Data Analytics Practice” at the AHIMA Convention & Exhibit, Baltimore, Md., October 2016.

Dr. Leming Zhou, assistant professor, presented a poster, “Innovative Use of Technology: Early Mood Diagnosis,” and he, **Dr. Valerie Watzlaf**, associate professor, and **Steve Moeini**, doctoral student, presented “imHealthy: A Comprehensive Well-being Assessment System for People in Medically Underserved Communities” at the 2nd Integrative Conference on Technology, Social Media, and Behavioral Health, Pittsburgh, Pa., November 2016.

Dr. Zhou also presented a paper entitled “An Accurate and Customizable Text Classification Algorithm: Two Applications in Healthcare” at the 6th IEEE International Conference of Computational Advances in Bio and Medical Sciences, Atlanta, Ga., October 2016.

Dr. Valerie Watzlaf, associate professor, along with Patty Sheridan of CIOX, presented “Information Governance Leadership Forum: Leveraging Your Most Valuable Strategic Asset,” at the AHIMA Convention & Exhibit, Baltimore, Md., October 2016. A paper, “ICD-10 Coding Productivity Study Highlights Emerging Standards,” co-authored by Dr. Watzlaf, **Mike Hoerner** (HIS '16) and CIOX representatives was published in the Journal of AHIMA and was also presented at the AHIMA Convention & Exhibit.

Occupational Therapy

Dr. Nancy Baker, associate professor, was invited to serve as an ad hoc reviewer on the Motor Function, Speech, and Rehabilitation Study Section at the Center for Scientific Review. She was also inducted into the American Occupational Therapy Association Roster of Fellows.

Dr. Baker received the Jeanette Bair Writer’s Award through the American Occupational Therapy Association.

Drs. Margo Holm and **Joan Rogers**, professors emerita, and **Dr. Elizabeth Skidmore**, associate professor and chair, were named in the American Occupational Therapy Association’s list of 100 Influential People.



Dr. Pamela Toto, assistant professor, was the recipient of the Pennsylvania Occupational Therapy Association Academic Educator Award. Dr. Toto also received the 2017 Geriatrics Teacher of the Year Award by the Pennsylvania Geriatrics Society Western Division, and served on the Technical Panel for Function Status, Cognitive Function, and Changes in Function and Cognitive Function in Home Health in Washington, D.C.

Dr. Juleen Rodakowski, assistant professor, was accepted to the Advanced Research Institute, a competitive continuing education event, sponsored by NIMH.

Dr. Lauren Terhorst, associate professor, received the Advancing the Science in Measurement Poster Award by the American Congress of Rehabilitation Medicine Measurement Networking Group for her poster titled “Systematic Review of the Application of Item Response Theory to Ecological Momentary Assessment Data.”

Physical Therapy

Dr. Sara Piva, associate professor, is serving as a member of the American College of Rheumatology Practical Guidelines Subcommittee for 2017–2018. She will help develop guidelines in rheumatology, and will review and approve the guideline manuscripts and related documents. Dr. Piva also has been appointed to serve on the work group for the development of clinical performance measures on the Surgical Management of Osteoarthritis of the Knee (SMOAK) representing the American Physical Therapy Association.

Dr. G. Kelley Fitzgerald, professor and SHRS associate dean for Graduate Studies, received an R21 grant from the National Institutes of Health in collaboration with Washington University in St. Louis, Mo., serving as the principal investigator for the University of Pittsburgh for the project “Movement Pattern Training in People with Intra-Articular, Pre-Arthritic Hip Disorders.”

Allyn Bove, assistant professor, presented at the American College of Rheumatology’s Annual Meeting in Washington, D.C., November 2016. The title of the poster was “Does Receiving Physical Therapy for Knee Osteoarthritis Impact Downstream Health Care Utilization?” **Professor G. Kelley Fitzgerald** and **Chris Bise**, assistant professor, are co-authors.

Rehabilitation Science and Technology



Dr. David Brienza, professor and SHRS associate dean of Research, was awarded the National Pressure

Ulcer Advisory Panel’s Kosiak Award. The award recognizes Dr. Brienza as a leader in the wound care provider community and was presented at the NPUAP Biennial Conference in New Orleans, La.

Sports Medicine and Nutrition

Dr. Bradley Nindl, professor and director of the Neuromuscular Research Laboratory, serves as co-investigator under the lead of Dr. John Jakicic, professor and chair, Pitt’s School of Education’s Department of Health and Physical Activity, on a major NIH large-scale collaboration to investigate why being active is beneficial for health. Findings of the Molecular Transducers of Physical Activity in Humans program could assist health professionals with physical activity recommendations and strategies for individuals at various stages of life and with particular health needs.



Deborah Hutcheson, director and assistant professor, Coordinated Master in Nutrition and Dietetics program,

received the Pennsylvania Academy of Nutrition and Dietetics “Outstanding Dietitian Award” for 2017. This award is the highest honor bestowed upon a member of the Pennsylvania Academy of Nutrition and Dietetics, recognizing a Pennsylvania dietitian whose leadership and service is exemplary and whose contributions to the Academy and the public have been longstanding and exceptional.



Student News

Communication Science and Disorders

AuD student **Julia Slifko** organized a successful toy drive through the Pitt Vets organization, collecting over 430 toys for children around the local community this past holiday season.



▲ **Emily Goldberg**, master's student, received the highly coveted 2017 Plural Publishing Research Award presented by Plural Publishing and the Council of Academic Programs in Communication Sciences and Disorders. The award will help support Goldberg's research on "Control of Lexical Inhibition in Deaf and Hearing Signer." Goldberg, along with Distinguished Professor **Malcolm McNeil** and Professor **Sheila Pratt**, presented a poster at the 2016 Convention of the American Speech-Language-Hearing Association in Philadelphia, Pa.

Graduate students **Natalie Bradshaw** and **Katrina Killian** presented separate posters at the 2016 Convention of the American Speech-Language-Hearing Association, Philadelphia, Pa., along with their faculty mentors Associate Professor **James Coyle** and Professor **Paula Leslie**, respectively.

Graduate students **Alexandra Korshin** and **Natalie Bradshaw**, and **Dr. Paula Leslie**, professor, presented "If Meryl Streep Was an SLP and We Were Movie Stars..." at the 2016 Convention of the American Speech-Language-Hearing Association, Philadelphia, Pa.

CSD doctoral student **Atsuko Kurosu** was first author of the poster "Physiological Source of High Resolution Cervical Auscultation Signals during Swallowing" which he presented with **Dr. James Coyle**, associate professor, at the 2016 Convention of the American Speech-Language-Hearing Association, Philadelphia, Pa.

Becca Hayes, CSD doctoral student, published the findings of her eye-tracking study of language comprehension in neurotypical adults and people with aphasia in the American Journal of Speech-Language Pathology.

Tom Kovacs, CSD doctoral student, was chosen to represent SHRS at Pitt Day in Harrisburg, March 21, 2017. He presented a poster related to his dissertation examining how children who use AAC devices can learn to master grammatical morphology.

Sujini Ramachandar, CSD doctoral candidate, **Dr. Deborah Moncrieff**, assistant professor, and others presented a 2-hour seminar, "Parent Education and Collaboration through Telepractice" at the 2016 Convention of the American Speech-Language-Hearing Association, Philadelphia, Pa.

Alicia Hutchison, AuD student, presented her poster, "A Collaborative Model of Clinical Education and Healthy Hearing Services on a College Campus," at the 2016 Convention of the American Speech-Language-Hearing Association, Philadelphia, Pa. The poster was recognized as a meritorious poster submission, and Hutchison was also awarded a Student Research Travel Award to attend the ASHA convention.

Health Information Management

Andrew Drilak, HIS graduate student, received the AHIMA Foundation John Kloss Memorial Veteran Scholarship providing financial support to those who have served our country and are now pursuing further education in areas related to HIM or health informatics. Drilak was also awarded the 2016 Google Student Veterans of America Scholarship and the AT&T Veterans Scholarship.

Occupational Therapy

Emily Kringle, PhD student, received the 1st Place Award in the American Congress of Rehabilitation Medicine Stroke ISIG Poster Competition for her poster titled "Predictors of Engagement in Inpatient Rehabilitation Following Stroke."

Alexandra Gruner, **Allison Juris**, **Morgan Leeds**, and **Lauren Lukacs**, MOT students, have been accepted to participate in the Jewish Healthcare Foundation Death and Dying Fellowship.

Pi Theta Epsilon and the University of Pittsburgh Student Occupational Therapy Association earned bronze level status for their fundraising efforts for the 2017 St. Catherine Challenge. The St. Catherine Challenge raises funds for occupational therapy research grants provided by the American Occupational Therapy Foundation.

Physical Therapy

DPT students **Nikki DiSalvio**, **Samantha Gladnick**, **Kelson Coddington**, and **Courtney Yun**, along with **Dr. Patrick Sparto**, associate professor, participated in Pitt's INVESTING NOW program, promoting physical therapy as a profession to high school students interested in STEM careers, January 2017. The students gave demonstrations and discussed the work of physical therapists.



