

UNIVERSITY *of* DELAWARECOLLEGE *of*
HEALTH SCIENCES

Pulse

Marking the Spot

Collaboration aimed at
developing clinically useful tool
to shed light on birth injury
page 8

First Step: Ideas for a healthier world

Undergraduates submit
solutions to important
health-related challenges
page 14

LEARNing to Communicate

Program provides future nurses
with cultural competency training
page 18

+
Q&A
with Leisure
Fitness
page 2



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IN THIS issue

2 Q & A with Leisure Fitness

Pulse editor Diane Kukich spoke with Paul Bastianelli and Dave Ford of Leisure Fitness to learn more about their business philosophy and their interest in forging new ties with the College of Health Sciences.

8 Marking the Spot

UD researchers are teaming with clinicians at Shriners Hospital for Children to shed light on an injury called brachial plexus birth palsy.

14 First Step

The College of Health Sciences celebrated its inaugural First Step Program with an award ceremony to honor undergraduate students who submitted solutions to important health-related challenges.

18 LEARNiNG to communicate

To improve cultural diversity in educating future nurses, a new set of scenarios has been introduced to UD's Healthcare Theatre program through a collaboration with medical anthropologist Melissa Melby.

22 Teaming for health

The Nurse Managed Health Center is not only providing routine healthcare for employees but also branching out to collaborate with a variety of offices and organizations across campus.

The UD College of Health Sciences: Front Door to the STAR Campus

By J. Michael Bowman

WHEN THE UNIVERSITY of Delaware cuts the ribbon at its Science, Technology and Advanced Research (STAR) Campus in January 2014, the College of Health Sciences will occupy a building the length of two football fields on South College Avenue.

The facility will house clinics, core research facilities, and high-tech meeting places for CHS faculty, staff, and students as well as offer space for businesses and organizations that complement the College's mission.

At almost 275 acres, the STAR Campus will ultimately be home to much more than just the UD College of Health Sciences, but health will drive a great deal of what happens there.

I'm now President of the Delaware Technology Park, but I spent the early part of my career working in the field of advanced composites, and my colleagues and I came to understand the power of partnerships in advancing and commercializing composites technology—we saw that teams of designers, material suppliers, part manufacturers, and end users were critical to success in the rapidly changing world of advanced materials.

The same is true now of health, with increasing recognition that it will take teams of professionals with varied expertise to conduct cutting-edge research, provide effective education and training programs, deliver patient-centered care, and commercialize new technologies.

The STAR Campus will provide the ideal venue for this venture.

When we talk about "health" today, we're talking about not only the traditional health sciences but also health engineering for device design, fabrication, and testing; health IT for data collection, storage, and analysis; and health business for the commercialization of intellectual property.

All of these enterprises will have a place on the STAR Campus in a physical infrastructure that facilitates collaboration, sparks innovation, and fosters entrepreneurship. The result will be better health outcomes, more effective prevention strategies, extended lifespan, and lower life-cycle costs.

An improved rail system will provide convenient, environmentally friendly transportation to our existing partners at Thomas Jefferson University and Aberdeen Proving Ground, as well as position the site to attract new clinical, academic, and business partners up and down the Eastern Seaboard.

This first building, which features an impressive list of amenities, will make a statement for a very long time about STAR and health sciences, serving as a "billboard" for the College and what it's doing in this very public endeavor to improve health-related education, research, practice, and workforce development.

Being the first UD tenant on the STAR Campus is an opportunity of a lifetime for the UD College of Health Sciences, and the College is well positioned to take full advantage of it.

Mike Bowman is President of the Delaware Technology Park and a member of the 1743 Advisory Board.



Mike Bowman
President, Delaware Technology Park

A handwritten signature in black ink that reads 'J. Michael Bowman'. The signature is written in a cursive style with a large, stylized 'J' and 'M'.



with Paul Bastianelli & Dave Ford

Leisure Fitness



Paul Bastianelli

Dave Ford

Paul Bastianelli and **Dave Ford** are University of Delaware alumni who partnered to bring Leisure Fitness out of bankruptcy in 2009. *Pulse* editor Diane Kukich spoke with Bastianelli and Ford in April 2013 to learn more about their business philosophy and their interest in forging new ties with the College of Health Sciences.

Q You're both accountants. How did you pair up to get into the exercise business?

Paul: Well, I guess everyone who lives in this state has one of those “only in Delaware” stories, so we might as well start by sharing ours. Dave and I had worked together at an accounting firm for several years when I left and started Strategy House, a business consulting firm. Years later, after Dave left the firm, we just happened to run into each other on the boardwalk in Rehoboth. I told Dave to give me a call if he was interested in working with me. We ended up working together in Strategy House and several months later purchased the assets of Leisure Fitness out of bankruptcy.

Dave: Part of our plan for the Leisure Fitness reorganization was to move Strategy House to the Leisure Fitness facility at Pencader Corporate Center, here in Newark. And strategy is the key word here—what we do is develop plans and tools for companies that work no matter what line of business they're in. So we focus on everything from finances and operations to our customers and our employees to ensure that the business is successful.

Q How has the recession affected your business?

Dave: We took over Leisure Fitness at a bad time—2009 was a very difficult year. Sales were significantly below previous years, but we believed in our partners, ourselves, the brand, and the people. The team that had been assembled by the former Leisure Fitness was top of the line, and it would have been a shame to see those talented people go, so we were glad to be able to offer many of them continued employment.

Paul: We realized that if we were going to be successful, we had to get out into the community. The days of just advertising in the newspaper and waiting for people to come to you are over, so we took a grassroots approach focused on wellness and community outreach. Wherever the customer is going to

be, we want to be in front of them, so we're tied into all of the social media outlets—Facebook, Twitter, Pinterest, and YouTube. We also do a monthly newsletter that reaches 20,000 people. If we can get to enough people who want to be healthy, eventually they'll come to us—it's an easy industry to get passionate about. One of the biggest hurdles we've faced is increasing traffic to our retail stores in a down economy. Many customers do not know that specialty fitness stores like ours exist. Once they find us, we're confident that we can earn their business.

Q What's your strategy for doing that?

Paul: From Day 1, we decided we wanted to be a wellness-oriented company that happens to sell fitness equipment. If you go to our website, you'll see that we offer a wealth of information and tools to help people stay healthy. For example:

On our Wellness Center site, we post workout videos, workout logs and charts, and articles on a broad range of topics.

We offer free corporate and group seminars, presented by Dr. Paul Kennedy. Our seminar series now includes five seminars, each lasting about an hour, and all are certified by ACE.

Our “Be Fit, Stay Fit” Home Fitness Challenge allows users to log their activities, track their progress, and even win prizes. We don't care whether they use our equipment or swim in a community pool or just take a brisk walk every day—we're interested in promoting a healthy lifestyle for everyone no matter their age. Fitness doesn't have to be a great big hill you can't climb up. The equipment we sell is great, but it's really not about the equipment.

We also host a trainer directory on our site that enables users to search for personal trainers, nutrition and diet advisers, rehab experts, and massage therapists within a given geographic area. Right now, we have

over 500 trainers in our network, and we're always looking to add more people.

Dave: We also work hard to tie everything together and be an integral part of the wellness community.

For example, after we deliver a corporate seminar, we invite all of the attendees to join our Home Fitness Challenge so that they stay engaged with us.

Another example is the trainer locator Paul mentioned. Through the directory, we help professionals in the business get new clients, and, in turn, they refer customers interested in buying equipment to us. It's a great way for us to help each other in what has been a tough economic period for everyone.

When we're asked to sponsor a local 5K, we don't just give a donation so that our company name shows up on the back of the race T-shirts—instead, one of our staff members hands out water bottles on the course so that we're an integral part of the event.

It's all about how you blend the lines of retail and wellness. The reality is that we have a huge issue with obesity and inactivity in our country, and exercise is the one medicine that is under-prescribed and underused.

Q How are UD and Leisure Fitness linked now?

Dave: We offer internships to UD students majoring in areas like exercise science and nutrition. Our goal is always to give them work that not only meets a need for us but also adds to their education so that they're learning—for example, generating ideas for our blog or researching articles for our Wellness Center.

Paul: Employment here is also a realistic career path for students with health-related degrees. Most of our sales team have exercise sciences degrees. In addition to our showroom, offices, and warehouse here in Newark, we have 26 stores along the I-95 corridor, and we employ about 80 people in 7 states.


Q How do you envision expanding those interactions on the STAR Campus?

Paul: We would be interested in collaborating with the UD College of Health Sciences on anything that has a wellness outreach component.


As just one example, Our “Be Fit Stay Fit” radio show could feature professors talking about their research in a way that members of the general public are able to understand its impact.

Who knows? Maybe our 27th retail store will be on the STAR campus.

On the less serious side, a fleet of our ElliptiGOs—an outdoor version of the elliptical trainers found in most gyms and many homes—could be housed at the STAR Campus for people to use in moving from site to site at STAR or in traveling back and forth from STAR to UD's Main Campus.

Dave: Overall, I think our emphasis on health and wellness dovetails perfectly with the CHS philosophy. And we want to hear about any ideas that UD faculty, staff, and students have because what we're really good at is taking something good and “putting it on steroids.” We're implementing a strategy for Leisure Fitness, and we'd love to be involved with helping to develop strategies for programs that can be carried out on the STAR Campus to make it truly a “healthy community by design.” 



