



Dance for PD allows Parkinson's patients to express themselves artistically while improving their motor skills and mood.

## Moving experience

## Dance program helps Parkinson's patients

**S**herry Brown walks gingerly into the dance class, her right elbow anchored at her side, her hand cupped in a ball. Her balance is uneven, so she takes care in finding a seat among the circle of chairs in the light-filled room at the Stanford Neuroscience Health Center. As the slow, rhythmic keyboard music begins, her arms, stiffened by Parkinson's disease, open in a wide, upward arc as if embracing the sky.

"You get a sense of your body and are pushing your body to do things you don't think you can accomplish," said Brown, who was diagnosed in 2008 with the neurodegenerative disease. "There is something about the music and movement together that seems to help at a different level. I come out of the class feeling energized and relaxed, all at the same time, and ready to move."

Brown is among some 20 students who have found a welcoming community at the Dance for Parkinson's Disease class, also known as Dance for PD. The class not only is physically therapeutic but often gives students

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PHOTOS: TIMOTHY ARCHIBALD

## COMMUNITY MATTERS



**Christopher Dawes**  
President and CEO,  
Lucile Packard  
Children's Hospital  
Stanford

**Lloyd Minor, MD**  
Dean, Stanford  
University School  
of Medicine

**David Entwistle**  
President and CEO,  
Stanford  
Health Care

**I**n the fall of 2014, Stanford Medicine emergency physician Colin Bucks, MD, risked his life by traveling into the heart of the Ebola crisis in West Africa to help treat stricken patients. He spent a month in a makeshift clinic in remote Liberia, working 14-hour days to save people infected by the virus, which also took the lives of many caregivers.

Bucks returned to California with invaluable insights about the virus and became a resource for hospitals around the country on how to manage a possible Ebola emergency here in the United States. His experience continues to help Stanford and other institutions

prepare for future threats from new or evolving infections.

This is one example of how Stanford Medicine physicians are reaching out globally to provide care, conduct research and educate trainees and colleagues abroad. As a leading

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► San Francisco Chronicle

**“For some, it’s going to be a higher dairy-fat, higher animal-fat diet. For others, it’s going to be more whole grains, more beans and less dairy.”**

—CHRISTOPHER GARDNER, PhD, professor at the Stanford Prevention Research Center, regarding weight loss, which is complex and will vary from one individual to the next. *Jan. 11*

► REUTERS

**“In the future, you will have multiple sensors relaying information to your smartphone, which will become your health dashboard. Alerts will go off with elevated heart rate over your normal level, and heartbeat abnormalities will be detected—these will enable early detection of disease, perhaps even before you can detect it yourself.”**

—MICHAEL SNYDER, MD, professor and chair of genetics, about his study on wearable devices, which can alert you to illness before there are symptoms. *Jan. 12*

► TIME

**“Clearly in aging something is breaking down, and we become less effective at managing this inflammation.”**

—MARK DAVIS, MD, PhD, professor of microbiology and immunology, on a study that found caffeine may help reduce the inflammation that underlies many diseases of aging. *Jan. 16*

► PBS NEWSHOUR

**“To see that a significant number of women reported toxicity that was severe or very severe was remarkable. It was higher than I might have thought and an important reminder to me as a clinician that these therapies are quite toxic, and that we need to listen carefully to what patients may be telling us about them.”**

—ALLISON KURIAN, MD, associate professor of medicine, on her study that found 42 percent of women have serious side effects from breast cancer treatment. *Jan. 24*

## Fighting for children’s health care: A pediatrician’s perspective

By Lisa Chamberlain, MD, MPH

**I** remember two things about my patient Maria, a tiny baby who was born a little early. One was her large, beautiful eyes. The other was that when I put my stethoscope on her tiny chest, I heard an enormous heart murmur. Maria had been born with a serious heart condition that would change her life and the life of her mom.

Good patient care at a time like this involves much more than treating a child’s heart. At that first appointment, Maria (not her real name), her mother and I began a long journey punctuated by multiple hospitalizations, surgeries and procedures. Maria was born at Lucile Packard Children’s Hospital Stanford and lived with her mom in East Palo Alto.

As her general pediatrician at Ravenswood Family Health Center, I came to know them both well. I focused on helping the tiny infant gain weight



Lisa Chamberlain, MD, MPH

so that she would be strong enough to undergo her heart surgeries. We brought in the Women, Infants and Children program to support her nutrition. I explained to her mom what the surgeries would do. I reviewed what Maria’s medicines were for and when

her mother couldn’t pay for them, I helped gain authorization from county staff, who were able to get them dispensed at the pharmacy. When I realized that they did not have enough money for food (due to many absences at work), I made sure that the family applied for food stamps.

