

U N I V E R S I T Y   O F   P I T T S B U R G H

# FACETS

SCHOOL OF HEALTH AND REHABILITATION SCIENCES

SPRING/SUMMER 2013

WHEN TRADITIONAL GOES DIGITAL



# CONTENTS

SPRING/  
SUMMER  
2013



22



32



26



30

1 **From the Dean**  
Dr. Clifford Brubaker

2 **Giving**  
Patty Kummick

3 **Access**  
Dr. Kate Seelman

4 **Student News**

6 **Faculty News**

7 **Alumni News**

9 **Department News**

10 **Alumni Profile**  
What's a Nice Dietitian  
Like You Doing in an  
Agriculture Library?

12 **Clinical Instructor  
Profile**  
Rosa Fannie: Transforming  
Nervous Students Into  
Confident Professionals

13 **Sports Medicine  
and Nutrition**  
Special Olympics 2013: In  
Search of More Than Gold  
  
Serving Up Nutrition  
Information in the Community

16 **FACETS Feature**  
Digital. The New Normal.

20 **Communication  
Science and Disorders**  
Learning Goes Viral

22 **Health Information  
Management**  
Putting Better Health in the  
Hands of Patients

24 **Rehabilitation Science  
and Technology**  
Teaching By Way of a  
Virtual Coach

26 **Physical Therapy**  
Flipping the Classroom

28 **Occupational Therapy**  
"Smart" Mannequins.  
Wiser Students.

30 **Emergency Medicine**  
*Edutainment: Keeping  
Students Engaged*

32 **The Real World**  
Danielle Dunegan

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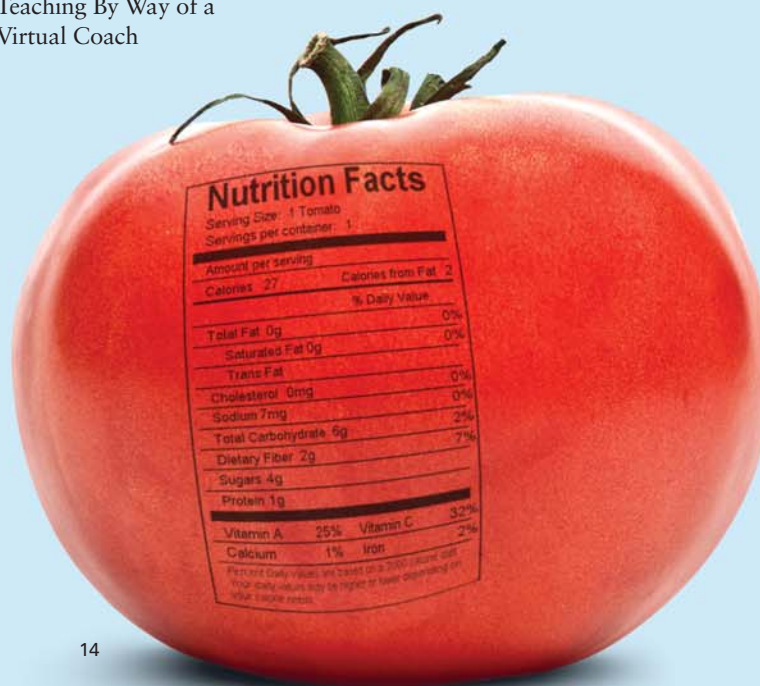
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### Greetings,

The featured article for this issue of *FACETS* addresses a particularly timely and relevant topic. As an undergraduate in the late '50s, I recall the novelty of space exploration and concern that the Soviet Union—remember the “cold war”—with the launch of Sputnik was out in front in this emerging area of technology. As a freshman at Purdue University, registration for courses was an ordeal of waiting in seemingly interminable lines with other new students

to obtain a schedule of courses. The notion of going “online” as opposed to standing in one had yet to even enter our collective imagination.

“Digital. The New Normal.” the focus for this issue, was discussed in a session that included the collective leadership of SHRS, including Dean’s staff, department chairs, and program directors. Perhaps the Internet has been with us long enough for the novelty that was evident at the outset to have dissipated for most of us. However, our discussion served as a reminder of the ubiquitous presence and the near universal dependence we all have on electronic media for nearly all dimensions of our lives. Are there still families in Pittsburgh who do not have cell phones, laptops, iPads? Probably very few. The information age has changed our lives and how we communicate and receive information, and it has imposed new demands and challenges. “Digital. The New Normal.” examines the exponential expansion of information in terms of both scope and access and how it will likely affect us—both individually and in the context of our institutions. Upon reflection, it seems clear that the manner in which we present information and learn is undergoing a transformation, and it is clear that we must become more agile to stay abreast of new trends and innovation as we continue our development and transformation in these times that are both exciting and daunting.

Perhaps it is fitting that this discussion takes place in the climate of current and rampant uncertainty that impacts so many dimensions of our lives. It is difficult to remember a time with so many different possibilities for adverse consequences as we await the decisions that will determine how we shall be taxed and which of the programs that we depend upon will be terminated or significantly curtailed through “sequestration”—we even seem to need new words to describe these threats—and the persistent inability of our political “leaders” to function with sufficient intelligence, diligence, and collegiality to address the substantial issues of our times.

I shall hope that many of these issues will have been resolved by the time you receive this issue of *FACETS* and we can look back upon the problems noted herein as historical artifact in the course of an otherwise exciting and illuminating period.

Warm regards,

Clifford E. Brubaker, PhD  
Professor and Dean  
cliffb@pitt.edu

## Calendar of Events

### M A Y

Thursday, May 23, 2013

#### **Schools of the Health Sciences**

**alumni reception** *Petroleum Club, Exxon Building, Houston, Texas, featuring Clyde Jones, president, University of Pittsburgh and UPMC Medical and Health Sciences Foundation. For more information, contact Julie Maceikis at JEM237@pitt.edu.*

### J U N E

Thursday–Friday, June 13–14, 2013

#### **Rehab Engineering Research Center on Telerehabilitation State of the Science Virtual Conference**

*Contact Cheryl Rohall at 412-624-6256 or crohall@pitt.edu or visit [www.rerctr.pitt.edu/sos](http://www.rerctr.pitt.edu/sos).*

Thursday–Saturday, June 13–15, 2013

#### **Communication Science and Disorders Teaching Conference**

*Forbes Tower. For details, contact Elaine Mormer at 412-383-6610 or emormer@pitt.edu.*

Tuesday, June 25, 2013

#### **Athletic Training and Sports Medicine**

**alumni reception** *Miller’s Ale House, Las Vegas, Nev., 6–8 p.m., held in conjunction with the NATA Conference. For details, contact Amy Aggelou at aaggelou@pitt.edu.*

### S E P T E M B E R

Friday–Sunday, September 27–29, 2013

#### **University of Pittsburgh Homecoming**

*Stay tuned for more details!*

### O C T O B E R

Thursday, October 3, 2013

#### **Matthews-Rubin Lecture**

*featuring Dr. Robert Burkard, University of Buffalo, SHRS Lecture Hall, 4060 Forbes Tower, 4 p.m. reception, 5 p.m. lecture. For more information, contact Pamela Morocco at 412-383-6540 or pjm79@pitt.edu.*

Monday, October 28, 2013

#### **Health Information Management alumni reception**

*Atlanta, Ga., held in conjunction with the AHIMA Conference. For details, contact Patti Grofic at pgrofic@pitt.edu.*

### N O V E M B E R

Friday, November 15, 2013

#### **Communication Science and Disorders alumni reception**

*Chicago, Ill., held in conjunction with the ASHA Conference. For details, contact Dr. Susan Shaiman at shaiman@pitt.edu.*



### **Great news! The School of Health and Rehabilitation Sciences has gone social!**

In addition to our semi-annual *FACETS* magazine and our Web site ([www.shrs.pitt.edu](http://www.shrs.pitt.edu)), we now have a presence on Facebook ([www.facebook.com/shrspitt](http://www.facebook.com/shrspitt)) and an alumni group on LinkedIn. Many of our departments and programs have specific Facebook pages and LinkedIn and Twitter accounts where you can interact with faculty, staff, and students. A listing of all the sites can be found by clicking on the banner headline on the school's Web site. We invite all SHRS alumni, faculty, staff, students, and friends to check out our sites, comment on posts, and network with fellow health care professionals.

And soon you'll see a new look to the SHRS Web site. We're incorporating changes to make it even more user-friendly and relevant to our various audiences.

Much of the increased attention to social media has been driven by the habits of our students and prospective students. They live on (and for!) Facebook and have access to up-to-the-minute news through this site and others like it. So SHRS is reaching out to its youngest audiences in places where they are. If you know of students interested in any of the areas of study offered at SHRS, please direct them to our Facebook pages. We've got a great story to share!

# giving



Did you know you can help ensure the future of SHRS? It's possible and easy through a gift of life insurance. And your gift could be significant even if your resources are limited. Life insurance can be an excellent option for making a charitable gift to SHRS because it can amplify the benefit of a gift to be considerably more than the cost of the gift to the donor. You can accomplish this by using an existing policy or by creating a new one.

By naming the University of Pittsburgh as the owner and beneficiary of an existing life insurance policy, you can maximize your current assets to help SHRS and any of its programs continue their great legacies.

It's important that Pitt be named as the irrevocable owner of the policy and not just its beneficiary in order to receive the best tax benefit. If the gifted policy is fully paid, you, as the donor, will receive a tax deduction that is the lesser of either the policy's fair market value or the total of your net premium payments. If premiums are still payable, Pitt will invite you to make tax-deductible contributions offsetting the University's payment of the premiums. Pitt reserves the right to keep such a policy in force during your lifetime or to terminate it sooner for its cash surrender value.

Alternatively, you could choose to name Pitt as the owner and beneficiary of a new policy insuring the life of the donor. By making manageable premium payments, you can create a larger future gift for the University and SHRS. You can make premium payments directly to the insurance company, or the premium notices can be sent directly to the University, and you can, in certain circumstances, make annual donations to offset the premium payments. These gifts can be tax deductible. (There is no deduction for setting up the policy itself.)

Be sure to consult with your financial planner and/or attorney when considering which investment is best for you. If you'd like more information about ways to support SHRS and its many academic departments and programs, I'd be happy to discuss a number of available options.

Sincerely,

Patty Kummick  
Director of Development

412-383-6548, [pkummick@pitt.edu](mailto:pkummick@pitt.edu)  
4031 Forbes Tower, Pittsburgh, PA 15260





# ACCESS

DR. KATE SEELMAN

*Public policy can be complicated, and none is more complicated than the advance of electronic health records (EHRs). In 2009, President Barack Obama signed into law the American Recovery and Reinvestment Act of 2009, which included the HITECH (Health Information Technology for Economic and Clinical Health) Act. The HITECH Act contains incentives related to health care information technology in general (e.g., creation of a national health care infrastructure) and specific incentives designed to accelerate the adoption of EHR systems among Medicare and Medicaid providers. But it wasn't until 2011 that these health care providers were offered financial incentives for demonstrating "meaningful use" of EHRs. Meaningful use is the set of standards defined by the Centers for Medicare & Medicaid Services (CMS) Incentive Programs that governs the use of EHRs and involves the use of certified EHR technology to meet a number of important criteria such as patient safety and privacy protection.*

*Doug Fridsma, MD, PhD, FACP, FACMI, understands the challenges and opportunities of meaningful use better than most. A physician and expert in biomedical informatics, he has played a major role in the development of the Nationwide Health Information Network, the Federal Health Architecture, EHR certification programs, and the Standards and Interoperability Framework.*

*Fridsma is known to the University of Pittsburgh community as former faculty in the School of Medicine from 2000–2006. However, we spoke to Fridsma recently about his current role as chief science officer and director of the Office of Science & Technology in the Office of the National Coordinator for Health Information Technology (ONC)—and his commitment to creating a foundation for interoperable health information exchange.*

**SEELMAN:** Describe what ONC is doing to support "meaningful use."

**FRIDSMA:** Most of the technical work we do at the ONC revolves around the development of standards to support meaningful use and interoperability of EHRs. We work very closely with the private sector to determine what specifications should be acceptable to qualify for the financial incentives that are tied to meaningful use. We also work to ensure that health care providers are, in fact, using the specifications. To that point, we've created a sort of marketplace for certification.

We ask health care providers to meet our criteria for meaningful use by submitting their systems to testing laboratories that have been approved by the National Institute of Standards and Technology (NIST). I like to think it works much like the Underwriters Laboratories to ensure that vendors are adhering to the same standards and we are creating best practices.

We believe that by establishing standards and making sure every EHR system follows them, it will be easier for clinics, hospitals, and other health care providers to gather and share information. We've tried to do this in a way that does not create a complex bureaucracy, but rather creates competition in the marketplace. We see our role at the ONC as one that convenes people, identifies problems, and facilitates the development of solutions.