▲ DPT students volunteered their time in February at UPMC Rooney Sports Complex on the South Side providing musculoskeletal screenings for individuals planning to run the Pittsburgh Marathon in the spring. The students screened 50 runners for flexibility, strength, and motor control deficits, and prescribed impairment-specific exercise instruction to improve the runners' training and decrease injury risk.

DPT students **Shayna Spano, Mike Turnwald, John Schneider,** and **Becky Russell** volunteered at the Össur Running and Mobility Clinic in Pittsburgh sponsored by the Challenged Athletes Foundation. The students assisted approximately 40 experienced athletes and new runners with prostheses on running techniques and methods.

DPT students organized a Physical Therapy Day of Service in October 2016 at Schenley Gardens Senior Living Community in Pittsburgh's Oakland section. The students provided education to 15 residents on fall prevention, home safety, and nutrition. The students helped the residents set up their rooms for safety and talked about the importance of healthy meals and exercise. The event was part of a national effort of community service for physical therapists. ▼



Jeffrey Moorhead Jr., DPT student, was named a Travel Award Winner for the fifth annual Symposium on Regenerative Rehabilitation at Emory University in Atlanta, Ga., October 2016. Moorhead has been working with research scientists of the McGowan Institute for Regenerative Medicine at the University of Pittsburgh to establish rehabilitation protocols for stem cell therapies. He has also been teaming up with students of different health science programs at Pitt to bridge gaps in inter-professional education and help develop health professionals who are equipped to face the challenge of providing efficient, affordable, high-quality, patient-centered care.

Sports Medicine and Nutrition

Doctoral student **Shawn R. Eagle** was awarded a National Athletic Training Association (NATA) Doctoral Research Grant for a study titled "Neuromuscular and Sensorimotor Differences Between Recently Concussed Athletes and Healthy Controls." The study, which is a collaboration between the Neuromuscular Research Laboratory and the UPMC Sports Medicine Concussion Program, will investigate potential mechanisms by which athletes are at an increased risk of musculoskeletal injury after suffering a concussion and returning to play.

Hannah Goodnight, senior, Nutrition and Dietetics program, won the Pennsylvania Academy of Nutrition and Dietetics "Outstanding Dietetic Student Award" for 2017. This award recognizes emerging leadership and academic achievement of students.

Undergraduate Program in Rehabilitation Science

Heather Day, Rehabilitation Science student, presented her poster, "People Die? Interprofessional Lessons from End-of-life," at the 2016 American Speech-Language-Hearing Association national convention, Philadelphia, Pa., November 2016. She prepared her presentation under the mentorship of **Dr. Paula Leslie**, professor, Department of Communication Science and Disorders.



▲ **Joseph Schmitz, Michael Tammaro, Jillian Rooney,** and **Anna Giancaterino**, rehabilitation science students, traveled to a L'Estère, Haiti, orthopedic clinic on a medical mission trip with the MIVO Foundation. Students worked alongside professionals in evaluation rooms and provided support in the pharmacy, triage, and operating room.



▲ **Jillian Rooney**, Rehabilitation Science student, presented her research, under the mentorship of Assistant Professor **David Beck**, Physician Assistant Studies program, at the 2016 Pennsylvania Society of Physician Assistants Conference, Pittsburgh, Pa., October 2016. Rooney's poster presentation was titled "Preventing Refeeding Syndrome: A Review and a Case."

2016–2017 SHRS SCHOLARSHIP AND AWARD RECIPIENTS

The following is a listing of SHRS scholarships and awards granted to students during the 2016–2017 academic year.

**Joyce and Andrew J. Kuzneski Jr.
Student Resource Award (school-wide)**
Katherine McGovern
Kenneth Pechtl

Anne Pascasio Scholarship (school-wide)
Subhana Chaudhri
Ryan Nierstedt
Elise Pure

**Dr. Timothy C. and Mrs. Cynthia B. Sell
Student Award (school-wide)**
Alexandra Shelley

**Semantic Compaction
Education Travel Award (school-wide)**
Therezia Alchoufete
Walaa Ashmeg
Samantha Bowen
Devin Craig
Heather Day
Brianna Garcia
Samantha Gladnick
Jonathan Herchko
Phillip James
Cameron James LeViere
Kendra McAlear
Bria Mitchell-Gillespie
Sara Munera Orozco
Kimberly Peterson
Sylvain Shimamana
Sierra Simon
Haohang Yan

**SHRS Alumni Endowed
Scholarship (school-wide)**
Lisa Beilman
Jacqueline Choffo
Sean Crandell
Jennifer Gates
Erica Watson
Haohang Yan

UPMC Endowed Scholarship (school-wide)
Robert Devich
Rachel Fryatt
Sara Munera
Gina Nerone
Kristen Polaski
Rebecca Torres

**Mildred L. Wood SHRS Endowed
Student Resource Award (school-wide)**
Samantha Chamberlin
Madeline Iannamorelli
Catherine Leece
Cameron Williams
Beatrice Zamfir

AVADA Book Award (CSD)
Danielle Cassels
Molly Brown
Anna Magnan
Erin Fennessy

Emeritus Award (CSD)
Natalie Bradshaw
Rachel Fryatt

**Audrey Holland Endowed
Student Resource Award (CSD)**
Chia-Ming Lei (Abel)

Lisa Levy Memorial Award (CSD)
Gabrielle DeFazio
Shawn Gyke

**Emergency Medicine
Program Scholarship (EM)**
Sharon Guarino

**Walt. A. Stoy Award for
Scholarly Activity (EM)**
Valerie Lannon

Denise A. Duniak Student Award (HIM)
Brian Mann

**Health Information Management
Department Scholarship (HIM)**
Mia Destfino
Amanda Horst
Skyler Schmidt

**Laurine M. Johnson Endowed
Student Resource Award (HIM)**
Zahraa Alakrawi

**Gerrilyne "Gerri" Siren Walk
Memorial Student Award (HIM)**
Kimberly Peterson

**Meagan Sampogna Williams
Student Resource Award (HIM)**
Mohammed Aldhoayan

**Cynthia Zak
Student Resource Award (HIM)**
Kimberly Peterson

**Caroline Robinson Brayley
Student Enrichment Award (OT)**
Jessica Gass

Joan Rogers Student Resource Award (OT)
Stephanie Rouch

**Occupational Therapy
Department Scholarship (OT)**
Kelly Dickson
Nicole Habovick
Kenneth Reichl

Dorothy Bradley Brown Scholarship (PT)
Kayley Buddenbaum
Lauren Clune
Katherine Dreger
Michael Eskay
Allison Morrison
John Schneider

Mary Behling Browne Scholarship (PT)
Grant Bower
Ellen Teasley

Pat Croce Scholarship (PT)
Alexander Krull
Allison Troilo

Mary K Daly-Crum Student Award (PT)
Audrey Harsh

**David Physical Therapy and
Sports Medicine Center/Joseph M. David
Endowed Scholarship (PT)**
Shanna Naider

Anthony Delitto Scholarship (PT)
Margaret Fiorina
Michael Thomas

**Victoria Green Memorial
Student Award (PT)**
Laura Smith
Mallory Vetter

Patricia Leahy Memorial Scholarship (PT)
Alyssa Livorio
Janelle Walbert

Pearl Cricco Mann Scholarship (PT)
Samantha Owens
Megan Renn

**Alice Chagnot Oulette
Endowment Award (PT)**
Julie Rekant

**Physical Therapy
Department Scholarship (PT)**
Jaclyn Morino
Rebecca Russell

PT Class of 2009 Student Award (PT)
Charles Badawy
Deanna Palatucci

PT Leadership Development Award (PT)
Shayna Spano

Paul and Judy Rockar Scholarship (PT)
Kristen Polaski

D. T. Watson Alumni Scholarship (PT)
Margaret Anzalone
Kristen Polaski

Jessie Wright Scholarship
Jaclyn Morino
Ashley Whitehead

**Rory A. Cooper and Dion Johnson
Student Award (RST)**
Nathan Hogaboom
Jorge Condiotto

**Todd Hargroder Endowed
Internship Award (RST)**
Brandon Daveler
Jonathan Duvall

Virginia Kaufman Scholarship (RST)
Jamie Arredondo
Andrew Biaesick
Kaila Grenier
Sara Hunsicker
Dustyn Pastors
Cody Reimers
Alexandra Salerno
Ryan Schaitkin
Allyson Simunic
Cory Spencer

Thomas J. O'Connor Award (RST)
Esteban Ruiz

**Sean and Stephanie Shimada
Student Award (RST)**
Sara Munera Orozco

Jill Conley Memorial Award (SMN)
Kevin Kozlik

**Dr. Freddie H. Fu Sports Medicine
Graduate Research Award (SMN)**
Anne Beethe
Shawn Eagle

**Dr. Freddie H. Fu Undergraduate
Athletic Training Scholarship (SMN)**
Summer DuPont
Thea Lucas
Makenna McAteer
Steve Nagib

**Tim Kerin Memorial Scholarship
in Athletic Training (SMN)**
Ellen Burgess

**Nutrition and Dietetics
Community Outreach Award (SMN)**
Christine Manta

David H. Perrin Student Award (SMN)
Alexandra DeJong



BORN TO LEAD: BENJAMIN GROSS



It's hard to imagine an occupational therapist (OT) with more energy and drive than Benjamin Gross (BS '06, MOT '10).