My experience with Maria coincided with my research at Stanford involving access to care for kids in California. As a result of the research, I spent part of my time in Sacramento, working with legislators on changes to the California Children’s Services program, or CCS. This program is critical to the care of low-income children with serious medical conditions. My research, which involved analyzing data on publicly insured pediatric care like Maria’s, showed that access to high-quality care for low-income kids was pretty good in California compared with other states, but that there was variation among its 58 counties.

While working on the program’s reform in Sacramento, I spent time in countless staff meetings, public hearings and hallway discussions. I often thought about Maria, whose life depended on CCS. The research data I brought to these negotiations were as important as sharing Maria’s story—how her mother lost her job because of time spent caring for her fragile daughter, how the family sank more deeply into poverty and how services needed to be more focused on families. As changes to the CCS system were being discussed, I imagined how they would benefit or hinder Maria’s care and her future.

The health policy decisions made in Sacramento and Washington, D.C., impact health care programs, and these changes trickle down to communities where the results are deeply felt. Before spending time in Sacramento, I had been on the receiving end of seemingly capricious program shifts. I had spent my time at Stanford teaching, doing research and seeing patients in East Palo Alto. The policy arena was a foreign land, complete with its own calendar and language. But I came away very impressed with how hard elected officials and their staff members work. They are dedicated and smart. They ask good questions and scramble to understand the multiple, complex issues that confront them on a daily basis.

As a physician, I have experienced the scarcity of time firsthand. No matter how quickly I work, there never seems to be enough time. But legislators and their staff members have even more compressed days. The speed with which they meet, consider, decide and take action is exhausting. They are open to, and benefit from, the perspectives of parents, doctors and patients, and they value the work of advocacy groups—in this case, Family Voices, a group that advocates for children with special needs. As California’s legislators considered changes to the CCS program, this input helped to inform legislation to protect children and minimize the potential for unintended consequences.

I am happy to say that Maria is thriving. The talented pediatric surgeons and cardiologists at Lucile Packard Children’s Hospital Stanford saved her life, and the network of community support systems and programs coalesced to make it all happen. She now is in elementary school, and her mom is back at work. Maria had access to the right care at the right time, and she wasn’t dependent on her family’s ability to pay. This is something to celebrate—the CCS program and the state of California enabled everyone to do their jobs and do them well.

The programs that support the most vulnerable kids like Maria cannot sustain significant changes without risking the well-being of children. Moreover, health policy that works well in communities cannot be created in a vacuum. Through my experience, I realized that bringing the voices, experiences and patient stories to the policy-making arena leads to policy shifts that have fewer unintended consequences. It is up to us all to engage with our policy-makers to protect what is working while improving the systems so many depend upon. We need this engagement now more than ever. ■■■

—Lisa Chamberlain, MD, MPH, is an associate professor of pediatrics and medical director of the Pediatric Advocacy Program at Stanford Children’s Health.

# Hospital plans integrate the therapy of nature

Gardens at the expanded Lucile Packard Children's Hospital Stanford include places for play and relaxation.

**H**ippocrates, the father of modern medicine, called nature “the healer of all disease,” and the concept of gardens and greenery as a healing element has deep roots in both Asian and Western cultures. Monasteries in the Middle Ages featured elaborate gardens to soothe the ill, and Florence Nightingale, the founder of modern nursing, championed a pavilion hospital design with courtyard gardens and an open-air layout after noting the curative effect of nature on the ill.

The Stanford University Medical Center Renewal Project builds on this long-standing tradition with extensive gardens and green spaces that integrate seamlessly with the new hospital buildings. Diverse landscapes have been designed for relaxation and quiet, or socializing and play, addressing the wide-ranging needs of patients and their families, as well as visitors and staff.

“Nature has always been an important part of the hospital and was a key factor in the expansion plans from the very beginning,” said Jill Ann Sullivan, RN, MSN, vice president of hospital transformation and space planning at Lucile Packard Children's Hospital Stanford. “The gardens are designed for healing, to give patients and their families a chance to relax, enjoy the outdoors and take their minds off the high-tech aspects of medical care.”

## Design based on data

Access to nature is a key factor in reducing patient and staff stress and leads to better outcomes, according to the Center for Health Design, a nonprofit organization of health care designers.

Studies that measured blood pressure, muscle tension, stress hormones, or heart and brain electrical activity have shown that spending time in natural surroundings helps to reduce stress and anxiety, speed recovery and increase patient well-being. And integrating nature into a hospital setting has shown to improve outcomes, with shorter hospital stays, faster healing, fewer postsurgical complications and reduced need for pain medication.



The new Stanford Hospital features the Dunlevie Garden with play areas and quiet spots for reflection.

## Landscapes for families

Outdoor environments are a major component of the children's hospital expansion, which is scheduled to open in late 2017. The expansion's design, by award-winning architectural firm Perkins+Will in association with HGA Architects and Engineers, will add 521,000 square feet to the approximately 300,000-square-foot existing hospital, with a total of 326 beds on-site, private rooms, state-of-the-art operating suites and family-friendly amenities.

