On the cover, Baylor College of Medicine surgical resident, Dr. Ronald Cotton is teaching basic physical examination skills to students at his alma mater, the Michael E. DeBakey High School for Health Professions. A joint program between Baylor College of Medicine and the Houston Independent School District, DeBakey High School recently celebrated its fortieth anniversary. Ranked among the best high schools in the nation, DeBakey provides a path to medicine and biomedical sciences for Houston public school children who may not have otherwise had the resources and the opportunities necessary to pursue these careers. “Because of everything BCM has done for me, I feel obligated to help others in the direction I am taking in college,” Cotton said.

For more about the DeBakey High School and Dr. Cotton, see page 28.
On the cover, Baylor College of Medicine surgical resident, Dr. Ronald Cotton is teaching basic physical examination skills to students at his alma matter, the Michael E. DeBakey High School for Health Professions. A joint program between Baylor College of Medicine and the Houston Independent School District, the DeBakey High School recently celebrated its fortieth anniversary. Ranked among the best high schools in the nation, DeBakey provides a path to medicine and biomedical science for Houston public school children who may not have otherwise had the resources and the opportunities necessary to pursue these careers. “Because of everything BCM has done for me, I feel obligated to help others in the Houston community who are willing to make their dreams come true,” said Cotton.

For more about the DeBakey High School and Dr. Cotton, see page 28.
70 Years in Houston

In 1943, in the midst of World War II, the MD Anderson Foundation made a decision that would result in Houston becoming an international powerhouse in healthcare and biomedical research. The Foundation dedicated its considerable assets to creating a medical center in Houston. As an initial step, Foundation leadership invited what was then known as the Baylor University College of Medicine to move from Dallas to Houston.

The Roy and Lillie Cullen Building, which opened in 1947 as a home for the College, was the first building constructed in the fledgling Texas Medical Center. From this modest start grew the largest healthcare complex in the world.
The 70-year-old partnership between the Houston community and the institution that is now known as Baylor College of Medicine has shaped the College, the Texas Medical Center and the city itself.

The axiom “think globally, act locally” underlies BCM’s philosophy of community involvement.

Research conducted at BCM produces new insights, new diagnostic approaches and new treatments that have a direct effect on the health of people around the world. BCM alumni are spread across the globe, helping to advance science and medicine in a wide spectrum of venues. BCM trainees and faculty travel widely, collaborating with colleagues, providing care to underserved communities and building ties that benefit BCM, our local community and communities around the world.

BCM opened the first school in the United States exclusively dedicated to the research, education and care of neglected tropical diseases, BCM National School of Tropical Medicine (NSTM). While the school’s work can potentially help communities around the world, one of the most compelling reasons for starting NSTM was local.

Today, BCM faculty, staff and trainees are based at numerous buildings within the Texas Medical Center (TMC), the world’s largest healthcare complex. With the recently developed McNair Campus, BCM is expanding beyond the borders of the TMC in buildings designed to meet Houston’s future needs.
New evidence indicates a hidden burden of neglected tropical diseases in the poorest parts of the United States, but especially in Texas and the surrounding Gulf Coast. Among the neglected tropical diseases found in Texas are Chagas disease, cysticercosis (pork tape worm), dengue fever and toxocariasis (caused by roundworm larvae).

With NSTM and all our work, the far-reaching impact is important, but the driving force behind much of what we do is our obligation to our local communities in Houston and throughout Texas.

This issue of The BCM Report provides a glimpse into the many ways in which BCM is reaching beyond its walls to improve health and expand opportunities for members of our local, national and global communities. While this report is far from a comprehensive catalog of all of BCM’s work, the selection presented reflects the depth and breadth of BCM’s efforts.
At private and public hospitals and practices throughout the city, Baylor College of Medicine healthcare providers serve the people of Houston. However, not everyone’s health needs are met through traditional modes of care delivery. When BCM faculty, staff and trainees identify unmet needs, they develop creative ways to fill the void.

Sarah Solózano and Jared Shearin found the support and assistance they needed to prepare to bring a child into their lives at the Baylor Teen Health Clinic.
Someplace to Go

In 2006, out of jail and off her medication for depression, Charlotte Garner found herself with nowhere to go.

“My grandparents’ homestead in Beaumont had always been available for me to stay, but while I was in jail for drug use, it was sold,” she said. “I didn’t have a home.”