As owner of Transformative Therapy Services in Phoenix, Ariz., Gross specializes in vocational rehabilitation for adults with traumatic brain

injury (TBI), spinal cord injury, and other neurological or mental health diagnoses.

"My practice really focuses on cognitive rehabilitation," explains Gross.

Working closely with state agencies and vocational counselors, Gross advocates for appropriate accommodations and compensations that allow individuals to succeed in the workplace. "By helping them develop things like a checklist to stay on task, or a calendar to manage their time, we can ensure they will be able to hold a job," he continues.

Gross also provides occupational therapy home health care for adolescents, and helps individuals with TBI resume activities of daily living so they can become more independent.

Caring for clients has always been his passion. "I learned early on that occupational therapy is a career, not a job," says Gross. "Knowing that something I do can really make a big impact on helping people improve the quality of their lives is what makes my work so rewarding."

Although running a successful practice might be enough to satisfy most professionals, Gross also puts his heart and soul into elevating the field of occupational therapy through his involvement with the Arizona Occupational Therapy Association (ArizOTA). In recent years Gross has served on various ArizOTA committees, as treasurer of the organization, and currently as president.

He credits his involvement with ArizOTA to the encouragement he received from Pitt faculty including Professor Denise Chisholm. One year after Gross received his OT licensure, Dr. Chisholm recommended him for the American Occupational Therapy Association's Emerging Leaders Development Program because, in her words, "He lives and breathes occupational therapy."

"I strongly believe that Benji possessed all the qualities needed by an AOTA Emerging Leader. He has a strong commitment to the profession, to education—not only his own but to others—to service and to leadership," she continues.

During his graduate education, Gross organized hands-on education events for high school students including ones that encouraged minority students to pursue degrees in the health sciences. His strong interest in international affairs and diversity led him to a year-long volunteer experience working with individuals from Israel.

In addition, Gross was awarded a Jewish Healthcare Foundation fellowship to explore ethical issues in the current United States health care system, and participated in Bridging Cultures, a two-week summer program at Atatürk University in Erzurum, Turkey.

Assistant Professor Pam Toto observes that Gross has always had a keen understanding of and appreciation for the world beyond Pitt. "While most students are focused on themselves and learning the skills of their future practice, Benji was acutely aware of the importance of being part of a larger professional group and the power of advocacy through that group," says Dr. Toto.

While at Pitt, Gross initiated student fundraising efforts for the American Occupational Therapy Political Action Committee (AOTPA). "The activities were creative, fun, and successful in helping his peers understand the importance of advocacy by the profession while simultaneously raising funds for the PAC," says Dr. Toto.

Gross uses the same leadership skills today to help ArizOTA grow stronger. Under his guidance, the organization has adopted new bylaws and a strategic plan. They have also established student internships in an effort to encourage future occupational therapists to become actively involved in the profession.

Through smart decision making, Gross's ArizOTA is also fiscally sound. "We have a lot of members working to increase the number of professional conferences while reducing costs," he notes. "It's a group effort, and we're very proud of where we're headed."

Ten years ago, Gross was a new college graduate with a dream. Today he is forging a path for other occupational therapists. "I had a strategy when I started college," recalls Gross. "I wanted to get involved. I figured, the more you do, the more you know."

This philosophy has never failed him. Today he's building positive relationships with his clients, networking with other professionals through ArizOTA, and contributing to the Joan C. Rogers Occupational Therapy Student Resource Fund to help future occupational therapists get the best education possible.

"The OT faculty from Pitt opened up so many opportunities for me," says Gross. "Now it's my turn to do the same." ■



A BALANCED DIET OF CLINICAL EXPERIENCES



▲ Dr. Hritz with student Molly Westbrook

Students in the Coordinated Master in Nutrition and Dietetics program have a voracious appetite for learning. Tom Hritz (BS '03, MS '07, PhD '11) makes sure they get their fill.

As the clinical nutrition manager for UPMC Mercy and Magee-Womens Hospital of UPMC, Hritz has been welcoming students to the table he sets for patients for nearly 13 years.

“The best place for students to gain experience working with all disease states is in a clinical setting, particularly an acute care setting,” states Hritz. “Clinical nutrition is the foundation for any area in which a dietitian will work throughout his or her career.”

“TOM MADE HIMSELF ACCESSIBLE TO ME WHENEVER I HAD QUESTIONS. HIS WAY OF CREATING A POSITIVE WORK ENVIRONMENT AND ALLOWING EVERYONE, EVEN STUDENTS, TO WORK AS PRODUCTIVE MEMBERS OF THE TEAM HELPED EVERYONE REACH THEIR GOALS.”

“Tom served as my preceptor at UPMC Mercy during my internship year,” recalls Laura Maydak (BS ’13, MS ’15). “He was always thorough in his explanations of projects, performance expectations, and a dietitian’s role in the clinical setting.”

“While he provided me with necessary baseline guidance, he encouraged me to think both critically and creatively to meet the needs of our individual patients and our hospital as a whole,” she continues.

Hritz places a high value on teaching students how and when to apply clinical judgment and skill when developing nutrition care plans to meet the goals that the clinical team has established for each patient.

That may sound obvious, but consider the challenge that dietitians face when they’re responsible for preparing approximately 500 patient meals per day at Magee, and 900 at UPMC Mercy. “It’s critical for students to understand that every patient’s course of care does not follow a textbook example,” says Hritz.

Interns working under Hritz and his team follow a rigorous schedule. They begin with four weeks in the food service department, where they learn about product flow, ordering, and inventory. From there they progress to clinical work.

“Students become familiar with reading electronic health records and thinking about how medications, lab results, or physician notes might impact the patient’s nutritional needs,” Hritz explains. “This is also when students start to interact with patients to learn their nutritional risk levels.”

“Experience in hospitals like Mercy and Magee really strengthens what students are learning in the classroom,” Hritz notes. “They may be aware that patients will have different and multi-layered health issues, but here they actually see how important it is for a dietitian to prioritize patient needs and solve problems one at a time.”

Over the course of their internship year, students work with patients diagnosed with a variety of illnesses including diabetes, renal disease, cancer, and gastrointestinal diseases, as well as those in critical and long-term care. They eventually move on to a rotation where they follow their own set of patients and develop nutritional care plans, under the watchful eye of their supervisors.

In the process, they learn the role of the clinical dietitian.

“Tom was all about teamwork,” says Liz Dunn (BS ’14, MS ’16). “He made it clear that the dietitians were a team in which everyone could step up and help out when time allowed. He also created a very comfortable environment for me to work in.”

Dunn acknowledged that at first she felt intimidated to express her opinions. “But Tom made himself accessible to me whenever I had questions. His way of creating a positive work environment and allowing everyone, even students, to work as productive members of the team helped everyone reach their goals.”

Current intern Molly Westbrook agrees that Hritz is a tremendous role model. “From the first day of my internship, Tom has given me a lot of autonomy. He is allowing me to develop my own ‘style,’ and gives me the independence to manage my own time,” says Westbrook.

“Under Tom’s guidance I’ve learned to be a professional and caring manager,” she adds.

Trisha A. Cousins, clinical coordinator and instructor in the Coordinated Master in Nutrition and Dietetics program, praises Hritz for his dedication to developing the next generation of clinical dietitians. “Tom’s leadership and initiative are what shapes him to be one of the best clinical nutrition managers I have ever worked with as a clinical coordinator,” notes Cousins.

Everyone agrees that Tom Hritz has developed his own special recipe for success as a dietitian, manager, and preceptor. ■





FACETS FEATURE

MOBILITY & THE PURSUIT OF HAPPINESS.



Many of us at SHRS dedicate our lives to helping individuals regain a certain level of physical activity. But as rehabilitation professionals, we know that completion of a course of therapy is not the goal. Nor is it always successful in keeping a person active.

The real goal is to find an activity that brings continuous joy. And that results in a greater likelihood of continued participation. Mobility. And happiness.

SHRS faculty follow their own best advice. They stay active and keep moving, participating in activities that add pleasure to their lives. Even as they age.

“From that day on, I was running.”

That’s not Forrest Gump talking. It’s Dr. Elaine Mormer, associate professor in the Department of Communication Science and Disorders (CSD). Back in 1993 she was one of three mothers with young children who decided to meet for an early Sunday morning run around Squirrel Hill. They met again the next Sunday. And the next.

Gradually her group invited a few others who they thought would enjoy the run. “I’m proud to say that those Sunday runs have continued, uninterrupted, since that first day,” announces Dr. Mormer. By the late 1990s, the group added two more weekly runs—meeting on Wednesday and Friday mornings at 5:45 for a pre-sunrise run through Schenley Park.

Today, the East End Runners, as they call themselves, consist of more than 100 individuals who are dedicated to the Sunday morning run. They take turns charting out various routes around the city, and in 2005 began publishing an online blog to keep everyone up to date on meeting points and times.