The children's hospital expansion includes a design concept that integrates nature seamlessly into the overall experience. A network of gardens adds 3.5 acres of greenery, with a water-efficient landscape of native plants, educational and engaging sculptures for children to explore and secluded nooks in which to sit and relax.

A commitment to the environment was a driving force behind the design, which puts sus-

tainability and “green” systems as a top priority. The landscaping features shrubs, trees and grasses that can thrive in California's arid climate and provide natural habitats for local birds and insects. Concrete pavers create secure footing while allowing rainwater to permeate into the ground. No potable water will be used for landscaping: Two 55,000-gallon underground cisterns will store rainwater and condensate water (water extracted from dehumidified indoor air) for irrigation, which is predicted to save as much as 800,000 gallons of water per year.

“Packard really embraced landscape as a central design concept,” Sullivan said. “Nature has been integrated throughout all the building design, so that even if you are not able to be outside, at least you can see green space and trees.”

The Dunlevie Garden, adjacent to the outdoor dining area near the hospital entrance, will feature open areas where patients and siblings can play as well as quiet spots for privacy and family connection. Situated near the corner of Welch and Quarry roads, the Emerald Garden will feature an open lawn that can be used for events, a children's play area and stone retaining walls. The Ford Family Garden will be a respite where physicians and staff can socialize and decompress. Each floor will feature overlook areas, and every patient room window will have a planter box to ensure a view of greenery from the bedside.

## A green environment

Gardens and landscaping have been integrated into the new Stanford Hospital, providing patients, families, visitors and staff easy access to numerous places for rest, reflection, relaxation and healing. The 824,000-square-foot hospital, which is scheduled to open in 2018, will feature

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a psychological boost. People struggling with movement and speech because of the disease say the sessions are liberating, providing a new way to express themselves.

### Conscious learning

The program began 15 years ago in Brooklyn, New York, and now is offered in 16 countries; it was introduced at Stanford Medicine last year with the opening of the new neuroscience center. It is not a traditional dance class but rather a group artistic experience. Teachers use elements of classic and social dancing, together with imagery, poetry and live music, to inspire participants to move in creative ways. The results translate into daily life, studies show, as participants demonstrate an improvement in walking and fine-motor skills, such as tapping a finger, and feel a lift in mood and a better sense of self that comes from gaining more physical control.

“Dancing has all the elements Parkinson’s patients can benefit from: extension and flexibility and moving with intention,” said Damara Ganley, a professional dancer and trained Dance for PD instructor. “Dancers are trained to be in their bodies in a conscious way, and Parkinson’s patients also are learning to be in their bodies in a conscious way.”

## Studies have shown that Parkinson’s patients who do some form of dance experience measurable physical and psychological improvements.

Parkinson’s, which affects as many as 10 million people worldwide, can cause rigid limbs, tremors, lack of muscle control and slowed movement. Patients may have impaired walking and balance and are more prone to falls. Some also suffer from depression and may experience a cognitive decline, with slowed thinking or memory issues.

### An aspect of therapy

Helen Bronte-Stewart, MD, MSE, a Stanford professor of neurology and neurological sciences and a former professional dancer, said she always tries to incorporate exercise, yoga and dance as part of the standard therapy for her Parkinson’s patients.

“As physicians, we stress the importance of physical activity, social interaction and mental stimulation to our patients with Parkinson’s disease,” she said. “Dance for PD gives them all three. But it is much more than a possible therapy or treatment: The PD dancers have told us this type of dance restores their self-image and brings them joy.”