**SEELMAN:** What is the role of the consumer in your plan?

**FRIDSMA:** While we believe that functionality is key to the success of any EHR system, we firmly believe that the patient is an integral part of the health care team. It is a priority at ONC that patients have total access to their health information.

In Stage 2 of meaningful use, which is being finalized right now, patients will not only have access to their information through a Web portal, but their information will be computable—they will be able to integrate their records into smartphones, tablets, and other devices. Patients will also have the ability to view, download, and transmit their information to a third party. It's very important to us that information flows smoothly between one provider and the other.

And although we are just beginning to articulate the priorities and technical objectives of Stage 3, we know that patient access will always be a goal, and we are starting to gather public input on this matter.

**SEELMAN:** How do you interface with CMS?

**FRIDSMA:** We at ONC are responsible for the standards while CMS is responsible for the incentive payments and how providers qualify for the payments. So if CMS says that 10 percent of patients would want access to their EHR, it would be our responsibility to make sure all providers would have the standards in place to give access to these patients.

**SEELMAN:** How will you ensure that EHRs are accessible to people with disabilities, older Americans, and those who communicate in other languages?

**FRIDSMA:** One of our hopes is that we are setting the stage for handling all of these challenges. We're looking at ways of building an underlying code that will translate to any language. For example, we're working with the Office of Civil Rights to develop a code that will translate to American Sign Language (ASL). We would also like to see the development of an international or universal code that describes a certain condition then translates it to any language.

As for older Americans, we know there is a surge in home monitoring devices. In the future, we imagine these consumer devices will be compatible with the devices used in doctors' offices and hospitals, and that the readings will be integrated into a patient's EHR.

Shared care raises a number of issues, but we look forward to an ecosystem of in-home systems that helps to improve the overall health of the patient and reduces hospital re-admission rates. Our job at ONC is to create standards that will make that happen.

**SEELMAN:** Does the ONC have a vision of how smartphone apps will help meet the needs of diverse users?

**FRIDSMA:** We have issued a series of challenge grants to incentivize the community. We want to know what the next generation of EHRs would look like on a smartphone or iPad, for instance. Right now, we have an initiative with the U.S. Department of Veterans Affairs to expand the functionality of their VA Blue Button technology. Through our efforts, the VA Blue Button, which allows veterans to enter personal health information such as blood pressure, test results, family health history, and more, will be made even more computable, and will give vets the ability to download VA Blue Button information in a more structured way.

**SEELMAN:** What challenges do you see down the road?

**FRIDSMA:** To be sure there are challenges from getting information off of paper and into electronic formats. It's not just turning the information into bits and bytes, but making sure that information can flow with the patient. After that, we need to do increasingly complex things with it. We need to be able to update it, to include new medications or allergies, for example. So we must continue to analyze data and learn what works and what doesn't.

Our work at the ONC is all about providing the basic infrastructure and encouraging health care providers to use the EHR as the tool it was designed to be. When we achieve meaningful use, we will be on our way to improving patient care.



# Student News

## Communication Science and Disorders

**Julia Gordon**, a second year CSD student in the Doctor of Audiology program, has received an NIH T-35 research training award at Vanderbilt University in the Audiology Division (AuD). She will be working with Dr. Todd Ricketts during the summer of 2013. Gordon is the first AuD student from the University of Pittsburgh to pursue summer research training through the NIH T-35 program.

SHRS has nominated **Julianna Sincavage** for the University's 2013 Emma W. Locke Memorial Award. Sincavage is completing her senior year in the Department of Communication Science and Disorders (CSD). She has demonstrated strong leadership skills as fundraising chair and currently as president of the Pitt Chapter of the National Student Speech, Language and Hearing Association. Sincavage serves as the undergraduate student representative at CSD faculty meetings. She is employed as a research assistant at the LRDC and has maintained an exceptionally strong GPA. The Emma Locke Award is presented to a graduating senior in recognition of high scholarship, character, and devotion to the ideals of the University.

## Occupational Therapy

**Dr. Shannon Juengst** successfully defended her dissertation "Self Awareness and Community Integration after Traumatic Brain Injury."

The inaugural recipient of the Joan C. Rogers Occupational Therapy Award is **Alexandra Harper**, MOT student, recognized for her high-level scholastics, exemplary professionalism, and commitment to advancing the profession. Harper also received the 2013 Award of Scholarly Excellence for her scholastic achievement and scholastic excellence in inter-professional activities.

The 2013 recipient of the Award of Professional Excellence is **Kailey Bedford**, MOT student, for her promotion of occupational therapy through community service activities.

MOT students **Jenifer Halterman** and **Krystal Vermillion** were appointed to represent SHRS and University of Pittsburgh Student Occupational Therapy Association (UPSOTA) on the Pitt Institute for Healthcare Improvement executive board.

**Kailey Bedford, Alison Brown, Tara Prentice**, and other members of the UPSOTA successfully held a 5K run/walk to raise money for the local Heart of Gold Fund, part of Open Your Heart to a Senior group. UPSOTA raised \$2,280.27, the most money ever received by this fund.

**Drs. Pamela Toto, Nancy Baker, and Joanne Baird**, in collaboration with 38 MOT students, participated in the American Occupational Therapy Association Hill Day in Washington, D.C. Attendees met with their state senators and representatives to advocate for occupational therapy.

**Dr. Nancy Baker**, associate professor, **Kailey Bedford, Alison Brown, Alesia Tonkin**, and **Eileen Wilmsen**, MOT students, helped to develop and implement an interactive exhibit for preschoolers, *Forest Friends*, in the Carnegie Museum of Natural History Discovery Room.

**Dr. Denise Chisholm**, associate professor, **Danielle Copeland, Kyle Johnston, Melissa Matis, Juliet Shalon**, and **Krystal Vermillion**, MOT students, represented the Department of Occupational Therapy at the Investing Now: Hands on Science program.

**Kailey Bedford, Maria Borrelli, Natalie Goerl, Katelyn Kelly, and Kelsey Trainer**, MOT students, participated in the Special Olympics of Allegheny County's annual Bocce, Soccer, and

Long Distance Running/Long Distance Walking Tournament. Volunteers helped the athletes in various soccer skills and also had the pleasure of taking part in medal distribution to the athletes.

**Alison Damico, Jenifer Halterman, Jocelyn Kuleck, Elizabeth Mackay, Melissa Matis, and Juliet Shalon**, MOT students, organized a fundraiser to provide developmentally appropriate toys for 30 children age 0–3 years with developmental concerns through The Alliance For Infants and Toddlers.

## Physical Therapy

**Eric Lehman**, DPT student, was selected to receive the Outstanding Physical Therapy Student Award from the Orthopaedic Section of the American Physical Therapy Association (APTA). Lehman received the award at the APTA 2013 Combined Sections Meeting in San Diego, Calif., in January.

## Rehabilitation Science and Technology

**Elaine Houston**, HERL graduate student and researcher, won the 2013 University/Post-Secondary Student Carnegie Science Award recognizing outstanding science and technology achievements across Western Pennsylvania.

**Nahom Beyene**, doctoral student, was the grand-prize winner in the "2 Minute Thesis" contest with his entry titled "The Synthesis of NAViSection." The online video highlighted what defines driver capabilities and how to link that capability to safety.

U.S. Army veteran **Nathan Bastien**, Bachelor of Philosophy student at HERL, has received a Berner Award from the University of Pittsburgh Honors College. Bastien is an army medic and OIF/OEF veteran and served as the non-commissioned officer in charge of the occupational therapy program at Walter Reed. He



# 2012-2013 SHRS SCHOLARSHIP AND AWARD RECIPIENTS

The following is a listing of SHRS scholarships and awards granted to students during the 2012-2013 academic year.

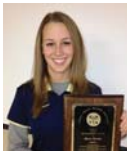
is participating in the Experiential Learning for Veterans in Assistive Technology and Engineering (ELeVATE) program funded by the National Science Foundation. Bastien has been working with the U.S. Army Marksmanship Unit at Ft. Benning, Ga., to develop an adaptive shooting stand to help wounded warriors compete.

**Szu-Han (Kay) Chen**, doctoral student, received the first-place award in the Student Research Paper Competition at the Clinical AAC Research Conference at St. Louis University in October 2012. Chen's paper was titled "Performance Outcomes and Clinical Issues of Language Acquisition of a Mandarin Chinese Child Using an AAC System."

**Bobby Quamar**, master's student in the Rehabilitation Counseling program, was selected by the American Association on Health and Disability Scholarship Committee to receive the AAHD scholarship.

Master's students in the Rehabilitation Counseling program, along with some rehabilitation science doctoral students, have created a rehabilitation counseling newsletter that features a highlight of a career professional, an alumni highlight, articles on topics that are beneficial for the students' career development, rehab counseling in the world news, and events. The newsletter will be published each semester.

## Sports Medicine and Nutrition



**Alexis Warden**, athletic training student, received the Eastern Athletic Trainers' Association scholarship award.

**Matthew Meredick**, sports medicine master's student, received the 2012 NATA Research and Education Foundation Scholarship and the Richard M. Burkholder Student Scholarship, awarded through the Pennsylvania Athletic Trainers' Society.

### Bruce Baker SHRS Student Award

(school-wide)

Seth Tichenor

### Bruce Baker Education Travel Award

(school-wide)

Katelyn Allison  
Corrine Barton  
Sarah Christian  
Ashlee Filippone  
Amanda Gillespie  
Samuel Haile  
Samannaaz Khoja  
Shilpa Krishnan  
Stephanie Mattei  
Kelly McCracken  
Megan Mick  
Jillian Oliszewicz  
Caitlin Piszko  
Eric Sinagra  
Tara Stein  
Jordan Wiley  
Hannah Wilson

### Joyce and Andrew J. Kuzneski, Jr. Student Resource Award

(school-wide)

Adam Haritan

### Anne Pascasio Scholarship

(school-wide)

Rebecca Kehs  
Rachel Lee  
Suzanne Speck

### SHRS Alumni Endowed Scholarship

(school-wide)

Channing Broyan  
Ted Fessides  
Sanghyuk Moon  
Breanna Sunday

### UPMC Endowed Scholarship

(school-wide)

Morgan Bryant  
Veronica Busan  
Alyssa Gruhn  
Tamara Miller  
Jocelyn Smith  
Jayna Whitcomb

### Mildred Wood Student Resource Award

(school-wide)

Kelly Battle  
Brittany Bianco  
Katarina Gasic  
Elizabeth Haley

### AVADA Book Award

(CSD)

Samantha Bowman  
Leslie Cody  
Lisa Giacometti  
Sanghyuk Moon

### Emeritus Award

(CSD)

Tara Anspach  
Sara MacIntyre

### Audrey Holland Endowed Award

(CSD)

Leah Helou

### Lisa Levy Memorial Award

(CSD)

Julia Gordon  
Marni Newberg

### Walt A. Stoy Award for Scholarly Activity

(EM)

Charles Pratt  
Amanda Scheboth

### Cindy Zak Student Award

(HIM)

Kim Peterson

### Joan Rogers Award

(OT)

Alexandra Harper

### Dorothy Bradley Brown Nationality Rooms Scholarship

(PT)

Kelly Ricker

### Dorothy Bradley Brown Scholarship

(PT)

Matthew DeBole  
Mark Malacarne

### Pat Croce Scholarship

(PT)

Rachel Lee  
Christian Roy

### David Physical Therapy and Sports Medicine Center/Joseph M. David Endowed Scholarship

(PT)

Michael Morgan

### D.T. Watson Scholarship

(PT)

Trevor Gillespie  
Kathleen Poploski

### Victoria Green Memorial Resource Award

(PT)

Kimberly Martinez  
Lauren Rosso

### Patricia Leahy Memorial Scholarship

(PT)

Rachel Hibbs

### Pearl Cricco Mann Scholarship

(PT)

Brandon Little  
Heather Paterson  
Brittany Reynolds

### Alice Chagnot Oulette Scholarship

(PT)

Claire Laverne  
Robyn Szablewski

### Paul and Judy Rockar Scholarship

(PT)

Matthew DeBole

### AAC Institute Student Award

(RST)

Szu-Han (Kay) Chen

### Rory A. Cooper/Dion Johnson Student Award

(RST)

Jorge Candiotti

### Virginia Kaufman Scholarship

(RST)

Jason Bender  
Amanda Bentley  
Courtney Bullers  
Michael Carpenter  
Joseph Corrigan  
Danielle Petersen  
Ian Waite  
Eric Williams

### Thomas J. O'Connor Scholarship

(RST)

Shivayogi Hiremath  
Shilpa Krishnan

### Sean and Stephanie Shimada Student Award

(RST)

Jonathan Duvall  
Joshua Telson

### Freddie Fu Sports Medicine Graduate Research Award

(SMN)

Katelyn Allison  
Mallory Sell

### Freddie Fu Athletic Training Scholarship

(SMN)

Stephanie Anderson  
Arielle Berman  
Nicholas Davic  
Morgan Skidmore

### Tim Kerin Athletic Training Scholarship

(SMN)

Dierdre Chatlos



# Faculty News

## Communication Science and Disorders



**Dr. Connie Tompkins**, professor, was awarded the Honors of the Association by the American Speech-Language-Hearing Association. The Honors of the Association

recognize distinguished contribution to the field of speech, language, and hearing and is the highest honor the association bestows. Tompkins was recognized as a pre-eminent scholar in language and communication processing in individuals with brain injury, in particular right hemisphere injury. She also was recognized for her work in the establishment of formal mechanisms to train emerging scholars within speech-language pathology, and for her excellence in scholarly leadership and mentoring within the professions. Tompkins was formally recognized at the awards ceremony at the Annual Convention of the American Speech-Language-Hearing Association, Atlanta, Ga., on November 17, 2012.