UD faculty and staff test drive
ElliptiGos on the Green 

Research ★★★★★ Superstar

UD professor receives
prestigious NIH MERIT
Award for ACL research

photo by Ambre Alexander



LYNN SNYDER-MACKLER, Alumni Distinguished Professor of Physical Therapy, has spent the past two decades developing evidence-based approaches to the rehabilitation of knee injuries.

Now, her dedication has paid off, as her accomplishments have been recognized with a prestigious MERIT (Method to Extend Research in Time) Award from the National Institutes of Health (NIH). Snyder-Mackler joins an elite group of researchers in receiving the award, which will provide her with up to 10 years of funding for her research.

“The NIH MERIT Award signifies that the awardee’s work is so impactful and of such significance that longer, more sustained funding is warranted,” says former UD provost Tom Apple. “This is a rare award and a sign that Lynn is one of the superstars in her field.”

Snyder-Mackler’s work has focused on knee, shoulder, and spine rehabilitation, but she is perhaps best known for her work on anterior cruciate ligament (ACL) injuries.

Most recently, she has teamed with researchers and clinicians at Oslo University Hospital in Norway in the development of a screening procedure to provide clinicians with treatment options that may improve function after ACL injury and reconstruction.

Snyder-Mackler emphasizes that those options include non-surgical alternatives.

As an example, she cites a high school soccer player who tears his ACL during preseason practice. If he has surgery, the season will be over by the time he has recovered. He’s a senior and doesn’t plan to continue with the sport in college.

“There are considerable social benefits to this athlete playing out his last year and delaying the surgery until the season is over. In fact, he may not even need surgery if he doesn’t plan to do anything but straight-on running in the future,” says Snyder-Mackler.

A delay in surgery enables some people, a group Snyder-Mackler calls copers, to regain knee stability simply through neuromuscular training. But which people fall into that category and which are non-copers? Can non-copers become copers—or vice versa—after a regimen of therapy?

Snyder-Mackler’s research team, including co-investigator Dr. Michael Axe, a local orthopedic surgeon, identified some clinical markers to distinguish between those with good and poor dynamic knee stability during the first five years of this work. However, to test their hypothesis, they needed a cohort of patients with torn ACLs who were not operated on early after injury.

That proved to be difficult in the U.S., but in Norway, no one has reconstructive surgery without first undergoing at least three months of rehabilitation.



“Our work over the past five years with our collaborators in Oslo, Professor May Arna Risberg and orthopedic surgeon Dr. Lars Engebresen, has provided considerable evidence to support our hypothesis that there is a differential response to ACL injury and that this response can be affected by rehabilitation,” Snyder-Mackler says.

▲ Lynn Snyder-Mackler has devoted her career to the development of evidence-based approaches to knee injury rehabilitation.



▲ Snyder-Mackler works in the PT Clinic as T. Fraser Russell demonstrates an exercise to strengthen the quadriceps.

“It’s also demonstrated that as rehabilitation continues before surgery, stability strategies change. Categories are fluid—non-copers can become more stable, and potential copers can become unstable.”

“Even more important,” she adds, “we’ve found that while surgery introduces passive stability, a successful outcome is not guaranteed. Many patients who have undergone surgery achieve normal measures of strength and laxity, or looseness, but still can’t return to competitive sports.”

Snyder-Mackler’s work makes a strong argument for a period of rehabilitation for all ACL patients, but she hopes to do additional studies in what she calls a “waiting list” country, where surgery is delayed for as long as 18 months to two years.

“That could tell us even more about what happens to copers and non-copers over time and what rehabilitation strategies are most effective,” she says. “Ultimately, our goal is to obtain data that will not only guide future research but also have a direct impact on clinician and patient decision making.”

Stuart Binder-MacLeod, of the UD Department of Physical Therapy, points out that Snyder-Mackler is among a very small group of clinical researchers to be recognized with the NIH MERIT Award.

“This shows very clearly the importance and impact of her work,” he says. “Her research has been rated very highly not only by her peers but also by the next level—the National Advisory Child Health and Human Development Council—and they have placed her among the most outstanding scientists supported by the institute.”



▲ Snyder-Mackler tests a patient in McKinly Lab clinic.

U.S. News Continuing Excellence

THE UNIVERSITY OF Delaware’s Department of Physical Therapy is ranked second in the nation in U.S. News and World Report’s 2013 edition of Best Graduate Schools. The ratings appear online at USNews.com.

UD graduate programs also ranked in the new guide were

- School of Education, ranked at 30;
- School of Public Policy Administration, ranked at 37, with specialty rankings for city management and urban policy (12), nonprofit management (25) and public management administration (26);
- Department of Psychology/Clinical Psychology, ranked at 47;
- College of Engineering, ranked at 56, with a specialty ranking for chemical engineering (10); and
- Department of Art, ranked at 114.

“It’s gratifying to see this newest recognition that several of our graduate programs have received,” Charles Riordan, vice provost for graduate and professional education, said. “Serving more than 3,500 graduate students, the University of Delaware has an array of excellent master’s and doctoral degree programs.”

The U.S. News website also includes rankings of UD graduate programs from previous years: biological sciences, 130; chemistry, 60; computer and information sciences, 72; criminology, 16; English, 71; geological sciences, 69; history, 64; mathematics, 76; nursing, 127; physics and astronomy, 77; psychology, 74; and sociology, 64.

For this 2013 guide, U.S. News and World Report analyzed more than 1,200 graduate programs. The rankings are based on opinions about program excellence and statistical indicators that measure the quality of faculty, research and students.



DMRC Needs You

Medical Reserve Corps supports public health emergency preparedness

RECENT MASSIVE STORMS, mass shootings, and a major increase in early flu season cases remind us all of the need to be prepared for disasters.

Just weeks before Superstorm Sandy struck the Mid-Atlantic region with gale-force winds and devastating storm surges in October 2012, the University of Delaware was selected to recruit, credential, and train volunteers for the Delaware Medical Reserve Corps (DMRC). The \$800,000 contract was awarded by the Delaware Department of Health and Social Services through its Division of Public Health (DPH).

"We got a baptism by fire with Sandy," says Bethany Hall-Long, professor in the School of Nursing and principal investigator of the DMRC contract. "Immediately after we received the award, we were up and running with seven shelters and 37 volunteers over a three-day period."

Added Kris Bennett, DPH nursing director, "The DMRC was an invaluable part of the state's ability to offer medical care in the American Red Cross Shelters during Sandy. They worked alongside the DPH staff nurses and helped provide much needed basic medical care."

Established nationwide in response to 9/11, the MRC plays an important role in marshaling volunteers not only to deal with emergencies but also to support a broad range of public health initiatives.

According to unit leader Ingrid Hansen, Delaware MRC volunteers include medical and public health professionals—physicians, nurses, pharmacists, dentists, and ancillary healthcare personnel—as well as other community members such as interpreters, chaplains, office workers, legal advisors, and others to augment medical personnel.

Jane Craft, former administrative assistant in the Department of Medical Laboratory Sciences at UD, and her husband have been non-medical MRC volunteers for the past three years.

"We've gone to several training sessions over the years in New Castle," she says. "I do this because it gives me an opportunity to get involved and help the community at large when there's a need for volunteers to aid county and state response teams."

Hall-Long sees the MRC contract as a logical next step in UD's strong disaster research, education, and service projects.



Doug Baker

▲ Pictured are (from left) Wendy Wilkerson of UD, Donzella Johnson of the Division of Public Health, Ingrid Hansen of UD, Bethany Hall-Long of UD, and Jillian Austin, Steve Blessing and Dr. Karyl Rattay, all of the Division of Public Health.

"The University has taken a leadership role in disaster planning," she says. "Here in the School of Nursing, we conduct semi-annual disaster drills in collaboration with community organizations, and we have a contract with the state to help long-term care facilities respond effectively to manmade and natural disasters. In addition, UD's Disaster Research Center is known throughout the world for its work in the social science aspects of these events."


Hansen points out that while disaster response tends to draw a lot of attention, the Corps is also involved in many other public health initiatives, including vaccination clinics, health fairs, and other health promotion and education activities.

"The DMRC volunteers helped us staff recent public health immunization clinics as we worked to increase the number of people vaccinated against the flu," said Dr. Karyl Rattay, DPH director. "They're a part of our first line of defense in the community to reduce the impact of the current flu epidemic. I'm grateful to Dr. Hall-Long and the University for their commitment to a healthier Delaware."

Hall-Long emphasizes that UD's involvement with the MRC provides learning opportunities for students and that the training delivered to volunteers is valuable for everyone in the community.

Wendy Wilkerson attended an intensive training session soon after she was hired to support administration of the MRC at the University.

"MRC training encompasses a wide variety of topics, including CPR-AED [automated external defibrillator], sheltering, emergency kit preparation, radiation, and fire," she says. "Anyone who undergoes the training will be prepared not only to assist others but also to help themselves."

For more information about MRC volunteer opportunities, contact Ingrid Hansen at 831-8368 or ingridh@udel.edu. 

“The University
has taken a
leadership role
in disaster
planning.”

— Prof. Bethany Hall-Long



Kathy F. Atkinson

Bethany Hall-Long

Exploring the Magic of Motion

Physical therapy student develops program for Girl Scouts

AS A GIRL Scout, Jazmine Tooles participated in activities like self-defense classes and mock space shuttle missions, so it's not surprising that she chose the organization as a way to teach young girls about the field of physical therapy.

