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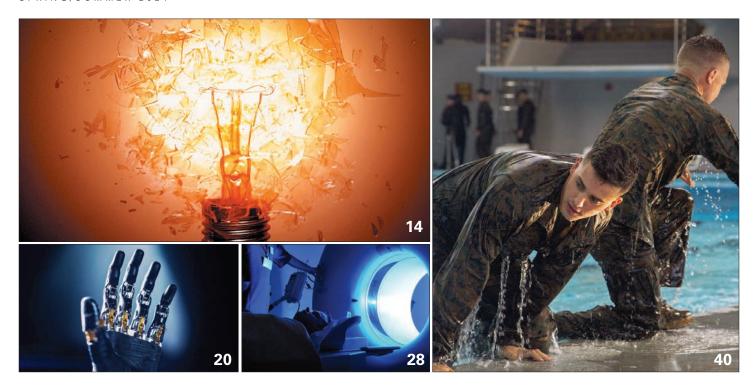


BEYOND BRIGHT IDEAS

HOW BOLD MOVES DEFINE SHRS

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SPRING/SUMMER 2021



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Greetings,

At a time when the COVID-19 crisis seems to throw challenge after challenge at SHRS (let alone the rest of the world!), it may seem audacious to talk of initiatives that would lead to transformational change here at the school. You may ask, "Shouldn't we be focused on keeping our collective heads above water?" I must admit, in March 2020, I was of the same opinion. However, after watching our leadership team, faculty, staff and students meet each and every COVID challenge head on, I quickly realized that we were not only going to survive the pandemic, but we were going to thrive.

I cannot say enough about our SHRS family. From our extraordinary vice dean, Debora Miller, to the associate deans, department chairs, program directors, faculty and staff, multi-tasking was elevated to a whole new level. Led by Patty Kummick, our Internal and External Relations team did a fabulous job of managing our relationships and engaging our extensive network of constituents. Everyone was simultaneously communicating with all stakeholders and dodging the daily curveballs of the pandemic while focusing on moving SHRS forward. By June, our leadership team was back on track revisiting and updating our five-year strategic plan.

I should not have been surprised by our collective responses. Our school has a legacy of performing courageously, evident through our history of achievement—a legacy that continues with the present SHRS team. And I commend our students who partnered with us as we delivered our programs with the Flex@Pitt model. Yes, partnered in the true sense of the word! We worked together as one to forge ahead, delivering our respective plans of study with everyone graduating "on time" and without compromising our standards of excellence.

In the past 12 months, the pandemic has been a true test of our mettle, and our position today is a testimony to the collective strength and spirit of the entire SHRS community. Our school's history demonstrates a tradition of boldly moving forward, thus the theme of this issue as we strategically plan our next five years. As a valued contributor to our past, present and future, I trust you will enjoy reading about our quest for transformational advances in educational excellence and research of impact, all while enhancing our efforts for equity, inclusion and a responsibility to our community.

Anthony Delitto
Professor and Dean

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Greetings from the School of Health and Rehabilitation Sciences!

I write as the new director of Development and extend an enthusiastic greeting from SHRS. I began my duties as director on December 1, 2020. I follow a legacy of development professionals who have engaged our SHRS alumni and friends, whose outstanding contributions have helped transform our school by providing resources for state-of-the-art facilities, pioneering programs and more scholarships for students. I am grateful for the opportunity to be here in SHRS working closely with Dean Delitto and continuing the work with alumni, faculty, staff, students and friends across the country to forge a bold and innovative path forward. Thank you all for the warm Pitt welcome!

As alumni and friends, I know each of you has your own SHRS story: how the school prepared you and how your education shaped your path and future. Similarly, my path in development and fundraising began at my alma mater, Thiel College, where I made phone calls to alumni and friends for our annual fund. I then made my way to Graham-Pelton Consulting, a global

fundraising consulting and nonprofit management firm in New York, where I served higher education and health care clients up and down the eastern United States. My career also included a stint at Saint Vincent College raising money for facilities and programmatic needs. Prior to coming to Pitt, I served as the executive director of Development at Indiana University of Pennsylvania, where I helped raise over \$30 million for a capital and endowment campaign.

My time over these few months at SHRS has been spent meeting with faculty and staff in our many departments and programs. Throughout the school we have faculty and staff who are experts in their fields and provide our students with both educational excellence and opportunities to engage in cutting-edge research. The depth and breadth of their work is evident through their advocacy work, numerous publications, funded grants and research of high impact. This bold and innovative work makes SHRS an important player in the future of health care delivery. In SHRS, I also find a very strong spirit of caring and compassion among our faculty and staff. This spirit, coupled with a can-do attitude, enables us to educate and graduate clinicians and health care practitioners in top-ranked programs. These professionals, as you can attest, go on to build stronger and healthier communities throughout the United States and abroad.

This is an exciting time in health care and, as we take bold fundraising steps to secure the resources for our future, I welcome and encourage your involvement and engagement in the life of the school. Each of you has your own SHRS story of transformation, so take a moment to reflect on your journey. There are many ways to give back to the place that mentored and taught you so much.

When we emerge from the pandemic, I encourage you to come back home and visit. When you do, you will find a dynamic School of Health and Rehabilitation Sciences with vibrant departments engaged in the work of inspiring and preparing new generations of clinicians, health care professionals and researchers to forge their own pathways. There is a tremendous heritage here with a very bold and bright future. In the meantime, I hope you will reach out via email, surface mail or by phone and we can plan to talk or meet virtually. Thank you for all you do for SHRS and when we have the chance to meet, I look forward to hearing your story!

Hail to Pitt!

Anthony Cancro, MBA Director of Development, SHRS

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perspective



"Perspective" is written by Natalie Baney, FACETS executive editor and SHRS director of Communications. This column serves to address topics related to our students, faculty, staff, the school, and local and global communities.

We are thrilled to debut the School of Health and Rehabilitation Sciences' new brand positioning and messaging through this issue of FACETS magazine. In the following stories, profiles and reflections, we're demonstrating how bold moves define the very essence of SHRS. After all, it was you who inspired us. We merely adopted the words to portray the courageous spirit and collective perseverance of SHRS alumni, students, faculty, staff and friends.

In a world where great emphasis is placed on building one's brand, we didn't have to dig deep to describe simply and effectively who we are and what we do. The birth of bold

moves came long before our time, yet its influence drives our daily motivations. One could argue that the origins of bold moves dates back to the 1920s, during the D.T. Watson era, when our physical therapy program began—one of the first in the country. ("One of the first" is a phrase we are often able to use when talking about SHRS's history.) The late Dr. Anne Pascasio, our founding dean, was believed to be the first female dean among the 19 allied health schools in the country in the late 1960s and one of the first physical therapists to be named dean of a school. This, in and of itself, didn't make us bold. It was Pascasio's strength, determination and grace in an academic world fraught with adversity that meant our school's very survival. These valiant beginnings created a culture of boldness that is now innate to SHRS.

But bold moves characterize more than just the steps we've taken. Bold moves illustrate how we advance health care and impact people. Bold moves science forward. Bold moves people forward. We have a strong history of moving higher education in new directions and improving patient care. SHRS shapes future generations of health care professionals and researchers. With 13 different disciplines, we forge new paths because there's so much at stake. The many providers and practitioners we train today will serve the needs of not just a few, not just the privileged, but of all people, everywhere. Bold has and always will move us forward. And move forward we must.

Which SHRS colleagues, mentors, alumni or students' boldness have moved you?

Speaking of mentors, I want to recognize Patty Kummick, retired SHRS executive director of Internal and External Relations, whom I had the pleasure and honor of working with for the last 14 years. I cannot express how much her unwavering support and guidance has meant to me. I was always amazed by the effortlessness with which she conducted her work. She created and led the SHRS Internal and External Relations team with purpose and precision. Her genuine kindness and selfless nature are evident by the lasting and meaningful relationships she built with numerous SHRS constituents. I am confident that I am not alone when I say thank you, Patty. You will be missed. Best wishes for a happy and fulfilling retirement.

To comment or share your insights on this column, please contact Natalie Baney at nbaney@pitt.edu, 412-383-4138, SHRS, 4053 Forbes Tower, Pittsburgh, PA 15260.



Department News

The Human Engineering Research Laboratories (HERL) was awarded one of four \$1 million Tier 1 University
Transportation Center grants from the U.S. Department of
Transportation. HERL will focus its research on the effects of accessible autonomous vehicles and other mobility services.

Students from the **Physician Assistant Studies Department** and **Emergency Medicine** program assisted the Allegheny County Health Department with the distribution of COVID-19 vaccines at the Petersen Events Center in January. Some 800 health care workers and student health care trainees were vaccinated through the clinic.

Faculty News

In October 2020, Dean Anthony Delitto named the following as SHRS associate deans:

Dr. David Beck, assistant professor and chair, Department of Physician Assistant Studies, as associate dean for Interprofessional Studies.

Assuming responsibilities as associate dean for Academic Outreach and Advising is **Dr. M. Kathleen Kelly**, associate professor, Department of Physical Therapy.

Dr. Thomas Platt, vice chair of the Division of Community Health Services and associate professor and director, Emergency Medicine program, as associate dean for Academic Partnerships.

Dr. Bernard Rousseau, professor and chair, Department of Communication Science and Disorders, as associate dean for Equity, Inclusion and Community Engagement.

In each of these new assignments, SHRS has highly accomplished leaders who are committed to supporting the school's current and future strategic initiatives.

Clinical Rehabilitation and Mental Health Counseling



Dr. Laura Dietz, associate professor (above), and Dr. Jamie Kulzer, assistant professor (below), were jointly awarded a Pitt Forge Your Own Path grant titled "Developing Self-Care and Personal Wellness in Graduate Students in Health Professions."



Dr. Dietz was awarded a Pitt Clinical and Translational Science Institute (CTSI) pilot grant to study rural determinants of health. She was also named the chair of the Child and Adolescent Depression Special Interest Group for the Association for Behavioral and Cognitive Therapies.

Communication Science and Disorders



Dr. Bharath Chandrasekaran,
professor, as Co-PI,
received a National
Science Foundation

award for a project to develop a variety of novel statistical methods for assessing local similarities and differences in longitudinally evolving behavioral and neural processes underlying learning, with a special focus on auditory learning.



Dr. Catherine Palmer, professor, was featured in a Health Connection piece on NBCDFW.com

discussing how hearing issues are more obvious when listeners are unable to read lips through masks.

Health Information Management



Dr. Valerie Watzlaf, associate professor, as part of her role with the National Committee on Vital

and Health Statistics (NCVHS), was named to the Privacy, Confidentiality and Security (PCS) subcommittee. The subcommittee monitors major developments regarding health information privacy, confidentiality and security on behalf of the NCVHS and identifies issues and opportunities for investigation.



Dr. Andi Saptono, assistant professor, was invited to speak in a public lecture titled "The Opportunity

of Implementing Telemedicine in a Pandemic Era" hosted by the Vocational School of Gadjah Mada University, Indonesia, in November 2020. The public lecture highlighted the implementation of telemedicine in Taiwan, opportunities and challenges of telemedicine in the United States and Indonesia, and opportunities and challenges of telemedicine in Indonesia during a pandemic. The lecture was broadcast through Zoom and YouTube.

Dr. Steve Moeini (MS '06, PhD '17), adjunct instructor, Associate
Professors Valerie Watzlaf
and Leming Zhou, and research
collaborator Rev. Paul Abernathy,
FOCUS Pittsburgh and the
Neighborhood Resilience Project,
had their research, "Development of
a Weighted Well-Being Assessment
Mobile App for Trauma Affected
Communities: A Usability Study,"
published in Perspectives in Health
Information Management.

Occupational Therapy



Dr. Natalie Leland, associate professor, received \$2.9 million in funding from the National Institutes of

Health National Institute on Aging for her four-year project, "The Impact of Post-Acute Care Payment Changes on Access and Outcomes." This multiple PI proposal is a collaboration between the University of Pittsburgh, University of Washington and University of California, Los Angeles.

Dr. Leland also received American Occupational Therapy Association service commendations as AOTA advisor from the Quality Advisory Group and Skilled Nursing Facility Policy.