**Dr. Elaine Mormer**, instructor, was appointed by the Board of Directors of the Council of Academic Programs in Communication Sciences and Disorders (CAPCSD) as the assistant chair for the 2014 CAPCSD annual conference. In 2015, she will serve as the conference chair and vice president of professional development.

**Dr. Cheryl Messick** and **Dr. Elaine Mormer** presented an invited full-day workshop at the University of Iowa on November 2, 2012. The workshop was titled "Applying the Evidence to Clinical Teaching," and was attended by clinical instructors and faculty from across the state of Iowa. The workshop was hosted by Dr. Ruth Bentler, chair, and Diane Niebuhr, audiology clinical coordinator in the University of Iowa Communication Sciences and Disorders Department (pictured above right, with Mormer and Messick).



**Dr. J. Scott Yaruss**, associate professor, completed a book titled *School-Age Stuttering Therapy: A Practical Guide*, published by Stuttering Therapy Resources, a specialty publisher co-founded by Yaruss.

**Yaruss** also received the Annie Glenn National Leadership Award from the Ohio School Speech Pathology Educational Audiology Coalition (OSSPEAC) "for excellence in leadership, specifically to those who are committed to innovative change through sustained clinical or research excellence in communication, language, and literacy."

## Health Information Management

**Dr. Mervat Abdelhak**, department chair and associate professor, has been named chair-elect, Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM).

**Abdelhak** presented the keynote address "Moving Forward as the Transformation Unfolds: A New Way of Learning and a New Way of Leading" at the Health Information Management Association of Australia, Gold Coast, Australia, in October 2012.

**Dr. Leming Zhou**, assistant professor, presented a poster, "Development of an Agent-Based Model Simulating the Effects of Angioplasty and Bare-Metal Stent Implantation in an Atherosclerotic Blood Vessel," at the Biomedical Engineering Society Annual Meeting in Atlanta, Ga., in October 2012.

**Zhou** has also served as an expert panelist to review NSF proposals.

**Drs. Valerie Watzlaf**, associate professor, and **Ellen Cohn**, associate dean for

Instructional Development, presented a poster titled "Telepractice and Informed Consent: Readability of VoIP Privacy Policies," which was selected as a Meritorious Poster at the 2012 American Speech-Language-Hearing Association Convention in Atlanta, Ga., in November 2012.

**Alaina Capanna** (HIM '06), along with **Dr. Valerie Watzlaf**, presented "How the EHR Promotes Patient-Centered Care in the Ambulatory Setting" at the American Health Information Management Association Annual Meeting in Chicago, Ill., on October 3, 2012.

## Occupational Therapy

**Dr. Elizabeth Skidmore**, associate professor, was awarded the School of Health and Rehabilitation Sciences Dean's Distinguished Teaching Award as an exemplary educator who masterfully integrates professional, interpersonal, and intrapersonal knowledge in her teaching.

**Skidmore** served as a member of the Developing Outpatient Therapy Payment Alternatives Technical Expert Panel, providing expertise on outcome measurement models to assess therapy outcomes for clients receiving Medicare Part B services. She also presented a paper at the American College of Rehabilitation Medicine 2012 annual meeting.

**Dr. Nancy Baker**, associate professor, presented papers at the Human Factors and Ergonomics Society 56th Annual Meeting and the American College of Rheumatology/Association of Rheumatology Health Professionals 2012 annual meeting.

**Drs. Denise Chisholm**, associate professor, **Joanne Baird** and **Mary Lou Leibold**, assistant professors, and **Alexandra Harper**, MOT student, presented papers at the 2012 Pennsylvania Occupational Therapy Association Conference.

**Dr. Joanne Baird**, assistant professor, presented a poster at the 13th



International Meeting on Simulation in Healthcare.

**Dr. Denise Chisholm**, associate professor, served on the 2012 People's Oakland Gala Benefit Planning Committee.

### Physical Therapy

**Dr. Michael Schneider**, assistant professor, received a Patient-Centered Outcomes Research Institute (PCORI) award for a project titled "A Comparison of Non-Surgical Treatment Methods for Patients with Lumbar Spinal Stenosis," which randomly assigns seniors who have pinched nerves in their lower backs to either usual medical care, such as oral or injected medications; individualized manual therapy, such as traction and exercise guided by physical therapists and chiropractors; or exercise in a group setting at two senior centers in Pittsburgh. Schneider's award was one of two received by Pitt and UPMC out of 25 new awards made by PCORI that foster comparative effectiveness research projects.

### Rehabilitation Science and Technology

**Dr. Rory Cooper**, distinguished professor and chair, was profiled in the lead article of the most recent issue of *Inventors Eye*, the United States Patent and Trademark Office's publication for the independent inventor community. "The Evolution of Adaptation" discusses Cooper's many patents in the field of assistive technology.

**Sara Peterson**, Prosthetics and Orthotics program instructor, was named among the 2013 Class of Fellows of the American Academy of Orthotists and Prosthetists at their annual meeting and scientific symposium in Orlando, Fla., in February. Also, for the second consecutive year, Peterson was named Educator of the Year in Orthotics and Prosthetics by the academy.

**Dr. Katherine Seelman**, associate dean of Disability Programs and professor, was re-appointed to the Area Agency on Aging Advisory Council on the recommendation of Allegheny County Executive Rich Fitzgerald.

**Seelman** served as a mentor for the NIH-supported Training in Grantsmanship for Rehabilitation Research workshop this past January at the University of North Carolina at Chapel Hill. She was also invited by the World Health Organization to serve as a consultant on hearing devices technology transfer in Low- and Middle-Income Countries (LMICs), in Geneva, Switzerland, in March 2013.

### Sports Medicine and Nutrition

**Dr. Kim (Crawford) Beals**, assistant professor, was awarded the Sir Henry Wellcome Medal and Prize in November 2012 for her publication "Less Body Fat Improves Physical and Physiological Performance in Army Soldiers" in the journal *Military Medicine*. The journal is the official monthly publication of the Association of Military Surgeons of the United States. Each year, an author of an article published in the journal or other peer-reviewed professional journal during the previous year is selected for the award. Beals was selected because of her outstanding scholarly contribution to current military medicine research through her published work.

## Alumni News

### Health Information Management

**Nancy Soso** (HIM '77, HIS '86) is serving as the 2013 president of the Western Pennsylvania Health Information Management Association.

**Cynthia Zak** (HIS '82) is currently serving on the board of directors of the American Health Information Management Association (AHIMA). Zak is corporate director of HIM at Yale New Haven Health in Woodbridge, Conn. She received the FORE CPR Breakthrough Triumph Award for implementing an award-winning electronic health record solution and spearheading the development of her organization's information security

standards. She has participated in numerous AHIMA committees and work groups, including the Council for Excellence in Education, and served on the Connecticut HIMA board, representing CTHIMA twice in the AHIMA House of Delegates.

**Wannetta Edwards** (HIM '82) is serving as the 2013 president of the Pennsylvania Health Information Management Association.

**Presley Kelleher** (HIS '06) recently accepted the position of product solutions manager with UPMC Technology Development Center. Kelleher is also an adjunct assistant professor for the Department of Health

Information Management, teaching in the graduate curriculum.

**Toni Wilbon Jackman** (HIM/HIS '99) is the assistant dean of Health Information Management & Clinical Data Coding at Northern Virginia Community College in Springfield, Va.

**Jennifer Abell** (HIM '07) relocated from Memphis, Tenn., to Atlanta, Ga., to serve as Grady Health System's compliance and privacy manager.

**Janyce House** (HRA '74) is currently the Health Information Technology program director for Ogeechee Technical College in Statesboro, Ga. She

(Cont.)



# Alumni News *(continued)*

has served in this position since 2011. Much of her professional career has involved teaching at some level.

**Dr. Xiaoming Zeng** (PhD '04) serves as the chairman of East Carolina University's Department of Health Services and Information Management. In September 2012, the department announced a new master's degree program in Health Informatics and Information Management that will start in the fall of 2013.

## Occupational Therapy

**Dr. Hazel Breland** (MS '03, PhD '06) is an assistant professor in the Division of Occupational Therapy, College of Health Professions (CHP) at the Medical University of South Carolina (MUSC). She recently accepted the role of interim academic fieldwork coordinator and is the 2012 recipient of the CHP's Excellence in Service/Clinical Service Award for her research mentorship of OT students and her extensive service to MUSC, the American College of Rheumatology/

Association of Rheumatology Health Professions, the American Occupational Therapy Association, and to her local community.

## Physical Therapy

**Jenifer (Burkey) Kiernan** (PT '96) was inducted into the 2012 University of Mount Union M Club Hall of Fame in recognition of her accomplishments in women's soccer at the university. She is the first female soccer student-athlete to be inducted.

**Zabrina Langer** (PT '10) was a presenter at the American Physical Therapy Association's Combined Sections Meeting in San Diego, Calif., in January. She is also studying for her Neurology Specialist Certification.

## Rehabilitation Science and Technology

**Dr. Gina Bertocci** (BS '83, PhD '97) has been selected to receive the 2013 BioE Distinguished Alumni Award. In addition to graduating from Pitt, Bertocci also served on the faculty in

Rehabilitation Science and Technology before being named the endowed chair of Biomechanics at the University of Louisville. She conducts research in the areas of child abuse injury versus stated cause and canine biomechanics as well as wheelchair transportation safety and crashworthy wheelchair design.

**Maggie Casteel** (RC '07) has joined the National Organization on Disability's Wounded Warrior Careers program as a career specialist. She focuses on helping veterans with serious disabilities achieve meaningful, rewarding, and sustainable careers in the civilian sector in the Pittsburgh area. Casteel was also recently highlighted in ACHIEVA's Goddess Project designed to help women and girls with disabilities advocate for themselves and to educate medical professionals and providers about the issues women with different disabilities face.

## Sports Medicine and Nutrition

**Larry Cooper** (BS '83), head athletic trainer of the Penn-Trafford School District in Harrison City, Pa., has

## 2012 Legacy Laureate Named

**Dr. Kevin M. Guskiewicz** (Educ. '92) was named a University of Pittsburgh 2012 Legacy Laureate this past October. A MacArthur Fellowship awardee, Guskiewicz is a researcher and athletic trainer who has made major advances in the diagnosis, treatment, and prevention of sports-related concussions. Through a combination of laboratory and on-the-field research, Guskiewicz has played an important role in raising awareness about the prevalence and dangers of sports-related brain injuries in both professional and youth athletics.

He was among the first to identify the long-term effects of multiple concussions, including cognitive impairment and depression in later life, through large-scale epidemiological studies of retired professional football players. His Balance Error Scoring System is now widely used by athletic trainers at colleges and secondary schools to diagnose and manage injury more accurately and rapidly. Guskiewicz contributes significantly to state and federal

policy discussions concerning development of more stringent return-to-play guidelines and headgear investigations that will improve the safety of athletes of all ages.

Guskiewicz currently serves as Kenan distinguished professor and chair of the Department of Exercise and Sport Science at the University of North Carolina at Chapel Hill. He is the founding director of the Matthew Gfeller Sport-Related Traumatic Brain Injury Research Center, research director for the Center for the Study of Retired Athletes, and professor in the School of Medicine's Department of Orthopaedic Surgery, all at UNC-Chapel Hill.

He was awarded the MacArthur Fellowship in 2011 in recognition of his research advancing the diagnosis, treatment, and prevention of sports-related brain injuries to improve the safety of athletes of all ages. Guskiewicz also has received 22 funded research grants from the NIH, CDC, DOD, and national foundations. He has authored more than 135 manuscripts and journal publications and 10 textbook chapters,

and presented more than 200 national and international lectures on sports-related concussion since 1996. He has received numerous awards and honors and is active in professional associations related to athletic training, sports medicine, and kinesiology and physical education.

A native of Latrobe, Pa., Guskiewicz and his wife, Amy, reside in Chapel Hill with their children, Jacob, Nathan, Adam, and Tessa.

The Legacy Laureate program was launched in 2000 to honor University of Pittsburgh alumni for their outstanding personal and professional accomplishments, and Guskiewicz was among 14 distinguished alumni recognized in the Class of 2012.