Now a student in UD's doctor of physical therapy (DPT) program, Tooles and her colleagues in the class of 2013 recently hosted a workshop called "Explore the Magic of Motion" for Girl Scouts ranging from 6th to 12th grade.

Tooles also created three Scout badges and had them approved by Girl Scouts USA last fall.

The Magic of Motion badge teaches 6th to 8th graders how to be physically active and demonstrates the role exercise plays in healing the body and maintaining health. It also invites girls to investigate professions that use exercise for healing.

The Healing through Motion badge teaches 9th and 10th graders how physical therapy improves the quality of life for many people and encourages girls to promote healthy living through exercise as physical therapists.

The Healing People, Changing Lives badge is a career-oriented patch that teaches 11th and 12th graders about the profession of physical therapy and the steps involved in becoming a physical therapist.

"Jazmine did an amazing job designing these new Girl Scout badges, and she developed a great program for the 40 girls who attended the workshop," says Laura Schmitt, associate director of clinical education in UD's physical therapy department.


The workshop used four stations — "Technology that Treats," "Muscles and Machines," "Follow Your Heart," and "Stress Strategies" — to teach the participants many of the principles incorporated into the badges. The scouts also toured

UD's PT Clinic, made their own stress balls, and created information cards about stress management so they could promote wellness to family and friends.

"The event stemmed from an idea sparked at an American Physical Therapy Association conference I attended in 2011," Tooles says. "A prominent topic was how physical therapy professionals could better promote the field and show that it entails much more than just giving massages. As we brainstormed in small groups, I reflected on the many experiences I had as a Girl Scout. That's when I decided that creating Girl Scout badges would be a great avenue for promoting the profession to young girls and their parents."

Tooles hopes to see the program continue at UD after she graduates in December. Her bigger dream is for it to be shared with other physical therapy programs around the nation.

"I think the Girl Scouts is a great way to reach girls who are beginning to think about not only what they want to pursue in college but also how to gain control of their own health," Tooles says.

UD's DPT curriculum includes a service learning requirement that comprises four categories: diversity, promoting the profession, promoting primary and secondary prevention in health and wellness, and volunteerism. 

“I think the Girl Scouts is a great way to reach girls who are beginning to think about not only what they want to pursue in college but also how to gain control of their own health”

- JAZMINE TOOLES



Marking *the* Spot

Collaboration is aimed at developing clinically useful tool to shed light on birth injury

photos by Kathy F. Atkinson

JIM RICHARDS HAS successfully used motion analysis technology to allow elite skaters to explore “what-if” scenarios about their jumping technique. Now he hopes that he and his research team can use a similar approach to enable clinicians to treat children with a birth injury called brachial plexus birth palsy (BPBP).

BPBP, which occurs in about four out of every 1,000 births, affects nerve roots in the cervical spine, impacting muscle function in the shoulder and the arm. Most children recover on their own, but about 30 percent are left with lifelong deficits in arm function that require therapy or surgery. The most severe brachial plexus injuries can cause complete paralysis of the arm.

But the answer to a key question has eluded researchers trying to understand exactly what is going on in the musculoskeletal systems of children with BPBP: Where is the shoulder blade at any given moment, and what is it doing? This information would provide valuable insight into a child’s specific defects and enable treatments to be tailored to individual patients, as the location and extent of damage to the nerves and muscles vary from one person to another.



Duane Perry

Jim Richards

Richards, who is Distinguished Professor in UD’s Department of Kinesiology & Applied Physiology and Vice Provost for Graduate and Professional Education at the University of Delaware, explains that the movements of the scapula, commonly known as the shoulder blade, are incredibly difficult to measure.

“Our motion capture cameras provide us with reasonable data for the lower extremities,” Richards says, “but the same approach applied to the upper body fails to tell us much about the movement of the scapula.”

He and his team of doctoral students in UD’s BIOMS (Biomechanics and Movement Science) program have taken a systematic approach to filling this gap. If they’re successful, it may someday be possible for surgeons to use the UD simulation to explore what will happen if they move a tendon from one point to another in an individual patient.



▲ The Richards research team works with Lindsay Adler, a physical therapist at Shriners Hospital for Children in Philadelphia. Pictured are (from left) Kristen Thomas, Tyler Russo, and Stephanie Russo.

Feeling Their Way

The team is working with clinicians at Shriners Hospital for Children in Philadelphia on the first stage of the project. Two of Richards’s students, Kristen Thomas and Stephanie Russo, have collected data on 65 children with BPBP using a motion analysis system.

“We’re fairly confident that we can get accurate scapular measurements under static conditions,” Thomas explains. “The question then is ‘If we put the kids in enough static positions, can we draw conclusions about what happens when they’re moving?’”

“There are 11 specific positions that have clinical relevance,” she continues. “The problem is that right now we’re identifying these positions through palpation, or feel, and the accuracy of this approach has not been established in living patients. So our plan is to use static fluoroscopic imaging data to build a 3D model for comparison with the palpation method. If the model validates the palpation measures, then we can move forward with testing a larger pool of subjects without the need for expensive imaging equipment.”

Doing the Math

Once the researchers have determined whether the positional measurements are repeatable, they can develop a set of equations to tell them how the scapula moves from one position to another. Results from the equations will be compared with data collected using 3D motion fluoroscopy, an imaging technique that produces a video X-ray.

Stephanie Russo checks the placement of markers on Lindsay Adler’s back. ▶



“We’re all working together to make treatment more effective for these kids.”

— Stephanie Russo



patient at Shriners Hospital in
Richardson and Stephanie Russo.

"If it all works," Richards says, "we'll be able to go into a clinical setting like Shriners, drop 11 markers onto a patient to find out what's happening, and then do the same after surgery to what the effects are."

Seeing the Big Picture

Tyler Richardson, another graduate student in Richards's group, is adapting a freely

available program called OpenSim for use on the project.


"With motion data input from a patient, the program will use mathematical optimization to find all of the possible muscle combinations that could produce that motion," he says. "We can gain lots of information about the muscle function, both pre- and post-surgically, of an individual this way."

Ultimately, Richardson envisions clinicians being able to explore what-if scenarios that would enable them to determine how a specific surgical technique will affect a specific patient. And eventually the technique could be broadened beyond BPBP to other injuries.

The academic researcher has high praise for his clinical partners on the project as well as his for his team of talented students.

"Shriners is the go-to place for families who have a child with this injury," he says. "We're very fortunate to be working with these experts, and none of this would be possible without my grad students."

Russo, who is simultaneously working on a Ph.D. at UD and an M.D. at Drexel University, is co-advised by two physicians at Shriners: Scott Kozin and Dan Zlotolow.

"They have been fabulous to work with," she says. "It's wonderful to see the collaboration between the science side through UD's BIOMS program and the clinical side through the physicians at the hospital. We're all working together to make treatment more effective for these kids." 

Paving a Professional Path

Center for Premedical & Health Profession Studies celebrates official opening

THE CENTER FOR Premedical & Health Profession Studies celebrated its official launch at an open house on Monday, Jan. 28, 2013 in UD's Career Services Center.

The new center assists students who are pursuing careers in the health professions, including medicine, dentistry, optometry, podiatry, physician assistant, advanced nurse practitioner, pharmacy, and physical and occupational therapy. The center supports all pathways for premedical studies and provides advisement and referral services for students pursuing careers in other health-related professions.

At the open house, center director David Barlow noted that several medical institutions were present or represented, including Christiana Care Health System, Philadelphia College of Osteopathic Medicine, Temple University, Thomas Jefferson University, New York College of Osteopathic Medicine, American University of the Caribbean, St. Georges University, and the University of South Florida Select Program.

In all, some 60 faculty, staff, students, administrators, and clinicians turned out for the open house, which highlighted the interdisciplinary nature of premedical studies and careers in the health professions.

The new center grew out of a task force appointed by former provost Tom Apple. Interim provost Nancy Brickhouse, who helped implement the group's recommendations, said, "Today, the work of many people is coming to fruition. The task force consisted of 17 people, including not only students and faculty from UD but also representatives from Christiana Care, Thomas Jefferson University, and others. They recommended that the center be created to take what we had been doing well and do it better."


Brickhouse referred to the center as "a very student-centered effort that will provide the right structure for helping students to succeed." She also pointed to its location in UD's Career Services Center as being ideal for visibility and traffic.

Joann Browning, associate dean in the College of Arts & Sciences, said, "We look forward to referring our students here, knowing that they will get the mentoring, advisement, direction, and guidance they need to realize their dreams."


"The College of Arts & Sciences has been involved in premedical advisement for quite some time through the Medical Scholars Program. We're delighted to see that kind of experience enriched, expanded, and brought to students across the University."

CHS Dean Kathleen Matt said, "It's symbolic that UD is doing this—it shows that we're leaders and out in front of where healthcare is going."

"People are entering the health professions from many different areas, including not only science but also the humanities and other fields. This center will bring students from across the University together as undergraduates, and those relationships will take them into their careers where they'll be members of interprofessional teams providing healthcare."

Matt also pointed to the center's role in "tagging into partnerships that will create a touchstone for students." Developments like the University's new Science, Technology, and Advanced Research (STAR) Campus will set the stage for experiential learning through translational research and meaningful collaborative projects with tenants such as a pharmacy, a medical aid unit, and radiology, sleep, and blood processing labs. 



 Dave Barlow (left) with students at the Center for Premedical & Health Profession Studies.

Evan Krape

Heads Up!