Alyson Stover, assistant professor, received a \$199,984 grant from the Substance Abuse and Mental Health

Services Administration for her two-year project "SBIRT-Plus: Rehabilitation Professions."

Assistant Professor Stover

was also elected president of the American Occupational Therapy Association. Her term begins July 1, 2021. She also was honored with the 2020 President's Award presented by the Pennsylvania Occupational Therapy Association.

Juleen Rodakowski, assistant professor, received the 2020 Pennsylvania Occupational Therapy Association Research Award.



Dr. Elizabeth Skidmore, professor and chair, met with the Biden-Harris
Presidential Transition
Team to discuss health

care challenges facing our nation and the Disability and Rehabilitation Research Coalition.

Dr. Skidmore and PhD student **Jessica Kersey** helped present on "EEG-based Neglect Detection for Stroke Patients" at the International Conference of the IEEE Engineering in Medicine and Biology Society in conjunction with the Canadian Medical and Biological Engineering Society in Montreal, Quebec.



Jennifer White, assistant professor (left); Dr. Elizabeth Skidmore, professor and chair; and Dr. Natalie Leland,

associate professor, participated in a poster presentation on "Critical Illness Survivors' Perceived Barriers and Facilitators to Functional Recovery" at the American Thoracic Society International Conference in Philadelphia, Pennsylvania.

Assistant Professor White shared her perspective on how cooling vests can make PPE more bearable when worn for long periods. White reflected on her clinical experiences during the SARS epidemic in an MDAlert.com article.

Dr. Pamela Toto, associate professor, was admitted to the Roster of Fellows for the Gerontological Society of America.

Faculty News



Dr. Amit Sethi gave an invited presentation, "Developing Interventions to Promote Upper

Extremity Function and Functional Independence in Individuals with Stroke," for World Occupational Therapy Day at the Manipal College of Health Professions in India on October 28, 2020.

Physical Therapy



Dr. Michael Schneider, associate professor, was elected to serve as a member of the Research Committee of the World Federation of Chiropractic.



Dr. James Irrgang, professor and chair, received the Carlin-Michels Achievement Award

from the Pennsylvania Physical Therapy Association.

Physician Assistant Studies



Jason Hare, assistant professor, was named the 2020 Pennsylvania Educator of the Year, presented by

the Pennsylvania Society of Physician Assistants.

Rehabilitation Science and **Technology**



Dr. Rory Cooper, HERL director and was named assistant vice chancellor for

Research for STEM and Health Sciences Collaboration for the University of Pittsburgh. He will provide intellectual leadership to help connect the STEM and health science areas and draw on Pitt's strengths in these fields. He will also participate in the University Research Council and work to develop institutional-level funding to support research.

Dr. Cooper participated in an online panel discussion sponsored by the U.S. Department of Transportation and Partners for Automated Vehicle Education entitled "AVs for All: Inspiring Solutions for Accessible Design" on September 22, 2020.



NIDILRR issued a Disability and Rehabilitation Research Project (DRRP) to **Dr. Mark**

Schmeler, associate professor, to investigate a new health coverage policy for custom manual and power wheelchairs for people with disabilities to improve their ability to live and participate in their communities. Included in the DRRP team are **Dr. Brad Dicianno**, HERL medical director, and Rosemarie Cooper, associate professor.



Dr. David Brienza. professor, is leading an international task force to develop prophylactic dressing

distinguished professor, standards for the prevention of pressure ulcers. Dr. Brienza is leading the effort on behalf of the National Pressure Injury Advisory Panel who is partnering with the European Pressure Ulcer Advisory Panel.



Dr. Anand Mhatre. assistant professor, was awarded a \$350,000 grant by the Indo-U.S. Science

and Technology Forum to design a postural support wheelchair for children with disabilities. The grant enables Pitt to collaborate with Mobility India and Participant Assistive Products to launch an ISO testing lab and the pediatric wheelchair in India.



Dr. Alicia Koontz, professor, was promoted to senior associate director for Research at HERL.

Dr. Garrett Grindle, research scientist, has been named associate director for Engineering at HERL.

Rosemarie Cooper, associate professor, was named HERL's associate director for Stakeholder Engagement.

Sports Science



Dr. Matthew Darnell, assistant professor, was featured on Today.com where he discussed how

"exercise snacks," short bouts of movement throughout the day, can greatly reduce negative health outcomes.



Alumni News

The following alumni volunteered their time and expertise to enhance the second annual student-run Collaborative Care Conference held virtually on February 19, 2021: **Angela Reino** (MS '12), Physician Assistant Studies; **Mitchell Bell** (BS '16, MS '19), Undergraduate Rehabilitation Science and Rehabilitation Technology; **Adam Maurer** (MS '16), Prosthetics & Orthotics; **Morgan Matisko** (BS '15, MS '17), Undergraduate Rehabilitation Science and Physician Assistant Studies; **Travis Slopek** (MS '19), Clinical Rehabilitation and Mental Health Counseling; **Leslie Smychynsky** (BS '91), Physical Therapy; **Larry Cooper** (BS '93), Athletic Training; and **Haley Feller** (OTD '20), Occupational Therapy.

Communication Science and Disorders



Dr. Haley Dresang (PhD '20) received the 2020 Academy of Aphasia Student Presentation Prize for

her platform presentation describing results from her dissertation, "Strong Conceptual Ability Reduces the Effect of Lexical Impairments on Verb Retrieval in Aphasia."

Dr. Noma Anderson (PhD '79) was named dean of the College of Nursing and Health Sciences at the University of Vermont.



Seven CSD alumni employed by Massachusetts Eye and Ear gathered recently for this group photo. They include **Arielle Swartz** (AuD '16), **Rachel Hammond** (BA '17), **Danielle (Frank) Leibowitz** (BA '13), **Jenna Goldstein** (AuD '20), **Kylie Hill** (AuD '19), **Emma Alscher** (AuD '20) and **Naomi Fireman** (AuD '16) who enjoy reminiscing about their Pitt days.

Health Information Management

Madison Meehan (MSHI '20) accepted a position as data coordinator and analyst in the Liver Cancer Center at UPMC.

Aysia Bugg (HSM '20) was hired as a clinical data analyst with UPMC.

Dr. Natasha Hepburn (HIM '10) serves as director of Technology Leadership Development (TLD) at Cigna. In her position, she and her team support the development of entry level to senior leadership employees in four TLD programs. Dr. Hepburn recently earned a Doctor of Education in Educational Leadership and Management with a focus on Creativity and Innovation from Drexel University.



Dr. Meagan Sampogna Williams(HIM '00) now serves as chief operating officer for BioMatrix Specialty Pharmacy.

Claire (Giblin) Venturella

(HIM '15) recently joined Evernorth as clinical solution manager. In her role, she is leading the build-out of Evernorth's new enterprise behavioral health program.

Following a successful and diverse career in the HIM arena, **Barbara Wood** (HIM '79) retired from PNC.
She most recently served as vice president and senior product manager.

Nancy Soso (HIM '86) retired after a successful career at UPMC as the executive director of Health Information Management.

Occupational Therapy

Morgan Leeds (MOT '18) was recognized by the Delray Medical Center for her assessment skills and quick intervention resulting in immediate treatment for her patient who was having a stroke. The actions of Leeds and her colleague ultimately saved precious brain time for this patient who was able to get interventional radiology and have the clot removed.

Margaret Summerville (BS '85) received the 2020 Pennsylvania Occupational Therapy Association Fieldwork Educator Award.

Physical Therapy



Russ Myers (MS '82) serves as a coach with the U.S. Paralympic World Trail Orienteering team and executive

director of Capital Region Nordic Alliance, a not-for-profit that aims to involve people in Nordic sports. He also works with the international Paralympic committee as classifier to evaluate and properly place athletes for competition.

Rehabilitation Science Undergraduate

Lt. Will Sgrignoli (BSRS '15) recently completed a six-month deployment to Africa and is making his way to Okinawa, Japan, for 30 months as a physical therapist with the U.S. Navy. Sgrignoli plans to attend medical school through the GI Bill following his commitment to the Navy.

Student News

Clinical Rehabilitation and Mental Health Counseling



Counseling student **Dallann Johnson** submitted the winning artwork for SHRS's social justice

T-shirt campaign. His slogan was "Discomfort Creates Change."

Ashley Griffin, Counseling student, was recognized by the North Atlantic Region Association for Counselor Education and Supervision as the 2020 outstanding master's student for her contribution to the counseling field.

Counseling students **Alexis** Faunce, Jason Gruzin, Haein Kim, Rebecca McIlhenny and Sharin **Shafi** earned Certified Rehabilitation Counselors and Educators **Supporting Transition Success** scholarships. These scholarships are made possible through a U.S. Department of Education training grant and fully fund the awardees' graduate training. They are designed to promote inter-disciplinary training in supporting those who are blind or visually impaired in achieving improved career outcomes and quality of life.

Communication Science and Disorders

Gary Gartling, PhD candidate, was accepted into the Clinical and Translational Science (CTS) Fellowship program (TL1) in Pitt's School of Medicine Division of General Internal Medicine. Gartling developed a rigorous training program and his research project aims to investigate alternative therapeutics to reduce vocal fold atrophy after vocal fold iatrogenic injury.

Azure Wilson, PhD student, was accepted into the Institute for Clinical Research Education, University of Pittsburgh TL1 Clinical and Translational Science Fellowship. Her research project uses magnetic nanoparticles to study molecular changes that regulate cellular health in the vocal folds.

Christina Dastolfo, PhD student, received an NIH F31 for her project which will examine the neurological basis of the speech motor control process that underlies successful speech therapy for patients with hypokinetic dysarthria, phonetic-prosodic encoding.

AuD student **Mary Rose Bethel** was invited to submit a three-part series to The Hearing Journal based on her audiology research project poster which was displayed at the American Academy of Audiology Annual Conference 2020.



PhD student **Cara Donohue** received the
Neurodegenerative
Diseases NG Best
Poster Award this

year for the American Congress of Rehabilitation Medicine Conference. She was also awarded a Distinguished Early Career Professional (ECP) Certificate from the American Speech-Language-Hearing Association (ASHA). The award recognizes leaders in the field who are making a difference in the profession and their community. Donohue also received the SHRS PhD Student Award providing funding to support the completion of her dissertation study.

PhD student **Rob Cavanaugh** received the NIDCD-funded Academy of Aphasia student fellowship award. He also received a student fellow award from the Academy of Neurologic Communication Disorders and Sciences.

Mandy Mahoney, PhD student, has been appointed as an Editorial Board Member for the journal: Perspectives of the ASHA Special Interest Groups for SIG 13, Swallowing and Swallowing Disorders.



Brandy Hollins, Audiology student, was spotlighted in the National Hearing Conservation

Association's Spectrum publication detailing her participation as an NHCA Scholarship Foundation Student Delegate.

Health Information Management

Nathan Suber, MSHI student, was selected as a 2020 Dignity & Respect Champion by UPMC Health Services Division. A volunteer at UPMC Hillman Cancer Center, Suber is being recognized for demonstrating a commitment to workplace practices and exemplifying dignity and respect in his work at UPMC.



The Health Information Management Student Association initiated a four-session Virtual

Speaker Series for students in the department and those interested in HIM or HI training. The series serves as an introduction of students to professionals in the field and enhances students' exposure and networking opportunities. One speaker, Dr. Wylecia Wiggs Harris (pictured), is the CEO of the American Health Information Management Association (AHIMA). She spoke about the bright future of the HIM profession. **Dr. Kimberly Peterson**, assistant professor, serves as the group's faculty advisor.

Occupational Therapy

Twenty-five Pitt OT students joined the Dementia Friends PA initiative in November. Dementia Friends is a global movement that is changing the way people think, act and talk about dementia.

OTD students Julia Beatty, Shao-Hsuan "Sunny" Lin and "Cam" Phuong Nguyen were selected for the Jewish Healthcare Foundation's Death and Dying Fellowship.

Rachelle Brick, PhD candidate, received the 2021 Dr. Gary Kielhofner Doctoral Research Scholarship from the American Occupational Therapy Foundation. The scholarship supports the dissertation work of an occupational therapist enrolled in a research doctoral program.