“I remember walking around in the rain with nowhere to go,” Garner said. “People tend to be standoffish with the homeless. They don’t understand the circumstances that got them there.”

She now works as a member of the Consumer Advisory Board of the organization she credits with helping her turn her life around, Healthcare for the Homeless – Houston. “The people at the clinic, like Dr. Buck, were really concerned about me.”

Garner was in need of more than just treatment for her debilitating depression. She needed dental work, glasses and treatment for high blood pressure.

“When I first came to Healthcare for the Homeless, I kept saying I needed help with everything. I couldn’t articulate what I really needed,” she said.

Remembering that helpless feeling later led her to work for the organization’s Consumer Advisory Board. The group meets twice a month, is made up of past and current patients as well as clinic leaders, and discusses ways to improve the patient experience.

Garner said she works on ways to help clinic workers talk with and relate to patients to find out exactly what they need in terms of care and services. She also has worked on a program called Project Access that began in 2003, one of Houston’s only free, regularly scheduled transportation services for the homeless.

“It is basically a bus that drives clinic patients to different locations they might need, such as the Social Security offices, other clinics, shelters or even the Salvation Army. Sometimes people just need to get out of the heat and sit in the AC for a while,” she said.
HEALTHCARE FOR THE HOMELESS – HOUSTON

Created in 1997 by Dr. David Buck, professor of family and community medicine at Baylor College of Medicine, Healthcare for the Homeless – Houston (HHH) serves the homeless population in and around the Houston area.

Buck credits his time volunteering with Mother Teresa with his decision to pursue a healthcare career dedicated to helping underserved populations.

When he first began the Houston program, it was simply a two-room clinic within the SEARCH Homeless Services building in Midtown Houston. The clinic served fewer than 2,000 people in its first year. It now serves more than 10,000 homeless men, women and children through more than 30 collaborations with community-based agencies including healthcare clinics, educational institutions and public organizations.

“I learned that we can’t do it all on our own; we need to integrate healthcare so that no one gets lost in the system,” Buck said. “People need immediate help and can’t wait for each individual program to get on the same page.”

Programs through Healthcare for the Homeless include:

- Shelter clinics
- Dental clinics
- A street medicine team
- Houston Outreach Medicine, Education, and Social Services (HOMES) Clinic
- The Jail Inreach Project
Students and patients eat together, or just have coffee. **THEY CONNECT.** Not just as a patient and a person in a white coat, but as human beings.
Education Is a Two-Way Street

When student volunteers arrive at the Houston Outreach Medicine, Education, and Social Services (HOMES) Clinic, their first priority of the day is sharing a community breakfast with the homeless men, women and children seeking healthcare services.

“Students and patients eat together or just have coffee—they connect. Not just as a patient and a person in a white coat, but as human beings,” said Dr. David Buck, professor of family and community medicine at Baylor College of Medicine and founder and president of Healthcare for the Homeless – Houston (HHH), which runs HOMES.

“There needs to be a certain mindset that starts when a person first begins his or her medical career as a student, learning from the beginning that you can’t solve all the problems on your own,” Buck said. “Because the HOMES Clinic involves students from different organizations and works directly with services throughout the Houston community, the student volunteers are learning how to integrate healthcare while providing a much needed service to the homeless community,” said Buck.

“The HOMES Clinic is a unique space where students can not only practice and learn new clinical skills, but also learn how to be compassionate healers,” said Ahilan Sivaganesan, HOMES Clinic executive director and a fourth-year medical student at BCM. “It’s easy to forget why we entered the medical field when so many other factors can complicate the healthcare process. But HOMES provides an environment where students can remind themselves why they are studying—the opportunity to care for, and hopefully heal, the sick and needy.”

While there is a BCM faculty physician from the Department of Family and Community Medicine on site to provide the student volunteers consultation on each patient, the HOMES Clinic is completely student-managed. Students volunteer from BCM, the University of Texas Health Science Center at Houston’s School of Medicine and School of Public Health and the University of Houston’s Graduate School of Social Work and College of Pharmacy.

The volunteer stint helps student volunteers as much as it helps their patients.

“This clinic has shown me how to take charge of my medical education. Seeing patients at the clinic and practicing skills is a powerful reminder that what we learn in school is not merely for passing exams,” said Sivaganesan.