Research examines effect of heading in previously concussed female soccer players

photos by Doug Baker

A GOAL IN soccer is worth one point no matter how it's scored, but for fans there may be no greater thrill than watching a talented player head the ball into the net.

But fan fun aside, how does heading the ball affect players, especially children whose brains are still developing?

"Heading is such an integral part of the game that I think it's important for us to know whether or not it's actually dangerous based on scientific data rather than anecdotal evidence," says Tom Kaminski, professor in UD's Department of Kinesiology and Applied Physiology.



Ten years ago, Kaminski began to document heading exposures in both collegiate and high school female soccer players. With a battery of neuropsychological and balance tests administered both before and after the soccer season, he found that heading did not affect short-term neurocognitive function in this pool of athletes.

But is the same true for young women who have already sustained concussions?

Neuroscience major Cameron Forbes was interested in this question as a topic for his senior thesis, and Kaminski's database proved to be a perfect source of information for him.

Advised by Kaminski and Joseph Glutting, professor in UD's School of Education, Forbes conducted a study to examine neurocognitive function in previously concussed female soccer players.

"Surprisingly, we found no difference between the experimental group and the control subjects," Forbes says. "Our work suggests that although previously concussed subjects engage in purposeful heading throughout a competitive season, they do not appear to be



▲ Cameron Forbes (right), guides a player in completing a questionnaire for the project.



The team manager logs head balls during the game. ▶

A player completes a research-related cognitive test. ▶



at additional risk for a decline in neuropsychological function or a return of concussion symptoms.”

“More research is needed to assess the effects over the course of an entire playing career,” he adds. “Also, our study was done on nonprofessional female players, where the speed of the ball is relatively low—maybe 25 miles per hour. In contrast, ball speeds in excess of 70 miles per hour have been recorded at the professional level with male players, so the results could be different with that population.”

Both Forbes and Kaminski are well aware that many questions remain to be answered about the effects of ball heading, but the still-growing database will serve as a valuable resource for those who want to examine other aspects of the issue.

“I’ve always been interested in sports and exercise, so this project was a perfect fit for me as a neuroscience major,” Forbes says. “Dr. Kaminski was very open to working with me, and he was great about letting me pave my own path with the work.”

Kaminski refers to Forbes as “a tremendous asset.”

“I view him the way I view my grad students,” he says, “and he has brought valuable knowledge about neuroscience to this work. He’s also setting an example for other undergraduates that even if they’re based in a different department or college, there are opportunities here at UD and experts to support them as they pursue those opportunities.”

A paper documenting the research, with Forbes as the lead author, is under review by the *Journal of Sports Sciences*, and the abstract was among just ten chosen for a special session at the American College of Sports Medicine’s 60th Annual Meeting in May 2013.



Alan Needle

In addition, an abstract by doctoral student Alan Needle, Kaminski, and associate professor Buz Swanik was one of ten selected for another special session at the same conference.

“For two UD students’ abstracts to be among 20 chosen out of more than 2,700 abstracts is amazing,” Kaminski says. “This recognition speaks volumes about not only the research we’re doing but also the quality of our students at both the undergrad and graduate levels.”



Doug Baker

▲ Kate McCleary (left) and Emily Moore, are the first two recipients of UD’s health coaching certificate.

Working Toward Wellness

Kate McCleary and Emily Moore, the first two recipients of UD’s health coaching certificate, were honored at a ceremony on May 15, 2013.

The post-baccalaureate program is aimed at preparing health professionals to work in a clinical setting as part of a team that facilitates behavior change among at-risk patients, decreases demand for healthcare services, and reduces morbidity across the lifespan.

“This is a turning point that symbolizes a major change coming about with healthcare reform,” said dean Kathleen Matt. “In the future, it’s going to be all about health instead of medical care, which is a perfect fit for our college because we already have the whole skill set.”

Mike Peterson, chair of the Department of Behavioral Health and Nutrition, said that health coaching is filling an important gap in modern healthcare. “What do you do when you leave the clinic or the hospital?” he said. “That’s when health coaches can step in and help people make the transition.”

Both of the certificate recipients are also earning master’s degrees, McCleary in health promotion and Moore in human nutrition.

“My passion is corporate wellness,” McCleary said. “It’s not enough to just tell someone what to do and leave them alone to do it. As a health coach, my job is to build a one-on-one relationship with my clients to help them succeed. In turn, their feedback will help me to do my job better in the future.”

Moore said that completing the health coaching certificate builds on what she has already learned as a registered dietitian. “I’m already using health coaching skills in my work as a nutrition counselor in a physician’s office,” she said.

The certificate program was launched in 2011 with an education pilot grant from the Delaware Health Sciences Alliance. Peterson said that UD also received valuable insight from physicians and health professionals at Christiana Care and Nemours/A.I. Nemours DuPont Children’s Hospital in identifying the skillsets and competencies needed for the certificate.

“We want to see health coaches affiliated with doctor’s offices and clinics,” Peterson said, “so it’s important for us to have their input as we train students for careers in this field. Clearly, there is a need for qualified and well-trained health coaches, and the University of Delaware is leading the way. Kate and Emily are exceptionally talented and will make a tremendously positive impact on those they serve.”

Medical Laboratory Sciences: New Name *and* New Major

Department of Medical Technology renamed Department of Medical Laboratory Sciences

THE DEPARTMENT OF Medical Technology has been renamed the Department of Medical Laboratory Sciences to better reflect terminology used in the industry.

The department is also now offering two undergraduate programs, one in Medical Laboratory Science and the other in Medical Diagnostics, with both majors culminating in the B.S. degree. An advanced career option includes an interdisciplinary graduate Ph.D. program in Medical Sciences administered by the College of Health Sciences.


Students pursuing the Medical Laboratory Science major gain clinical laboratory technical skills as well as the medical knowledge to facilitate prevention, diagnosis, and treatment of disease. The majority of Medical Laboratory Science graduates are employed in the labs of hospitals, private companies, or public health agencies.

"Our graduates perform at an exceptional level on the national certification examination administered by the American Society

for Clinical Pathology Board of Certification," says department chair Huey-Jen Lin, "and most of them obtain jobs before or soon after graduation."

The Medical Diagnostics major is a clinically oriented basic science program that educates students in the principles of laboratory testing in light of disease prevention, diagnosis, and potential therapy. Graduates typically go on to advanced education in the areas of medicine, dentistry, optometry, physician assistant studies, clinical research, and forensics as well as post-baccalaureate studies in other health-related areas.

A small student-to-faculty ratio, dedicated laboratories equipped with sophisticated clinical instruments, and opportunities for undergraduate research add to the quality of education offered by the department.

"In addition, we have an extensive list of clinical affiliates in four states where our students receive supervised, structured, diagnostic laboratory experience during the last five months of the program," Lin says. "Our students leave here well prepared for careers or further education, whichever path they choose to pursue." 

Medical Laboratory Sciences

www.udel.edu/mls

small in size, BIG on Research

UD'S DEPARTMENT OF Medical Laboratory Sciences is small but has a strong record of scholarship: five of its seven tenure-track faculty have active, funded research programs. In addition to educating the next generation of clinical laboratory scientists, these individuals are contributing to the development of new knowledge on health-related topics from cancer and diabetes to immunology and nanomedicine.

"Because the department currently has no graduate program, it's especially challenging for the faculty to move their research programs forward," says Susan Hall, deputy dean of the College of Health Sciences.

"Fortunately, however, the undergraduate student majors in the department are quite academically talented, with many going on to medical school. So the faculty are able to utilize the assistance of some of these undergraduate students, as well as some students from the Department of Biological Sciences."

The following are brief highlights of the work being done by these five researchers. For more information, contact them directly via email.




Healthy Helping

Groups in Medical Laboratory Sciences reach out to community

During just three months in 2012, groups from the Department of Medical Laboratory Sciences raised over \$1200 for the Juvenile Diabetes Research Foundation (JDRF), volunteered during the Blood Bank of Delmarva CAA Have a Heart Blood Challenge, and hosted an information table at the Apple-Scapple Festival in Bridgeville, Del. The group that raised funds for JDRF intended to participate in the Foundation's Walk for a Cure, but Hurricane Sandy caused the event to be postponed until January.



For the blood drive, nine members of the MLS club took donated blood units upon completion of the donation and "stripped" the tubing, packaged the blood properly in coolers for transport back to Blood Bank of Delmarva, and packaged the blood tubes collected for further testing of the donated blood.

For the Apple-Scapple Festival Health Fair, the department and the Delaware affiliate of the American Society for Clinical Laboratory Science hosted a table to provide the public with information about patient safety tips on blood collection, fasting before lab tests, and the patient-friendly website Lab Tests Online. 



MICHELLE PARENT
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Focusing on immunology and infectious disease, including the protective mechanism required to survive a pneumonic plague infection and the immune response to infection from food-borne pathogens.



ARUN KUMAR
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Conducting research on the development of functional nanomaterials, targeted drug delivery technology, nanomaterial-based drug formulations, biosensors, and tissue engineering.



HUEY-JEN LIN
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Examining how epigenetically silenced tumor suppressor genes influence tumor initiation, progression, and metastasis in breast and pancreatic cancers.



MARY ANN MCLANE
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Investigating a snake-venom protein called eristostatin that binds to receptors on the surface of cancer cells and inhibits metastasis.



RAELELE MASER
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Focusing on a complication of diabetes called neuropathy, in which the nerves are damaged.