Shelby Cartwright, Spencer Sutter and Ashley Thompson, OTD students, volunteered with UPMC Mercy's patient voting initiative, Ballots for Patients, on November 3, 2020. Ballots for Patients collected applications for emergency absentee ballots from patients, filed them with the Judge of Elections, and got the ballots back to the hospitals to be filled out by said patients.

Anna Marie Clark, OTD student, was awarded a Pennsylvania Occupational Therapy Association (POTA) student scholarship.

OTD students Anna Marie Clark, Sarah McKendry, Laura Lam, Amber Shojaie and Gabriella Mazzeo participated in the 2020 AOTA StudentCon Knowledge Bowl on November 4, 2020. They competed against four university teams of OT and OTA students and placed second in the competition. This event is designed for students preparing to take the NBCOT exam.

Amber Shojaie, OTD student, co-founder of Harmony – Pittsburgh, led the winter showcase available on YouTube titled "Lean on Me" on December 6, 2020.

Kelsey Watters, CScD student, received one of the first-ever NBCOT Impact Awards recognizing practitioners who demonstrate exceptional professional commitment through dedication, hard work and outstanding occupational therapy skills.

Sports Medicine



Will Conkright, NMRL graduate student researcher, won the Doctoral Student Investigator

Award and the President's Cup at the Mid-Atlantic Chapter of the American College of Sports Medicine. He also received an SHRS PhD Student Award.



Kellen Krajewski, NMRL graduate student researcher, received the International Society

of Biomechanics in Sports Student Research Grant and an SHRS PhD Student Award.



NMRL graduate student researcher **Alice LaGoy** was the recipient of the Sleep Research Society Trainee Merit Award.



NMRL graduate student researcher **Aaron Sinnott** was awarded the ACSM Clinical Sports Medicine Endowment.





"TREAT PEOPLE WITH RESPECT, WORK HARD AND LEARN SOMETHING NEW EVERY DAY TO IMPROVE."

Edward Banos (BS '87) recalls his mother's words of wisdom as she drove him to his first job as a caddy at a local golf club when he was only 12 years old. He's taken her advice seriously and used it as a springboard to a successful, 30-year career in health information management (HIM), a field that is constantly changing.

Today, Banos serves as executive vice president and chief operating officer at the University Health System (UHS) in San Antonio, Texas, a \$2.2 billion organization with 9,000 employees, approximately 1,000 patient beds and a huge community presence.

"In our current health care environment, population management and value-based care are key to achieving successful patient outcomes," notes Banos. "But we can't achieve that goal without utilizing extensive amounts of patient data."

"With the right data, we can focus on not only the proper treatment, but also how to get patients out of the hospital and into ambulatory care and eventually into a wellness routine," he continues.



Banos built his foundation in health care in the Health Records Administration program, now known as Health Information Management (HIM), at SHRS. He says he not only learned medical terminology but also anatomy and physiology, which prepared him to engage in informed conversations with doctors and administrators.

As a student, Banos worked in the Medical Records Department at what is now UPMC Montefiore in the evenings after a full day of classes. "This was a great learning opportunity for me," notes Banos. "Everything was still on paper back then."

"Between the classroom instruction and my on-the-job training, I developed a good understanding of the importance of valid and accurate data and was able to see first-hand how medical coding was actually implemented in a real-life setting," he continues.

Dr. Valerie Watzlaf, vice chair of Education and associate professor, Department of HIM, had no doubt Banos would find success. "Ed was such a great student—so very personable and a genuine leader," notes Watzlaf. "He loved the field of HIM and did very well in our program."

As Banos advanced in his career, he realized the true value of health information. "It's essential to providing consistent quality care and allocating the proper resources to meet the needs of the patients and the community at large."

Because data can tell you a lot about a patient, he says it can also help to provide an excellent experience, regardless of a patient's ability to pay.

"Every day we can improve someone's life in health care. That is why I do what I do," says Banos.

He is proud to help further the mission of CareLink, a financial assistance program open to San Antonio or Bexar County residents who do not have private or public health insurance.

Created by the leadership team at UHS, CareLink creates a medical home for individuals within the University Health System. It connects them with primary care physicians, important health screenings and community outreach programs that promote healthy living, disease management and coping skills, among other things.

"Texas is a state with a large number of uninsured and undocumented individuals," says Banos. "Through CareLink, we make sure they all receive the care they need."



"When the community needs health care, we all get together," continues Banos. Never has this been more important than during the coronavirus health crisis.

Before the pandemic hit the San Antonio area, UHS brought together doctors, staff and administrators from area health care organizations including University of Texas Health Science Center (UT Health) at San Antonio where another Pitt alumnus, Dr. Mohamed Hagahmed (BS '09), worked as an emergency physician.* They assessed upcoming needs and discussed whether they had enough beds and personal protective equipment (PPE) to handle what was coming.

"UHS administration went above and beyond to secure the necessary PPE by sterilizing and

reprocessing N95 masks in order to extend their usefulness and creating our own PPE, approved by outside regulatory agencies," notes Banos. "We are very proud of our partnership with the health care professionals in the area, including the many Pittsburghers who now live in San Antonio. I know of a dozen or more physicians who went to medical school or did their residencies at UPMC."

Banos credits Epic software for helping to deliver meaningful patient data as well as IT solutions to UHS facilities. "This powerful software allowed us to handle the pandemic to the best of our ability," says Banos. "And our partnership with UT Health allowed University Hospital to host one of the largest clinical trials of remdesivir with UT Health Infectious Disease physicians."

Although Banos has served in executive roles at various health care institutions across the United States, he maintains strong ties with Pittsburgh, where his brother and sisters still live. He returns whenever possible to visit them and cheer on the Pittsburgh Steelers as a season ticketholder.

"I keep track of the great work Ed is doing," adds Watzlaf. "He is one of the true success stories among our alumni and a role model for our current students."

Watzlaf continues, "To be able to secure a position like the one Ed has is a wonderful testament to what HIM professionals can do when they possess excellent leadership, organizational management and change management skills."

^{*}See "Challenges on the Front Lines" in the fall/winter 2020 edition of FACETS.





TOUGH JOB. TOUGH LOVE.



Imagine a day in the life of a paramedic. With every call comes a different set of challenges. The need for a versatile skill set. Split-second decision making. And consummate trust in your knowledge, experience—and gut feelings.

How do you prepare student paramedics to be ready for this on day one?

City of Pittsburgh paramedics Nicolle Sweitzer (BS '18) and Cora Brna say it takes tough love.

As preceptors for the Emergency Medicine (EM) program, they understand there is no time for students to sit around the station house and gently wade into the waters.

"They're thrown to the wolves right away," states Sweitzer.

"Absolutely," agrees Brna. "You can't learn this profession without going out on calls." She says that on the first shift, she tells students to observe, learn and ask questions about why she did what she did.

"I remember being intimidated by Cora at first because I had never experienced a preceptor who asked me 50 questions within my first 20 minutes of being at the clinical site," recalls EM student Cassandra Crouse. "There were many questions that I did not know the answer to, but Cora explained that it was okay to not have an answer for everything."

Questioning is key to learning in this demanding profession. Student Anna Audley says that after every call, Sweitzer would sit in the back of the ambulance with her, re-hash every detail and answer all her questions.



"Nicolle truly loves her profession and loves teaching," says Audley. "This authentic love for teaching is rare to find in a preceptor, and it was duly appreciated by me as a paramedic

student who was eager to learn everything that I could."

By their second shift, Brna and Sweitzer say their students are ready to play a more active role. But now clinical instructors face a real dilemma—how to respond quickly to the patients' needs at the same time they are providing

City of Pittsburgh Paramedic Cora Brna

City of Pittsburgh Paramedic Nicolle Sweitzer with her dog, Boswell.

meaningful on-the-job training to their students.

"Students don't always know the best way to communicate with patients," explains Brna. "Or they may be feeling some anxiety about how the call is going and second-guess their next step," adds Sweitzer.

Brna and Sweitzer welcome these moments.

- "Cora definitely encouraged me to take an active role in patient care and move out of my comfort zone as much as possible," says Crouse. "I think this was necessary for me to grow as a health care provider."
- "Nicolle had high expectations for me," adds Audley. "I personally responded well to her tough love because I needed someone to push me out of my comfort zone and force me to use the tools and knowledge that I had only seen in the classroom setting."
- "I know both Nicolle and Cora are passionate about EMS and our EM students," notes Nicole Cecchini, EM instructor and clinical coordinator. "We are grateful they continue to give back to our program as preceptors to help teach the next generation of EMS providers."

As preceptors, Sweitzer and Brna take advantage of opportunities to build trust and expand awareness of social factors that often impact how paramedics perform their job.

"I spend a great deal of time with students, discussing social issues and the enormous disparities faced by certain members of society, especially transgender and non-binary patients and

people of color," says Brna. "It's important for students to know that paramedics are often the first member of the health care team these patients will encounter, and we need to build their trust in the system."

"It's also important for students to understand that this job can take its toll on us, physically,

emotionally and psychologically," says Sweitzer. "There are many times when a call does not have the ideal outcome and you go over every step and wonder if you could have done something differently."

"The good news is there is always someone in the department you can reach out to for support," she continues. "This is so important to staying healthy in your profession."

Although Sweitzer and Brna believe they are tough teachers, their students give them high grades.

"Cora definitely helped improve my understanding of situational awareness," says Crouse. "She is an excellent preceptor and made a positive impact on my clinical practice."

"Without a doubt, Nicolle has been the most influential person in my EMS career," adds Audley. "She taught me how to love being a paramedic and I will be forever grateful."

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BEYOND BRIGHT IDEAS. HOW BOLD MOVES DEFINE US.

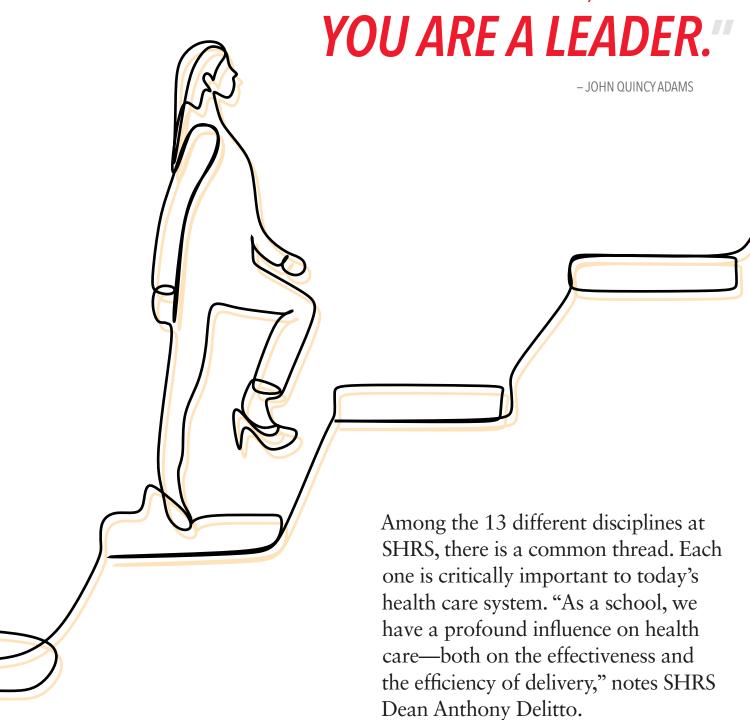
In today's rapidly changing health care environment, maintaining the status quo is not an option. Standing still, in fact, means falling behind. And waiting for others to take the lead negatively impacts students, clinicians and the patients we serve.

Throughout our 50-year history, SHRS has been on the cutting edge, pushing the boundaries of higher education, advancing best practices and impacting the lives of individuals everywhere.

Today more than ever, we are committed to making even more bold moves that define us as a leader and shape the future of health care education and clinical practice.









"I am continually inspired by our faculty," he continues.

"They are here because they are driven by the love of their professions. They want to help people and they want to instill this passion in their students."