The blog includes photos and endorsements for everything from coffee shops to kitchen gadgets to favorite and not-so-favorite shows. There’s no shortage of banter, as you might expect from a group of old friends who frequently run together.

◀ *Hockey team members and Department of Physical Therapy faculty Dr. Kelley Fitzgerald and Chris Bise mind referee and Emergency Medicine program Associate Professor Tom Platt.*

Ten years ago, Dr. Paula Leslie was invited to join Dr. Mormer for a 5:30 a.m. run the day she interviewed for a position at Pitt. “Elaine told the others it was part of the hard-core interview process,” laughs the now CSD professor. She was immediately hooked.

“I never joined a running group before because I was put off by the serious athleticism image,” notes Dr. Leslie. “But this one is different in that we don’t always know what others do for a living. We just run. And talk. Talking is almost compulsory. Talking to all sorts about all sorts, followed by coffee. So there’s a great social aspect.”

Hat trick!

Every time Department of Physical Therapy (PT) Professor Kelley Fitzgerald straps on more than 20 pounds of gear and takes to the ice as a member of an over-40 hockey team, he scores a hat trick. Although he’s not always putting the puck in the net, he says that skating keeps his blood pressure under control, connects him to great friends, and keeps him out of pain.

A life-long runner, Dr. Fitzgerald had to quit when psoriatic arthritis made running too painful. “It was depressing to think that I could no longer do this thing that I loved so much,” he admits.

He recalls that one day his cousin showed up for a visit with a bag full of hockey gear. “It was a life-changing experience,” says Dr. Fitzgerald. “When I got on the ice, it was the first time in many years that I could do a high-intensity physical activity without hurting.”

Seven years later, he’s still an avid skater. “Once or twice a week I get to be 25 years old again,” he states. “It’s really enjoyable!”

Playing with his colleague, PT Assistant Professor Christopher Bise, is especially rewarding. “Chris is my mentor on the ice,” says Dr. Fitzgerald. “And Kelley is my mentor in the classroom,” adds Bise.

For Bise, hockey has always been a way of life. Growing up in New Hampshire, there was always a rink nearby. And when he walked on to the goalie position at Boston University, Bise was fortunate to have a master educator as his coach.

“I believe Jack Parker was one of the best coaches in college hockey,” recalls Bise. “He was a brilliant teacher when it came to game theory and drill design. He not only fueled my passion for hockey, but inspired me to become a teacher.”

“Hockey has had a great impact on how I teach, my intensity in the classroom, and my expectations for my students,” he continues.



“Good teachers are also good coaches,” notes Dr. Fitzgerald. “Chris has certainly coached me and improved my level of play. He always puts things a little out of my reach to make me work harder!”

The two play together whenever they can, and are frequently joined by Dr. Thomas Platt, associate professor in the Emergency Medicine program. A former player in an over-30 league, coach for his son’s team, and referee in the adult and senior hockey leagues, Dr. Platt is now on the ice three times a week, often between the hours of 10 p.m. and 1 a.m., sometimes with Dr. Fitzgerald and Bise.

“It is fun to ref with players that you have a good relationship with,” explains Dr. Platt. “They both play well and are very competitive.”

“I actually don’t enjoy calling penalties—it’s just part of the job. But I have learned some colorful language. I’m just not saying if it came from Kelley or Chris!”

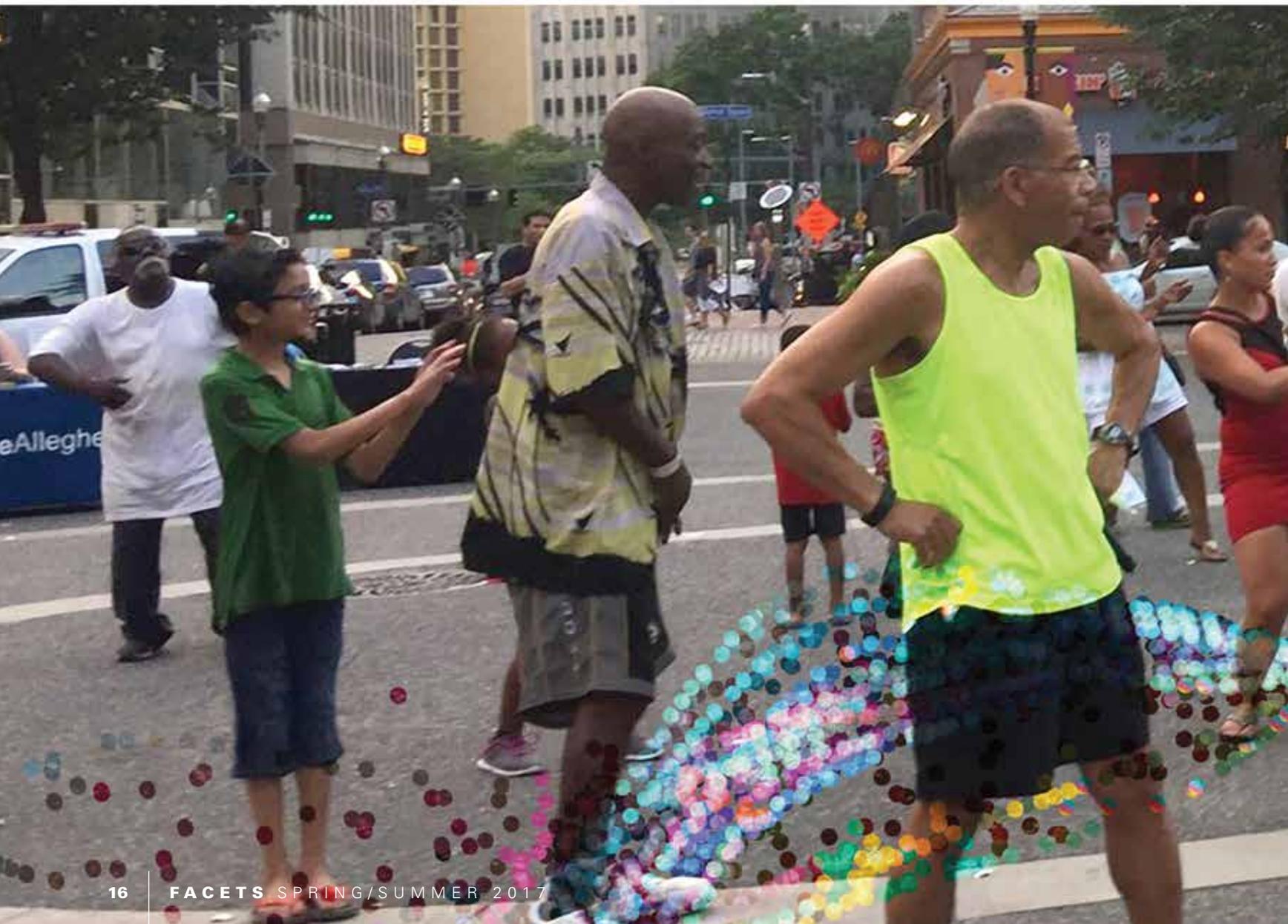
Dancing with heart and soul.

Dr. Samara Joy Nielsen gets her kicks through soul line dancing. Several times a week, this assistant professor in the Department of Sports Medicine and Nutrition travels to find line dancing classes or line dancing socials in different parts of the city.

Soul, or urban, line dancing is part hip-hop, part ballroom, part disco, and all fun. A group of dancers all face in the same direction and execute a series of steps in unison. The music is contagious and upbeat, and Dr. Nielsen says it’s not unusual to see several dozen or more people lining up on the dance floor.

“It’s a great workout because you’re constantly moving, but it’s also a workout for your brain,” says Dr. Nielsen.

She explains that there might be as many as 50 to 75 steps in each dance, and every dance is different. “I wouldn’t be surprised if some of my teachers knew 500 or more dances,” she reports.



“Line dancing is a wonderful escape,” Dr. Nielsen continues. “While you’re dancing you’re not thinking about work, or worrying about anything. It’s all about what step comes next and having a great time.”

Dr. Nielsen is excited that line dancing is gaining in popularity. Pittsburgh Citiparks sponsors line dancing during summer events at Mellon Square and Highland Park. “It’s great to see people jump in and start dancing with the line dancing community,” says Dr. Nielsen. “It’s really appealing because it’s not a free-form style of dancing that makes some people feel self-conscious. You can look to the left or look to the right and follow along with the person standing next to you!”

How does an hour of line dancing compare to an hour of walking on an elliptical machine? According to Dr. Nielsen, “I get much more exercise, and it lifts my spirits so much.”

She affirms that line dancing is the perfect activity for her: “I just feel happy when I’m dancing.”

The National Institute on Aging reminds us that regular exercise and physical activity can reduce the risk of developing some diseases and disabilities that often come with age, and serve as an effective treatment for many chronic conditions including arthritis, heart disease, and diabetes. ■



Dr. Samara Joy Nielsen (in blue), Nutrition and Dietetics assistant professor, leads a community line dance.