“Seeing patients at the clinic and practicing skills is a powerful reminder that what we learn in school is not merely for passing exams.”
Providing a Village

It takes a village to raise a child, and Sarah Solózano and Jared Shearin found their village at the Baylor Teen Health Clinic through a program called Centering Pregnancy.

Centering Pregnancy is a model of group care for teens who are expected to deliver their babies at about the same time.

Solózano and Shearin attended weekly meetings with other teens expecting babies around the same time. Their group was one of four run concurrently at the clinic, with about 10 participants each. Before each gathering, Solózano received a prenatal exam in the clinic. Then a licensed social worker led an educational program for the group.

“It was comfortable,” said 18-year-old Solózano. “You got to hear what everybody else was going through, because every pregnancy is not the same, and some of the women were just a little further along.”

“Plus some of the others in the group had questions that you hadn’t thought of,” Shearin added. “That was really helpful.”
The Baylor Teen Health Clinic operates seven locations in areas with high rates of infant mortality, sexually transmitted infections and teen pregnancy. Adolescents and young adults can access a range of free or low-cost services, including comprehensive primary healthcare, family planning services, screening and treatment for sexually transmitted infections and HIV, health risk reduction education, prenatal care, sports physicals, wellness exams and counseling. The Clinic was established in 1976 at Baylor College of Medicine and partners closely with the Harris Health System. More than 26,000 young men and women ages 13 to 25 used clinic services in 2012, according to Dr. Peggy Smith, director of the Baylor Teen Health Clinic and professor of obstetrics and gynecology at BCM.

Solózano did not have an easy pregnancy, so it was also important to her that she was able to pick up the phone and talk to a nurse quickly and easily—access she’s not sure she would have had without the Centering Pregnancy program.

Through the Centering Pregnancy program, Shearin became involved in Project Bootstraps, which provided him and other young fathers with a stipend to help them obtain a GED and pursue higher education or a certification through Houston Community College. A case manager provided employment referrals and assistance. Shearin looks forward to a future working in a veterinary clinic or perhaps in healthcare.

Through the two programs, Solózano and Shearin feel more confident in their ability to provide for their son, Kaleb. Because of Centering Pregnancy, they now have a village of friends and family to support them in their journey through parenthood.

**THE BAYLOR TEEN HEALTH CLINIC**

The programs are integrated whenever possible, noted Dr. Ruth Buzi, director of social services for the Clinic. “For example, if a young man is participating in Centering Pregnancy with his wife or girlfriend, we try to get him involved in other programs that we offer and to visit our clinic for his routine healthcare needs,” she said. “Young men are an important part of the equation at the Teen Health Clinic.”

Health services for adolescent men have often been overlooked, but studies show the importance of focusing on that group, Smith said.

“Evidence-based studies show that educating young men about their overall health and encouraging them to visit the doctor for routine checkups and when they’re ill results in them being much more responsible,” Smith said. “They’re more likely to stay in school and stay out of jail, and they’re more responsible to their partners and as parents.”
Finding Answers

At 16 years old and soon to become a first-time mother, Roxanna Naranjo felt a mix of emotions. She was excited, but also scared. She had so many questions and very few answers.

Early in her pregnancy, the South Houston teenager was referred to the Nurse Family Partnership at the Baylor Teen Health Clinic. This program provides home visits from registered nurses for vulnerable first-time moms and their babies.

Naranjo was paired with nurse Eve Atkisson, and soon she started getting answers to her questions—and much more. In Eve, she has found a healthcare provider and community resource, a friend and a life coach of sorts.

“This is my first baby, and I didn’t know anything,” said Naranjo, now a mom to one-year-old Koda. “I had so many questions about things I was feeling and experiencing, and Eve has been so helpful. She always seems to have the answers.”

Koda has met all of his developmental milestones. The healthy and happy boy babbles and displays a keen curiosity. His mother, now 18, is on track to finish high school through an online program and hopes to pursue a career in cosmetology.

Atkisson has been there for them every step of the way. During Naranjo’s pregnancy, the home visits focused on topics such as nutrition and breastfeeding, preparing for labor and delivery, getting the home ready for a baby and birth control. Each visit also included a routine health assessment. Since the arrival of little Koda, their discussions focus on Koda’s health and developmental assessments, his eating and sleeping habits, behavior, how to treat a cough or cold, vaccinations and much more.