Delitto says one of the ways SHRS faculty adds value to the health care system is through its robust research environment. "Our research prowess is one of our best assets," continues Delitto. "But it's not the sheer number of research dollars we receive. It's the impact we're making on people with disabilities, on wounded warriors, the elderly, and the science of our professions."

"The true impact of research and development isn't felt until it gets into the hands of people who need it," agrees Dr. David Brienza, associate dean for Technology and Innovation. "At SHRS, we have an exceptionally good track record of translating research to marketable products and services."

Start-ups with SHRS Lead Inventors



During the past five years, there have been 11 new business start-ups with a lead inventor from SHRS, and 17 new U.S. patents issued with at least one inventor from SHRS. Innovative technologies in the areas of rehabilitation science, information and communication,

activity monitoring, physiologic sensing, robotics and others have been proven to drive better outcomes, improve efficiency and lower costs.

Brienza says these technologies are a natural extension of SHRS's highly successful and extensive applied research activities.

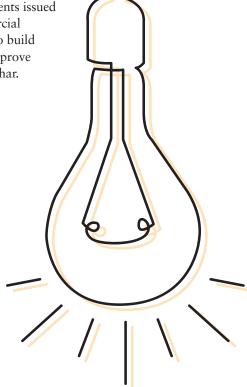
In 2020, to accelerate the pace of innovation, seven teams from various SHRS programs proudly participated in the school's first Innovation Challenge, sponsored by Pitt's Innovation Institute. Teams presented ideas that included a wheelchair maintenance monitoring system, a digital device for accurate prosthetic fitting, a real-time performance and alertness testing system to measure job readiness, and workplace injury prevention services and products.

Two SHRS teams emerged victorious, receiving mentoring, support from business development partners and \$10,000 awards to help them take their ideas to the marketplace.

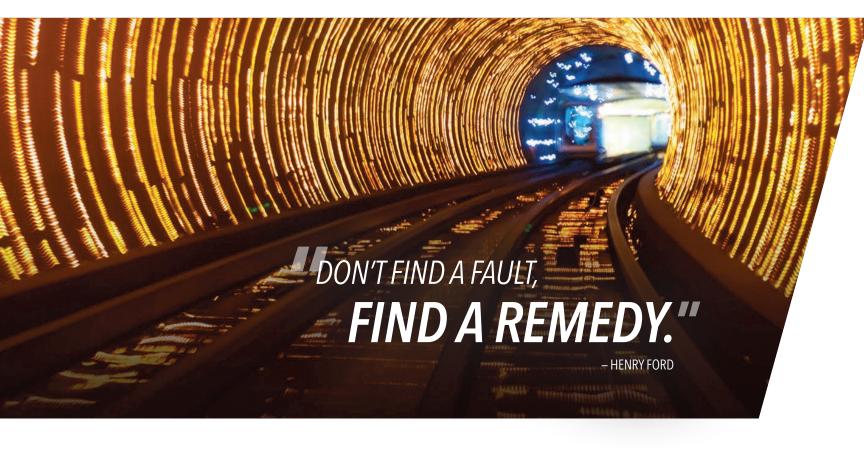
The Universal Data Logger, developed by PhD student Michael O'Leary and Department of Communication Science and Disorders Associate Professor Katya Hill, is a unique software program that monitors communication performance for individuals who use alternative communication devices.

Dr. Matthew Darnell, assistant professor, Department of Sports Medicine and Nutrition, collaborated with Dr. Elizabeth Nagle to develop a tether device that uses sensors in athletic training. It provides immediate feedback to coaches and athletes, resulting in improved performance and reduction of injuries.

Transformative research and collaboration are high priorities for Dr. Anantha Shekhar, University of Pittsburgh senior vice chancellor for the Health Sciences. "Creating an ecosystem of collaborations will increase the number of patents issued and the number of commercial entities using our patents to build products and ultimately improve health care," explains Shekhar.







At SHRS, a new, solutions-oriented leadership team has come together to transform SHRS education, recruitment and engagement. Comprised of the dean, vice dean, associate deans, department chairs and executive directors, the team is laser-focused on finding solutions that will carry SHRS into the future.

"Even during the height of the COVID-19 challenges, this team never came to my office with a problem," remarks Delitto. "They came with an open mind, a willingness to collaborate

and an eagerness to find solutions. They are quite remarkable."

Newly appointed associate dean for Academic Partnerships, Dr. Thomas Platt, has a vision. "Partnerships are vital because we as individuals, as a school and as a University cannot succeed alone," says Platt. "We need to not only build on our success but merge our strengths with the talent and strengths of others to build the future."

In his new role, Platt is strengthening relationships between SHRS and Pitt's regional campuses and working closely with UPMC to determine what the health care workforce needs of the future may be. And how SHRS can fill them.

It's a daunting challenge.

What new professions will be emerging? Will they cause us to rethink our current models of education? What can we do to facilitate societal problems such as aging at home? Or delivering services outside of the hospital or clinic setting?

"The health care environment is constantly evolving," admits Platt. "Access to care and reimbursement are major drivers of the changes in our systems. The health care provider of the future will be shaped by these influences and many roles will be defined by the employers."

"Meeting these needs will be critical to the success of SHRS as well as the health care system," he continues.

Working closely with Platt are the associate dean for Undergraduate Studies, Dr. Kevin Conley, and associate dean for Academic Outreach and Advising, Dr. Kathleen Kelly. They are creating new models of undergraduate student delivery and outreach and making more students aware of the opportunities that SHRS has to offer.



By working directly with students, Conley and Kelly will help more Pitt undergraduates learn about future health career options and prepare for SHRS programs.

As students graduate, they will not be working in silos. Instead, they will be immersed in team-based care. Dr. David Beck, new associate dean of Interprofessional Studies, will ensure that every student has opportunities to learn the value of collaboration.

SHRS Vice Dean Debora Miller notes, "Through collaboration and teamwork, each health care professional can practice at 'the top of their license' and understand more fully the value that each member of the team brings to caring for the patient, the community and the population at large."

"To be transformational, we want every student to think about 'team-based care' not as an option, but as a 'go-to' strategy," Miller continues.

YOU MUST BE BOLD, BRAVE AND COURAGEOUS AND FIND A WAY TO GET IN THE WAY.

- JOHN LEWIS

At SHRS, we dare to take bold steps to ensure a better tomorrow. "While educational excellence has always been an integral part of our success, we are now finding ways to make our programs more accessible and more affordable," states Delitto.

"We have already shortened the length of our number-one ranked Physical Therapy program and are exploring ways to shorten other programs without sacrificing academic excellence. We are also exploring more hybrid and distance education programs as well as opportunities for increased student financial aid," Delitto continues.

At the core of the new strategic plan for 2021-2025 is a new strategy for equity and inclusion. "We are a school founded on the principle of equity and inclusion for individuals with disabilities," says Delitto. "We are now embracing equity through our hiring practices. This aligns with the University's commitment to increase faculty diversity."

The Office of the Senior Vice Chancellor for the Health Sciences has committed substantial resources—approximately \$15 million over the next three years—to support the hiring of 25 diverse faculty members. "My goal is to move Pitt Health Sciences into the top quartile for faculty diversity, growth and leadership development," says Shekhar.

"I will be asking health sciences leaders like Dean Delitto to develop proposals for specific new positions which will then be the subject of nationwide and global searches for leading experts in the relevant fields. And I will also be requiring that the hiring deans, chairs and directors submit effective mentoring and retention plans for each new hire."

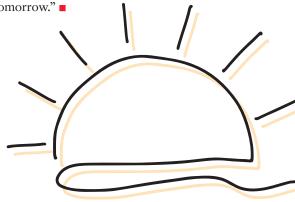
To increase student diversity, SHRS departments are developing pipeline programs to engage undergraduate students through exposure to health-related professions. For example, the Department of Physical Therapy is developing ADaPT@Pitt to provide professional mentorship and academic counseling to underrepresented students to support the application process.

In addition, to assist with recruitment and retention of faculty, staff and students, and to promote equity, inclusion and belonging, SHRS has also established an Office of Equity, Inclusion and Community Engagement led by Dean Delitto and Associate Dean Bernard Rousseau.

According to Rousseau, "We envision a future in which Pitt SHRS leads in the elimination of health disparities, the advancing of health equity and creation of an equitable health care system.

"Not only will we accomplish our vision through faculty and staff recruitment, promotion and retention, but by leveraging community engagement through our work in our SHRS Wellness Pavilion and by growing assets and sustainable funding sources to support our work."

"We are excited and energized by this and other key initiatives to transform SHRS education, research and service," concludes Miller. "With so many bold initiatives in place, we are poised to meet the health care needs of today and tomorrow."







ALL HANDS ON DECK

"Experts predict there will likely be a 60% shortfall of credentialed prosthetics and orthotics professionals over the next five years," states Helen Cochrane, director, Prosthetics and Orthotics (P&O) program at SHRS. "It is our responsibility to ensure a steady supply of appropriately trained new professionals in order to meet this critical need."



Preparing people to join this profession is no easy task. It starts with building knowledge and understanding of the science of prosthetics and orthotics and evolves to application through inhouse clinical and technical laboratories directed by skilled faculty with real-world experience.

In addition, Cochrane says the Master of Science in Prosthetics and Orthotics (MSPO) program is fortunate to have a team of invaluable partners who support students every step of the way.

"These partners participate in our advisory board, facilitate clinical experiences, provide guest lectures and host internships," she explains.

"Recently, our clinical partners took an additional step to help implement a competency-based internship for students to work in clinics under the supervision of a preceptor while attending classes virtually."

A blended learning model allowed faculty to deliver content online while 20 students improved their competency skills at P&O clinics all over the country. They learned how to evaluate, recommend, fabricate, fit and adjust devices that ranged from foot, ankle, knee and spine orthoses to transfemoral and trans-radial prosthetics.

"Typically, students would participate in simulated scenarios on campus to build these competencies," notes Cochrane. "This time, they were learning and gaining real-world experience under the direction of experienced professionals."

Douglas Reber, director of Education and the National Residency Program for Hanger Clinic, played a key role in finding placements for students.

"It is extremely valuable to have this type of internship for any student as it puts them in the real-time environment of device fabrication and patient care," notes Reber. "The most important skill that can't be taught in the classroom is how to combine professionalism, passion and excellent patient outcomes."

MSPO student Nolan Wilson was grateful to be placed in the Hanger Clinic in Oklahoma City. "The people at Hanger showed me what works for them and then encouraged me to work on my own set of skills," says Wilson. "They set me up to grow as a future clinician and I will forever be thankful that they let me join their team for a short period during this trying time."

"Nolan was very educated in orthotics and prosthetics when he came to us for the internship," notes Hanger Clinic Manager Shane Hyman. "We not only facilitated an opportunity for him to utilize his knowledge, we also taught him how to apply that knowledge in an everyday setting when caring for patients."



"Participating in the MSPO program through Hanger Clinic provides students with a first-hand experience into patient care, along with valuable exposure to custom devices during their day-today job," adds Reber.

In addition to building hand skills, internships provide additional experiences that students cannot find in the classroom.

During his internship at United Prosthetics, Inc. in Boston, Matthew McClintock worked

on honing his people skills. "Our job as prosthetists and orthotists is as much about people as it is the assistive devices that they wear. While at United Prosthetics, I had the opportunity to interview patients, diagnose the chief complaint for their visit and formulate a possible treatment plan," says McClintock.

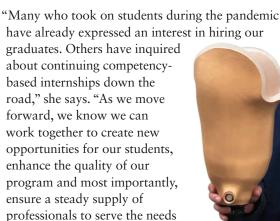
For MacKenzie Conlen, the internship at Boston Prosthetics and Orthotics in Boston Children's Hospital allowed her to work with a unique patient population and gain a greater understanding of the range and scope of her future profession.

Under the supervision of Pitt alumna Kaitlin Rivest (MSPO '15), Conlen says she refined a variety of skills including how to choose the appropriate device, take impressions, fit devices, make adjustments and develop a plan for the patient.

"While not working on my specific projects, I followed other clinicians to observe various approaches and many medically unique cases," she continues. "I was able to see both in-patients and out-patients, which gave me a better understanding of the different clinical settings I might encounter in the future."