College of Health Sciences celebrates innovative student solutions to challenging health issues

photos by Doug Baker

A MULTIFUNCTIONAL MOBILE app for use at restaurants, a web portal for teen mothers, and a plan to help the Cheyenne River Sioux eat more healthfully using fresh-grown herbs took top honors in the University of Delaware's inaugural First Step Program competition.

First Step was launched at the beginning of the 2012–13 academic year by the College of Health Sciences to encourage students to identify important health-related challenges and develop novel solutions to those challenges.

All of the participants came together with program coordinators, faculty mentors, and family members at an awards dinner in UD's Clayton Hall Conference Center.



📍 Kevin Chang explains the first place entry "Noms Away" as his partners Mitali Desai and Annie Sanger look on.

"We launched this program because we saw grand challenges in healthcare and felt that there was no one better to take on some of those challenges than our bright, creative, and energetic students," said health sciences dean Kathleen Matt in welcoming the attendees. "I'm so impressed by how this program has taken off, and I look forward to seeing even more students participate next year."

The Winners

Kevin Chang, Mitali Desai, and Annie Sanger laid the foundation for a small business startup with their first-place project



📍 Third prize recipient Chelsea Hollowell delivers a one-minute presentation on her project, "Planting Herbs in a Food Desert."

"Noms Away." The three seniors created a mobile app that enables users to order and pay for restaurant food while also tracking nutritional content. "We think this is the first product of its kind to integrate all three aspects in a convenient and efficient system," says Chang.

The State of Delaware has expressed interest in sustaining Kelsey Bristow's "Online Resource Center for Pregnant and Parenting Teens in Delaware," which captured second place. Bristow, a student in UD's Accelerated Nursing Program, incorporated research on teen internet use in order to optimize her site's search results, facilitate navigability, and enable its use on mobile devices.



📍 Second place winner Kelsey Bristow developed a website for pregnant teens.

Third-prize winner Chelsea Hollowell, a senior majoring in dietetics, will implement the first phase of her project when she visits the Cheyenne River Sioux reservation in Ziebach County, South Dakota, this summer on a mis-

“These kids are poised to make changes in the world.”

– Dr. Dan Flynn

sion trip with her father. Her plan is to improve the health of the residents—who live in the poorest county in the U.S.—by teaching them healthy cooking techniques, produce preservation, and herb garden cultivation.

“We had so many wonderful ‘back stories,’” says Dan Flynn, associate dean for research and Unidel Chair of Health Sciences. “Two of our students received funding to attend the Clinton Global Initiative, one was offered a job, and First Step helped another participant select a major.”

“The whole experience has been impactful for the students,” he adds, “and many of the projects will soon be impactful to society. These kids are poised to make changes in the world.”

The Back Stories

Marta Shakhazizian was a freshman without a declared major when she entered the competition. Her entry “Junk Kills” uses startling photographs—a woman “smoking” a French fry, a face sporting a McDonald’s golden arch as a frown, another face smeared with sprinkle-studded icing—to urge the public to “Eat Responsibly.”

Shakhazizian had such a rewarding experience developing the Facebook page and graphic images for her project that she has decided to pursue a career in visual communications and photography. She was also awarded \$1500 by the Clinton Global Initiative to further develop her campaign to end obesity and promote healthy eating.

Biology major Jacob Joseph, a senior on a multidisciplinary team addressing food insecurity in Haiti, was also invited to the Clinton Global Initiative. “Malnutrition in Haiti is deeply rooted in a complex web of cultural, social, ecological, economic, and other factors,” he says. “Our goal is to identify ways to

About First Step

First Step was launched at the beginning of the 2012–13 academic year by the College of Health Sciences to encourage individual students and student teams to identify important health-related challenges and develop novel solutions to those challenges.

Students were invited to submit proposals focused on an important aspect of health care or healthy living, develop a potential solution to that problem, and present their solution for review. CHS provided \$500 to each of the top 10 applications.

The students had six months to develop their solutions and then present them in the form of posters. They met with program director Dan Flynn and faculty mentors every month and were also connected with experts to discuss the merits of their ideas and how they could be pursued and further developed.



▲ Angela Montes talks about her project focusing on improving the delivery of patient-critical lab results to physicians.

combat malnutrition on a large scale.” Other team members were sophomores Allison Morris and Jaewoong Yoo.

Connecticut native Celeste Richards, a senior majoring in nutritional science, contacted the Mayor of Bridgeport when she began to do the research for her project on urban food deserts, and he offered her a job upon graduation. Her YouTube video is aimed at bringing attention to the absence of healthy foods, including fresh vegetables and fruits, in urban neighborhoods. Richards admits that

she started the project as a resume builder. “But then it became a passion,” she says, “and finally it turned into a job.”

Michelle Francis and Angelica Montes, both seniors in medical laboratory science, polled more than 200 physicians’ offices in Delaware to determine how their staff members handle the delivery of critical patient laboratory results. The pair was thrilled with their 31 percent response rate but dismayed to find tremendous inconsistencies both within individual offices and across practices. Their project demonstrates the need for a standard operating procedure for this important function.

Stephen Donald, a senior in exercise science, proposed a novel way to combat childhood obesity. His FitTen Program is based on surveying kids about what they think comprises an effective fitness intervention. His goal is to identify ten core principles for a healthy lifestyle and build a program for 10- to 14-year-olds around these principles.

Junior dietetics majors Ariana Haidari and Dana Sivak teamed up to develop age-appropriate solutions to childhood obesity that can be incorporated into school curricula and computer games. “We want the focus to be on nutrition concepts rather on weight control,” Haidari says.

Ryan Locke, a sophomore in biomedical engineering, is developing a multitasking device for physical therapy applications. The first phase of his project focuses on the wrist, but his long-term goal is to create specialized devices for every joint in the body. An invention disclosure has been filed on the concept, and Locke hopes that a patent will eventually be issued for the device. ++



▲ Marta Shakhazizian explains her anti-obesity campaign to Mike Peterson, chair of the Department of Behavioral Health and Nutrition.

◀ Liz Hetterly (left) travelled to Bangladesh for 10 weeks during the summer of 2012 to study maternal health at the icddr,b.

from GLOBAL 2 LOCAL and back again

LIZ HETTERLY MAY be only 22 years old, but after spending 10 weeks during the summer of 2012 in Bangladesh, she has gained the wisdom of someone much older when it comes to global health issues.



Dr. Omar Khan

Under the guidance of Dr. Omar Khan, chair of the DHSA Global Health Working Group, Hetterly worked at the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)

studying the health of mothers.

“Mothers are the foundation of our communities,” Hetterly says. “The health of our mothers is a strong indicator of the health of the world we live in. Every day, 800 women die from preventable causes related to pregnancy and childbirth—99 percent of those occur in developing countries, and more than half occur in just 11 countries. One of those countries is Bangladesh.”

“The underlying causes of maternal death are largely social and economic in nature,” she adds. “I firmly believe that wealth, social class, and geographic location should not determine life and death.”

A biology major with minors in sociol-

ogy and political science, Hetterly designed her own academic program focusing on global health through the UD Dean’s Scholar Program. Under that program, she completed a senior thesis on barriers to access and effective use of family planning services among poor adolescents in Dhaka, Bangladesh.

Khan, who is Medical Director for Community Health and the Eugene duPont Preventive Medicine & Rehabilitation Institute at Christiana Care Health Systems, views DHSA as the perfect facilitator of programs like Hetterly’s.

“With DHSA, we can now think about offering majors in areas like global health that none of the partners could offer alone,” he says. “Global health requires teachers that span disciplines, including political science, medicine, anthropology, sociology, biology, economics, public health, and others. We need to provide undergraduates with broad experience, which requires team teaching.”

In Hetterly’s case, that team included, in addition to Khan, three UD faculty—David Usher (biological sciences), Barret Michalec (sociology), and Michael Peterson (behavioral health and nutrition).



David Usher



Barret Michalec



Mike Peterson

Khan also points out that global health projects provide students with an opportunity to apply locally what they learn globally and vice versa. “We often point to Delaware as the perfect place to do research and implement new programs because the state is a microcosm of the U.S. as a whole,” he says. “At the same time, we have a lot to learn from the rest of the world that can be applied here. ICDDR,B is one of the leading tropical medicine centers in the world, so this was a great opportunity for Liz.”

As Hetterly has learned, effecting change in developing countries is a complex undertaking. “Over a third of pregnant women are underweight in Bangladesh,” she says, “and 41% of children under five are short for their age. With stats like that, it seems that improving nutrition has to be

the priority, regardless of sustainability. But I wonder if there's a way to do it all, to do it the right way—improve nutrition and maternal health, strengthen food security, and promote sustainable agricultural practices all at the same time.”

She has also come to understand that cultural and political issues can get in the way of real problems like malnutrition being addressed. During her first month in Bangladesh, she attended, “Invest in Nutrition Now: A Smart Start for Our Children, Our Future,” which was a meeting to present recent data on the economic viability of a comprehensive nutrition program in Bangladesh.

During the Q&A session following the presentation, Hetterly was disappointed to hear government and other officials place the blame for malnutrition on women for not breastfeeding exclusively for the first six months of their babies’ lives.

“I was shocked at how certain individuals extraordinarily simplified a complex problem,” she says. “As I saw each day at ICDDR,B, malnutrition involves many factors, including poverty, poor water quality, and infectious disease, in addition to breastfeeding.”



“I saw babies suffering from acute and chronic malnutrition, with additional diagnoses of pneumonia, sepsis, acute respiratory infection, and even a ventricular septal defect,” she says. “Did the problems of these severely underweight babies all boil down to a lack of breastfeeding?”