*Photo right (top): Dean Alan Lesgold, School of Education; Dean Clifford Brubaker, SHRS; Dr. Arthur Levine, senior vice-chancellor for Health Sciences and dean, School of Medicine; Provost Patricia Beeson; Dr. Kevin Guskiewicz, legacy laureate; and Chancellor Mark Nordenberg. Photo right (bottom): Chancellor Mark Nordenberg; Dr. Kevin Guskiewicz, legacy laureate; Dean Clifford Brubaker, SHRS; and Dean Alan Lesgold, School of Education*



# Department News

been appointed chair of the National Athletic Trainers' Association Secondary School Athletic Trainers' Committee (NATA SSATC). He previously served as District 2 representative for the committee for three years, chair of the Pennsylvania Athletic Trainers' Society (PATS) Secondary School Committee for 11 years, and on the PATS board of directors for seven years. Cooper has presented numerous programs, primarily on concussion, for varied audiences including family physicians and physician assistants, expanding their knowledge of the important role of licensed athletic trainers.

**Cooper** also served as an expert on the NATA Inter-Association Task Force: Preventing Sudden Death in the Secondary School Setting, in Washington, D.C., this past February.

**Jennifer Galando-Smith**, (MS '08), athletic trainer for the Penn-Trafford School District, also presented with Cooper at the Pennsylvania Academy of Family Physicians workshop on concussion rehabilitation.

## Communication Science and Disorders

The 2012 Matthews-Rubin Lecture in the Department of Communication Science and Disorders was held on October 18, 2012. Emily Tobey, PhD, associate provost and Nelle C. Johnston endowed chair in Communication Disorders, Callier Center for Communication Disorders, University of Texas at Dallas, presented on the longitudinal effects of cochlear implantation on children. Pictured below is Dr. Malcolm McNeil, CSD department chair, Tobey, and Dr. Herbert Rubin, professor emeritus.



The next Teach the Teachers conference will be held at SHRS from June 13–15, 2013. Chaired by Catherine Palmer, associate professor, the conference's focus is "The Art and Science of Clinical Teaching: Classroom to Clinic." The moderator is Dean Celia Hooper, School of Health and Human Sciences, University of North Carolina Greensboro. Dr. Ian Windmill, University of Mississippi Medical Center, will serve as keynote speaker. Conference faculty include Stella Ng, University of Western Ontario; Joanne Schupbach, Rush University, Chicago, Ill.; and Mary Barnum and Susan Guyer, Springfield College, Springfield, Mass. SHRS faculty speakers include **Elaine Mormer**, **Dr. Cheryl Messick**, and **Amy Aggelou**. The conference would be of interest to audiologists, speech language pathologists, occupational therapists, physical therapists, and athletic trainers.

## Rehabilitation Science and Technology

The department's Rehabilitation Engineering Research Center on Telerehabilitation State of the Science Conference is slated for June 13–14, 2013. The virtual conference allows rehab professionals, industry partners, government agencies, and consumers from around the globe to participate from their home or office. Conference co-directors are Dr. David Brienza, professor, and Dr. Michael McCue, associate professor, and CEUs will be offered. For more information, please contact Cheryl Rohall at 412-624-6256, or [crohall@pitt.edu](mailto:crohall@pitt.edu). Or check out [www.rerctr.pitt.edu/sos](http://www.rerctr.pitt.edu/sos) for information and registration.

The 2013 Matthews-Rubin Lecture will be presented by Dr. Robert Burkard, professor and chair, Department of Rehabilitation Science, University of Buffalo, the State University of New York, on Thursday, October 3, in Forbes Tower. Burkard will present his current research on auditory evoked potentials. A reception at 4 p.m. will precede the 5 p.m. lecture. For more information, contact Pamela Morocco at 412-383-6540 or [pjm79@pitt.edu](mailto:pjm79@pitt.edu).

The Department of Communication Science and Disorders welcomes its newest members, Department Administrator **Jacquelyn Harden** and Administrator **Pamela Morocco**. We are happy to have you with us!





# *What's a nice dietitian like you doing in an Agriculture Library?*

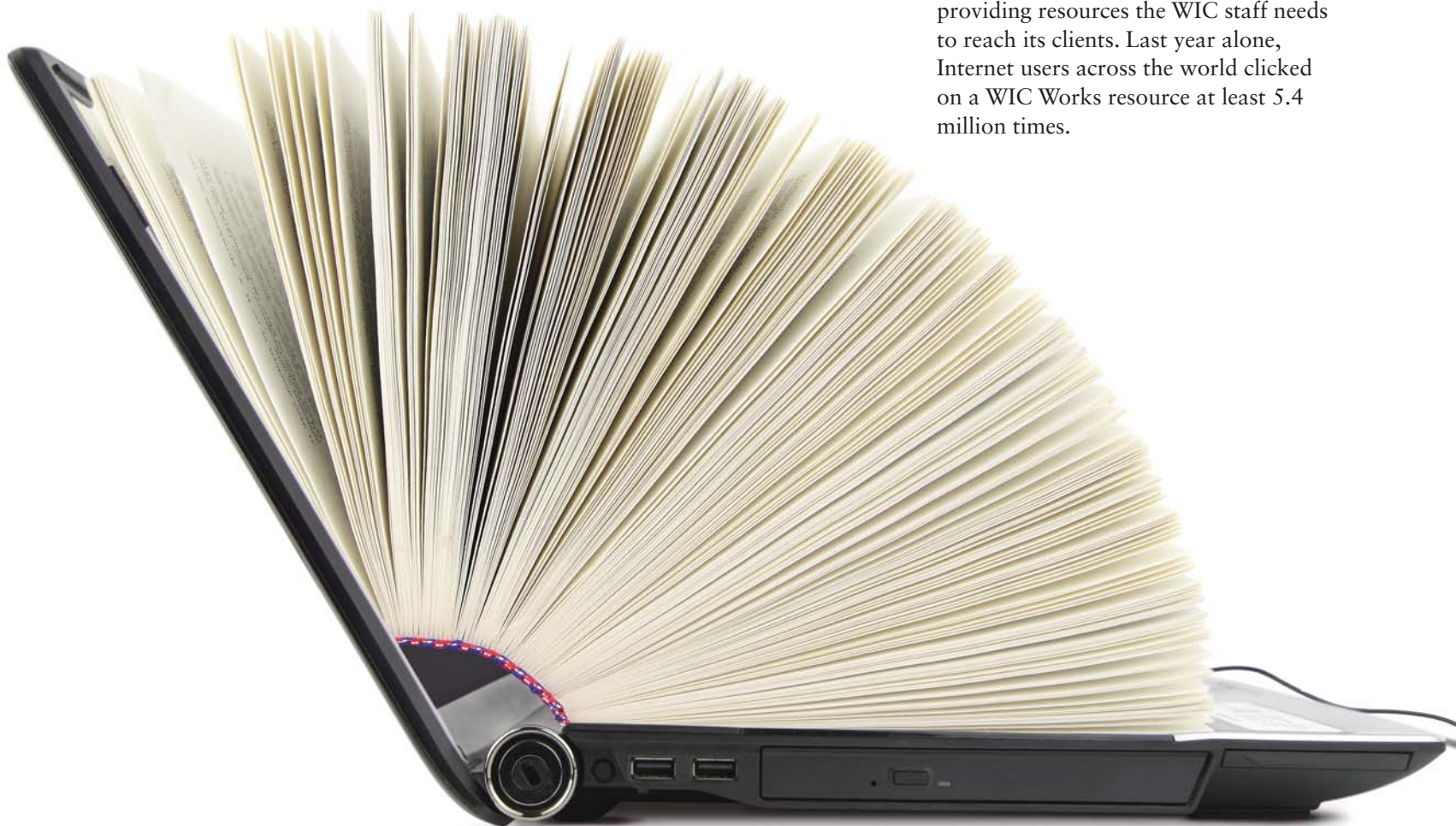
*"Putting people in touch with information, of course," exclaims Janice (King) Schneider, MS, RD ('91).*

**B**ut Schneider doesn't work in just any library. As the coordinator of the WIC Works Resource System (WWRS) at the USDA's Food and Nutrition Information Center, Schneider calls the National Agricultural Library (NAL) home. It's a busy—and not always quiet—place.

The NAL, located in Beltsville, Md., is considered one of the world's largest repositories of information relating to every aspect of the agricultural industry, including animals and livestock, soil management and sustainable farming, rural and community development, and of course, food and nutrition.

"I consider my job to be non-traditional," admits Schneider. "Every day, I'm able to combine my knowledge of nutrition, which I love, with technology, which is so vital to the way we live today."

Schneider's team provides resources to WIC staff via WWRS. According to Schneider, technology is key for providing resources the WIC staff needs to reach its clients. Last year alone, Internet users across the world clicked on a WIC Works resource at least 5.4 million times.







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*“We’re combining nutrition education and digital technology, and helping students embrace this ever-evolving world!”*

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The Special Supplemental Nutrition Program for Women, Infants, and Children, better known as WIC, is designed to help children up to the age of five and low-income pregnant women. In addition to providing healthy food and health care referrals, the WIC program delivers breastfeeding support and critical nutrition education.

Schneider says participants can go to a kiosk in a WIC clinic or go online to complete their nutrition education requirements. They might also enroll in a traditional class. In special circumstances, WIC staff members provide one-on-one counseling.

Schneider spent several years working with high-risk WIC participants. She saw firsthand staff and client needs, and realized that modern technology can make everyone’s job easier. “We do our best to provide tools to help WIC staff keep participants engaged so when they leave WIC, they will understand the importance of good health and nutrition.”

One tool that WWRS provides is online learning. “We started WIC Learning Online more than 10 years ago with a series of 12 different courses that were available to WIC staff via our Web site,” explains Schneider. “At the time, this was truly innovative because online learning was not part of our culture.”

Today, Schneider and her team are still developing pertinent online courses. But now they are also striving to make their courses adaptable for use on tablets and other mobile devices.

“Our staff goes where the people go,” notes Schneider. “WIC staffers work in church basements, community centers, and mobile vans. They’re on Native American reservations and overseas with our servicemen and women.

“Dietitians and other WIC staff need downloadable resources to help their participants, often on the fly. We give them the tools they need to inform and help others.”

Schneider is also responsible for keeping the WIC Works Web site up to date. Then there are the e-mail lists that are used for outreach. And the social media that presents the face of the USDA to the world.

But in spite of her demanding schedule, Schneider takes time to serve as a preceptor to both graduate and undergraduate interns from the Department of Nutrition and Food Services at the University of Maryland in College Park (UMCP).

Approximately 100 future dietitians have rotated through Schneider’s office during the past 12 years. Under her guidance, they’ve gained exposure to new technologies, new applications, and social media tools that facilitate modern communication. She’s proud of the fact that UMCP is the only dietetic

internship in the U.S. that focuses on information management and communication.

“We’re combining nutrition education and digital technology, and helping students embrace this ever-evolving world! I always tell them not to be afraid. Make yourself a blog. Put yourself out there on Twitter and see what happens. It’s been terrific!”

Schneider stresses the importance of networking to the students. “I came to Washington, D.C., during my graduate studies and met someone from the Food and Nutrition Information Center. Although I didn’t get a job there right away, I stayed in touch, and look where I am now. Networking is a powerful thing.”

She also stays in contact with professors like Judy Dodd, assistant professor, Clinical Dietetics and Nutrition. “Janice was one of my joys,” remarks Dodd. “I have always taught community-based nutrition. It’s wonderful to see that Janice has expanded on this message of community service and has taken it to another level.”





# TRANSFORMING NERVOUS STUDENTS INTO CONFIDENT PROFESSIONALS

*As a certified physician assistant, Rosa Fannie, MPA-C, has a vast array of responsibilities that more than fill her days at Magee Womancare Associates. Although she thrives on examining patients, diagnosing illnesses, ordering tests, and conferring with her team of doctors, Rosa is equally enthusiastic about training the next generation of physician assistants.*



In her role as a preceptor for second-year students in the Physician Assistant (PA) Studies program at SHRS, Rosa works with a different student every five weeks. Under her guidance, they gain exposure to a wide spectrum of women's health issues.

"A student will spend 25 hours a week with me, working in an outpatient OB-GYN environment," explains Rosa. "They spend the rest of the week with other PAs at Magee Womens Hospital, where they get experience in urogynecology, labor and delivery, gynecologic oncology, and maternal fetal medicine."

"The combination offers them a true picture of the breadth of women's health care."

Rosa has been acting as a preceptor since The University of Pittsburgh's PA program began in 2010. Her goal is not only to prepare students to pass their certification exams, but to get a good sense of how to treat the patient as a whole—mind and body.

"Bedside manners are huge!" she exclaims. During her first week with students, Rosa urges them to observe how she interacts with patients.