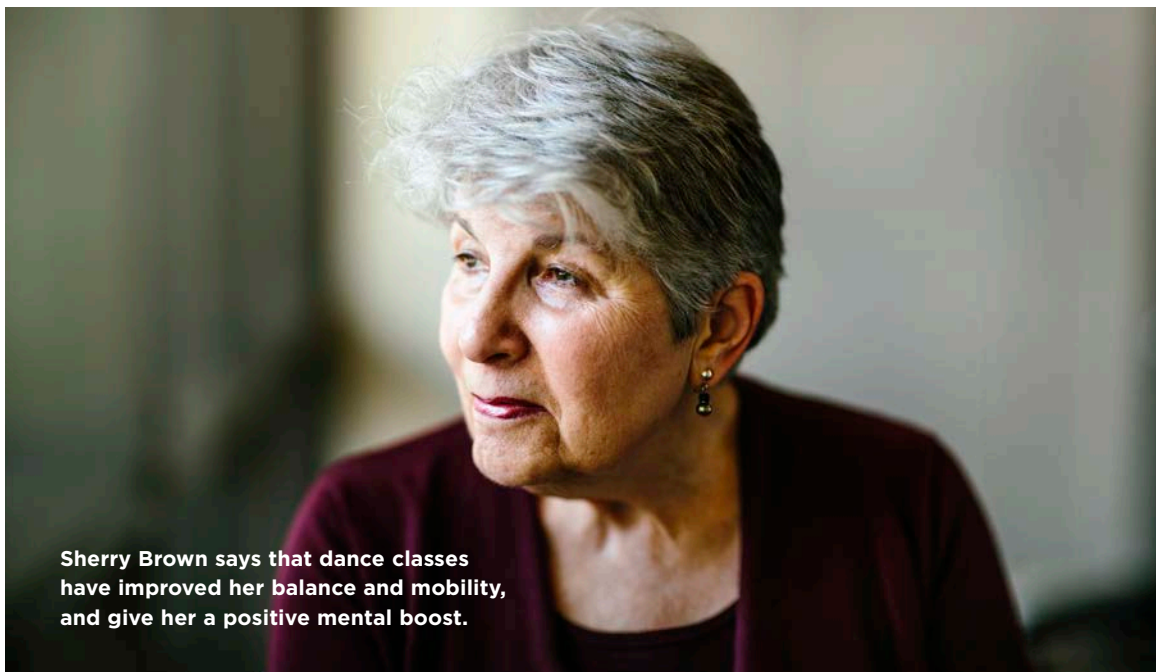
When the neuroscience building was in the

planning stages, Bronte-Stewart said she was determined to include a dance studio and helped design the space with a flexible floor and glass walls on two sides. She and Ganley obtained a grant from the National Parkinson Foundation for the class, which is free and is open to all in the community.

The program was started in 2001 by Olie Westheimer, executive director of the Brooklyn Parkinson Group, who walked into the Brooklyn studio of the Mark Morris Dance Group one day with the idea of creating a dance class for members of her group, said David Leventhal, a

prove balance, motor skills, freedom of movement and endurance. Study participants also describe many improvements in the quality of their lives, with one saying, “I want to fly. It gives me a swinging feeling. I feel relaxed after the dance lesson. Before, I’m always very stiff.”

In addition to physical benefits, dance classes may counter some of the cognitive and mood issues that affect patients, who sometimes withdraw and suffer social isolation and poor self-esteem. The classes offer an opportunity to mix with others in a social setting where everyone is accepted regardless of limitations, and studies



Sherry Brown says that dance classes have improved her balance and mobility, and give her a positive mental boost.

former Mark Morris company member who is now Dance for PD’s program director. Leventhal became one of the first instructors.

“I thought it was the most enjoyable teaching experience I’d ever had because people were so focused on learning and trying to absorb as much as we had to offer,” Leventhal said. “They were so engaged as students right away, because for them it was not just an activity they added to their week but an essential portal for them to experience what possibilities were still available to them. It became a way of accessing their true selves—who they were as people, rather than as patients.”

### Backed by research

Leventhal said the program initially met with some skepticism in the medical community.

“There was one neurologist who told us, ‘I think the program is great. But I can never recommend it because dancing is a frivolous activity and that would tarnish my reputation as a serious doctor,’” he said. “I think there is a lot of misconception about the amount of learning and skill and the amount of brain work and physical work that somebody has to do to execute a dance. It’s the opposite of frivolous. It directly addresses what people are struggling with. I think that over the past 15 years, people have come to recognize that.”

In fact, published studies have shown that Parkinson’s patients who do some form of dance experience measurable physical and psychological improvements. More than a dozen studies have shown that twice-weekly dance classes im-

show that participants feel their mood lighten and their anxiety decline.

### Bodies in tune

“There is joy in the dancing class,” said Juan Bulnes, a 74-year-old computer scientist who attends regularly with his wife, Margaret. “We do some of the same movements as in other classes, like tai chi or physical therapy, and here we do them with an added, special flair that comes from conscious dance movements, such as gracefully waving your hands to imitate falling leaves, rain, wind or reaching for the stars. Integrating physical exercise, rhythm, music and imagination makes dancing a very liberating experience.”

Brown said the class, together with her medication regimen and other physical activities, has helped to improve her balance and flow of movement and given her the ability to do things, like stand on her toes, that she couldn’t do before.

“I think the rhythm helps keep things more even. I feel my gait is more even. In general, my body feels more in tune—more rhythmic,” she said. “I feel that with all the things I am doing—the exercise, the dance, the medications—I am definitely delaying the severe symptoms of the disease. I am pleased that I am able to have the life that I have at this point.”

*The dance classes are part of the Stanford Neuroscience Supportive Care program. To learn more, call 650-721-8500 or go to [stanfordhealthcare.org/for-patients-visitors/neuroscience-supportive-care-program](http://stanfordhealthcare.org/for-patients-visitors/neuroscience-supportive-care-program).*

# Independence day

## *A successful separation of conjoined twin girls*



Erika Sandoval (in orange) and her twin, Eva, are adjusting to life as separate individuals.