A NOVEL APPROACH TO MUSCULOSKELETAL INJURIES

Last fall, Dr. Shawn Flanagan arrived in the Department of Sports Medicine and Nutrition (SMN) with a fresh doctoral degree from The Ohio State University ... and some rather unique ideas about the biology of musculoskeletal injuries.

“It seems that some traumatic musculoskeletal injuries result in functional deficits that aren’t easily explained,” says Dr. Flanagan, assistant professor.

Take a person who has ruptured the anterior cruciate ligament (ACL). It’s a knee injury that’s common among military service members and athletes, especially women. But even years after therapy, that individual may exhibit symptoms such as poor balance and coordination, and slower reaction times. He or she might also be more prone to injury of the previously uninjured knee.

Dr. Flanagan believes that some of these problems may be neurological in nature.

In a recent study, he proposed that changes in behavior due to traumatic injury may reflect changes in the function and structure of the brain.

To test his hypothesis, Dr. Flanagan is comparing measures of brain function and structure in college-aged women who experienced ACL injury more than three years ago to those with no history of knee injury.

He is tracking differences in physical functioning between the two groups as well as differences between the injured and uninjured leg in women with ACL injury. In addition, Dr. Flanagan is measuring brain function in various ways—with magnetic resonance imaging (MRI), electroencephalogram (EEG), and transcranial magnetic stimulation (TMS).

“FLANAGAN’S PROPOSED USE OF TMS TO SELECTIVELY TARGET CERTAIN AREAS OF THE BRAIN SIGNIFICANTLY ENHANCES THE RANGE OF TREATMENT OPTIONS FOR MUSCULOSKELETAL INJURIES THAT CAN BE USED IN CONJUNCTION WITH CURRENTLY ACCEPTED THERAPY TECHNIQUES.”

TMS is used to treat medication-resistant depression and to assess brain damage caused by stroke and other disorders such as multiple sclerosis. Dr. Flanagan speculates that repetitive brain stimulation of the motor and planning regions of the brain may improve many of the deficits that occur in patients with ACL injuries including balance, skilled learning, and reaction speeds.

“Based on our pilot work, advanced brain stimulation techniques allow us to directly detect and potentially treat diminished physical resilience in a safe, rapid, non-invasive manner,” says Dr. Flanagan.

This is a truly novel idea—one that has far-reaching ramifications.

SMN Department Chair and Associate Professor Kevin M. Conley believes Dr. Flanagan’s focus on the neurophysiological basis of injury is something that cannot be addressed by traditional musculoskeletal interventions alone.

“Dr. Flanagan’s proposed use of TMS to selectively target certain areas of the brain significantly enhances the range of treatment options for musculoskeletal injuries that can be used in conjunction with currently accepted therapy techniques,” says Dr. Conley.

He adds, “Dr. Flanagan’s research brings a different perspective to SMN’s Neuromuscular Research Laboratory. But more importantly, it will benefit the subjects and patients his research is directed towards.”

According to Dr. Conley, Dr. Flanagan is also providing tremendous opportunities for freshman undergraduates through the First Experiences in Research program.

This semester, neuroscience majors Ryan Moriarty, Brandon Sciavolino, and Sadhana Sridhar, along with Rehabilitation Science student Alexis Faunce, are getting a taste of scientific research with the help of Dr. Flanagan. They’re learning basic lab procedures, conducting bibliography research, and learning how to analyze physical performance data and brain stimulation/brain imaging data.

According to Dr. Flanagan, “This work is helping the students become familiar with the scientific process and to consider future research questions of their own.”

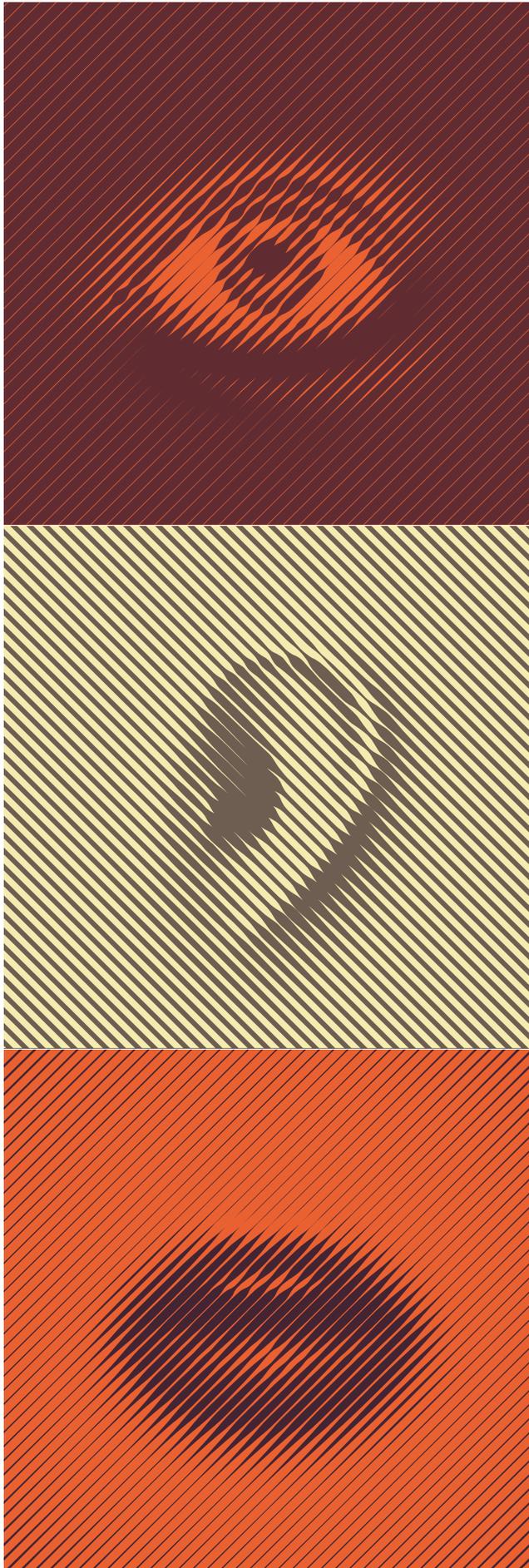
Sciavolino is ready. He says his goal is to learn the basic procedures of the lab so he will be prepared to play a valuable role in future projects when he has a greater knowledge base. “Dr. Flanagan is a very helpful mentor. I see a lot of potential in his future projects and I hope to be a part of them,” he adds.

Moriarty agrees. He applied to work with Dr. Flanagan because he has a passion for both neuroscience and sports, and hopes to attend medical school. “This experience will open many doors for me in terms of future opportunities in research, whether that be with Dr. Flanagan in the Neuromuscular Research Lab or elsewhere,” explains Moriarty.

Sridhar is excited to see the relationship between the brain, performance adaptations, and behavioral psychology. “This project helps me understand what kind of work I may be doing in my research career,” notes Sridhar.

For Faunce, Dr. Flanagan’s mentoring provides a gateway for learning topics not always taught in the classroom. She says, “This is a great opportunity to not only collaborate with others, but explore and engage in hands-on learning with a multitude of technologies.”

“Although Dr. Flanagan’s only been part of our team for a short time, he is already making a difference,” observes Dr. Conley. “He’s engaging with students and conducting research that could change our approach to injury prevention and performance optimization. He is a tremendous addition to our faculty.” ■



MOVEMENT:
ESSENTIAL TO
COMMUNICATION.

COMMUNICATION:
ESSENTIAL TO
QUALITY OF LIFE.

While many of us equate movement with the ability to reposition our arms, legs, or other external parts of our body, faculty and researchers in the Department of Communication Science and Disorders (CSD) remind us that internal movement is essential for all communication. And communication is fundamental to our participation in the human experience.

CSD researchers delve into movement in the tiniest parts of our bodies and study how these movements work together to perform the amazing tasks of speaking, swallowing, and hearing. What's even more fascinating is that, because we can't see all the intricate internal parts moving, we don't even think about how movement inside our head, face, and neck helps us to communicate.

According to Distinguished Professor Malcolm McNeil, movement is more than locomotion from one place to another. "It is essential for writing and gesturing for communicative purposes," says Dr. McNeil. "Movement of the middle ear bones is critical for hearing. And in order to produce speech, the body must move 100 muscles in synchronized patterns."

Movement in Voice Production and Swallowing

In her research, Dr. Susan Shaiman, CSD associate professor, examines how precise movements controlled by sensorimotor mechanisms in the nervous system are essential for clear, intelligible speech.

"Even minor problems with the control of movement can result in impairments in speech production," says Dr. Shaiman. "Consider an individual with Parkinson's disease who cannot read a storybook to his grandchildren because he has difficulty producing a loud enough voice and produces sounds in an unintelligible manner. Or a stroke patient who has difficulty telling his nurse that he needs to go to the bathroom because his speech is imprecise or he cannot coordinate his articulators. Or even a teenager who stutters and is too embarrassed to answer questions in class."

Countless movements also take place during the complex and life-sustaining task of swallowing. For example, there are voluntary movements such as chewing and using the tongue to position food in the mouth, but there are also reflexive movements of the pharynx to move food down the throat to the esophagus and eventually to the stomach.