Usher, who is associate chair of biological sciences at UD and has served as chair of the DHSA education taskforce, points to the importance of a program in global health from the standpoint of education.

“The National Institutes of Health has mandated that medical education include programs to increase cultural awareness among healthcare professionals,” he says. “Each of the DHSA partners has a global health program, and under the umbrella of the alliance the combined



▶ “Invest in Nutrition Now: A Smart Start for Our Children, Our Future,” presented new research on estimates of the benefits and costs of a comprehensive nutrition program in Bangladesh.

programs create new and exciting opportunities for healthcare professionals and students like Liz Hetterly.”

Hetterly is just one example of the synergy growing out of DHSA collaborations in the area of global health. Khan explains that the Global Health Working Group came together in 2010, with the group first assessing capabilities and needs.

In February 2012, Khan chaired a global health symposium at Christiana Care. “That event helped us all get to know each other better,” he says. “Next, we wrote a joint grant to develop a common global health elective framework, and we’re planning another symposium next year, focused more on education. We’ve also developed a global health curriculum for residents at Christiana Care.”

Khan was recently named chair of the American Public Health Association’s Section on International Health. APHA is the oldest and largest public health organization in the world, with a major annual meeting that draws some 15,000 attendees.

“One very important aspect of my job as chair of the DHSA Global Health Working Group,” Khan says, “is not only connecting my very accomplished colleagues from across our four institutions but also scaling us up to be a regional leader.”

“DHSA is structured to be more than the sum of its parts—it’s intended to enhance our collective capabilities beyond those we currently have as individual institutions,” he continues. “In order to develop these capabilities, we must have alliances

and connections with groups from across the country and internationally. Having DHSA leadership in APHA leadership positions gives us one such presence. It can also promote the great work of DHSA to an international audience.”

As for Hetterly, she also learned how quickly global becomes local and vice versa.



She met “Dr. Chris” while in Parbutipur with ICDDR,B visiting the Rang-Din Nutrition Study.

“When I mentioned that I was from the University of Delaware,” Hetterly says, “she told me that although she’s originally from Ohio, she did her residency at Christiana Hospital, and her sister graduated from UD’s physical therapy program in 1991. Now Dr. Chris works for LAMB, a Lutheran mission in Parbutipur that runs an amazing hospital and community health program.”

It truly is a small world. 🇺🇸



LEARNing *to* communicate

Creating cultural competency *photos by Doug Baker*

MISCONSTRUED LYRICS IN popular songs can be funny, but miscommunication in a doctor's office or hospital ER is no joke. Often the result of cultural, religious, and socioeconomic differences, mixed messages can result in incorrect diagnoses and failure to comply with prescribed treatments.

To improve cultural diversity in educating future nurses, a new set of scenarios has been introduced to the University of Delaware's Healthcare Theatre program through a collaboration with medical anthropologist Melissa Melby.

"In teaching cultural competence, we have to be careful to avoid stereotyping and view the issues in a more dynamic way," says Melby, who joined UD's Department of Anthropology as an assistant professor in 2011.



Melissa Melby

Ambre Alexander

"Our goal with these scenarios is not only to help nursing students understand that there are cultural differences but also to make them aware that the differences may not be as great as people perceive them to be. We want to give these students the tools to work through cultural stereotypes, so that they can deliver effective care to their patients."

Under Melby's advisement, students in UD's Honors Program developed four cultural scenarios based on the common premise that the patient is at an urgent care center for a non-emergency visit.



The scenarios were then implemented in NURS235, Health Vulnerability and Diversity, where the LEARN model is used to navigate this interaction with patients. LEARN is an acronym for “Listen, Explain, Acknowledge, Recommend, Negotiate.”

Karen Avino, co-instructor of NURS235 with Wayne Voelmeck, points out that teaching cultural competence to students when there is no previous frame of reference can be difficult. “Using authentic real-world experiences through simulations makes the didactic material come alive,” she says.

The scenarios, which are not scripts but rather loose frameworks for practitioner-patient interactions, provide the nursing students with a stage for practicing communication skills using the concepts underlying the LEARN model. At the same time, the approach gives Melby’s anthropology students the opportunity to observe and assess the nursing students’ interaction with their patients.

“As a professor, I’m really excited to provide my students with this kind of hands-on experience in a medical setting,” Melby says. “Logistically, it would be very difficult to get them into

a real doctor’s office or hospital, but UD’s unique structure fosters and facilitates these types of collaborations, which are so valuable in providing our students with experiential learning opportunities.”



One scenario highlights miscommunication stemming from the nurse’s use of the term *hypertension* and the patient’s reference to *high pertension*. The former is the biomedical term for high blood pressure, while the latter refers to an incurable African American folk medicine condition in which symptoms are brought on by strong emotions.

In another, a Hispanic patient with poor English language skills is diagnosed with diabetes. In addition to dealing with the language barrier, the nurse has to try to convince the patient that it’s not all right to take her mother’s medication for this disorder.

Amy Cowperthwait, Healthcare Theatre Program coordinator, points out that in this scenario, the issue is as much socioeconomic as it is cultural because the patient can’t afford to pay for her own prescription. In the debriefing following the scenario, she praises nursing student Dominique Wisher for helping the patient explore ways to get the correct medication more affordably.

Cowperthwait also gives credit to Mallory Acevedo, who has played the part of the Hispanic patient, for grabbing a bottle of grape juice as a last-minute prop, thereby setting the stage for Wisher to initiate a conversation with her patient about the need to monitor her sugar consumption.

Neil Redfield, who helped to create the Hispanic scenario, admits that culture isn’t something we usually think of in the context of contemporary healthcare. The project not only raised his awareness of this issue but also gave him the satisfaction of contributing to the education of future practitioners.

Emily Bange, who wrote a scenario featuring a female Muslim patient with a urinary tract infection, says, “This program showed me just how useful anthropology can be in solving the problems we face as citizens of an increasingly globalized world. I really enjoyed the opportunity to give feedback to the nursing students and help them improve their skills and better communicate with patients.”

Cowperthwait, who pioneered the Healthcare Theatre program several years ago with theatre professor Allan Carlsen, admits that at first she was a bit skeptical of the undergraduate anthropology students’ ability to give meaningful feedback to the future nurses.

However, she is glad to have been proven wrong.

“I’m impressed,” she says. “They’ve been spot-on with their comments.” ++





UD volunteers help people attending Vive tu Vida learn about the use of a parachute as an exercise tool.

Vive tu Vida

Research and event focus on health in Hispanic community *photos by Doug Baker*

GETTING EXERCISE CAN be as simple as dancing to some fast-paced music, and preparing healthy meals can be easy and inexpensive. Those were the messages shared by a team of UD health sciences faculty and students who volunteered at Vive tu Vida, an annual Hispanic family physical activity and healthy lifestyle event. More than 1,000 people turned out at Anson Nixon Park in Kennett Square, Penn., for the event.

The UD involvement in Vive tu Vida was an outgrowth of a research collaboration between a team of faculty in the Department of Behavioral Health and Nutrition and La Comunidad Hispana, a federally qualified health center committed to empower immigrants and low-income residents of southern Chester County to stay healthy, build strong families, and lead productive and fulfilling lives.

Assistant professors Mia Papas, Jillian Trabulsi, and Greg Dominick are conducting a pilot study “Project Vida Sana,” which focuses on understanding the role of food insecurity, health literacy, diet, and physical activity on obesity rates among Hispanic mothers and children.

“The community center has been a wonderful partner with us,” says Papas. “The

nurse practitioners there have encouraged people to participate in the research, and they’ve been very interested in our results.”

“When the opportunity came to participate in Vive tu Vida, we realized we could extend our reach into the community beyond the research. Our goal was to show how we can build fun into physical exercise.”

The UD students participated in two on-stage demonstrations to promote physical activity—“Get up and Dance” and “The parachute: A physical activity exercise for all.”

“Dance is an ideal form of physical activity for children—it enhances coordination, cardiovascular fitness, balance, and spirit,” she says. “All that’s needed is music and a little bit of space. For the Hispanic population, I think this was something a little different from what they were used to seeing

with the typical Latin style dances. Everyone seemed to enjoy it, and it made my day to share my passion with the kids.”

The UD students also hosted two informational booths. One, run by nutrition and dietetics students, focused on healthy eating. The other, part of a “know your numbers campaign,” provided information on the importance of health screenings. All four undergraduate clubs within BHAN—public health, health behavior science, nutrition and dietetics, and health and physical education—recruited student volunteers who volunteered throughout the day.

“Our work with the community center and this event has been great for our students,” Papas says. “It’s really valuable for them to have experience working in communities, as cultural practices and beliefs can have an impact on health and health promotion activities.”



A UD volunteer helps children make posters about healthy eating habits.

Get Up and Do Something is source for optimal health

Mike Peterson believes that the best way to bring about changes in health behavior is to take an approach that's fun, positive, and motivational.

So the website he developed and runs with the health promotion master's students at the University of Delaware is "not about 'guilting' people into doing things — it's about playing to their better angels."

Chair of UD's Department of Behavioral Health and Nutrition, Peterson launched the Get Up and Do Something (GUADS) website in 2003 with funding from the state of Delaware. GUADS is a program of the Delaware Coalition to Promote Physical Activity and Healthy Nutrition.