"I want them to see how I conduct an exam. But more importantly, I want them to learn to listen to patients. What are they telling you? Oftentimes, students are so focused on coming up with a diagnosis, they might miss something else that's going on. Perhaps there is a suggestion of problems in a relationship, or abuse, that is causing a physical or psychological problem. You really have to read between the lines."

Carrie Weaver (MS PA Studies '12), credits Rosa for putting her at ease during her first clinical rotation. "I was a nervous student with little clinical experience. Rosa helped me to appreciate the sensitivity and empathy providers need while working in women's health."

Rosa notes that these types of skills cannot be taught in the classroom. However, she points out that most students are quick to pick up on the nuances that will help them become better health care professionals.

According to Rosa, "Students always have good questions. They come to me and ask 'How do you handle that?' or 'What would you have done in that situation?'" Certain situations often surprise students, and Rosa says these are wonderful teachable moments.

"Students aren't always prepared for the emotions that come along with discovering a patient's miscarriage or infertility, for example. Drug abuse is also difficult for students to understand. I tell them it's important for them not to stereotype patients. They need to be non-judgmental and professional at all times."

"Rosa provided a unique experience that allowed me to think individually, while learning from her example, answering any and all questions, and demonstrating appropriate technique," Weaver claims. "One of her many strengths is her ability to provide encouragement to her students."

Emily Murphy, assistant professor and clinical coordinator for the PA Studies program, communicates regularly with Rosa. She seeks out feedback about the students' clinical performance to ensure they are improving their overall knowledge base during the rotation. She also evaluates her and other preceptors during routine site visits.

"Quality preceptors are extremely difficult to find in PA education, and as the number of programs and students increases, the preceptor shortage will intensify," explains Murphy.

In addition to her duties as a physician assistant and preceptor, Rosa is active in the UPMC Office of Advanced Practice Providers. She serves on several committees that build leadership opportunities for other PAs and certified registered nurse practitioners (CRNPs). "I'm always encouraging other highly motivated PAs and CRNPs to become preceptors so students are exposed to the best in the area," says Rosa.

According to Murphy, "The SHRS Physician Assistant Studies program is extremely fortunate to have found valuable preceptors like Rosa Fannie who are willing to volunteer their time, knowledge, and expertise to our students. She is more than just a clinical educator. She is a wonderful role model for our students."





# *Special Olympics 2013: In search of more than gold*

From January 29 to February 5, Assistant Professor Kevin Conley, director of the Athletic Training program in the Department of Sports Medicine and Nutrition, had the distinct honor of serving as medical director for Team USA at the Special Olympics World Winter Games in PyeongChang, Republic of Korea.

He came home with high spirits, renewed energy, and a greater realization of the need for better health care for people with disabilities.

“The athletes were just amazing,” affirms Conley. “They played their hearts out. Sometimes in spite of medical conditions that could have—and should have—been treated before they ever arrived in Korea.”

Conley says he spent a great deal of time with the U.S. floor hockey team and noticed that several of the players appeared to be in pain. He quickly learned that one young man was told he had broken his foot prior to the trip, but did not receive any type of medical treatment for it.

After a quick examination, Conley knew that the athlete did not have a broken foot, but a torn plantar fascia, which resulted in a large, painful lump on the bottom of his foot. Some taping and arch support enabled the athlete to continue competing, but he was advised to seek additional treatment when he returned home to the U.S.

“I found it somewhat alarming that there still exists a wide gap between the medical treatment that people with disabilities need and what they actually receive.”

Although the athletes must get medical clearance to participate in Special Olympics, Conley believes that some primary care providers do not have a broad enough knowledge of sports medicine to provide the appropriate medical clearances. But something else troubled him as well.

“Unfortunately, some health care providers are under the impression that because these athletes have intellectual disabilities, they do not compete at very high levels. This simply is not true,” affirms Conley.

Although the Special Olympics offers free health screening clinics as part of their Healthy Athletes program, they don’t always have a strong local presence, and athletes don’t always take advantage of the opportunity.

“In the past, audiologists from our Department of Communication Science and Disorders have provided hearing exams for Special Olympics athletes in Allegheny County and around the state,” says Conley. “And we have offered ‘Special Smiles’ in conjunction with the University of Pittsburgh School of Dental Medicine, with Pitt dental students coming in for a day to provide screening and education.”

However, Conley wishes there was more involvement from other local health care providers.

“Special Olympics offers so much to the participants and their families. The games are not so much about winning or losing. It’s the camaraderie, the empowerment, the opportunity to travel and share their experiences with others. We as a community really have a responsibility to support these young men and women however we can.”





# Serving up Nutrition Information in the community

There's a lot of talk about obesity in America. According to the Centers for Disease Control and Prevention, more than one-third of U.S. adults are obese, and so are approximately 17 percent of children and adolescents ages 2 to 19.

That's why Judy Dodd, assistant professor, Department of Sports Medicine and Nutrition, wants there to be more talk about healthy foods and good nutrition.

Every semester, Dodd challenges undergraduates in the Clinical Dietetics and Nutrition program and graduate students in the Coordinated Masters in Dietetics (CMD) program to get out in the community and "take it to the next level."

Right now, Dodd's students are playing an active role in more than 20 community organizations and schools. Under the supervision of a registered dietitian, they bring nutrition information to the young and the elderly, people with disabilities and chronic medical conditions, the underserved members of society, and the general public.

"Students absolutely should be involved in the community," proposes Dodd. "They need to be engaged with different

populations, to see how they react to information about food, and most importantly, to listen to what they need."

Gretchen Zehner, a first-year CMD student, agrees. "Working in the community means being on the front lines of many public health and nutrition issues. You are confronted with the reality that nutrition and dietetics are not just sciences you learn in a classroom."

At the Prospect Park Family Center, an outreach of South Hills Interfaith Ministries, Zehner works with many immigrant families from Southeast Asia. She has organized nutrition education lessons that focus on chronic disease prevention while maintaining cultural integrity.

"It's been an exciting opportunity for me to pursue my passion for community nutrition, but also to be submerged into many cultures and foods in ways that I have never experienced," she explains.

Fellow CMD student Erin Long says her experience teaching healthy cooking classes to residents with developmental disabilities at Mainstay Life Services opened her eyes. "I learned quickly how to adjust my teaching strategies to meet their needs. It was a great feeling to know I had made





an impact on their lives by introducing simple and healthy recipes that they could make on their own.”

According to Dodd, working in the community forces students to step out of their comfort zone.

CMD student Carly Pelchen worked with pre-kindergarten children through the Children’s Museum of Pittsburgh. “I never would have chosen to work with small children before. But I learned that I get very energetic and excited when I educate people about nutrition and healthy eating, which was perfect for this group!”

Haley Schmidt, an undergraduate clinical dietetics and nutrition major, was also a little hesitant to talk with underserved teen girls about nutrition. But through The First Tee of Pittsburgh, a character-building and mentoring program that uses golf as a platform, she learned how to relate to the teens in order to gain their trust. “What I have really gained is patience and a sense of accomplishment.”

Dodd believes all of the students achieve a great sense of satisfaction, which she hopes will translate into a lifelong commitment to community service.

“I started working with the Pittsburgh Marathon’s Kids of STEEL that promotes healthy eating and physical activity in elementary school children around the Pittsburgh area,” says undergraduate student Laura Maydak. The program, sponsored by Dick’s Sporting Goods and Giant Eagle, combined her two passions—physical activity and healthy eating. “It was a great opportunity to take what I learned and make a difference in the community.”

Undergraduate students earn credit for independent study projects that are community-based, while students in the graduate program fulfill requirements for their national certification as registered dietitians.

“It’s fascinating to watch them all grow in a supervised and controlled educational environment,” observes Dodd.

She points out that community involvement provides another very important advantage. “Many students from other programs graduate without ever having hands-on experience in the community. We think this kind of exposure gives our students a real leg up in the job market, and have seen job opportunities emerge as a result of it.”



From the left: Laurie Parker; Donnie Baxter, Kids of STEEL Essay Contest winner; dietetic students from the University of Pittsburgh; Michele Nichols, Kids of STEEL program coordinator; Judy Dodd, registered dietitian, Giant Eagle, and assistant professor, SHRS Clinical Dietetics and Nutrition program

Undergraduate student Kalli Lodovico, for example, is involved with the 10,000 Tables Event, which encourages families to eat home-cooked meals and spend time together. “The program sponsors—Giant Eagle and Let’s Move Pittsburgh—opened up many networking opportunities for me,” explains Lodovico. “Dietetic internships and master’s programs can be very difficult to get into. Having community involvement can be a great way to gain that competitive edge.”

Dodd also reports that the number of community organizations that work with students grows every year. “We’re all about healthy eating and making it easier for people. I think our community partners see the value in that.”





At the University of Pittsburgh Honors Convocation on February 22, 2013, Chancellor Mark Nordenberg presented Carnegie Mellon University President Jared L. Cohon with an Honorary Doctor of Public Service degree. It was a fitting tribute to a man who has been a longtime friend and partner of our University, as well as a champion of innovation and technology.

In his address to the convocation, Cohon praised Pitt for its visionary approach, but warned that we may be entering a period “when universities will change fundamentally in the way we deliver education.” He cited technology as the force that will transform residential universities as we know them.

FACETS magazine joined Dean Clifford E. Brubaker and eight department chairs and program directors as they discussed technology and how they are using it to enhance teaching and learning at SHRS.

Present at the round table discussion were SHRS Dean Brubaker; Mervat Abdelhak, chair, Health Information Management; Ellen Cohn, associate dean for Instructional Development and associate professor, Communication Science and Disorders; Kevin Conley, assistant dean, Undergraduate Studies and director, Athletic Training program; Rory Cooper, distinguished professor and FISA-

Paralyzed Veterans of America chair, Rehabilitation Science and Technology; Malcolm McNeil, chair, Communication Science and Disorders; Deborah Opacic, director, Physician Assistant Studies; Joan Rogers, chair, Occupational Therapy; and Walt Stoy, director, Emergency Medicine program.

*It's been nearly 20 years since the Internet forever changed our lives. How has technology impacted you and your interactions with students?*

STOY: First of all, we're far more accessible. The Internet puts greater expectations on us—and on everyone—to respond quickly to every e-mail and every question.

COOPER: Twenty years ago, there was something called “office hours.” Now, office hours are basically 24 hours a day. And with technologies like Skype, students can come to class when they're not even in the United States.

BRUBAKER: The way students now gather information is far different than it used to be. Technology now gives students unlimited access to information, which is interesting, but we need to moderate how this could lead to plagiarism.

McNEIL: We run everything through online plagiarism software called Turnitin. It's just part of our routine. It not only identifies plagiarism, but compares the document that the



# Digital.

## The new normal.



student turns in with other documents anywhere in the world. It's a way to teach students what plagiarism is.

COHN: I find that much of student plagiarism is unintentional; academic integrity is the norm for SHRS students. As a preventive measure, many faculty talk with students about what constitutes plagiarism and how it can be avoided. When faculty construct assignments that are current and unique to each class, there is less likelihood of plagiarism. That's good teaching anyway to use authentic, case-based material. And we also sometimes allow students to use the plagiarism software so they can get a sense of what they might have violated.

COOPER: We use a lot of computer-aided design in our department, and that was very hard to check 10 years ago. Then we got a rapid prototype machine that looks at drawings and can

tell if every joint is connected correctly or not. It's one form of technology checking another. Now the threat that I'm going to run their work through the machine is enough to get students to take a second look at their project! That said, I want to stress that our programs are very competitive, so we're not looking at students who want to cut corners. They're here to learn as much as they can and they are preparing to be leaders in their fields when they graduate!

*What recent technology has brought about the biggest change in your classrooms?*

ABDELHAK: We have a virtual lab, which allows students to have a simulated practice experience before they ever move into the workplace. They are exposed to systems and software that the vendors and other firms are providing gratis for teaching.

It's developed and maintained by our professional association, and we use it early on in our program to introduce students to real-world technology.

ROGERS: We use TurningPoint "clickers" in the classroom. It's interactive software that allows students to react to questions on a PowerPoint presentation, for example. It helps us to immediately see where the students fall—do they understand this concept, do they have the right or wrong answer. It facilitates discussion on a variety of topics.

COHN: Technology frees us up to have more interaction in class. When students have access to a PowerPoint presentation ahead of time, they can arrive at class better prepared to engage in higher-level critical thinking and problem-solving.

STOY: We use more simulation technology than most. There are



very high-end, high-fidelity, robust systems that we're able to utilize in the classroom, but at times we still use traditional "patients"—i.e., other students—to practice skills.

COOPER: Sometimes professors allow students to use their smartphones to text their instructors questions, so you don't have to raise your hand anymore. Electronic devices are also the accommodations for students with disabilities, so this helps them tremendously.

COHN: Some faculty might object to students having their laptops open or using Web-based features on their smartphones during class, but I see many instructional benefits.

STOY: There will be the occasional student who might be playing Solitaire on their laptop, but most have learned that if they have their computer open in my class, then they're going to use it to work—to look up references or to collect data!