According to Cochrane, "It's a big job to bring students into the clinical setting at this stage of their training, but they have learned and been inspired in some very unique ways."

Cochrane notes there may be advantages for clinical



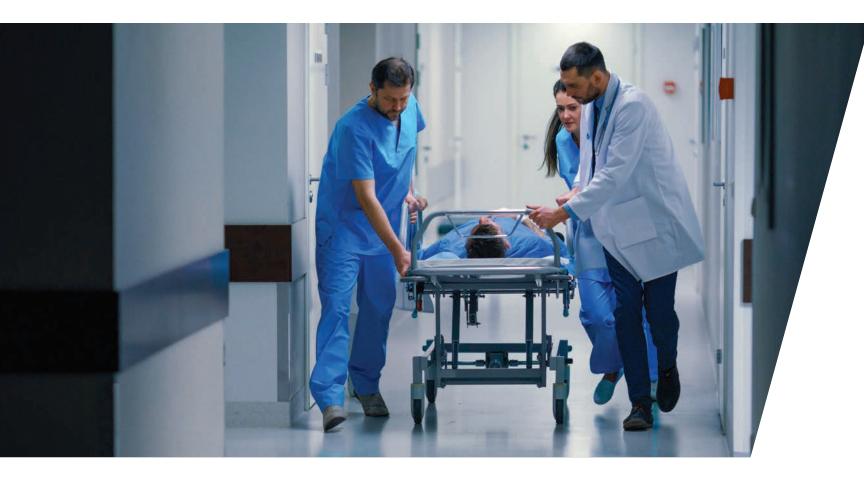
partners, too.

of patients."

Student Nolan Wilson improved his hand skills during his internship.







ADVANCING THE SCIENCE OF EMERGENCY MEDICINE

"Undergraduates typically have limited knowledge of and exposure to original research," observes Dr. P. Daniel Patterson, associate professor, Emergency Medicine (EM) program. "But we know that, among these students, there are future researchers."

To spark an interest in research, Patterson and Associate Professor and EM Program Director Thomas Platt are training students in how to conduct systematic reviews on topics that impact their practice as paramedics.

- "EM students are only with us for two years, which does not allow sufficient time to conduct original research in a lab or collect community data in various phases," says Platt.
- "But as mentors, we want to provide them with opportunities to be scientists as well as clinicians," adds Patterson. "Systematic reviews can provide that opportunity."

During a systematic review, students make a critical assessment of already published research. They learn how to dissect scientific publications, extract critical data, and evaluate the quality of



evidence provided in the study. They then use that information to form their own conclusions and, in many cases, publish their work in scientific journals.

"It's a rigorous process, taking an average of 67 weeks to complete," notes Patterson. "The experience helps these emergency clinicians-in-training learn about the evidence, raises interest in research and even advances our field."

Through a grant from the University of Pittsburgh's Office of the Provost, students are paid a modest stipend to engage in EM research. To date, they have conducted systematic reviews on subjects such as how sleep impacts the clinician's blood pressure while working night shifts and how clinicians can improve their sleep health with "banking sleep" before shift work.

EM students Quentin McIlvaine and Lily Nong are currently involved in a systematic review to determine if evidence supports shorter or longer naps during night shifts and what impact these different nap durations have on health and performance outcomes for shift workers.

"Sleep health is such an important part of prehospital medicine," says Nong. "In order for prehospital providers to provide excellent care to their patients, they must take care of themselves first, which includes ensuring that they are receiving adequate sleep. Scientific research such as this helps to form protocols."

"I believe it is important for all health care providers to understand scientific research because they must know why certain protocols exist," adds Nong.

McIlvaine agrees. "Evidence-based practice and protocols are used readily in EMS/EM because of our highly adaptive work environment. I believe this research has the potential to improve workplace safety in EMS and support policy change and implementation."

According to Patterson, when students conduct systematic reviews, their eyes are opened to the excitement and importance of research as they move on in their careers.

"Whether they want to work as paramedics or advance their studies in medical school or other health care fields, taking part in a systematic review of the literature can help students build confidence in their own skills as researchers while they gain a greater appreciation for the science that moves us forward," says Patterson.

Kristina Mountz (BS '19) collaborated with three other undergraduate students on a systematic review that

investigated the relationship between shift work and blood pressure among shift workers. Now a graduate student in SHRS's Physician Assistant Studies program, Mountz says the scientific process taught her many things.

"Systematic reviews have a huge potential to advance the field of emergency medicine because the goal is to summarize all of the findings that are currently published about a particular topic and to put it all neatly in one article with summarized conclusions," explains Mountz. "Because of this, protocols and practice are changed and the systematic reviews become an incredibly valuable addition to research literature."

Patterson believes that involving students in systematic literature reviews is a great model for undergraduate EM education. "It's a way to involve many students at one time and give them feasible opportunities to expand their own knowledge base as well as the scope of knowledge of the field."

He says it's also a means to promote careers in research. "There are so many great research-focused career paths that can begin with an undergraduate degree in Emergency Medicine," explains Patterson. "Certainly, we are proud of our graduates who work as paramedics. They have excellent clinical training and hopefully a deep appreciation of the research that impacts their care every day.

"We also have alumni who have gone on to successful research careers in fields such as epidemiology and public health."

"Our focus on undergraduate research is a springboard to whatever health care field our students choose," adds Platt.

Nong says she now feels more qualified in her ability to read scientific literature. "It's an important skill for whatever field I choose to enter after my time in the Emergency Medicine program."

McIlvaine reports he plans to attend medical school after graduation and continue to conduct research related to emergency medicine in the future. ■









HOW DATA DRIVES GENDER POLICY CHANGES FOR MARINE CORPS TRAINING

Data never lies. That's why the U.S. Marine Corps (USMC) recently awarded a \$2 million contract to the Neuromuscular Research Laboratory, the applied research facility of the Department of Sports Medicine and Nutrition (SMN).

Through the Neuromuscular Research Laboratory/Warrior Human Performance Research Center (NMRL/WHPRC), co-principal investigators, SMN Professor and Vice Chair of Research Bradley Nindl and Associate Professor Mita Lovalekar, are leading a multidisciplinary team of 11 researchers from the University of Pittsburgh and other universities, as well as Insight Policy Research to study the most effective ways to integrate genders in entry-level training.

While a number of reports and studies have examined options of gender-integrated training at Marine Corps Recruit Depots (MCRDs) in the past, none has been conducted by a public or private university with a peer-reviewed, published result.

Dr. Kevin M. Conley, associate professor and chair, Department of Sports Medicine and Nutrition, says the study will draw from the collective interdisciplinary expertise across military sociology, sports medicine/science, military physiology and injury epidemiology. "The team will employ a mixed-method research approach to provide objective data-driven recommendations for policy change to current Entry-Level Training (ELT) models for Marine Corps recruits," explains Conley.

According to Lovalekar, the study will evaluate recruits through both a social science and human performance lens.

"We will address the sociological and physical training effects of increased gender integration and consider training models which maintain the same level of discipline, physical fitness, attention to detail and camaraderie," says Lovalekar.

"As we assess the musculoskeletal injury patterns between male and female recruits during ELT, we will build upon our prior work to identify the financial costs for these injuries and the negative impact on military readiness," she continues.

The Gender-Integration Study, which began in September 2020, will run for 18 months. It includes interviews with USMC leadership, subject matter experts and training cadre, along with focus groups and observations of multiple cohorts of male and female recruits from different MCRDs across the country.

It will also examine the gender-integrated training practices of other military services including the U.S. Army, Navy, Air Force and Coast Guard to determine if their methods are useful to the USMC, and determine alternatives to existing Marine Corps training models.

Six hundred recruits will be assessed throughout 11 weeks of ELT. Evaluations will include physical assessments of lower body power and strength; collection of biomarkers for stress-induced hormones; and a range of sociological and psychological questionnaires, interviews and focus groups on topics such as cohesion, leadership, mentorship, social and cultural norms, gender attitudes and gender bias.

Doctoral student and NMRL researcher Patrick Peterson helped to design and facilitate the human performance testing protocols for the study. He welcomes the collaboration with researchers from other institutions.

"It is exciting to work alongside a group with such a broad array of expertise," says Peterson.

"The benefit of collaborating on a project like this is that it allows for the team to ask more questions and encapsulate a broader picture than if the efforts were confined to just one university or institution," he notes.

"This study is a great example of how collaboration builds a stellar research team," agrees Nindl. "This research is important to the Marine Corps to help ensure women are provided full and equal opportunities in pursuit of successful military careers, free of bias and unfounded barriers."

"The NMRL has more than a 15-year legacy of military-centric human performance optimization and injury prevention research, making it a highly regarded research institution in this domain," says Nindl.

He continues, "We have multi-disciplinary expertise across all aspects of human performance and we have made significant academic and scholarly contributions to military physiology and readiness."

"We are proud of our role in this study," concludes Lovalekar.

"The study will provide scientific data and evidence-based recommendations to USMC about models of ELT which integrate genders to the greatest extent possible while continuing to train Marines to established standards."







ON THE ROAD TO **BEST PRACTICES**

Take a novel approach to occupational therapy intervention design. Couple it with a passion for implementing services within the health care system. Multiply the result by a network of innovative partners and you're on the road to best practices.

Department of Occupational Therapy (OT) Chair and Professor Elizabeth Skidmore and Associate Professor Natalie Leland believe this is the way of the future. "We are committed to partnerships that help us take our expertise in intervention design and implementation and deliver rehabilitation care in new and meaningful ways within health care systems," says Leland. "This includes partnerships with colleagues in other fields as well as a multitude of health care stakeholders."

Through her collaboration with Encompass Health's national network, for example, Skidmore seeks to implement new intervention approaches in post-acute and long-term care settings.

"Occupational therapy is, by nature, patient centric," says Skidmore. "But traditional approaches to rehabilitation interventions might not be the most effective ways to help individuals with acquired disabilities learn to perform everyday tasks."

She suggests strategy training as an effective rehabilitation technique.



Instead of telling patients how to perform a certain activity, strategy training engages patients in developing their own actions. Through cross-disciplinary collaborations and patient input, Skidmore designs interventions that provide patients with problem-solving tools they need to meet their individual goals, whatever they may be.

There's no need for costly equipment or technology and strategy training can be used for many patient types and levels of impairment.

Skidmore's research partner, Dr. Scott Bleakley (PhD '14), associate regional director of Therapy Operations, Encompass Health, offers an example of Joe, a middle-aged man who was recovering from a severe stroke and wanted to return to fishing.



"Certainly, given his level of impairment, traditional exercise and strengthening were important components of his therapy," says Bleakley. "But I have never witnessed someone doing therapy with as much joy and focus as Joe did when we used strategy training. Joe 'landed' a 4-pound largemouth bass (simulated by cuff weights) with a 6 1/2-foot rod in our back therapy hall."

Increased patient engagement is also key to addressing the gap in cancer rehabilitation care.

In her dissertation study, PhD candidate Rachelle Brick is using the voices of stakeholders including older breast cancer survivors, occupational therapists and other health care providers to make interventions for older adult breast cancer survivors more accessible, effective and implementable.

"As a practicing occupational therapist, I consistently noticed how existing cancer interventions were challenging to integrate into day-to-day practice," says Brick. "For example, many interventions were too time consuming and expensive to recreate in light of current insurance reimbursement and session allowance."

"In addition, interventions did not consider the priorities and values of my patients," she adds. "These barriers limit how effective the interventions can be for my patients."

Using information from all stakeholders, Brick is generating consensus-based recommendations for the content and delivery of an effective cancer rehabilitation intervention.

"This study is innovative because it unites the perspectives of older breast cancer survivors with those of health professionals and researchers in the fields of aging and oncology to create interventions that highlight the values, preferences and needs of this population," says Brick.

> "Cancer rehabilitation is one of the most important frontiers of the future," notes Skidmore. "With a patient-centric approach like the one used in Rachelle's study, occupational therapists have the opportunity to create a model of care that can be used by a variety of health care providers."