"The website is a great opportunity for our students to learn how to use communication and social marketing to promote health," Peterson says. "At the same time, it's a fabulous way to motivate people to

think about what they can do to make their own lives better and healthier."

The website features upbeat music to keep people moving, articles on topics from family relationships to mood-wrecking foods, and information about handling stress, eating well, and being physically active. The site also has links to a broad range of resources, including health-related federal agencies and professional organizations. A GUADS Facebook fan page was launched in 2011 to encourage fans to seek more health information online.

Results of a study carried out by Peterson and master's student Paige Woolley suggest that Facebook may be an effective medium to help people adopt and maintain a healthy lifestyle.


"Successful media campaigns to promote health can't be just informational — they also have to be motivational," Peterson says. "Our health promotion program is one of the first on the East Coast to train students in the effective use of communication and



Kathy F. Atkinson

social marketing for health promotion. Delaware is taking the lead in providing a living laboratory for the next generation of health promotion professionals."

"With social marketing, you're fishing, and you have to use the right bait," he adds. "This isn't about fear of disease but about working to be the best you can be."

GUADS partners include the Delaware Coalition for Healthy Eating, Heart Truth Delaware, Healthy HENS, Urban Bike Project, and Delaware Greenways. 

Unique course offers culinary experience, provides apprenticeship training

CLOVES, THE DRIED flower buds of a tree native to Indonesia, offer a number of health benefits, including anti-bacterial and anti-inflammatory properties. Cinnamon, which comes from the inner bark of a tropical evergreen tree, is a natural way to control blood sugar. Saffron, harvested by hand from the stamen of the crocus plant, is one of the world's most expensive spices.

These were just a few of the facts offered by instructor Laura Masullo during week seven of "The Spice Kitchen: Taste the Flavor," a new one-credit course offered at the University of Delaware.

Masullo, who completed her master's degree in nutrition in May 2013, tosses up ingredients and tosses out spice trivia as she teaches students how to make "flavorful swaps" by substituting spices for salt in daily food preparation. During the week in which cloves took center stage, the students learned how to make braised lentils, spiced saffron jasmine rice, and autumn apple brew. The recipes were all prepared using methods that reduce fat as well as sodium.

The brainchild of Marie Kuczmarski, professor in the Department of Behavioral Health and Nutrition, the course is aimed at helping people become more knowledgeable about spices and their potential health benefits.

"Current dietary guidelines emphasize the need to reduce dietary sodium for better health," Kuczmarski says. "But if you're going to take out the salt, you'd better add some flavor to your food in other ways."

"While registered dietitians are well aware of the need to reduce dietary sodium, they're not necessarily culinary connoisseurs," she adds. "I think it's important that we not only advise people to cut back on salt but also provide them with specific ways to do that without sacrificing taste."




Evan Krape

The course was first taught in fall 2011 in the departmental food lab, which has six cooking stations and is equipped with a mirrored demonstration table. The 14-week class consists of four presentations and ten spice labs, with different students given the opportunity for hands-on cooking experience each week.

Kuczmarski and graduate student Elisabeth Jones conducted a detailed evaluation of the course on a sample of 18 students during its inaugural semester and reported their results in a paper published in *Creative Education* in 2012.

Their overall conclusion?

"A culinary class focused on spices can enable college students to learn approaches to healthy, flavorful cooking," says Kuczmarski.

"Most of us are aware that food consumed in restaurants typically contains more sodium, fat, and calories than home-cooked dishes," she adds. "However, many people, especially young adults, have limited knowledge and experience cooking with a wide variety of foods as well as with herbs and spices. Courses like this can go a long way toward bringing people back into the kitchen where they can prepare their own food in healthier ways." 



Teaming *for* Health

Nurse Managed Health Center
reaches out across campus

photos by Ambre Alexander

▲ UD's Nurse Managed Health Center is developing partnerships with a variety of organizations and offices across campus — activities that are expected to grow when the center moves to the STAR Campus.

IF HEALTHCARE OF the future is a team sport, the Nurse Managed Health Center at the University of Delaware is already forming its roster.

“Our first goal is to provide convenient, comprehensive care for all UD faculty and staff,” says nurse practitioner Allen Prettyman, who manages the center. “But we also recognize the increasingly interdisciplinary nature of healthcare delivery and education, and we’re always looking for new opportunities to collaborate with other organizations on campus and in the community.”

So far, the list of NMHC partners includes a diverse group, ranging from the Laboratory Preschool and Public Safety to the Labor Relations Office and the Employee Wellness Program.

PULSE talked to Prettyman about the center’s various partnerships and outreach efforts.

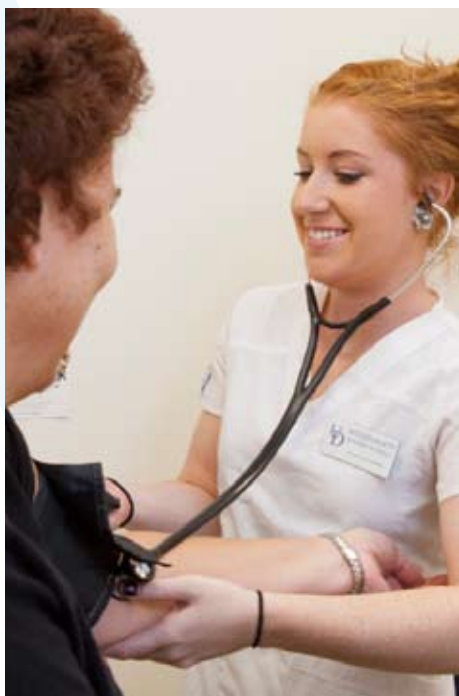
How do you identify new partnership opportunities?

In general, I try to get the word out about the NMHC by giving presentations to interested groups and organizations, and some of our collaborations have grown out of those discussions. But sometimes ideas for new partnerships just crop up unexpectedly.

For example, I was recently asked to serve as healthcare consultant to UD’s Laboratory Preschool, a position that involves advising rather than actually delivering patient care—for example, I might be asked about how to handle a flu outbreak. But as I was touring the preschool’s new facility, I noticed that there was an unused nurse’s office. When I learned that it was not staffed, I immediately saw an opportunity for our graduate students—who are already registered nurses—to gain clinical experience while providing a free service to the preschool. We’re now exploring how we can set this program up.

What are you doing outside the clinical setting?

One important aspect of our work is supporting research that involves human subjects. Since we opened, we’ve done routine blood work on prospective subjects, and we’ve recently added a lab dedicated to conducting stress tests. The lab is expertly run by a graduate student in



About the NMHC

The NMHC is located in Room 119 McDowell Hall and is open from 8 a.m. to 4 p.m. Monday through Thursday, and 8 a.m. to noon Friday. The center accepts health insurance as well as credit cards, cash, and checks. Same-day appointments are available, and walk-ins are accepted.

For more information, call 302-831-3195, email NM-HC@udel.edu, or visit the website.

applied physiology and is currently supporting four research projects, two in kinesiology and applied physiology and two in physical therapy. In the past, the subjects would have had these tests done off campus, but with the NMHC, we can serve them here.

“Our first goal is to provide *convenient*, comprehensive care for all UD faculty and staff.”

– Allen Prettyman

There is an increased emphasis on wellness and health promotion as healthcare costs increase. What role is the NMHC playing in this area?

We work closely with the Employee Wellness Program on campus, with referrals going in both directions. If wellness program staff detect a problem—for example, high blood pressure—in an employee, they will suggest that the patient visit us for follow-up. At the same time, if we see a patient that we think could benefit from nutrition or fitness support, we’ll send them to the Employee Wellness Program.

How is education integrated into these efforts?

While maintaining standard of care is our top priority, we’re always looking for ways to involve students in what we do. Grad students in our nurse practitioner program assist with exams, students in medical laboratory science help with blood work, exercise science students support our stress testing lab, and students in health promotion provide input to nutrition, fitness assessments, and behavioral health change.

I never stop thinking about how we can continue to find new opportunities for our students to gain clinical and service learning experience. ++

Editor’s Note: If you have an idea for how your organization could partner with the NMHC, contact Prettyman at apretty@udel.edu.

Through the program:

- **Medical technology** students collect blood samples, perform routine urinalysis, and process and prepare samples for shipment to the lab;
- **Kinesiology and applied physiology** students perform treadmill exercise stress tests;
- **Nurse practitioner** students perform physical exams and assist with stress testing; and
- **Health promotion** students, working through UD’s Employee Wellness Program, gain experience with biometric measurements and health education.



What kinds of special healthcare services are you providing to the University community?

The NMHC is now working with the Office of Labor Relations to handle workman’s compensation cases and to conduct Department of Transportation physicals for bus drivers and heavy equipment operators. I’d like to emphasize that use of the NMHC is *completely* voluntary for these purposes, but a lot of employees are finding that it’s much more convenient than other options. We can see people here relatively quickly and refer them to other providers if needed. Bills are sent directly to employees’ departments.

Ron Wenger, who has amyotrophic lateral sclerosis (commonly known as Lou Gehrig's disease) and his wife Sherri spoke to the class as part of Rachael Green's capstone project, "Walk in the Patient's Shoes." ▶



Chronic Illness *in* America: From Policy *to* Person

New course uses experiential service learning to enrich understanding of patient experience *photos by Doug Baker*

CHRISTINE MANTA MAKES a peanut butter and banana sandwich for Stephanie Weir while Kelly Grzinic cleans up Weir's email inbox and Rachael Green dusts her dining room furniture.