McNEIL: Technology has also changed the way we monitor clinical training! There is terrific software that can be used by students, preceptors, and instructors. What used to take months is now accomplished instantaneously and with greater accuracy.

OPACIC: Yes! It helps for credentialing as well. For example, during the clinical year, our students who are on rotation are required to update their daily logs detailing what they have seen and done. In this way, there is specific and quantifiable evidence of a student's evaluation, management, and performance of certain procedures and clinical conditions along with how and how often. When the preceptor and clinical instructor sign off, this evidence becomes part of the student's record.

CONLEY: We also use an online student portfolio program that enables us to track students' clinical hours, preceptor evaluations, and clinical

proficiency assessment over the course of their tenure in the Athletic Training program.

COOPER: Technology has allowed students to become more responsible for their learning. They don't just depend on us doing the "chalk and talk." They go to the virtual library on their own, and they are learning to be lifelong learners.

### *How has technology affected research?*

COOPER: It would be impossible to do research without technology. All your data collection and analysis are done electronically. Archiving, publishing, all of that depends on technology. You can't even submit a journal article without technology. Grants are written electronically, and you can track your reports online. That puts more pressure on faculty members to publish much faster because the turnaround time on everything is much quicker.

ABDELHAK: The Health Information Management department is often the one creating new technology that others want or need. We are considered a leader in mobile health technology, for example. Researchers from various other departments and schools at Pitt come to us when they want to develop their own mHealth—mobile health—technologies. We've assisted a few divisions in psychiatry, physical medicine and rehabilitation, emergency medicine, and social work in their efforts to create applications that will lead to better outcomes for patients. So, in essence, our research and the development of new technology evolve into new research for others.

COHN: We should mention the University's wonderful library system. The Digital Research Library provides Pitt faculty with the infrastructure to create scholarly archives and host electronic journals, and the Health Sciences Library System partners with our school in training students how to conduct advanced literature searches.

CONLEY: There has been an incredible expansion of information available as the result of the evolution of digital technology in the form of library resources. Like most health-related professions, our curriculum relies on evidence-based practice, and the growth of research in sports medicine has been made that much more accessible as a result of this technology.

COOPER: Technology also allows us to see how our research is being received globally—how many hits an article gets, how many times it's been downloaded and referenced.

### *How does technology help you outside of the classroom?*

OPACIC: We have all of our applicant information in a central repository. We can download, analyze, and extract the information we need about prospective students. It really gives us a good structure and a way to develop a competitive ranking system to fill spots in the Physician Assistant Studies program.

COOPER: We look at the number of applicants in our program compared to other programs. For instance, we can see how many students applied to all Prosthetics & Orthotics programs, and then how many applied to Pittsburgh. That allows us to make certain assumptions, like our program is better because we had more applicants.

STOY: We use data to compare our students to others in the nation. We can track how many IVs or how many intubations our students have completed. We know what the national average is, so we can compare our students to that.

### *Are there any downsides to technology in education?*

ABDELHAK: Students now might have access to your lecture notes and PowerPoint presentations prior to class. Some ask you to record your sessions. The bottom line is, you might wonder if



some students are asking if they really have to attend class.

COOPER: I think they honestly want to look at your lecture again. But that brings up the issue that not all classes are appropriate to record. For instance, patient care or client care classes are not suitable for recording.

COHN: There are other privacy concerns, too. If corporations are being hacked, there is a possibility that our work—whether it's grant proposals or online curricular content—could be hacked as well. And there are also privacy issues for students. I don't see evidence of anything like that happening here, but it could be a problem.

COOPER: I've had instances of people at conferences pulling out their smartphones and recording my lectures, then posting them online! I believe that students have a completely different concept of privacy than we do, and 10 years from now, people will have an even different concept of it.

COHN: It really is our responsibility to model good behavior for students in regard to every aspect of technology use.

### *What is the role of social media in education?*

COOPER: Social media plays a key role in recruitment. Students expect to see virtual lab tours and virtual classrooms. That's the way they find out who's doing what in the programs they're interested in. We also use Twitter to communicate with REU (Research Experience for Undergraduates) applicants. We send out reminders of due dates and deadlines because in today's world, they expect to be informed.

COHN: I maintain certain boundaries. I don't look at my students' Facebook pages, but I am a recent convert to LinkedIn. I think it's a lifelong, mature

and responsible way for us to keep in touch with students for years to come.

### *What is your vision regarding the use of technology in the future?*

McNEIL: Technology has improved our research and clinical practice. The day has arrived when we are able to measure movements and structures that are inside the body, such as the tongue and other oral structures, which serve as differential diagnostic information and can then be used as biofeedback for treatment purposes. We are able to research things we've never been able to look at before—such as what the brain is doing while we're formulating a word, talking, and listening to a sentence, and what goes wrong when these processes are impaired. We can program hearing aids and make adjustments to cochlear implants with remote technologies—all clinical services that change people's lives.

BRUBAKER: Everyone is familiar with online learning. Right now, we're in the developmental stage of looking at the possibility of creating online programs that are clinically intensive, which has not been done successfully to date. Within our school, there has been the development of a technology—a

telerehabilitation type of technology—that allows us some options. We haven't explored this fully, but it is in our plan to do so.

COHN: We're very excited here about the idea of moving forward with interpersonal and inter-professional education and practice. Telerehabilitation technology could support some of that by enabling virtual connections between experts who work in different physical locations.

COOPER: It's easy to get sucked in by technology. You have your e-mail and your online resources, but it's important to remember that you've also got your students and your colleagues and research participants and patients.

STOY: I think we have the right idea about what we expect to do with technology. We need to create complementary relationships between devices that are more than simple machines and less than humans. I think that's where we are right now. We have hardware, we have software, and we have “warm ware”—people—that can be integrated in such a way that it works for the good of all of us!





The young woman on screen looks much like any other. She's wearing a tank top and a choker necklace. But it's not her look that will strike you. As she leans toward the camera to admit this is her first YouTube video, her eyes are wide and her face is animated. You must pay close attention to understand her raspy whisper.

*"I was looking on YouTube for RRP—Recurrent Respiratory Papillomatosis—and all I saw were doctors' notes and doctors talking about it. I didn't see anything with people—actual people—having it. Well, guess what? I have it. ... RRP is pretty much, in people terms, it's warts growing on your vocal chords or in your throat, which block off your airways. ... So I whisper, and the only time I have a voice is pretty much after surgery. ..."*

Students in Professor Katherine Verdolini Abbott's master's level Voice Disorders class immediately start asking questions. They're not phased by the fact that they are learning through YouTube, a technology that didn't even exist 10 years ago.

YouTube has transformed communication ever since "Me at the Zoo" was uploaded by one of its founders in 2005. While millions of viewers still go to the site every day in search of cute animal videos, extreme sports clips, and how-to instructions, Verdolini Abbott says its educational value has gone viral.

"YouTube allows me to present my students a wide range of pathologies affecting voice in a very realistic manner," claims Verdolini Abbott. "They can see and hear what the patients are going through and get a better understanding of what they'll be faced with in different clinical situations."

Cheryl Messick, associate professor in the Department of Communication Science and Disorders (CSD), teaches an undergraduate course in Language Development and a graduate-level course in Articulation



and Phonological Disorders, and also incorporates YouTube into her classroom presentations. She agrees it provides “a treasure trove” of educational material.

“Prior to YouTube, I created a series of videotapes using my own children and my nieces and nephews to provide examples of language development in children at different ages. These were my resources,” says Messick, with a laugh. “Now I can pull up any number of YouTube videos and say, ‘Look at this. Which behaviors that were just described do you see?’ And we can have a good discussion in the classroom.”

Verdolini Abbott also used treatment videotapes in the past and recruited patients to come into her classroom. “YouTube is so much more convenient,” she observes. “Plus, we don’t have to worry about patient confidentiality.”

According to the U.S. Department of Health and Human Services, the HIPAA Privacy Rule requires that “covered entities” such as health care plans, health care clearing houses, and health care providers must safeguard the privacy of patient information. But because individuals post their own videos to YouTube, there is no risk of violating the rule.

Verdolini Abbott says this makes YouTube far more convenient for all parties involved.

Taylor Baker Rogan, a CSD student in the Master of Arts program, hopes to become a speech language pathologist. She likes the idea of being able to access YouTube videos on any computer or smartphone. “We used YouTube in Dr. Messick’s Articulation and Phonological Disorders course. It was very helpful to see a child in his natural environment when we were analyzing his speech sample.”

Hannah Feroce, who will receive her undergraduate degree in Communication Science and Disorders in December 2013, agrees that YouTube videos work well to supplement class discussions and further the students’ understanding of different topics.

“The videos that Dr. Messick showed us were engaging and highly relevant,” says Feroce. “They provided us with an opportunity to apply some of the clinical observation skills that we were learning. Furthermore, YouTube is an excellent study tool. It was easy to reference the videos when I was studying for exams.”

Messick claims one of the biggest advantages of using YouTube is that students get accustomed to listening and

learning to observe communication behaviors.

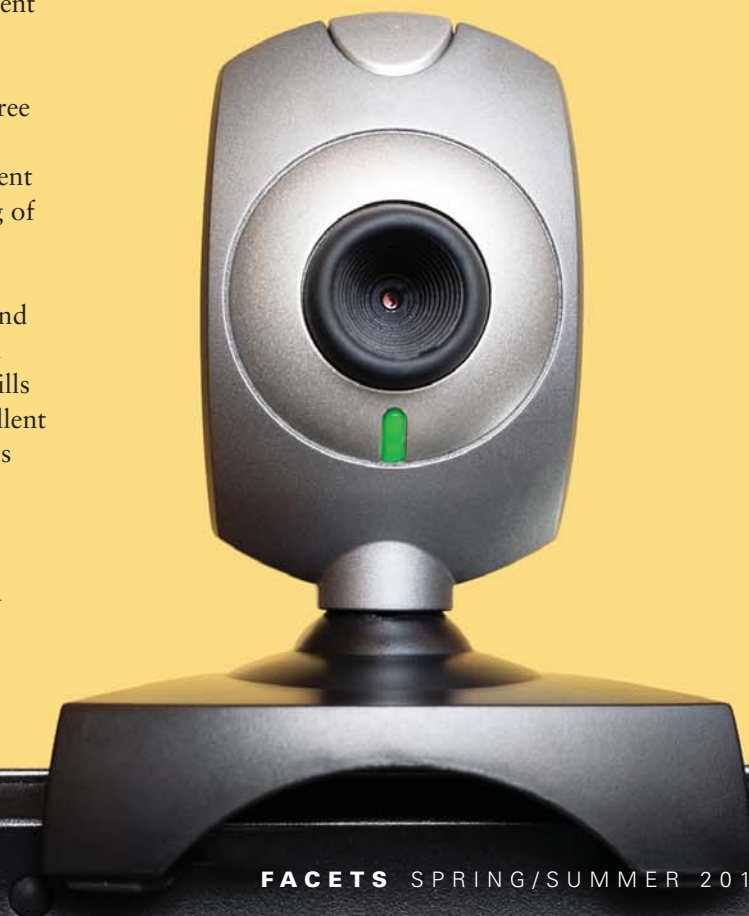
“Students can go back to the videos again and again,” Messick says. “The more they watch and listen, the more they understand. They can also look at multiple videos on the same topic and start to get a sense of what is ‘average’ speech development or what is ‘typical’ for a particular speech disorder.”

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*“YouTube allows me to present my students a wide range of pathologies affecting voice in a very realistic manner,” claims Verdolini Abbott. “They can see and hear what the patients are going through and get a better understanding of what they’ll be faced with in different clinical situations.”*

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Rogan adds, “The amount of material on YouTube is unmatched. As a future speech and language clinician, I will not only have access to published texts, articles, and other educational materials, but emerging technologies such as YouTube will give me access to speech samples from all over the world.”





# Putting Better Health *in the* Hands of Patients

“People with disabilities and chronic illnesses face numerous challenges. But getting to the doctor’s office every time they have an issue shouldn’t be one of them,” observes Daihua Xie Yu, doctoral student in the Department of Health Information Management (HIM).

That is why Yu has spent the past several years researching ways to make health care more accessible.

In 2009, Yu began collaborating with HIM Professor Bambang Parmanto and fellow doctoral student Gede Pramana to design and develop a mobile health (mHealth) platform for patients with chronic disease. The platform, called iMHere (Internet-based Mobile Health and Rehabilitation), is composed of a Web-based clinician portal and a smartphone application that’s easy for patients to use.

In 2011, the team collaborated with Andrea Fairman, a doctoral candidate in the Department of Rehabilitation Science and Technology (RST), to launch a clinical trial of iMHere.

The smartphone app gathers patient data and can be programmed with reminders, such as when to take a particular medication. It also connects to a secure clinical portal that operates in real time. Working as the wellness coordinator, Fairman remotely reviews the patients’ data and interacts with them on a more regular basis.