"We perform kinematic analysis of thousands of swallows per year, and my clinical work and research are all about movement of these structures," states Associate Professor James Coyle. Dr. Coyle also investigates impaired oral, facial, pharyngeal, mandibular, and other upper digestive movements.

Research in both Dr. Shaiman's and Dr. Coyle's labs help to inform appropriate care and therapies for their patients.

Movement in Hearing

Movement is critical to hearing as well. Associate Professor Catherine Palmer says it all starts with movement of the eardrum. "Movement of the eardrum causes movement of the three tiny middle ear bones, which puts the oval window into motion, which puts the fluid in the cochlea in motion, which moves the hair cells in the inner ear."

"It is the very precise movement of the hair cells that provide the input to the auditory nerve that finally results in the perception of sound, which leads to communication," adds Dr. Palmer.

Eye Movement

But lack of movement also affects our ability to communicate. This is especially true for individuals with severe motor/movement disorders such as cerebral palsy, ALS, upper spinal cord injury, or Rett syndrome. It even impacts their use of augmentative and alternative communication (AAC) technology.

According to Associate Professor Katya Hill, technology can certainly provide an alternative access method for individuals with severe disabilities. "Eye gaze technology, for example, uses a camera to pick up the eye movement of the individual in order to select targets or locations on a screen to control the AAC language software for communicating. And Brain Computer Interface (BCI) is a newer innovation providing access to AAC and computers for individuals with minimal or no functional movement and when eye conditions may prevent efficient use of eye gaze technology."

Assistant Professor Dawna Duff also studies eye movements, but for a different reason. "Eye movements can help us gain insight into the cognitive processes of individuals with reading difficulties," says Dr. Duff.

It is evident that CSD faculty not only study movement, they are moving the field of communication science forward through their expertise and research. ■



HIM AND UPMC COLLABORATE TO CREATE A NEW CLINICAL ALERT TOOL

Result Comment by SYSTEM on April 15, 2016 4:45 AM

Warning Possible Acute Kidney Injury: This result indicates an increase of 0.3 or more (in the past 52 hours). Based on reference creatinine of 0.60 (04/1/2016) this result indicates a change of 166.67% This change in kidney function is consistent with KDIGO Stage 2. Note, that Acute Kidney Injury is a clinical diagnosis and clinical evaluation is recommended before management is altered. Consider consultation with renal medicine or, if patient may be critically ill, the consult intensivist.

Acute kidney injury (AKI), previously known as acute renal failure, is a devastating condition that affects more than 10 percent of all hospitalized patients and more than two-thirds of all ICU admissions. Even mild cases of AKI can become severe during hospitalization and, in the past, outcomes have been less than desirable.

But thanks to an ongoing collaboration between Dr. Dilhari DeAlmeida, assistant professor, Department of Health Information Management (HIM), and Dr. John Kellum, director of UPMC's Center for Critical Care Nephrology (CCCN), physicians in 14 UPMC facilities now have access to a unique electronic tool known as the AKI alert that may help prevent the progression of AKI in their hospitalized patients.

According to Dr. DeAlmeida, who also holds a faculty position at CCCN, the new tool utilizes data from electronic medical records (EMRs) in a way that has never been done before by quickly identifying patients who are at high risk for progressing into kidney failure.

"The main value of the AKI alert is the automation of several time-consuming steps in interpreting serum creatinine data," explains Dr. Kellum. "The first is the identification of the most appropriate baseline value out of a potentially long list of prior values that may not be easy to find in the EMR. The second is identifying time-based changes in a patient's creatinine level over the course of hospitalization."

"The e-alert does both of these things and therefore aides the clinician in interpreting the results," Dr. DeAlmeida continues. "Because it establishes areas for practice improvement, it ultimately leads to improved patient care."

The collaboration between Drs. DeAlmeida and Kellum began back in 2013. As part of a multi-disciplinary team, they developed "use cases for e-record research" on diseases such as diabetes and AKI.

"This example of collaborative partnership drives innovation and provides all parties with a competitive and leading edge within the industry," says Dr. Mervat Abdelhak, HIM Department chair and associate professor.

While developing the AKI e-alert, the team took into account recommendations from new clinical practice guidelines established in 2012 by Kidney Disease: Improving Global Outcomes. The guidelines called for "early detection and management" of hospitalized patients with high risk for AKI.

This study incorporated professionals in the areas of clinicians/physicians, information technology, and HIM. "Our role was to provide leadership in data and information governance, data content, management, and analysis, and privacy and security aspects of the tool," says Dr. DeAlmeida.

As a first step, the study examined both the specificity and sensitivity of the alert. "We wanted to make sure we were capturing the correct levels of creatinine, for example, and that we were doing so within a specific period of time before AKI progressed," explains Dr. DeAlmeida.

The study concluded that the alert provided 100 percent specificity and 97 percent sensitivity, making this a viable tool for moving forward. The second phase of the study is now underway, assessing the impact of physician decision-making and the evaluation of the computer-based decision support for AKI.

"The implementation of this decision support system with Dr. Kellum and UPMC colleagues has reaffirmed the fact that having great technology and data are just the start. It's what we do with this technology and data to benefit patient care that matters and drives us all," notes Dr. Abdelhak.

Dr. DeAlmeida believes the alert will have a positive impact on patient outcomes because it quickly detects the rate of AKI and allows physicians to make appropriate diagnosis and treatment plans before the disease progresses. In addition to improving survival outcomes, it reduces hospital costs by lowering the patient's length of stay.

According to Dr. Abdelhak, "This is an exciting time for HIM and the industry. We've never had greater potential working with partners such as UPMC to improve patient care, improve lives, and transform how we practice, fund, and implement evidence-based solutions, health care policies, and processes."

"The partnership with HIM professionals has been excellent," states Dr. Kellum. "The application of specific HIM science to clinical medicine is very powerful. All of the HIM faculty, Dr. DeAlmeida in particular, have been excellent to work with and I hope to continue our collaboration." ■



▲ Dr. Dilhari DeAlmeida



MAKING EVERY STEP COUNT.

According to the statistical portal statista.com, more than eight million health and fitness trackers were sold in the U.S. in 2015. Many of us have come to rely on our trackers to gauge the number of steps we walk each day or our level of cardiovascular activity. We like them because they are self-affirming gadgets that help us achieve our fitness goals.

We trust that fitness trackers are accurate. But are they?

Assistant Professor Andrea Hergenroeder and Associate Professor Jennifer Brach from the Department of Physical Therapy (PT) noticed that their own wrist-worn devices didn't always track steps taken while pushing a grocery cart or stroller. They wondered if the same would be true if worn by older adults who walk at a much slower gait, shuffle when they walk, or perhaps use a cane or walker.

During the summer of 2016, they conducted the "Step Count Recording in the Elderly" study to determine the accuracy and reliability of ten different activity monitors when they were used by individuals over the age of 65 who walked at different speeds, either unassisted or with the help of a cane or walker.

"We know that physical activity and walking is especially important as we age," says Dr. Hergenroeder.

"It appears that activity trackers were originally designed for well-functioning, active individuals," she continues. "We believed that if these devices accurately measured all steps—even ones taken at a slower pace—that they could be used to motivate older adults to walk more."

The study recruited 44 men and women between the ages of 75 and 98 from four different UPMC senior living communities. During the course of two 100-step walking tests, participants were asked to wear three research-grade activity monitors and five to ten commercially available activity monitors. Some were designed to be worn on the wrist, ankle, or leg, while others were clipped on to clothing.

"We compared actual steps taken to the number of steps that were recorded on the activity trackers," explains Dr. Brach.

Jacklyn Berry, a senior in SHRS's Rehabilitation Science undergraduate program, assisted with the step counting. "Many participants were excited to try out the new technologies that they had heard so much about. Many said, 'I didn't realize it was so easy to take 100 steps.'"

Berry also surveyed the participants to document their preferences regarding the ease of putting on each device, whether or not the screen was easy to read or manage, and how willing they would be to wear a particular device.

"Our goal was to find an intervention that would help increase activity for this population—one that would be easy to use and not frustrate them in any way," continues Dr. Brach.

While the older adults reported an interest in using the new devices, several problems emerged. "We found great discrepancies in accuracy from one device to another," reports Dr. Hergenroeder. "The wrist-worn devices did not capture the accurate number of steps if the participant used a cane or walker, and many devices were not accurate if the participant walked slowly."

"In addition, about half of the older adults struggled to get the device on and off," notes Dr. Brach. "Obviously, this would not be an effective intervention if older adults are unable to put on the device."

Both researchers expressed surprise that manufacturers did not involve all potential stakeholders in the design of their products.

"The accuracy of wearable physical activity monitors that count steps for personal use and for interventions among older adults, including those with limited physical function, is a key research gap that we aim to address," adds Dr. Hergenroeder.

Many participants said they wanted to focus on staying mobile for as long as they can. Berry adds, "As adults remain active, they maintain better health which, in turn, promotes a happier and more independent lifestyle. It's a continual cycle of positive motivation. Sometimes we all just need the initial push to get started." ■





"DANCING IS POETRY WITH ARMS AND LEGS."