PHOTO COURTESY OF LUCILE PACKARD CHILDREN'S HOSPITAL STANFORD

**C**onjoined twins Eva and Erika Sandoval are now adapting to life as individuals following a landmark 17-hour separation surgery at Lucile Packard Children's Hospital Stanford. The girls have been handling their recovery cheerfully and progressing well with help from physical and occupational therapists in preparation for a return to their home near Sacramento, said lead surgeon Gary Hartman, MD.

"They're way ahead of our expectations," said Hartman, a professor of surgery at Stanford Medicine.

In the early morning of Dec. 6, the 2-year-old girls were wheeled into the operating room as one. Nearly 12 hours later, Eva was moved to an adjacent operating room so that both girls could undergo reconstructive surgery, the first time in their lives they had been in different rooms.

"We know that this is the right path for them: to be independent, to have the chance to succeed and explore on their own everything the world has to offer," said their mother, Aida Sandoval.

### Long-term planning

The surgery, Hartman's seventh conjoined-twin separation, was the culmination of plans launched when Aida was referred to Packard Children's during her complex pregnancy. More than 100 hospital staff in nearly every department have taken care of Eva and Erika, who were born there in August 2014.

As they prepared for surgery, doctors warned the family that there was a 30 percent chance one or both girls would not survive separation. The main risk was possible bleeding during division of their shared pelvis.

"Before separation, you could think of their anatomy as two people above the rib cage, merg-

ing almost into one below the belly button," said Peter Lorenz, MD, chief of the Division of Pediatric Plastic Surgery, who led the reconstructive phase. The girls had separate hearts, lungs and stomachs; a shared diaphragm muscle; one liver, one bladder, two kidneys and three legs. Comprehensive CT and MRI scans were used to print 3-D models of the twins' pelvic bones and blood vessels to help plan the separation.

"We had amazing information from our radiology colleagues but even with that there were some surprises," Hartman said. "There was only one large intestine. It appeared that it all belonged to Eva but had some blood supply from Erika, so we had to do some testing in the operating room to clarify that."

Once the exploratory phase was complete, the team divided the twins' liver and split their gastrointestinal and urinary tracts. The single bladder was made into two bladders, and each child received a colostomy. The pelvic bones were then divided. The final incision that officially separated Eva and Erika was made by James Gamble, MD, professor of orthopedic surgery, and Matias Bruzoni, MD, assistant professor of pediatric surgery, at 4:34 pm Dec. 6.

After the girls were separated, Lorenz led the team that performed Eva's reconstructive surgery. Erika's reconstructive surgery was led by

pediatric plastic and reconstructive surgeon Rohit Khosla, MD, assistant professor of surgery. To help complete Erika's reconstruction, the bones from the girls' third leg were removed, and skin and muscle from the leg were used to close Erika's abdominal wall. The surgeons had considered keeping the leg if it was not needed for reconstruction, but it would likely not have been useful for walking because of its abnormal anatomy.

### Rapid recovery

Now that the twins are separated, each child has one kidney and one leg. Recovering at the hospital, Eva and Erika have been happy and chatty, and are doing well in physical and occupational therapy.

"It's amazing how strong these girls are, and it's amazing what their team performed," their mother said.

Although it is a struggle for the girls to sit up since they lack the abdominal muscles used to maintain balance, the team is helping both sisters learn to sit up and stay in that position, reach for their toys and develop functional mobility so they can move through their surroundings. Therapists also are working with the family on strategies to train the twins to eat more.

"Their progress has just been tremendous," said occupational therapist Kelly Andrasik. "Eva loves it when we play with our wooden pizza set, and Erika has been really motivated by different things she wants to play with. We're learning from her how she is best able to use her body."

The team is committed to helping the girls gain as much mobility and independence as possible. "They are highly motivated and hard workers," Andrasik said. "That's going to carry them really far." [SM](#)

# ABOUT YOUR HEALTH

EVENTS ARE FREE UNLESS OTHERWISE NOTED. SPACE MAY BE LIMITED, SO PLEASE CALL TO REGISTER IN ADVANCE.