Dr. Leslie Scheunemann, a geriatric and critical care physician as well as assistant professor of

Geriatrics and Pulmonary and Critical Care, University of Pittsburgh School of Medicine, is exploring the perspectives of different health care providers as part of her career development plan.

She says "convergence science" allows members of a health care team to re-examine the values of their own disciplines and be open to those of other disciplines.

To challenge her own perspective and values while learning from others, Scheunemann is being mentored by Leland and Skidmore. They are helping her develop powerful networks of collaborators to continue to advance structures and processes of care for some of the most complex and vulnerable patients who have survived critical illness.

"Drs. Leland and Skidmore have had a profound influence on all aspects of my work as a researcher and clinician," says Scheunemann. "They have helped me to ask better questions, identify systems issues that prevent us from better fulfilling our mission, and begin to become an agent for culture change.

"With their help, I am finding that 'how we do things here' becomes increasingly patient centered, collaborative and effective," she continues.

Leland and Skidmore would say this was spoken like a true occupational therapist.







Recent data from the American Speech-Language-Hearing Association (ASHA) reveals some startling statistics.

More than 91% of its membership is White.

Less than 1% of ASHA members identifies as American Indian, Alaska Native, Native Hawaiian or other Pacific Islander; 3% as Asian; and 3.5% as Black or African American. Additionally, less than 6% of all members are Hispanic or Latinx.

"Clearly, our professions are disproportionately non-diverse," says Dr. Bernard Rousseau, associate dean for Equity, Inclusion and Community Engagement, School of Health and Rehabilitation Sciences (SHRS) and chair and professor, Department of Communication Science and Disorders (CSD). "The country's demographics do not reflect these numbers, and quite frankly, it's time for a change."

To this end, Rousseau has partnered with two other universities to launch a new initiative to attract bright students from underrepresented backgrounds in the third year of their undergraduate programs to graduate programs in audiology and speech-language pathology.

Funded through a grant from ASHA, the IMPACT (Innovative Mentoring and Professional Advancement through Cultural Training) program connects faculty mentors from Pitt and the Boys Town National Research Hospital with juniors from Case Western Reserve University (CWRU) and Hampton University, one of the top-ranked Historically Black Colleges and Universities.

The goal is to increase practical learning opportunities at a time when students are making critical decisions about their futures. The first cohort of fellows was admitted to the IMPACT program in the fall 2020 semester. Although the format was virtual, five students from CWRU and five from Hampton were paired to form Empowerment Teams that worked together on IMPACT activities and events.

"The idea behind the team approach is to build trust, teamwork and friendship, and to learn from others with different lived experiences," says Dr. Lauren Calandruccio, CWRU associate professor and IMPACT program director.

Students participated in a virtual orientation. Throughout the course of the year, they will enjoy a series of six virtual, catered "family dinners," with two invited guest speakers at each dinner. The guests are people of color who are highly successful professionals in speech-language pathology, audiology and the hearing sciences.

CSD alumna Dr. Noma Anderson (PhD '79), currently dean of the College of Nursing and Health Sciences at the University of Vermont and member of the SHRS Board of Visitors, and Rousseau will host one of the virtual dinners during the spring 2021 semester to speak about their professional careers and

experiences in higher education leadership.

"The family dinners were not in the original grant," says Jessica Sullivan, assistant professor and Graduate Program coordinator at Hampton. "But they add a very rich aspect to the program. Students are getting first-hand experience in networking with peers and professionals."

CWRU IMPACT Program Director Lauren Calandruccio (left) with students Jessie Lin, Aniya Martinez and Abby Simmons.

"We are also learning a lot from the students," she continues.

As part of the program, students also participate in virtual tours of the Boys Town National Research Hospital and the CSD department research facilities.

"The idea is to expose IMPACT fellows to world-class research laboratories, all investigating different topics related to communication sciences and disorders," says Calandruccio. "They have been blown away by how vast this field is and how many ways you can contribute to the field and to the profession."

"This type of experience is a win-win," adds Rousseau.

"The students can showcase their interests and abilities and faculty mentors get to know students of color who have tremendous potential to move our field forward."

Rousseau believes the mentoring aspect of IMPACT is very powerful. "We have seen successful models of mentoring programs in other fields," he says. "For example, mentorship

programs have been shown to increase gender diversity in the traditionally male-dominated fields of science, technology, engineering and math (STEM). We expect these programs to increase cultural diversity in our professions as well."

Rousseau says IMPACT mentors go above and beyond the role of academic advisors to make students more aware of the types of graduate programs that are available, help them evaluate which ones might be best for them, and expand their knowledge of professional opportunities that exist in the workplace.

They also work with the students on letters of application for graduate school, helping them to write effective essays and prepare for graduate training.

A highlight of the program will come in November 2021, when the fellows present a poster about the IMPACT program at the ASHA national convention.

"The biggest thing we hear from our students is that they wished they had the opportunity to enroll in the IMPACT program as freshmen," says Sullivan. "They understand the

importance of this program and they are all honored to be a part of it."

"We know we have a leak in our pipeline," adds Rousseau. "Minority student enrollment in undergraduate CSD programs is around 22% nationwide, yet students from underrepresented groups make up only about 16% and 11% of enrollment in graduate programs in speech-

language pathology and audiology, respectively."

He hopes the outcomes from the IMPACT program will change that.

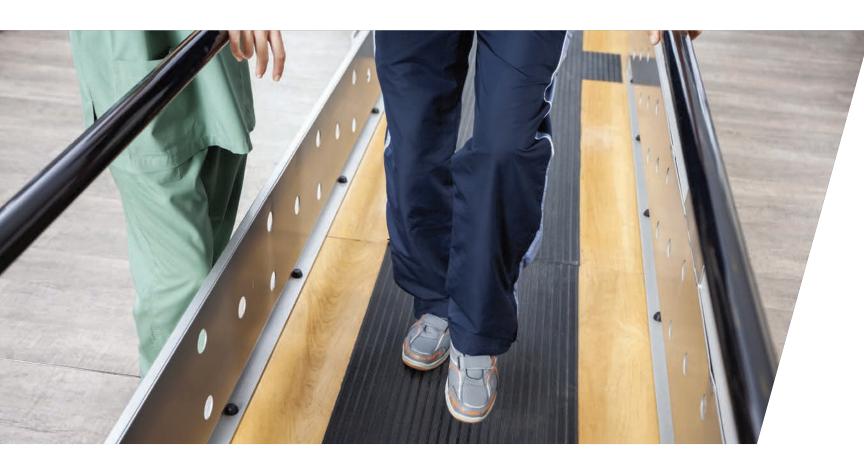
"My long-term vision for diversity, equity and inclusion in SHRS is to leverage mentoring and professional development programs such as the IMPACT program and others to increase access to the educational and research opportunities available to students from underrepresented groups, not only in speech-language pathology and audiology, but across all health professional training programs at the University of Pittsburgh," says Rousseau.

Sullivan and Calandruccio say fellows from their universities have expressed an interest in applying for admission to Pitt's graduate programs in fall 2021. They report the students particularly like how Pitt's CSD Department recognizes the importance of diversity.





NUMBER ONE **NEVER STANDS STILL**



How do you enhance the educational value of the number-one ranked Doctor of Physical Therapy (DPT) program in the country?

According to Department of Physical Therapy Chair and Professor James Irrgang, you do it by continually improving. This time, by making the program more affordable, more accessible and more innovative.

Irrgang says the first step was to shorten the plan of study from nine to eight terms. The change was approved by CAPTE (the Commission on Accreditation in Physical Therapy Education) in December 2019, allowing students who were scheduled to graduate in April 2021 to complete their program in December 2020. "This saved the students

a substantial amount of money—\$13,600 to \$15,600 depending on residency status—in their final year in the program," explains Irrgang.

"By shortening the program, we're reducing the tuition burden of our students and allowing them to enter the work force sooner," says David Wert, vice chair of Doctor of Physical Therapy Education. "But make no mistake, we have not sacrificed our program's excellence."

"Changes to reduce time-to-degree have been supported by our DPT alumni and current students during student focus groups held over the past several years," says Lynn Fitzgerald, assistant professor and vice chair, Doctor of Physical Therapy Education. "This demonstrates that we are always seeking out new and better ways to graduate professionals who practice at the top of their license."



MAKING PT EDUCATION MORE ACCESSIBLE.

According to Irrgang, a plan is underway to make the DPT program more accessible to a wider, more diverse population of interested students through a hybrid offering that combines online asynchronous and synchronous learning with intensive lab immersions.

"Upon review and approval by CAPTE, this program would enable individuals to enroll in and earn a DPT degree from the University of Pittsburgh from their current residence without having to relocate to Pittsburgh," notes Irrgang. "And

because they will be able to participate in clinical education experiences, most likely in their home communities, we would be expanding the availability of physical therapy services in rural or otherwise underserved communities."

"A hybrid option will also help establish our number-one program as a leader in personalized education," adds Wert. "The demand for online education continues to grow in higher education, and this will give us the opportunity to meet the needs of many more students with unique circumstances."

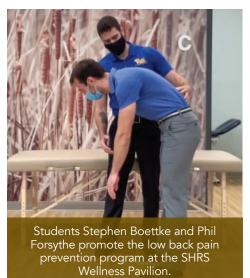
INCREASED INNOVATIONS AND COLLABORATIONS.

To enhance student learning at the onset of the COVID-19 pandemic, PT faculty utilized human-actor based simulation (standardized patients) and computer-based simulation (virtual patients) to enhance their instruction. But Associate Professor Andrea Hergenroeder says simulation is here to stay.

"Students tell us that simulation is an excellent way to prepare for clinical affiliations," explains Hergenroeder. "It allows them exposure to cases that they may not see in the clinic."

She offers this example. In a simulated intensive care scenario, students have the opportunity to interact with a human-actor who is the patient in a complicated hospital environment. The simulation not only helps them understand how to communicate with a patient in the ICU, but also how to manage IV lines and oxygen tanks while mobilizing a patient out of bed during a physical therapy session.

Hergenroeder adds that students frequently request additional opportunities for simulation across all of their clinical courses, and the faculty is working to expand the number and diversity of simulations in their course offerings.



Opportunities for interprofessional educational (IPE) experiences are also on the rise. According to Assistant Professor Bonnie Virag, students routinely participate in clinical experiences and volunteer opportunities at the Birmingham Free Clinic on Pittsburgh's South Side and at the SHRS Wellness Pavilion located in Pitt's Community Engagement Center in Homewood.

"When students spend time in these unique settings, they learn to function as part of a comprehensive health care team that shares common goals of addressing health disparities and improving access to care for our underserved, vulnerable populations," notes Virag.

In addition, they take part in structured IPE events with their peers from other University of Pittsburgh Schools of the Health Sciences programs. According to Virag, these events include learning activities such as mock case conferences. "It's important for our students to learn that challenging patient cases are often addressed more efficiently and effectively when the care providers work together as an interdisciplinary team rather than trying to tackle them alone."

"During our 90-plus years of existence, our PT program has been known for its ability to innovate and adapt to meet the changing needs of our students and the patients they serve upon graduation," says Irrgang. "Our latest efforts are examples of how we continue to play a leadership role in PT education in the future."





ADDRESSING THE SERVICE CLIFF: NEW HOPE FOR ADULTS WITH AUTISM



Approximately one in 59 youth in the United States is affected by Autism Spectrum Disorder (ASD), a lifelong disability that is estimated to cost society \$3.2 million per individual.

"While many young people learn strategies and have access to interventions throughout childhood, there is a tremendous decline in functioning during adolescence and adulthood when school-based services end," says Dr. Kelly Beck, assistant professor, Clinical Rehabilitation and Mental Health Counseling (CRMHC) program. "This is at least partly due to impaired emotion regulation and limited evidence-based services for adults."

While the service cliff is cause for great concern, little research is being conducted to develop accessible evidence-based treatments for adults with ASD.

Beck is dedicating her career to changing that through emotion regulation research.

"Emotion regulation is the ability of an individual to monitor and modify his or her emotional arousal and engage in adaptive behavior," explains Beck.