“iMHere really is a novel technology,” says Parmanto. “It provides two-way communications between clinicians and patients, and that results in faster, more efficient patient care.”

According to Parmanto, their technology and platform can be used for various types of patients and medical conditions. “We receive many requests from researchers in other disciplines. They’ve heard about our capabilities and are interested in developing apps that are specific to their patient population.”

Working in conjunction with Dr. Brad Dicianno, medical director of UPMC’s Adult Spina Bifida Clinic and adjunct assistant professor in RST, Yu began to focus her efforts on developing smartphone apps that are accessible for users with physical impairments, particularly users with motor impairments.

In 2012, she conducted an in-depth study with six spina bifida patients to monitor the use of five different apps that served as reminders for very specific needs—medications, skin care, mood swings, and bowel and bladder control.

“Patients with spina bifida have either partial or complete lack of sensation,” Yu says to explain the need for the skin care app. “They cannot feel if anything is wrong with their skin. If they burn themselves, for example, they might not feel it. Or if they have sores or other skin conditions that are not easy for them to see, they may go untreated.”



Through the app, patients are routinely reminded to check their body for any skin irregularities. If they find a problem, they can take a picture with their smartphone and upload a report that goes through the clinician portal directly to their physician.

“We try to make it easy for the patient,” Yu goes on. “On the report, we show real objects, such as coins. The patients can compare their skin problem with the object and report that their sore, for example, is the size of a quarter.”

Parmanto says that self-care technology, such as the skin care app, is a valuable tool for improving personal and community health. “If we can help patients practice self-care, we can help them prevent more serious conditions.”

Yu is currently working on redesigning the apps to make them easier to use, not only for users with impairments but also users without impairments. Her accessible design focuses on personalization, navigation, and the use of visual icons. This accessible app design will be applicable to any mHealth system beyond iMHere.

In a new field study, she will determine how two of the apps—the medication reminder and skin care reminder—can be adapted to individual patient needs.

This study will not be limited to spina bifida patients, but will include people with other chronic neurological conditions such as cerebral palsy, multiple sclerosis, and spinal cord injury.

“These individuals might have trouble moving or using their fingers, or have a lack of sensation in certain areas. Some also have skin breakdown such as pressure sores, wounds, or ulcers,” explains Yu. “What works for one might not work for another. I want to see how I can personalize the smartphone app to make all of their lives easier.”

Using his knowledge of the iMHere platform, doctoral student Pramana developed another technology that facilitates collaboration between clinicians and patients. In his pilot study, Pramana is working with clinicians from Western Psychiatric Institute and Clinic and children with anxiety.

The new technology is called smartCAT (smartphone enhanced Child Anxiety Treatment). In the study, therapists are teaching children to manage their emotions and maladaptive behaviors in a clinic environment using Cognitive Behavioral Therapy, also known as talk therapy.

Through the use of a smartphone app, therapists send daily interventions to remind the children to utilize these therapy skills during their real-life experiences. The children’s responses to the interventions are sent to the therapist portal. Using this portal, therapists can observe how the children are doing over time. The therapists use this information

in weekly sessions to determine what should be done to improve the treatment.

The novel feature of smartCAT is that the app functions as an “in vivo” skill coach: the app adapts the intervention based on children’s real-life momentary experiences.

“For the children, it’s like having a therapist in their pocket,” claims Pramana.

“When children respond to the suggested intervention, they receive a reward point that can be exchanged for a prize when they return to the clinic for their next session.” This is an example of Ecological Momentary Assessment (EMA)—a novel technology that can assess and intervene while patients live their lives. Parmanto and Pramana have been working on developing technologies for EMA and EMI (Ecological Momentary Intervention). Pramana is also developing machine-learning tools to help patients and clinicians better understand patients’ conditions and the best way to cope with the conditions.

Pramana hopes that as the children learn to improve their skills, they will eventually learn to successfully manage their emotions and behaviors.

He adds that a messaging feature of the platform allows children to ask their therapists for help if they are having difficulty using a particular skill. The therapist can send a treatment video clip through a secure portal to a child’s smartphone and the child can watch and learn how to use the skill correctly.



Parmanto believes that interventions like these will help clinicians gain better insight into their patients’ health and get the proper intervention to them at the right time.

“Technology will have great impact if it is useful from the patient’s point of view,” concludes Pramana. “The apps that we are developing here at HIM are particularly beneficial because they are linked to treatments.”



## TEACHING BY WAY OF A VIRTUAL COACH

Power wheelchairs with powered seat functions (PSF) can be expensive—they can run upwards of \$30,000. In addition to maximizing independence for many people with spinal cord injuries, they are medically necessary to maintain the function of the user and to reduce the risk of pain and secondary complications such as pressure ulcers and increased swelling in the limbs.

Yet, according to Rosemarie Cooper, Department of Rehabilitation Science and Technology (RST) assistant professor and director of the UPMC–University of Pittsburgh Center for Assistive Technology (CAT), power wheelchairs with powered seat functions are not always funded by the user's insurance.

Cooper and Hsin-yi (Tanya) Liu, a doctoral candidate in RST, wanted to find out why—and how they could remedy the situation.

“We observed that most clients did not use the full range of their power seat functions for comfort or pressure release,” says Cooper. “For example, if clients did not use the powered seat tilt

function to change their position from 90 degrees to 40 degrees every half hour or so, they continued to experience pressure sores and pain, much like they would if they were using a traditional chair.”

She further explains that if an insurance company does not see a patient benefit, it cannot support the cost of the chair.

Cooper and Liu looked at their own process and deduced there was a need for more patient education.

“We have this great technology—the power chair with the powered seat function—and yet we only have one session with the client to ensure proper fit and correct usage,” laments Cooper. “We needed more time to educate them and be sure they understood the importance of using the powered seat functions.”

An idea came to Liu as she was preparing her PhD statement. “I wanted to become a bridge between engineers and clinicians, so I decided





to test the effectiveness of a technology that would educate the users of power wheelchairs with PSF, help them to follow the recommended clinical instructions, and in the long run, justify the cost to the insurance company.”

Liu conducted a focus group to see what type of interface the clients would be most willing to use. Using feedback from that group, she developed the virtual seating coach.

The virtual seating coach is a software package that works with a small, handheld computer that is mounted to the user’s chair. Small sensors are installed on the chair to monitor the sitting angle of the user, the backrest recline, leg rest elevation, and wheelchair base inclination.

“The sensors tell us if the user is following our clinical advice on how to use the powered seat functions,” says Liu. “And if they do follow our instructions, they have fewer pressure ulcers and other problems.”

The virtual seating coach is a unique project achieved by close collaboration between engineers and clinicians. Machine shop experts and engineers at the Human Engineering Research Laboratories (HERL), including Cheng-shiu Chung, Garrett Grindle, Josh Brown, Ben Gebrosky, and Dr. Rory Cooper, provide strong and constant support for this project to design and build prototypes matching clinical needs with technology.

The virtual seating coach program compares the seating function usage data with the clinician’s recommendations. If patients do not follow the instructions provided by the clinicians, the virtual seating coach reminds them. “They see our face and hear our voice, so they know it’s time to tilt the chair or elevate the leg rest.” Liu smiles and says, “They know we’re looking out for them!”

Different feedback modalities can be modified according to the user’s preferences. For example, if the user is

in a meeting, the virtual seating coach will not provide audio feedback.

If the program detects improper use of the PSF, it alerts the user and gives instructions on how to adjust the powered seat. It also provides positive feedback when the user follows the clinician’s instructions.



During a pilot study, clients took the system and a power wheelchair with PSF to their homes for up to three days to check ease of use and functionality of the virtual seating coach. After minor modifications, Liu was ready to launch a study.

Twenty clients enrolled and had the opportunity to use one of HERL’s power wheelchairs with PSF in their home environment for up to eight

weeks. The users were divided into two groups. One received an educational pamphlet and flashcards that describe how the powered seat function should be used. The other group got the traditional educational materials plus the virtual seating coach technology.

RST Instructor Annmarie Kelleher, who also serves as a wheelchair seating clinician at CAT, asserts that the virtual seating coach appears to be an effective educational tool.

“We’re starting to see some findings,” claims Kelleher. “When clients use the virtual seating coach, we see that compliance improves immediately and continues to improve. This should lead to a reduction in secondary problems like pressure sores for the users.”

Armed with this knowledge, Yu-Kuang Wu, a physical therapist who is currently pursuing his PhD in RST, is working with Kelleher, Liu, and engineers at the Quality of Life Technology Center and HERL to develop a smartphone application based on the virtual seating coach technology.

“With an app on their smartphone and a few Velcro sensors, clients could eventually use their own chairs and have this technology right at their fingertips everywhere they go,” notes Kelleher. “It would be a simple—and effective—way to improve the health and comfort of our clients.”

Cooper, who is monitoring the results, is hopeful that insurance companies will take notice. “Insurance pays for patients with prostheses to learn gait-training, for example,” she notes. “It’s equally important for wheelchair users to learn how to use their power chairs so they will get the most benefit from them.”

“In the past, these chairs were labeled ‘convenience items,’” adds Kelleher. “Our study is helping to educate the insurance companies and convince them that power wheelchairs with powered seat functions are, in fact, medically necessary for our patients.”



# Flipping the Classroom

**H**ow many times as a student have you wanted to rewind the professor to review a point that you didn't quite catch? Or you realized when studying for an exam that the notes you took in class were a little too cryptic?

Students in the Doctor of Physical Therapy (DPT) program don't have to worry about this anymore.

Assistant Professor Christopher Bise and Instructor Michael Timko have "flipped the classroom" in their Evaluation and Treatment of Musculoskeletal Disorders I, II, and III classes

in an effort to make classroom sessions more interactive and hands-on.

Rewind. What exactly does flipping the classroom mean?

Bise explains that he and Timko now record lectures, which are assigned to students as homework. Students review the lectures and come to class prepared for meaningful discussion.

"This is a fundamental shift for students," Bise admits. "They have been lectured to their entire lives. But they have been very receptive to the new concept. We've seen an increase in

student engagement and their retention of material seems to be better.”

He says that instead of being “the sage on the stage,” instructors serve as “the guide on the side,” interacting with students, addressing their questions, and facilitating conversation.

Timko agrees that this concept makes much more productive use of the classroom. “It gives us the opportunity to strike a better balance between the didactic information students need to know and the hands-on skills they need to practice.”

Second-year DPT student Matthew DeBole notes that the transition was difficult at first. “Flipping not only changes how the class is structured, but how the student has to operate. Now we have to prepare by watching videos prior to coming to class! Yet as students become more tech savvy, having these online resources feels very natural.”

Stephanie Austin, a first-year DPT student, adds, “We have more time to be hands-on in the classroom and more time to discuss any concepts that were difficult to understand.”

Timko says the new concept challenges teachers as well as students.

“We want to ensure we are delivering all the right information, without putting the students on overload,” he admits. “We had to be very organized ahead of time, and as new evidence-based knowledge becomes available, we need to be able to incorporate it into our recorded lectures.”

Timko and Bise dabbled with the concept of flipping the classroom during the 2011–2012 school year, but implemented it fully this year.

Instead of delivering the entire lecture in one four-hour “class,” instructors broke their lectures into small segments so it was easier for students to manipulate the content. “They can stop and start

the lecture, take notes, and rewind, all from the comfort of their own homes,” says Bise.

They also divide the classroom time, allowing half the students to participate in a lab while the other half reviews the recorded lesson. “The result is a lower student-to-teacher ratio and greater opportunity for hands-on learning,” he notes.

According to Timko, SHRS instructors share their instructional videos with a consortium of like-minded institutions and provide links to experts from other highly ranked programs in order to expand the students’ perspectives.

Bise says that by collaborating with other high-caliber PT programs, they are raising the bar for students and standardizing the training of future clinicians. “Why we consider lectures about current evidence proprietary information that’s exclusive to our university is beyond me. Now, in addition to our own experts, our students learn from industry experts as well. We’ve essentially, as a group, quit re-inventing the ‘instructional wheel.’”

This is a win-win for students. “There are tremendous examples and resources available online, which traditionally couldn’t be brought into the classroom. Now they can,” claims DeBole.

Social media is also playing a role in how PT students learn. The department uses webinars and online chats as learning tools. Bise uses Facebook to offer virtual office hours for his classes and Twitter to connect current students and alumni with evidence-based resources.

They’ve started a wiki page where students, under the guidance of instructors, record case studies and interventions. It will be updated every three years, or as new evidence becomes accepted. “This is an evidence-based resource that students will be able to access forever,” notes Timko.

Bise also uses a secure Facebook group as a forum for student discussions.

“Everyone’s on Facebook, so when someone poses a question, they answer almost immediately,” claims Bise. “There’s very robust discussion. Oftentimes, students answer other students’ questions. I try to stay out of it unless I need to correct misinformation!”

“There’s some very meaningful discussions in Facebook groups and Twitter chats,” explains DeBole.