## Grandparents Seminar

**DATE:** Monday, March 6, 6 pm  
**LOCATION:** Community Programs Classroom, 4100 Bohannon Drive, Menlo Park

**Fee. Register online at classes. stanfordchildrens.org.**

## Got Rhythm? An Update on the Treatment of Cardiac Arrhythmias

**SPEAKER:** Paul Wang, MD  
Director, Stanford Cardiac Arrhythmia Service

**DATE:** Thursday, March 23, 7 pm  
**LOCATION:** Stanford Health Library, Hoover Pavilion, 211 Quarry Road, Palo Alto

**To register, call 650-498-7826.**

## Transition to High School

*Interactive learning and discussion for entering high school freshmen and their parents*

**DATE:** Saturday, April 22, 3 pm  
**LOCATION:** Community Programs Classroom, 4100 Bohannon Drive, Menlo Park

**Fee. Register online at classes. stanfordchildrens.org.**

## Mothers of Sons: Guiding Your Son Through Adolescence

**SPEAKER:** Robert Lehman, MD  
Co-founder, Heart-to-Heart Program

**DATE:** Friday, April 28, 7 pm  
**LOCATION:** Freidenrich Auditorium, Lucile Packard Children's Hospital Stanford, 725 Welch Road, Palo Alto

**Fee. Register online at classes. stanfordchildrens.org.**

## Dads of Daughters: The Joys and Challenges of Raising Teen Girls

**SPEAKER:** Julie Metzger, RN  
Co-founder, Heart-to-Heart Program

**DATE:** Monday, May 1, 7 pm  
**LOCATION:** Freidenrich Auditorium, Lucile Packard Children's Hospital Stanford, 725 Welch Road, Palo Alto

**Fee. Register online at classes. stanfordchildrens.org.**

## Preparing for Multiples

*A class for those expecting twins, triplets or more*

**DATE:** Saturday, May 13, noon-4:30 pm

**LOCATION:** Community Programs Classroom, 4100 Bohannon Drive, Menlo Park

**Fee. Register online at classes. stanfordchildrens.org.**

## Becoming a Family: The Gottman Bringing Baby Home Workshop

*A two-session workshop for expectant and new parents based on the research of Drs. John and Julie Schwartz Gottman*

**DATE:** Sunday, June 4 and 11, 9 am-2 pm

**LOCATION:** Community Programs Classroom, 4100 Bohannon Drive, Menlo Park

**Fee. Register online at classes. stanfordchildrens.org.**



Visitors to last year's Health Matters had a chance to visit with canine members of Pet Assisted Wellness at Stanford (PAWS), an animal visitation program for patients and families in the hospital.

## Save the Date: Health Matters

Stanford Medicine will host Health Matters, a free community-wide event showcasing the latest advancements in medicine and health, on **Saturday, May 20**.

The day will include lectures by distinguished faculty on subjects ranging from weight loss and sleep to addiction, heart health, immunotherapy and mindfulness. The event will feature interactive exhibits and activities for the entire family. High school students will have the opportunity to see what it's like to be a health professional in a morning "mini-medical school" program.

The event runs from 9 am to 2 pm at the Li Ka Shing Center for Learning and Knowledge, 291 Campus Drive, on the medical school campus.

*For more information, visit [healthmatters.stanford.edu](http://healthmatters.stanford.edu). Registration is encouraged.*

### COMMUNITY MATTERS FROM PAGE 1

health care institution, we believe we have a responsibility as global citizens to contribute beyond our borders. It is in keeping with our mission of Precision Health—providing predictive, preventive and precise care that benefits everyone.

### At home and abroad

Ultimately these global activities may help people at the local or national level by informing the work done here. Moreover, in this era of global travel, health emergencies that originate abroad can quickly become public health challenges at home.

Take, for instance, the recent outbreak of the Zika virus, which can cause serious birth defects in babies born to infected women. The outbreak began in Brazil and quickly moved north into the United States. Stanford researchers' experience in working with similar, mosquito-borne viruses in Africa proved to be an asset. During the crisis, our experts in pediatric infectious disease advised the federal Centers for Disease Control and Prevention and helped provide guidance for pediatricians around the country on how to care for

pregnant mothers and their babies who could be at risk.

Stanford Medicine physicians are contributing to global health in myriad other ways. Over the last decade, our emergency medicine physicians played an instrumental role in helping India develop its first 911-type emergency medical system, which now serves three quarters of the country. Our physicians and nurses also are on the front lines of humanitarian disasters, having served in rescue efforts in Haiti, the Philippines and Nepal. They return home with eyes opened to the range of human experience and as practitioners better equipped to deal with emergencies in the United States.

### Prevention and training

On the research side, our scientists have played a major role in the development of the first, low-cost vaccine for rotavirus, a diarrheal disease that kills some 500,000 children a year. Our immunology experts have an ongoing collaboration with the Bill & Melinda Gates Foundation to develop a whole new generation of vaccines to combat the world's most deadly infections.

We also are helping to build research and training programs in countries with fragile health care systems through programs like the federally funded Medical Education Partnership Initiative in sub-Saharan Africa. And we provide a variety of opportunities for trainees to work in developing nations where they help fill the health care gap while honing essential skills that will serve them well in treating patients here at home.