—CHARLES PIERRE BAUDELAIRE

The French poet Baudelaire may have appreciated the beauty of dance, but it's unlikely that he recognized the therapeutic value of each and every move. Master of Occupational Therapy (MOT) students Elise Pure and Stephanie Rouch, however, do.

That's why they're passionate about bringing art and science together as instructors in a community dance program.

Pure, who has been studying dance since the age of three, was thrilled to join other health care specialists and dance professionals to become an instructor in a program that brings the joy—and benefits—of ballroom dancing to people with physical disabilities and cognitive disorders.

"It's exciting to see how everyone participates," says Pure. "It's as simple as that. It doesn't matter that they may be diagnosed with Down Syndrome, cerebral palsy, autism, or vision problems. When they dance, they become part of a community."

"Dancing is an occupation," asserts Alyson Stover, assistant professor in the Department of Occupational Therapy (OT). "If certain individuals enjoy this activity, it's up to us to look at their needs and interests through the lens of occupational therapy and help them achieve their goals."

Rouch agrees. Armed with an undergraduate degree in Special Education and a personal interest in dance, she joined Pure as a dance instructor. But when parents, staff, and mentors started noticing significant changes in social functioning as a result of the program, she decided to pursue a research study. "I wanted to align my academic goals with what is happening in the community."

"Through scientific investigation, I hoped to examine whether or not social skills improve as well as physical capacity as a result of this program," Rouch explains. Over a six-week period of partner dancing, her study tracked changes in balance, grip strength, and well-being in adults with developmental disabilities.



Faculty mentors Associate Professor Nancy Baker and Assistant Professor Juleen Rodakowski guided the research effort. “Stephanie wanted to look at how a community-based program could affect individuals with disabilities,” notes Dr. Baker.

Improvements in balance and physical ability were obvious right from the start. “When dancers are learning the tango, for example, they’re required to step forward and move,” says Pure. “This was not an exercise to them; it was just dancing. They didn’t realize how much physical benefit they were receiving.”

Dr. Baker points out that many individuals with disabilities are restricted in their ability to use their bodies to express themselves because of physical limitations, or are not encouraged to participate in activities like dance, because they don’t meet the “norm” of what is considered to be “dancing.”

“Programs that break through that stereotype not only provide people with disabilities the opportunity to hone individual skills, such as balance, rhythm, memory, and movement, but they also create opportunities for socialization and teamwork,” says Dr. Baker.

“As a result, individuals can revel in their own ability to move and be successful in it,” she continues.

Pure cites an example of one student who previously did not make eye contact with those around him. “After the second week of instruction, this dancer was smiling and making eye contact with others in the room. He eventually grew confident enough to attend a dance in his community and asked others to dance.”

“Sustainable community programs like those that focus on dance can address issues of well-being and health outside of the traditional health care system,” says Dr. Baker. They can also give students such as Rouch and Pure insight into what they hope to accomplish in the future.

For Rouch, it’s all about inclusion. “I see an emerging need for OTs to work with adults with special needs and get them participating in the community. I hope to contribute to that work after I complete my MOT degree,” she states.

Pure hopes to help people with arthritis find therapies before the disease progresses to the debilitating stage. To that end, she wants to continue her role as a dance instructor for individuals with disabilities for as long as she can.

With occupational therapists working in the community, we can always be assured of poetry in motion. ■





HERL'S MEBOT ROLLS INTO FINALS AT CYBATHLON

It was an international race like no other. In October 2016, designers, engineers, and people with disabilities from around the world came together in Zurich, Switzerland, for the first ever Cybathlon.

The race that pitted the latest assistive technologies against each other on a simulated course was thrilling in its own right. But the real excitement began when the wheelchairs crossed the finish line. That's when discussions sparked between technology developers and people with disabilities, including conversations about how to bring advanced wheelchairs like these to market.

Graduate student researcher and PhD candidate Jorge Luis Candiotti (BS '10) came to Cybathlon with MEBot, a revolutionary robotic-powered wheelchair developed at SHRS's Human Engineering Research Laboratories (HERL).

Candiotti was involved in the design, development, and testing of electronics and software to operate the various applications of MEBot. "I have been working on MEBot for the past five years," he explains. "The process involved a lot of feedback in the mechanical design, and the incorporation of end-users' comments and, of course, troubleshooting."

At Cybathlon, MEBot competed against 12 other robotic wheelchairs in the power wheelchair division. Although it qualified for the finals, MEBot timed out of the final round. "MEBot was among the crowd favorites and was clearly the front runner in commercial potential for indoor-outdoor use," says Candiotti.

MEBot is unique because it features six independent, height-adjustable wheels. "The driving wheels are adjustable along its frame to change its driving configuration to mid-, front-, or rear-wheel drive according to the environment and user's preference," explains Candiotti.



▲ MEBot was a crowd favorite when it competed against 12 other robotic wheelchairs in the power wheelchair division at Cybathlon.



▲ Six independent, height-adjustable wheels allow MEBot to adjust to different terrains.

"MEBot could climb over steps if necessary," he adds. "In addition, the wheelchair can adjust the seat to a flat level when driving over uneven terrains, or to prevent tips or falls."

The organizers encouraged teams competing in the Cybathlon to also apply for the Blackwood Design Award. HERL submitted the MEBot for this prestigious award and was selected as the winner. "I'm very proud of the team working on the MEBot for its accomplishments at the Cybathlon, and for winning the Blackwood Design Award," says Department of Rehabilitation Science and Technology Distinguished and FISA/PVA Chair Professor Rory Cooper, director of HERL. ■

MAKING WHEELCHAIR USERS **STRONGER FASTER.**

▼ *High frequency vibration contracts muscles every 40th of a second, building strength in a shorter period of time.*

Picture yourself in the gym holding a dumbbell doing biceps curls. You know what happens, right? Over time, you build strength in that muscle.

Now imagine you're using a dumbbell that has a high-frequency vibrator embedded in it. You're not only working your biceps, but also your triceps, your deltoids, and other muscles in your upper body. Your arm muscles will get stronger, faster.

Associate Professor Alicia Koontz and Assistant Professor Theresa Crytzer, Department of Rehabilitation Science and Technology, are using this hypothesis in a pilot study that they hope will define new training guidelines for building muscle strength for people with paraplegia.

"Manual wheelchair users rely on their arms for just about everything," says Dr. Koontz, principal investigator for the study. "The constant strain negatively impacts upper extremity health, and frequently leads to other injuries, such as shoulder pain."

In the study, 24 individuals with spinal cord injury who use manual wheelchairs are randomized into two groups. Each group participates in a 12-week-long supervised dumbbell resistance and strength training program and a three-month follow-up assessment.

The vibration group holds a high-frequency (40 Hz) vibrating dumbbell in a static arm posture, while the control group moves a non-vibrating dumbbell through a full range of motion exercise.

"The vibration exerts force on the body and contracts the muscles," explains Crytzer. "It's extremely challenging because there's a contraction every 40th of a second!"

The researchers believe this form of training could greatly benefit persons with paraplegia who need effective and efficient solutions to build upper limb muscle capacity and to protect the joints from overuse and aging effects.



Dr. Koontz predicts there will be additional benefits. "We're looking at how vibration training will impact both wheelchair propulsion and transfer ability. Will the wheelchair user be able to cross the street faster, for example? And will these individuals transfer higher or lower than they could before the training?"

Vibration training may also improve the general quality of life for manual wheelchair users. "With less pain, they may be able to reduce the number or amount of medications they need on a daily basis," adds Dr. Koontz.

According to Crytzer, who is part of an integrated team of rehabilitation specialists at UPMC Center for Assistive Technology, this is a very practical study. And one that has interdisciplinary implications.

"We always get requests for exercises for people with spinal cord injuries," says Crytzer. "Down the road, we envision ways that vibration training could be incorporated into a course of physical therapy. It might even be delivered through a home health provider, improving accessibility as well as muscle strength." ■



CAPSTONE PROJECTS EARN RECOGNITION ON INTERNATIONAL STAGE



▲ Steve Zetts (MSPO '17) presenting his capstone research, "Investigating a Method of Sustainable Fabrication of Orthotic Joints."

The Prosthetics and Orthotics (P&O) Master of Science program at SHRS has only been in existence since 2009, but it is already capturing the attention of P&O professionals around the world.

One reason for the increasing awareness is the number of students and graduates who have been invited to present academic research conducted as part of their capstone projects at national and international conferences. In fact, during the past year, more than a dozen students have presented at such conferences.

According to Assistant Professor Goeran Fiedler, preparing qualified research is no easy task. "The research must be novel, well executed, and must add to the body of knowledge in our field."