"Adults with ASD are four times more likely to have problems with emotion regulation than children or youth," she continues. "Because of this, they are more likely to experience meltdowns, exhibit aggressive or self-harming behaviors or become hospitalized. On the other hand, when they are aware of their emotions and have strategies to help them cope, they are more likely to be able to live independent lives, maintain employment and sustain social relationships."

Beck says mindfulness-based interventions (MBIs) are a promising, evidence-based option for adults with ASD to learn how to regulate their emotions.

Through a new study, Beck will build on the Emotion Awareness and Skills Enhancement (EASE) program, a mindfulness-based intervention that she co-developed and has already been established as feasible, acceptable and promising for improving emotion regulation in adolescents with ASD. EASE uses mindfulness meditations, awareness exercises, cognitive distancing and distraction skills to teach individuals to manage their strong emotions. Over the next five years, she will adapt EASE so it is appropriate for use with adults in community settings.

"My goal is to provide a quality, low-cost, evidence-based treatment for adults with ASD and to simultaneously enhance the community mental health workforce by providing them with effective interventions," notes Beck.

Beck is partnering with key stakeholders to better understand the service needs for adults with ASD. She will then work with these stakeholders to adapt EASE for adults and plan for facilitators and barriers of optimal MBI implementation.

Recently named a 2020 Clinical Translational Science (CTS) KL2 Scholar, Beck will receive research funding for the next two years from the University of Pittsburgh's Institute for Clinical Research Education (ICRE) and will be supported by the National Center for Advancing Translational Sciences of the National Institutes of Health (NIH). The scholars program provides individualized mentoring and competency-based training in rigorous research methodologies for the design and conduct of high-quality translational research.

It serves as a bridge to longer-term independent funding from the NIH.

Assistant Vice Chancellor for Clinical Research Education and Training for the Health Sciences and ICRE Director Dr. Doris Rubio is impressed with Beck's commitment, vision and passion for her research.

"Kelly's focus on qualitative methods to engage stakeholders in the optimization of MBIs is innovative," notes Rubio. "I am confident that she will become a leading researcher on optimizing interventions for adults with ASD in community settings."

To guide her through this research project, Beck secured a team of prominent mentors in the areas of ASD treatment, implementation science specific to ASD, and biostatistics and methodology.

Beck's primary mentor is Dr. Carla Mazefsky, associate professor in the University of Pittsburgh School of Medicine, Department of Psychiatry, and an international leader in emotion regulation measurement and treatment for youth, adolescents and adults with ASD. She is also the co-director of the Center for Excellence in Autism Research and director of the Regulation of Emotions in ASD Adults, Children & Teens (REAACT) lab.

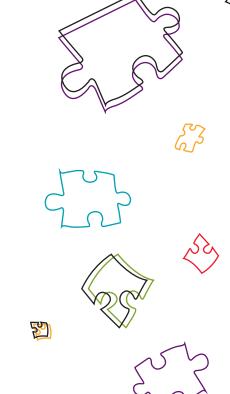
Mazefsky has been mentoring Beck weekly since 2018, and Beck says she is fortunate to have such an accomplished expert to guide her as she transitions to an independent research career. "As a past K Award recipient, Dr. Mazefsky understands the process, and will oversee my overall progress on my research activities and training plan while providing scientific mentorship on emotion regulation response in ASD," explains Beck.

"Kelly has a level of mindfulness training that is very uncommon among autism researchers in addition to a very in-depth understanding of the condition," says Mazefsky. "She has a genuine compassion that shines through to patients, participants and colleagues alike."

"Technically I am Kelly's mentor but I have learned a lot from her, too. I think we are a good team, with very complementary expertise," she continues. "I often think Kelly is the only one who can achieve what she has set out to do given her unique background."

Beck believes there is no time to waste. "Without an urgent focus on the development and implementation of evidence-based mental health services now, the rapidly growing population of adults with ASD will be forced to use crisis services for treatable problems."

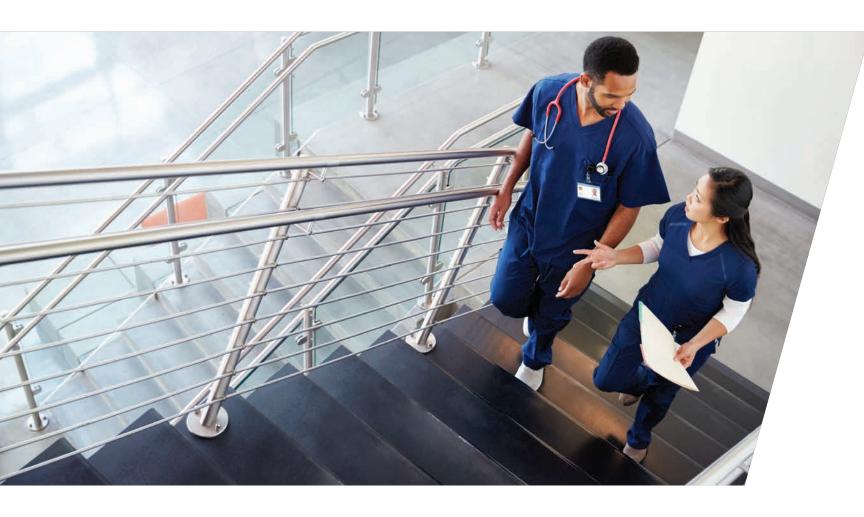
According to Mazefsky, "Dr. Beck is tackling this problem in just the right way." ■











FUTURE LEADERS **STEP UP**

There are surefire ways to advance in the workplace. Show initiative. Take on increased responsibilities. Network, network, network. But experts agree, the most effective way to advance any career is through continuing education.

As a health care professional, this is not always a feasible option. But the Department of Physician Assistant (PA) Studies has a solution that is being welcomed not only by PAs, but by other Advanced Practice Providers (APPs), including nurse practitioners, nurse anesthetists and nurse midwives.

Co-sponsored by UPMC, the new APP Leadership Certificate is an online, widely accessible program that builds leadership skills and fosters career growth in a spirit of interprofessional collaboration.



PA Studies Chair and Assistant Professor David Beck says this program fills a gap that exists for practicing professionals. "It is very accessible and very relevant. It utilizes a faculty comprised of leaders from different disciplines who pass on

their knowledge and expertise to help current practitioners assume leadership roles."

According to Amy Haller, director, Center for Advanced Practice Education, UPMC Office of Advanced Practice Providers, this is truly a "boots on the ground" approach to building leadership skills.

Haller notes there are more than 3,400 APPs in the UPMC Health System alone. While many excellent clinicians choose to continue to practice in their current roles, others are interested in leadership opportunities but do not know where to start.

"This course was developed by local APP leaders who know what leadership and health care administration skills are needed to be successful, as they have made transitions from clinical practice to management in their own careers," adds Haller.

To earn the certificate, participants complete eight modules over a 16-week period. The modules cover topics that range from leadership and growth to communication strategies and executive essentials. Lectures from experts are divided into 15- to 20-minute sections which allow participants to work through the content at their own pace. In addition, they engage in online activities with their peers from different professions.

Emily Murphy, PA Studies director and assistant professor, says there are distinct advantages of bringing together individuals from a variety of health care professions. "In today's health care environment, we all work together on a daily basis, but we don't always understand the scope of each other's practice," says Murphy.

"Through this program, APPs will get to know their peers from different disciplines, develop a strong network of other professionals and be better prepared to lead," she continues.

"No single profession or discipline can possibly meet the needs of a diverse and complex patient population," adds Haller.

"So many APP leaders are charged with leading members from different professions they are not innately familiar with and need an 'extra boost' to lead those team members effectively. By bringing all four of these professions together, we are learning from one another and supporting one another to grow together. This builds community and trust," says Haller.

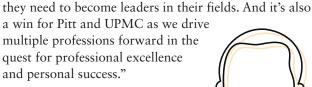
Months before launch, the course had already filled and surpassed its enrollment targets. "The interest in this certificate proves that we are offering a program of value," says Beck. "We increased our faculty presence and the resources available to provide the best educational experience possible for these emerging leaders," he adds.

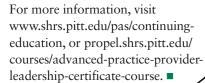
Murphy says that with the APP certificate, clinicians will add to their professional toolbox. "Through this program, physician assistants, nurse practitioners, nurse anesthetists and nurse midwives will not only have the opportunity to bolster their clinical practice, but also move into different roles in the fields of academics or

health administration if they choose to do so at some point in their career."

The APP Leadership Certificate capitalizes on Pitt and UPMC's storied reputation for clinical and academic excellence.

"We look at this as a win-win initiative," says Beck. "It's certainly a win for the APPs who will quickly gain the skills











A NEW CHAPTER BEGINS

Prior to 2015, there were few organizations that supported the global wheelchair sector as a whole. But with the establishment of the International Society of Wheelchair Professionals (ISWP), positive changes began to take shape.

ISWP was launched by the Department of Rehabilitation Science and Technology (RST) at SHRS under the leadership of RST Chair and Associate Professor Jon Pearlman, Distinguished Professor Rory Cooper and Associate Professor Mary Goldberg.

Its mission was ambitious: to serve as a global resource by setting wheelchair service standards; improving access to wheelchair users through advocacy, education, evidence-based practice and innovation; and establishing a platform for information exchange.

Over the past five years, more than 4,000 providers, educators and advocates have kept that mission alive. With initial funding from the U.S. Agency for International Development and additional support from the Consortium of Universities for Global Health, Paralyzed Veterans of America and NIDILRR, and collaboration with the World Health Organization (WHO), many goals have been achieved.

But the time is right to take the next steps.

"At this point in time, we believe ISWP is ready to begin a new chapter," says Pearlman.

"In November 2020, a founding board of directors was formed and work began to establish ISWP as an independent entity with an appropriate governance structure and funding model for long-term sustainability," Pearlman continues.

"We would like ISWP to be the go-to organization for anyone working in, with and for wheelchair providers and wheelchair users," notes David Constantine, founder director of Motivation Charitable Trust and the newly elected ISWP board chairman. "We also want it to be the place where the users themselves can find valuable support and information."

"Through ISWP, we have established a wheelchair service provider certification program and a worldwide network of trainers and educators," adds Goldberg. "We are proud to say many of them are SHRS alumni."

Dr. Padmaja Kankipati (PhD '12) has been involved with ISWP since its inception. ISWP has helped to support trainings she has led in India and to prepare her to assume a current consulting role with the WHO.

Kankipati is part of a team working to implement a national survey on behalf of WHO in six member countries.

"It's an exciting project," she says.

"We are collecting data on wheelchair needs, unmet needs and barriers to assistive technology using the Rapid Assistive Technology Assessment tool developed by WHO."

ISWP helps to train and establish a network of those conducting evidence-based practice and expanding the research base.

Dr. Maria Toro-Hernandez (PhD '15), for example, is evaluating the capacity of the Dominican Republic and Bolivia to regulate, finance, procure and provide assistive technology according to the needs of their populations.

Toro-Hernandez says there is an opportunity to raise awareness and educate people and governments about the need for appropriately trained wheelchair providers and to invest in wheelchair training. This is where ISWP can help.

"ISWP actively collaborates with key stakeholders such as WHO and the International Society for Prosthetics and Orthotics to develop global wheelchair service standards," says Toro-Hernandez. "The organization also helps to link individuals, organizations and technical resources to improve the quality of wheelchair services and products."

At the conclusion of projects like this one, ISWP helps to disseminate the results through its global network.

Nidia Arias Becerra serves as an academic training partner for ISWP. As a faculty member at the Universidad CES in Medellín, Colombia, Becerra works with physical therapy and medical students to bring the latest knowledge of wheelchairs into the classroom through resources that have been established and promoted by ISWP. She also establishes networks among different professionals outside of the university who are interested in improving wheelchairs and the quality of life for wheelchair users.

Goldberg says the training programs utilize syllabi, lab guides and other resources such as the Seating and Mobility Academic Resource Toolkit (SMART) to increase the awareness of WHO standards among wheelchair providers.

"Our platform helps us make a difference by disseminating resources for education and professional development around the world," says Goldberg.

In December 2020, Becerra participated in the academic training partners webinar series where she presented her university's experience with wheelchair training. "It's a wonderful way to learn what other colleges are doing," notes Becerra. "It was very helpful to exchange ideas with ISWP members and receive their feedback."