### Investing in the future

Recently we have been planning a major initiative on planetary climate change, which has been called the biggest global health threat of the 21st century. Our goal is to establish a U.S. plan to monitor global weather patterns and their impact on health, conduct research to help adapt to those changes, and invest in programs to strengthen international preparedness and response.

Our mission in global health is the same one that inspires us here at home: to provide the most expert, innovative and compassionate care to patients, regardless of where they live. Thinking globally impacts lives locally. [SMH](#)

# Building on science to improve wellness

For thousands of years, everyone from philosophers such as Aristotle, Epictetus and Buddha to smooth-talking snake-oil salesmen has tugged at the problem of what makes for a good life.

What does it mean to be well? If we want to improve wellness for everyone, we have to be able to define it and measure it. Once we can calculate wellness, we can find out which factors increase it or decrease it.

Using a quantitative approach, Stanford researchers are undertaking an ambitious project to tackle anew the age-old question of wellness. Scientists at the Stanford Prevention Research Center (SPRC) study ways to help populations improve their lives by doing things like eating healthier foods or quitting smoking. Although the SPRC continues to tackle health problems separately, the center recently launched the Wellness Living Laboratory, or WELL, to improve the overall health of entire populations.

Funded by a \$10 million gift from the Amway Nutrilite Health Institute Wellness Fund, WELL proposes to identify the factors that help maintain health and wellness and develop ways for people to control those factors as a way to enhance individual wellness.

In one project, WELL for Life, researchers will observe more than 30,000 people in several countries and search for the keys to wellness. WELL for Life also will test behavioral modifications to determine which interventions help people quit smoking, eat better, exercise more or take other steps to improve well-being. Scientists at SPRC's Health Improvement Program will promote the proven interventions to a wider population.

"This is an effort to change the world of medi-

cine and health," said John Ioannidis, MD, DSc, professor of medicine and of health research and policy and lead investigator on the project. "It may sound very ambitious, but I see this as a way to refocus the key priorities of biomedical research." The project is in keeping with Stanford Medicine's mission of precision health, which aims to predict and prevent disease, rather than just treat acute illness.



John Ioannidis, MD, is leading an international study to identify and quantify the factors that can improve lifestyle behaviors and health.

"The vast majority of biomedical research has focused on treating diseases," he added. "A much smaller part has focused on maintaining health and maybe some prevention efforts. But there is very, very little research that has tried to look at the big picture—what makes people happy, resilient, creative, fully exploring their potential and living not only healthy but more-than-healthy lives."

Among the things the WELL team wants to know: Is wellness the same for everyone, or do factors like gender or age influence how it is perceived? For example, among young adults, wellness might revolve around finances, career and athleticism. But as we age, social connectedness and resilience to stress may become more important factors in our sense of how well we feel.

During the first five years of WELL for Life, the 30,000 participants—10,000 each in China, Taiwan and the United States—will supply mountains of personal health information ranging from general health and personal habits to genetic markers, said Sandra Winter, PhD,

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more than 360 new beds, a greatly enlarged emergency department, and state-of-the-art diagnostic and treatment rooms.

A design highlight will be the 40,000-square-foot garden on the third floor of the new building, with California native and drought-tolerant plants and mature trees scattered among paved walking paths and carefully designed topography. Set 60 feet above ground level, the rooftop Goldman Garden—named to acknowledge the generosity of philanthropists John and Marcia Goldman—will provide sweeping views of the nearby foothills as a backdrop to the medical center.

"The gardens help to humanize the scale of the new hospital and provide flexible spaces for patients, visitors and staff to sit, linger and rest," said Grace Hsu, director of design manage-

ment for Stanford Health Care. "They also offer a chance for discovery, with private niches and spots that suit different moods and needs."

Gardens were designed by San Francisco landscape designer Gary Strang, who worked closely with hospital project architect Rafael Viñoly and Fred Kent from the Project for Public Spaces, a nonprofit public space planning organization, to establish a cohesive sense of nature in a hospital setting. The resulting layout incorporates low-water plants, grasses and trees, such as Mexican lily, agave, Mondo grass, flowering currant, magnolias and black pine, which frame meandering pathways for strolling and inviting spots to sit. These water-efficient selections will be irrigated with recycled rainwater and condensate captured from the building air conditioning and medical

**Volunteers  
invited to  
improve  
well-being**



**WELL**  
for life

WELL for Life is a free wellness research program organized by the Stanford Prevention Research Center. The initiative seeks to include 10,000 San Francisco Bay Area volunteers to help Stanford collect data designed to improve well-being for all.

WELL is open to anyone 18 or older. Once registered, participants take a 30- to 40-minute survey once a year, see how their results compare with others' responses and receive customized feedback to learn how to improve their health and well-being.

To learn more and to register, go to [med.stanford.edu/wellforlife](http://med.stanford.edu/wellforlife).

director of WELL. And it's likely that WELL will expand to other countries in the future.