When the chores are finished, the four young women chat about their common interests in music, cooking, and yoga. At the end of the one-hour visit, Grzinic leads a short meditation session, guiding the participants to "be in the moment" and let go of their worries.

Their worries, however, couldn't be more different.

Manta, Grzinic, and Green are typical college students concerned about exams, papers, and other end-of-semester commitments, while Weir carries the anxieties

of a person with a chronic illness. She was diagnosed with multiple sclerosis in 2006, the same year she got married.

None of the four would have met any of the others if not for a new transdisciplinary course at the University of Delaware, HLTH267, Chronic Illness in America: From Policy to Person.



An outgrowth of the Lori's Hands registered student organization at UD, HLTH267 incorporates both classroom and experiential learning by pairing students with chronically ill clients in the community.

"The course allows students to connect with these individuals and provides an opportunity for both to benefit from the experience," says course instructor Cynthia Diefenbeck, assistant professor in UD's School of Nursing. "The students link these deeply meaningful human encounters to the course content, which includes a sweeping overview of individual, family, community, and national policy-level issues."

"I've been amazed at the breadth of students during this first semester," she adds. "The course has brought together a microcosm of budding stakeholders who now have a foundation for joining forces to address a broad range of healthcare issues in the future. They have really enjoyed wrestling with big questions like 'How do we sustain quality healthcare?' and 'How do we afford it?'"

Rachael Green chats with instructors Cynthia Diefenbeck and Sarah LaFave after class. ▶



The course is co-taught by Lori's Hands founder Sarah LaFave, who graduated from UD in 2011 with a degree in nursing. LaFave started the organization in 2009 in memory of her mother who had died of breast cancer when LaFave was just 14 years old.

Walking down the UD Green one day during her sophomore year, LaFave thought about the various needs of chronically ill people, especially those without strong family support networks. Why not pair them with energetic college students who had odd pockets of time throughout the day that they could use to help others by doing ordinary household chores?

That moment marked the birth of Lori's Hands, and the organization has since served some 150 elderly and chronically ill people in the greater Newark, Del., community. The weekly visits are about much more than just raking a lawn, organizing a messy closet, or filling a refrigerator with fresh food. The students develop relationships with their clients, witness the daily struggles of life with a chronic illness, and learn to serve as advocates for their clients.

But LaFave saw the potential for the Lori's Hands concept to do even more good.

She knew that UD's Service Learning Program brings students together with community organizations. Through her experiences with Lori's Hands, LaFave saw an opportunity to add a new component to that program through a course that would complement and enrich students' work with clients in the community. She and a small team of Lori's Hands leaders went on to develop the curriculum and syllabus for HLTH267.

The students are paired to work with clients selected specifically for the class. Manta, a premed student, and Grzinic,



who is majoring in English and Women's Studies, have teamed up to work with Weir during the Spring 2013 semester.

"The class appealed to me because of its focus on patient interaction and chronic illness,"

Manta says. "As a future physician, I felt I needed to learn more about the healthcare system. Stephanie is really into alternative

medicine, and working with her has helped me see that there has to be a compromise between what the patient wants and what the physician thinks she needs."



Partnering with Grzinic has also been enlightening for Manta. "We started talking in the car on the way home after our first visit with Stephanie," she says. "The amazing thing was that we quickly realized we were coming away from the same experiences with completely different ideas. Kelly brings in a 'whole-person' type of perspective that's very different from what I'm exposed to with my pre-med and science friends."

For Grzinic, working with Weir has been a reminder that nothing is certain in life. "We can build up expectations, but there's no guarantee about anything," she says. "It's been an incredible experience to see Stephanie handle this illness with such grace."

LaFave, who is now volunteer coordinator for an aging-in-place organization called the Brandywine Village Network, joins Manta and Grzinic on one of their last visits to Weir as the semester is coming to an end.



Stephanie Weir meditates with Rachael Green, Kelly Grzinic, and Christine Manta. ▶

Kelly Grzinic checks Stephanie Weir's refrigerator to see what she needs. ▶



"I love that you created this," Weir tells LaFave. "The best part for me has been the company—having someone here who's nice and someone who cares and someone who actually wants to help. They can ask me questions, and they're learning about the disease."



"They can learn so much more from you than they can from a textbook," LaFave replies. "You're the best teacher the students could ever have when it comes to knowing what

it's like to have a chronic illness. Thank you for being so open to them."

LaFave notes that all of the students became very engaged and bonded with their clients quickly. "I could see them transforming more and more from students to client advocates each week," she says.

She also observed an increased awareness about health-related political issues among the students.

“The best part for me has been the company—having someone here who’s nice and someone who cares and someone who actually wants to help.”

— Stephanie Weir

"My dad and the rest of my family are pure-blooded Republicans," Rachael Green told LaFave after class one day. "I also have a significant number of friends who voted for Obama. I was never able to argue healthcare from a political standpoint because Fox News says one thing and MSNBC says another, and I had no understanding of my own to argue one way or the other. With everything we're learning in this class, I feel like I can start

to decide how I feel about the issues based on real facts, not stories in the media or the opinions of other people."

The course culminates in a capstone project, where the students are asked to identify a value-added service and then to explore its feasibility and implementation. Projects included a pen-pal program and writing, music, art and pet therapy programs.

"This puts them in the driver's seat," says Diefenbeck. "It's their opportunity to be change agents. We're hoping that some of them will carry on this tradition of service at UD as well as in the larger community, whether that's through Lori's Hands or in some other way."

Diefenbeck, who was LaFave's Honors thesis advisor at UD, views the course as an opportunity not only to expose current undergraduates to the social, financial, physical, and emotional issues surrounding chronic illness but also to mentor LaFave as a teacher.

"I saw her passion when she was an undergraduate," Diefenbeck says. "I really wanted to help her launch her career because I think she has a great deal to share with others about this subject." +



Rejoicing in South Africa

Nursing instructor is named first study abroad faculty director of the year

LISA MCBETH'S STUDENTS surprised her with a seven-foot-tall giraffe during the last week of their Study Abroad trip to South Africa in January 2013. She named him Jabulani, a Zulu word that means "*rejoice*."

"That is what we have done for almost a month now," McBeth wrote in a blog entry the day she received the gift. "Rejoiced in

the opportunities and experiences we have shared and the lessons learned. Rejoiced in knowing we made a difference in some lives and touched many."

The nursing instructor has touched many lives herself, including those of the students that she has taken to South Africa and Peru over the past three years. Late in 2012, their nominations resulted in her selection as the University of Delaware's first Study Abroad Faculty Director of the Year.

The students credited McBeth with challenging them and with caring about the women they treated in prenatal clinics and the babies they cuddled in orphanages. She opened their eyes to healthcare disparities and their hearts to patients who craved a



kind touch as they dealt with the pain of childbirth.

One student said McBeth gave her advice and guidance while also allowing her to gain confidence interacting with patients and other members of the medical staff on her own.

Lisa McBeth and her students visit an orphanage. ▶



“I keep telling them, ‘If you just impact one woman, you’re making a difference.’”

— Lisa McBeth

For McBeth, the trips are literally and figuratively a labor of love.

“I’ve always been passionate about childbirth and women’s health issues,” she says, “and I wanted to take my students into clinics where they could really make a difference. I keep telling them, ‘If you just impact one woman, you’re making a difference.’”

The Study Abroad program follows on the heels of a labor and delivery course that McBeth teaches at UD. “It’s amazing to see the students connect what they’ve learned in the classroom with what they do at the bedside,” she says.

They also come to see the glaring discrepancies between American hospitals and the public clinics in South Africa and Peru, including not only the absence of caring on the part of many midwives but also a lack of supplies and sterile techniques.

At the same time, however, McBeth realizes that childbirth in America has been victimized by technology. “We intervene too much, and our maternal mortality rate is climbing. This program allows my students to see natural childbirth and understand that women can deliver babies without pain meds and epidurals—that they can give birth to babies who are alert and kicking rather than drugged and limp.”

McBeth says that winning the award “completely rejuvenated” her.

“It reminded me of why I’m doing this—why I love what I do,” she says.

But if she was surprised at being selected, her students were not. One of her nominators summed it up best when she wrote, “Lisa exhibited the qualities of a global citizen every minute of the trip.”

To commemorate the award, McBeth’s name will appear on a plaque that will be hung in Elliott Hall. She has also been appointed to the Advisory Board of the Institute for Global Studies—a fitting assignment for a “global citizen.”



Baby Love

When Bari Melker saw the UDaily story announcing Lisa McBeth’s Study Abroad award, she posted it on Facebook with the following comment:



“I am honored to call this wonderful woman my mentor and friend. Thank you for letting me on the trip last minute, you truly changed my life.”

The 2011 graduate of UD’s School of Nursing recently spent a year volunteering in South Africa, first at a safe house for abused and abandoned children in Pretoria and then a small maternity hospital in Cape Town.

By sheer coincidence, her year in South Africa was winding down just as the 2013 study abroad group was visiting Cape Town.

At McBeth’s request, Melker took the students on a tour of the hospital where she had been working. Although still barely 24 years old herself, Melker easily made the transition from student to teacher.



“I really fell in love with midwifery during the time I spent with the UD students,” Melker says. “Seeing them connect to the patients in the same way I did was just an amazing experience for me.”

Now back in the U.S. to attend midwifery school, Melker is marking time until she can get on another overseas flight, maybe to South America.

“I just want to travel around the world delivering babies,” she says.



Pulse

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