While the governance structure

of ISWP is different, Pearlman and Goldberg remain
involved as ex officio members of the board. The University
of Pittsburgh will continue to play a key role in product
research, development and testing.

According to Constantine, "The team at Pitt has done a great job of initiating and building ISWP to what it is today. They have been able to use the facilities and knowledge in the wider university to broaden the depth of knowledge ISWP now has."

"The affiliation with the University has given ISWP a reputation for providing evidence-based resources with academic rigor," he continues.

"We believe that as an independent and sustainable association, ISWP will be able to grow even more," says Pearlman. "And we at Pitt will continue to do whatever we can to expand the body of knowledge that impacts service providers and wheelchair users."

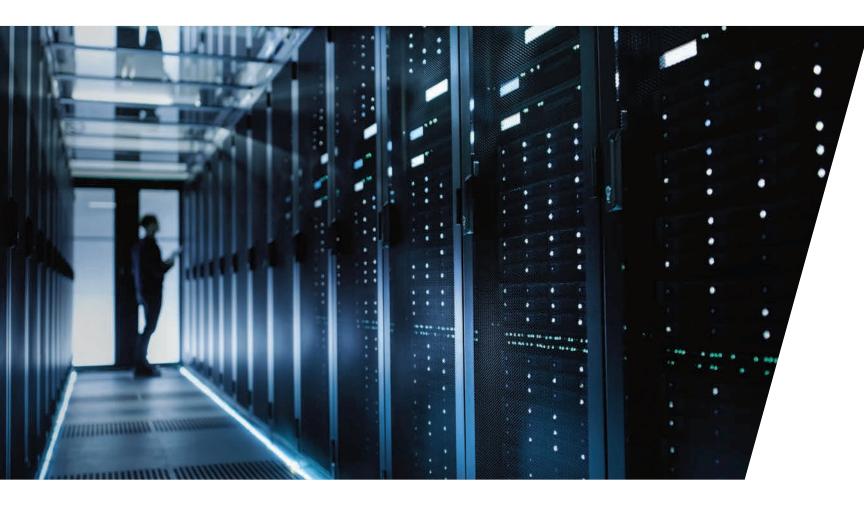
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BUILDING DATA ACUMEN



A recent report published by the National Academies of Science, Engineering, and Medicine stressed the importance of data science as an "emerging ... field that is revolutionizing science and industries alike."

In its publication, "Data Science for Undergraduates: Opportunities and Options," this highly regarded organization offers recommendations for helping educators, administrators and students learn how to best prepare for and keep pace with the data-driven era of tomorrow.

At the top of its list: increase data acumen.

Dr. Bambang Parmanto, professor and chair, Department of Health Information Management (HIM), says data acumen combines traditional computer science and mathematics skills with broader abilities in the areas of communications and teamwork, workflow and domain knowledge, ethics, analytics and visualization of data.

"Building data acumen requires a multi-disciplinary, multi-faceted approach," says Parmanto. "It's a way for students to learn how to best analyze the vast amounts of data available today and make sound judgments that create real-world solutions."

"We are solidly committed to incorporating data science and increasing data acumen in all of our programs," he continues. "We have established a health data science graduate program and now it's our turn to infuse strong data science acumen in our undergraduate program as well."



In the fall 2020 semester, HIM introduced a new curriculum for its Bachelor of Science in Health Information Management. Rich in data science content, the BS HIM now boasts the highest data acumen score among all University of Pittsburgh programs—higher than the undergraduate Computer Science, Information Science and Finance programs and higher than some graduate programs. The data acumen score is determined by the amount of specific content taught in each course, as illustrated in the chart shown here.

The new undergraduate curriculum includes database design and big data analytics as well as machine learning, security and privacy issues in health care. It also introduces the two most widely used statistical programming tools in data science: R and Python.

"Our students are learning how to use and apply state-ofthe-industry tools from data science experts in health care organizations," explains HIM Associate Professor and Vice Chair of Education Valerie Watzlaf. "These professionals utilize machine learning, data analytics and data mining in the workplace and understand how to teach our students to use and apply tools such as SQL, R and Python."

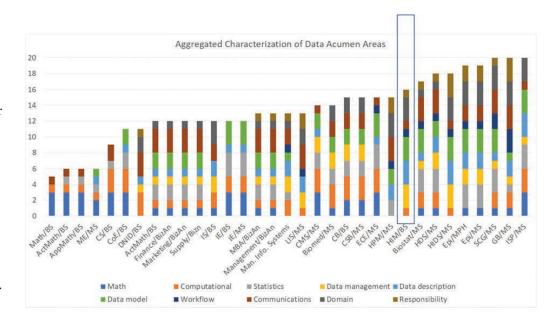
In one of her courses, Watzlaf combines research methods and statistics so students can tackle problems specifically related to health care data. "Students complete a project that enables them to take large health care data sets, choose a research question and run statistical tests through SPSS statistical analysis software to provide recommendations."

With this kind of preparation, Watzlaf says students will be well prepared to enter the job market with the appropriate skill set.

Jobs for HIM graduates are diverse—and growing.

"With the vast quantity of digital data used in health care, our students have a multitude of career path choices," explains Assistant Professor and Clinical Education Coordinator Patricia Anania Firouzan.

She notes there are increased opportunities for data analysts, business intelligence developers, health IT systems analysts and quality improvement analysts.



"All of these positions require a high degree of data acumen that may be used in strategic decision making or to develop interventions that improve clinical care and efficiencies across an organization," says Firouzan.

According to Parmanto, the increased emphasis on data science and data acumen aligns with recommendations from the University of Pittsburgh Task Force on Data Science to catalyze, nourish and sustain data science in both its educational and research programs.

"Computer and information technology skills changed the health care business landscape 30 years ago. Today, data science will have the same real impact on human health and health care practices," adds Parmanto.

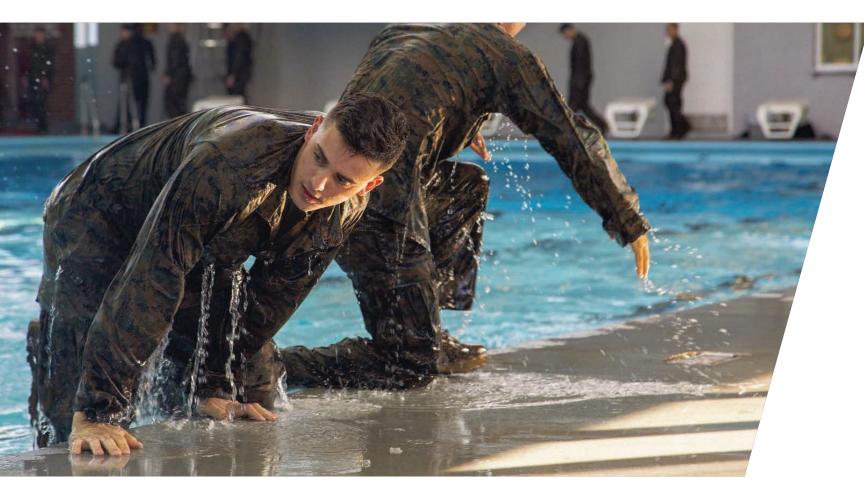
When a new Master of Science in Health Informatics was introduced in 2019, it was designed to enhance critical

thinking skills and help students utilize the most advanced technologies and industry best practices to develop data-driven solutions to improve patient care. Today it also ranks among the programs with the highest data acumen at Pitt.

With the changes to the BS HIM curriculum, undergraduate students will also be better prepared to apply technical skills such as database design and management, programming and the use of statistical software in the current and future health care environment.







NMRL: **DEPLOYED TO THE FIELD**

For more than 20 years, the Neuromuscular Research Laboratory/Warrior Human Performance Research Center (NMRL/WHPRC) has applied its extensive knowledge of sports injury prevention and performance enhancement to the tactical athletes who serve in the U.S. military.

Looking through a variety of lenses that include biochemical, biomechanical and psychological markers, NMRL researchers routinely develop mission-specific protocols to reduce the incidence and severity of injuries, increase combat readiness and improve the quality of life for military men and women, both during and after their service.

The multidisciplinary state-of-the-science lab sprawls across 11,600 square feet of space in the Rivertech Office Works on Pittsburgh's South Side. What sets it apart is the comprehensive nature of the work done there.

"Most other labs tend to focus on biomechanics OR neurocognitive OR nutrition OR musculoskeletal injury prevention research," notes Kevin M. Conley, associate professor and chair, Department of Sports Medicine and Nutrition (SMN). "But our lab can accomplish all of these



because of the wide array of expertise you find in our faculty and their ability to weigh epidemiological, machine learning and big data considerations in the lab's work."

"The addition of physiological capabilities with the emergence of the biochemistry lab, along with state-of-the-art technologies that allow us to measure and assess skeletal architecture provides us an advantage in collecting data with greater fidelity and to examine other variables more effectively such as the effect of nutrition on performance," adds Dr. Bradley Nindl, NMRL director and SMN professor.

Another unique feature: Key components of the lab also can be found at military installations around the country, as two recent studies demonstrate.

NMRL Research Assistant Professor Brian J. Martin and his team of researchers have set up NMRL capabilities at the U.S. Naval Academy, where they are utilizing a battery of tests that examine the resiliency of midshipmen and predict who are good

According to Martin, "The SEAL screener allows us to assess an individual's capabilities, efficiency and strength, but it also helps us better understand physiological, physical and cognitive differences between those who succeed and those who do not."

candidates for SEAL training.

Researchers collect key biomarkers such as blood and saliva samples from candidates before they undergo a rigorous 24-hour course that tests both their physical and psychological capacity.

The combined data is used to create a comprehensive algorithm that helps to predict potential for injury and

that helps to predict potential for injury and the success of individual candidates.

NMRL graduate researcher and PhD candidate Meaghan Beckner (BS '13, MS '17) assists with site visit preparation, onsite data collection and data analysis. She says the onsite data collection provides a true perspective of the demanding schedule and rigorous training midshipmen endure.

"This study and others like it can help advance the military's understanding of what it takes for candidates to succeed," notes Beckner.

In May 2020, under the guidance of Martin and Nindl, NMRL research assistant Matt Bird, a PhD student at Texas A&M, began work on a new study funded by the Office of Naval Research. Known as the Assessing Resilience in Marine Musculoskeletal Screening (ARMMS) study, it develops signature algorithms to predict the potential for injury during Marine Corps Officer Candidates School (OCS) training in Quantico, Virginia.

"Military trainees and women in the military are especially susceptible to musculoskeletal injuries as they undergo intense, physically demanding training," explains Bird. "The susceptibility can result in a loss of tactical readiness and disability, as well as increased financial cost and attrition."

But developing an algorithm to predict risk requires large amounts of data.

The NMRL team is capturing the data they need through emerging technologies such as markerless motion capture and force plate performance testing. These technologies have been used in athletic training but have not yet been evaluated in military field or operational settings.

"They allow us to collect a variety of measurements including kinetic variables and asymmetries in an individual's anatomy," explains Bird. "We can then quantify that individual's movement to further determine the quality of the movement and compensation patterns."

Bird says these technologies not only provide valuable baseline information, but they can be utilized in the field at various points during training. "By taking biomechanical assessments from the laboratory to the field, we can accurately determine if something like fatigue or injury is impacting performance. The results can help Marine leadership make key decisions regarding training and selection."

He adds that subsequent data may then be used in a machine learning approach to further classify and predict injury potential and successful candidates.

"The multidisciplinary approach at the NMRL is unique and provides us the opportunity to take a more holistic approach when it comes to enhancing military readiness," adds Beckner. "By building on our previous research, we can help to address the evolving needs of the U.S. military."

Martin says the NMRL/WHPRC's long-standing partnership with the U.S. military has led to expanded, and sometimes new, studies. "The OCS training study has prompted interest in new research on wearables and how they might help to prevent injuries," he adds. "And we are looking at how the extensive battery of tests that are now part of the SEAL screener might one day be refined into a single set of tests that will predict a candidate's potential for success."

To learn more about the NMRL, visit www.nmrl.pitt.edu.



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