Participants will periodically answer scores of questions such as, "During the last two weeks, did your diet, physical activity and sleep habits influence your well-being?" or "How confident are you that you can bounce back quickly after hard times?"

"We want to not only ask what is the profile of someone who feels good about life," said Ioannidis, "but how can we make that profile better? And how can we intervene with simple means—things that we do in everyday life—not with drugs or devices or complex procedures in the hospital?"

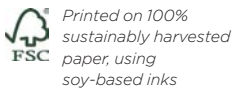
It's known that a person's likelihood of exercising more or eating well is influenced by environmental factors such as neighborhood safety, social relationships and public policies. But how does a sense of well-being impact the ability to make and maintain healthy changes in behavior? For example, could it be that having the strength to build a garden is more motivating to encourage exercise than knowing the risk of a heart attack 20 years from now? That is the kind of question that WELL seeks to answer. ■■■

equipment, saving an estimated 364,304 gallons of water per year compared with water use in the current hospital.

"There was a lot of discussion about sustainability and the importance of being careful stewards of the environment," Hsu said. "Our decisions about what to plant and how to maintain the grounds resonates with our philosophy of how we take care of our patients."

The design also features an outdoor respite area adjacent to the new emergency department, with medicinal plants and sculptures, and a broad promenade with food kiosks, a pet park and shaded areas for seating. ■■■

Learn more about the Stanford University Medical Center Renewal Project at [sumcrenewal.org](http://sumcrenewal.org).



# Volunteer devotes half a century to Stanford

**E**very Tuesday and Thursday afternoon, Martha Bachmann drives her 1989 Buick LeSabre sedan up to the front of Stanford Hospital, hands her keys to one of the valet attendants and comes inside to start her volunteer shift. Like clockwork, she arrives smiling, 20 minutes early, ready to stock the patient shopping cart and head out on the floors. At 100 years old, Bachmann has had the same routine for 54 years.

When Bachmann first volunteered as a Stanford Auxiliary “Pink Lady” in 1962, Stanford Hospital was known as Palo Alto–Stanford Hospital Center. Over her long career, she has watched the hospital expand dramatically. But one constant has remained—her shopping cart. For more than five decades, Bachmann has pushed the cart through the hospital’s halls, bringing T-shirts, jackets, books, magazines, gum, candy, stuffed animals and toiletries to patients’ rooms.

“The shopping cart is my heart and soul,” said Bachmann, who shares the job with partners Betty Cowart and Pat Ricaud, her fellow Pink Ladies. “You get to meet the patients, their visitors and the hospital help. It’s one of the best jobs anyone can have in the hospital. We don’t stick. We don’t poke. We just bring some happiness.”

Her favorite part of the routine is visiting the newborns. Each shift, she pushes the cart to the farthest reaches of the hospital to visit new parents, bringing every new baby a tiny, colorful



**For more than 50 years, Martha Bachmann has been bringing a smile to Stanford Hospital patients as a “Pink Lady” volunteer.**

beanie. She hand-knits the hats at home with help from her daughter and another volunteer.

Born in Germany in 1916, Bachmann came to the United States when she was 10, settling into the Lower East Side of New York with her family. After high school, she moved to California. She came to Palo Alto for a wedding in 1941 and rekindled a friendship with a young man she knew from her church choir. The two fell in love, married and had two daughters. In the early 1960s, with her children grown, Bachmann began looking for an opportunity to do charitable work with her extra time. Her friends from church invited her to join the Stanford Auxiliary and volunteer at the hospital. Today she is the longest-serving volunteer in Stanford Health Care’s history and one of its last remaining Pink Ladies.

With her smile and occasional hugs, Bachmann does her best to bring some happiness to the patients she sees each day. “Not all days are easy,” she said. “It has its nice moments, and it has its sad moments. It’s a hospital. Sometimes, patients ask, ‘Would you just hold me for a minute?’ When I find myself with tears, I sneak my

tears away. You can’t come to a place like this with a sad face. You can’t bring your miseries here.”

Bachmann is one of 850 active volunteers at the adult hospital. “We use her as a role model during volunteer orientation,” said Linda Velez, director of Volunteer Services. “She is so kind and selfless and always has a smile on her face. Martha affects everyone she interacts with and brings a glimmer of sunshine to patients, staff and visitors.”

While Stanford asks its volunteers for only a six-month commitment, Bachmann remains dedicated after 54 years and has no intention of retiring. Her biggest concern is that her driver’s license will expire in a little over a year, so getting to the hospital could become a challenge. Her health remains strong, and Bachmann attributes her longevity to not smoking or drinking and to remaining active. In addition to walking the halls of the hospital twice a week, she stays young by walking to the store near her home.

“I like to keep going,” she said. “I’m really blessed.” 