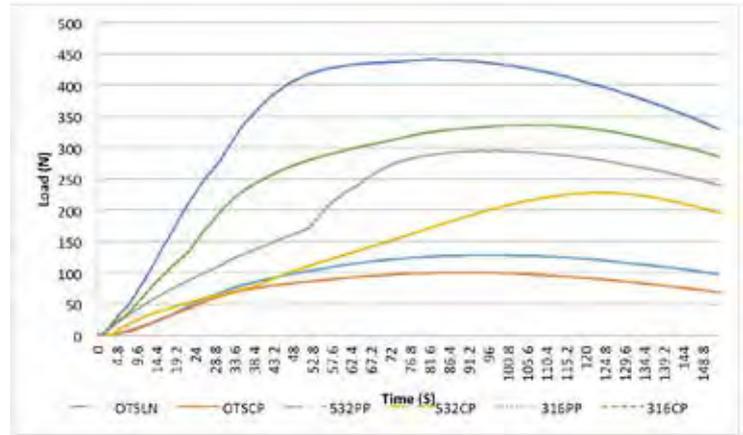
In May 2017, three recent P&O graduates will make podium presentations at the most prestigious conference in the field: the International Society for Prosthetics and Orthotics (ISPO) World Congress 2017 in Cape Town, South Africa.

Steve Zetts (MSPO '17) will present his capstone research, "Investigating a Method of Sustainable Fabrication of Orthotic Joints." Zetts, who worked as a technician prior to attending graduate school, saw how much waste was involved in the production of orthotic devices.

"I began by examining a process for fabrication of custom ankle-foot orthotics," explains Zetts. "During one phase of production, a piece of plastic is cut to size from a larger sheet and vacuum-molded for each individual device, leaving a lot of leftover plastic that typically goes unused."

"I felt that much of this leftover material was being wasted simply because it was too small to be used for the custom devices," he continues.

In his research, Zetts created a two-part mold that used leftover plastic to fabricate an ankle-foot orthosis joint. Not only does his process allow for excess plastic to be incorporated into a device, but it can also reduce the overall cost and production time. Zetts's process can be done entirely on-site, eliminating the need to send the joint from an outside fabrication facility.



Zetts, who is currently applying for a P&O residency, is looking forward to his presentation at the ISPO World Congress because it will provide him with opportunities to explain his concept to professionals around the world. “I believe there are many people who would benefit from this protocol,” he adds.

Corin Shirley (MSPO ’16), orthotic resident at the University of California, San Francisco Medical Center, and Alexander Ashoff (BS ’14, MSPO ’16), prosthetic resident at the Oklahoma City VA Medical Center, are also presenting at the ISPO World Congress in Cape Town. Their topic: “The Effect of Shoes on the Durability of Low-Cost Prosthetic Feet for Tropical Climates.”

Shirley and Ashoff came up with the idea after completing a literature review on prosthetic foot options for low-income countries. “We immediately noticed that there was very little P&O-related research in this area,” explains Ashoff. “We also noticed that prosthetic foot options for low-income countries were not adequate because they wore out very quickly. Our first idea was to design a whole new foot that could be used in these geographic areas.”

“Dr. Fiedler had to rein us in on that idea,” continues Shirley. “He explained that this was unrealistic because it was outside the scope of the one year we had to complete our capstone project. He brainstormed with us and helped us land on a more realistic project of statistically proving that shoes can, indeed, extend the life of prosthetic feet.”

“We feel this topic is very important because it provides a simple, low-cost, and effective solution to extending the lifetime of prosthetic feet,” says Ashoff. “This is crucial because of the lack of availability of prosthetic components and practitioners in these areas of the world. If we can assure that prosthetic components will last longer, then we can focus more attention on the huge number of amputees who don’t even have prostheses.”

▲ (Left) Environmental chamber for “The Effect of Shoes on the Durability of Low-Cost Prosthetic Feet for Tropical Climates”

(Middle) Foot and light setup for “The Effect of Shoes on the Durability of Low-Cost Prosthetic Feet for Tropical Climates”

(Right) Compression force in Newtons applied to each joint by the MTS machine over a period of 150 seconds. The curves represent the amount of force required to deform each of the joints. The labels of the graph coincide to each of the joints tested: Off the Shelf Heavy Duty (OTSLN), Off the Shelf copolymer (OTSCP), 5/32 polypropylene pulled from mold (532pp), 5/32 copolymer pulled from mold (532cp), 3/16 polypropylene pulled from mold (316pp), and 3/16 copolymer pulled from mold (316cp).

Shirley and Ashoff credit the Human Engineering Research Laboratories at Pitt for allowing them to use their equipment, and for volunteering to help carry out some of the testing procedures.

“The acceptance into the ISPO conference is amazing because it means that someone else believes our research is valuable,” says Shirley. “This project is not something that is completely revolutionary, but rather a detailed look into a protective device (shoes) that we often take for granted here in the first world, and how much they actually do prolong the lifetime of a prosthetic device.”

The research team is excited to attend the conference and receive feedback from professionals who work in tropical areas. “They may provide us with ideas we hadn’t thought of yet,” notes Ashoff.

For Dr. Fiedler, invitations to these conferences validate his belief in his students. “We want our students to be ambitious and embrace the idea of doing something that will enhance our field. We are proud that so many of them are getting recognition for doing exactly that.” ■



▲ AT student Alicia Ferrara wrapping the wrist of RMU hockey player Katherine Murphy.

THE REAL WORLD

Growing up, Alicia Ferrara used sports as a stress reliever. She participated in multiple sports but started focusing on volleyball during her high school career. She excelled as an outside hitter and eventually joined a junior Olympic team that traveled all over the country.

“Sports allowed me to channel my negative energy into something positive and challenge myself to keep improving for the sake of my team,” says Ferrara.

When she enrolled at Pitt, Ferrara quickly realized there was a career track that would combine her love of sports with her desire to help others be the best they could be. Now a senior in the Athletic Training (AT) program in the Department of Sports Medicine and Nutrition, Ferrara is completing her final clinical rotation working with the men’s and women’s ice hockey teams at Robert Morris University (RMU).

“This is a truly great experience,” exclaims Ferrara. “Every single player is passionate about the game. They work hard and want to play. They don’t want to take time off for any reason.”

Ferrara understands that even a minor injury can be frustrating to an athlete. “I can empathize with an injured player because I know what it’s like to temporarily lose that stress reliever,” explains Ferrara. “As an athletic trainer, I can put myself in their shoes and make an impact not only on their physical health but also, with the help of my team, on their emotional and mental health.”

“You’d be surprised at how much an injury can affect an athlete’s mental state,” she adds.

William K. Ankrom, clinical education coordinator for the AT program, has tremendous confidence in how Ferrara interacts with athletes. “Alicia has shown great leadership in her ability to handle diverse matters and be able to communicate with those involved in a very professional manner,” reports Ankrom.

“I feel that her level of emotional intelligence is beyond that of a typical student,” he continues.

Ferrara likes the fact that as an athletic trainer, there’s always something to learn, from time management skills to understanding the best way to prevent and treat specific injuries.

“Every sport is different and every situation is different,” she says. “But one thing is always the same. No matter what, it’s always exciting!”

RMU’s Assistant Athletic Trainer Lindsay Gilarski (BS ’10, MS ’11) is pleased to have Ferrara on board. “I like people to show up early and have a willingness to learn,” says Gilarski. “Alicia displays both traits. She’s not afraid to ask questions. I’m sure she’s going to be a great athletic trainer.”

Ferrara spends between 15 and 30 hours a week with the RMU teams. Although it’s a big time commitment, she appreciates the opportunity to apply what she’s learned in the classroom.

On any given day she treats many soft tissue injuries affecting the women athletes. Sprains involving the acromioclavicular (AC) joint at the top of the shoulder are more common on the men’s team where full body contact is permitted. Concussions are an issue for both men and women.

“Lindsay is a great preceptor,” says Ferrara. “She gives me independence and allows me to think creatively, but she’s always available to discuss various treatment options.”

According to Ankrom, Gilarski has a lot to offer his AT students. Not only is she a Pitt graduate herself, but she’s also working with hockey athletes in a Division I setting. That, says Ankrom, is unique.

“Women athletic trainers have a very limited presence in professional hockey,” he notes. “In fact, no female certified athletic trainer currently works in the National Hockey League.”

He adds that Gilarski is a sound clinician who is progressive, engaging, and eager to share her knowledge with students to make them stronger clinicians.

Although this is a short-term clinical assignment, Ferrara feels like she’s a part of the RMU hockey family. She enjoys once again being part of a team.

“Sports are all about teamwork,” observes Ferrara. “But they’re also about dedication and competition and constant improvement. I believe these same qualities apply to athletic trainers. I want to constantly challenge myself. When I reach one goal I know I’ll find another one to work on.” ■



▲ Ferrara with RMU Assistant Athletic Trainer Lindsay Gilarski.

Change Service Requested



SHRS Study Abroad in Ireland

Now playing on SHRS Facebook and Youtube.



International Society of Wheelchair Professionals

EDUCATING
INNOVATING
SERVING
ADVOCATING
ENGAGING
IMPACTING
LEADING
INFLUENCING
TRANSFORMING
INTEGRATING
REVOLUTIONIZING
PIONEERING

SHRS Snapshots

View our new video series highlighting students, faculty and alumni engaged in opportunities offered only through Pitt SHRS.



www.facebook.com/shrspitt



www.youtube.com/user/shrssupport