“It’s also a good way to connect with other professionals,” adds Austin. “I’ve participated in chats with students from other universities and with some of our faculty. It’s nice to spark professional conversations about different topics.”

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*“We have more time to be hands-on in the classroom and more time to discuss any concepts that were difficult to understand.”*

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“Furthermore, the best way to remember something is to teach it to someone else,” reminds DeBole. “Student-to-student learning provides an incredible opportunity for mentorship and better prepares us for working with patients.”

“Our program has always been ahead of the curve when it comes to evidence-based practice,” notes Bise. “Now we are also ahead of most other programs in the use of technology. It has gone over very well with students.”

Timko agrees. “We’ll continue to use technology to accelerate learning and to push evidence-based practice out to our alumni and peers.”





# “SMART” MANNEQUINS.

# WISER STUDENTS.

Occupational therapy students often practice on one another to learn about muscle strength, range of motion, and patient handling in preparation for functional tasks. But now there’s a better way to practice the skill of safely transferring a patient from a bed to a wheelchair.

Instead of one student playing the role of the patient while another student serves as the clinician, students in the Master of Occupational Therapy (MOT) program at SHRS are using mannequins from the Peter M. Winter Institute for Simulation Education and Research (WISER) at the University of Pittsburgh Medical Center. WISER is a world-class, multidisciplinary training and research facility with a mission of providing a safer environment for patients.

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*“The full-bodied mannequins at the WISER  
give students hands-on experience without risk.”*

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The benefits are obvious. Instead of using a “patient” who is medically stable, with no tubes, lines, or surgical drains in place, students can practice on a simulator that can exhibit any number of medically complex conditions.

Drs. Ketki Raina and Joanne Baird, both assistant professors in the Department of Occupational Therapy, say this is the ideal training scenario.

“The idea is to provide a protected experience for students,” explains Baird. “It’s only natural to be nervous when you first learn to transfer a patient who is medically fragile. So many things could go wrong. But the full-bodied mannequins at the WISER give students hands-on experience without risk.”

Raina and Baird started exploring the use of simulators in 2010 when they applied for and received an Innovations in Education grant from the University of Pittsburgh. Through the grant, they were able to develop a curriculum that was implemented for students in their MOT program.

In order to give students a good idea of what they will face in a clinical situation, the mannequins in the WISER Center can be connected to real catheters, wall-mounted oxygen, and IVs. They may appear to be post-operative, with tracheotomy tubes or surgical drains.

Professors can also program in certain surprises for their students so they will have the opportunity to work with “patients” who are experiencing specific behaviors, such as dizziness or cardiac arrest.

Raina says this element of surprise helps students develop important critical reasoning skills.

“In the classroom, we teach students that things are not always what you expect. But when they are faced with analyzing a situation and making quick, medically sound decisions using the mannequin, they gain more confidence. This is a vital part of their education.”

Second-year MOT student Stacey Gnora agrees that the use of the simulator enhanced her understanding of the many factors that she will face as a licensed occupational therapist.

“My ‘patient’ had a Jackson-Pratt drain that was hooked onto the bedsheet. I had to identify and move the drain appropriately and also adjust the hospital bed before I attempted to get the ‘patient’ out of bed,” recalls Gnora. “From then on, I knew I had to observe the patient in his or her environment before working with them.”

Kate Welland, who expects to graduate from the MOT program in the spring, also learned a valuable lesson when attempting to transfer her mannequin.

“I was so focused on making sure I was transferring the ‘patient’ correctly, I almost didn’t notice the change in his vital signs,” Welland admits. “Fortunately, I did notice that something sounded different in the room. A monitor was going off. There was a moment of panic when I realized that my ‘patient’ had an elevated heart rate that, if left unattended, could have led to cardiac arrest.

“Now that I’m completing Level II Fieldwork in an acute setting, I know

to always check for vital signs before doing anything with a patient.”

Baird notes that another benefit of using simulators is the ability for students to review their work on video. They can also watch transfers completed by their peers and discuss various techniques and decisions that were made under pressure.

“In the early stages of our grant, we researched the best way to teach students using the simulator,” adds Raina.

Students were divided into three groups, with some students performing one or two transfers with the mannequins, and other students observing their classmates.

“We were trying to determine how observation affects learning,” Raina explains.

“Conventional wisdom would tell you that the more a student practiced the transfer, the better he or she would become at it,” she continues. “But in fact, we learned that students learned equally well if they observed two transfers and did one themselves.

“This helped us to understand the most cost-effective way to use the simulators in our class. When we integrated the WISER Center into our curriculum, we knew that we were using the most effective and efficient training tool.”

Baird adds, “We’re pleased with the use of simulation in our curriculum. In our department, we continuously strive to enhance our curriculum by connecting the education and research opportunities available to us.”



# *Edutainment:* Keeping Students Engaged





**H**ow do you keep students interested in classwork and engaged in learning? That's a question that has challenged every teacher since Socrates.

But Dr. Walt Stoy, professor and director of the Emergency Medicine (EM) program, has an answer that plays right into the hands of today's students. In a word, *edutainment*.

"Technology is deeply embedded in the lives of our students," explains Stoy. "They always have a smartphone, a tablet, or laptop in front of them. So it's up to us as faculty to continually assess and develop new software and technologies that will keep them interested and lead to higher gains in learning. It's how we enhance what we do and eventually impact patient care."

Stoy credits EM program Medical Director Owen Traynor, an emergency medicine physician and assistant professor of EM, with encouraging the use of turning point technologies and software in their program.

"We need to be able to adapt quickly to changes that make it more convenient for people to learn," observes Traynor.

He also creates videos of skills that students can watch and then practice on their own.

Using Google Docs and a Web-based proprietary package known as FISDAP, faculty can track the number of skills that students are required to complete. "These tools allow me to see the number of times students have performed a particular skill and actually monitor them until they gain clinical confidence," Traynor remarks.

He notes that the data is then added to Google Drive, so other faculty who are working with students can see how they are progressing. He's also building a Web site that focuses on paramedic skills—and is considering a blog that will encourage a dialogue about emergency medicine.

This kind of technology allows students to interact with EM content on days that they are not in the classroom.

For example, Assistant Professor Thomas Platt is considering a Twitter account where he could pose the EM "question of the day" or tweet the "message of the day" from his course.

programmed to present with a variety of medical symptoms."

A computer interface allows the faculty to program the mannequin with vital signs and medical events that will challenge students much like they'll be challenged in the field.

Stoy says a mannequin might be programmed to experience symptoms such as chest pains and shortness of breath. The student must respond appropriately and make decisions based on real-time events. The mannequin will also "speak" in much the same way a live patient would, albeit through the voice of the instructor.

According to Platt, one of the greatest benefits of this technology is that it requires students to interact with the "patient" instead of the instructor. "When they hear the voice of their 'patient,' they don't ask us what's wrong. They ask the 'patient.'"

Platt says this is critical because it forces the student to focus more on the patient. He notes that the feedback feature is also very helpful. "You can run a scenario for 10 or 15 minutes, then have the student stop and review what they did. The instructor can then ask why the student made a certain decision, or what he should have done differently.

"When a student sees what happens to the patient because he gave an incorrect dosage of a medication, for example, he will most likely never make that mistake again," remarks Platt.

"Clearly there are frustrating aspects of technology," admits Stoy. "When students bring their iPads and laptops to class, we never really know if they're engaged with the lesson or if they're just on Facebook!"

Nonetheless, this team is determined to stay one step ahead of their students by constantly exploring emerging technologies that will enhance learning.

"This is the new normal," observes Platt. "I don't have a Facebook account right now, but I wonder, do I need one? Is this how we're going to educate students in the years ahead? Or will it be something different? Whatever it is, we'll be there!"

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*"Technology is deeply embedded in the lives of our students," explains Stoy. "They always have a smartphone, a tablet, or laptop in front of them. So it's up to us as faculty to continually assess and develop new software and technologies that will keep them interested and lead to higher gains in learning. It's how we enhance what we do and eventually impact patient care."*

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He says technology allows him to incorporate new findings into his curriculum as soon as it makes sense to do so. It also lets him connect students to YouTube videos, movies, or readings that apply to emergency medicine issues.

Instead of giving quizzes in class, Traynor allows students to take the quizzes online, where they can receive immediate feedback based on correct or incorrect answers and think about why they got an answer wrong.

Stoy is quick to add that edutainment now extends from the classroom into the skills lab, where students get high-tech, hands-on experience.

Platt offers a case in point. "In the past, the EM skills lab was full of 'dismembered' task trainers. There was the mannequin head that was used to teach intubation or the arm that trained students to start an IV.

"Today, the skills lab boasts full-bodied 'smart' mannequins that can be



# The Real World



A year ago, Danielle Dunegan was shadowing a clinician at Hanger Clinic on the South Side of Pittsburgh as part of her internship in the Master of Science in Prosthetics and Orthotics (MSPO) program. Today, she is a certified prosthetist and is also completing the second half of a full-year orthotics residency in preparation for the American Board for Certification examinations.

“Residency is different from internship in that you have many more responsibilities,” explains Dunegan. “As a resident, I’m a paid employee, even though I am still learning on the job.”

Last summer, Dunegan completed her prosthetics residency and received her certification. Now, during her orthotics residency, she spends a great deal of time traveling to various hospitals in the Pittsburgh area, applying braces to patients immediately after surgery.

“Many people need braces to help stabilize their bones until they heal,” Dunegan says. “Whether they have problems with their back, hip, or knee, we make sure they have the appropriate type of brace and that it’s a comfortable fit.”

She also creates custom inserts for shoes for diabetic patients and those with other chronic foot problems. “We see these patients more frequently because there are always adjustments to make,” she notes. “For me, it’s very satisfying when I can build a relationship with a patient.”

Dunegan’s interest in the field of orthotics and prosthetics is personal. Her father’s leg was amputated below the knee after a battle with bone cancer approximately 11 years ago. He uses a prosthetic leg now, but doesn’t let that get in his way.

“My father is very strong. Our whole family is strong. He works a full eight-hour day as a laborer for the Municipal Authority of Westmorland County. He always told me that

when something happens to you, it isn't the end of the world. You have to buckle down and work hard to get back to your life."

Dunegan knows that every patient is different, and not everyone has the same positive outlook as her father. Nonetheless, she tries to keep an upbeat attitude when treating patients.

"It's so rewarding when you see a patient who doesn't give up—a patient who is making real progress," observes Dunegan.

She recalls one orthotics patient in particular. He was a young man in his early 20s who was paralyzed from the waist down due to a dirt bike accident. "Some people thought he might never walk again, but he was young and determined."

Together with her colleagues, Dunegan cast and delivered a reciprocal gait orthosis for him—basically, it was a brace that went from the hips down. It took a while, but she said one day, he managed to lift his left foot three times.

"This really opened my eyes," admits Dunegan. "There is a chance for him to regain function!"

When she saw him get up and take a step for the first time in three months, she said it was hard not to shed a tear.

"Returning a patient to their daily life—giving them independence again—that is the truly rewarding part of this career."

Sara Peterson, prosthetics coordinator for the MSPO program, speaks highly of Dunegan. "Danielle has the qualities to become an excellent practitioner. As an MSPO student, she was very hands-on and creative with her

work. She also displayed great compassion and the desire to help people."

Dunegan enjoys the artistic as well as the scientific side of her career. She earned an associate degree in graphic design and a baccalaureate degree in psychology before pursuing her MSPO.

At Hanger Clinic, she is able to incorporate all of her interests into her career.

"I enjoy working with my hands, and the people at Hanger have really supported me," says Dunegan. "They encouraged me to make a prosthetic cover for one patient, for example. And also a coloring book for children who come to the clinic."

According to this young professional, it can be overwhelming when a new graduate begins his or her career. "Of course you have to have confidence in your ability to treat patients. But you also have to learn the ins and outs of the company you're working for," Dunegan offers. "Don't be afraid if you make a mistake. There's always someone there to support you and help you work through the issues."

SHRS offers support to the MSPO students by organizing structured clinical experiences at various prosthetic and orthotic facilities in Pittsburgh and throughout the country. Says Peterson, "The student may choose to complete his or her last clinical rotation closer to home. The MSPO program monitors the student's progress and assists with preparation as needed for the certification exam."

"It's important to remember that as a P&O professional, you're always learning," continues Dunegan. "Even after you're certified, you have to continue to learn and to improve your skills. Patients are depending on you, and that's what makes this such a rewarding career!"





Change Service Requested

# PANTHER FOLKLORE

There is an Oakland urban legend that on the way to a final exam, a student rubbed the nose of the panther statue for good luck and aced the test. You can help to give good luck to School of Health and Rehabilitation Sciences (SHRS) students by making a contribution to the school's annual fund. Your donation can support scholarships, student research, and related academic endeavors. Everyone can use a little luck—and, through your donation, you can become a legend in the minds of future SHRS students.

For more information, contact  
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