In addition to assessments and discussions of health-related topics, each visit also includes setting goals that Naranjo will strive to achieve before the next visit. Naranjo’s goals have included finding an online high school program, completing high school and, now, finding a part-time job, securing financial aid and finding daycare so she can start college.
Atkinson provides referrals to community resources and programs to help Naranjo complete her goals.

When asked about the best part of the program, Naranjo replies simply, “Eve. Just having her around is the best part.”

Atkinson, a registered nurse with a master's degree, has a background in emergency care. She heard about the Nurse Family Partnership from a colleague and said she waited over a year for a position to open so she could apply.

“It's an innovative program but at the same time, it really goes back to the roots of nursing because you're able to establish real relationships,” Atkinson said.
Caring for the Neediest

When Esteban Sanchez’s epilepsy returned at age 12, after eight seizure-free years, his mother Lourdes did not know where to turn. The epilepsy compounded the other health problems and behavioral issues Esteban already struggled with, and the Sanchez family did not have access to the specialty healthcare resources Esteban desperately needed.

Luckily for the Sanchez family, they did have access to the San Jose Clinic, where they met Dr. Susan Gillespie. An assistant professor of pediatrics at Baylor College of Medicine and attending physician at Texas Children’s Hospital, Gillespie volunteers in the pediatrics clinic at the San Jose Clinic twice a week.

In addition to coordinating appropriate management for Esteban’s epilepsy, Gillespie and her team also diagnosed a genetic heart condition and attention deficit disorder.

To make sure Esteban received the appropriate care, Gillespie helped the family work with financial counselors at institutions including Texas Children’s Hospital and Children’s Memorial Hermann Hospital, where Esteban sees a pediatric neurologist.

“We now have all of his issues under control,” said Lourdes Sanchez. “We are so incredibly thankful for the doctors here and their efforts.” In August, Esteban, now 15, started his freshman year of high school. “I do not know what my family would do without the doctors at the clinic.” Lourdes’ younger children, Andres (12) and Valeria (9), also receive primary care through the San Jose Clinic.
We now have all of his issues under control. *WE ARE SO INCREDLIBLY THANKFUL.*

I do not know what my family would do without the doctors at the clinic.
An Oasis of Hope

“Giving up? No—that’s not an option for me,” said Charlotte Harris, a mentor and patient at the Harris Health System’s Thomas Street Health Center.

Harris made up her mind a long time ago that she wasn’t going to let her HIV—and then later AIDS—diagnosis stop her from enjoying life.

“I’ve lived through a whole lot of battles, and now I enjoy life,” said Harris. “I don’t sit around and wait for stuff to happen. If I want to go somewhere, I do. If I want to go on vacation, I do. If I want to go out to eat, I do. Life doesn’t stop because you’ve been given a diagnosis.”

The 58 year-old was diagnosed with HIV in 1989 after losing her husband of four months, who never told her he had the disease.

“That was very hard for me, but I have risen above that,” said Harris.

In 1994, when insurance could no longer cover her care, she came to Thomas Street, a clinic that provides medical care and psychological and social services to those living with HIV/AIDS in Houston and Harris County.

In the early 1980s, when HIV/AIDS first emerged, there was no clinical home for patients. The first AIDS patients in Harris County received outpatient care at the Jefferson Davis Hospital, but the volume of patients outgrew the space. The Harris County Hospital District (now the Harris Health System) renovated the Southern Pacific Railroad Company’s former employee hospital to establish the Thomas Street Health Center in 1989.

“It’s one of the first free-standing, dedicated HIV clinics in the country,” said Dr. Thomas Giordano, associate professor of medicine – infectious diseases and health services research at Baylor College of Medicine and medical director of the Thomas Street Health Center.

The clinic quickly grew, and in 1994, major renovations were made to expand the space and use all of the building’s floors. Both Baylor College of Medicine and University of Texas Health Science Center at Houston have faculty and fellows on staff at the clinic.

Each year, the number of patients treated has grown, with more than 5,500 patients served in the last calendar year, making it one of the largest HIV/AIDS clinics in the country.
“It’s our mission to really deliver comprehensive care to people living with HIV, both for their HIV and HIV-associated complications, but also for any other medical problems they might have,” said Giordano. “So it became a true medical home even before the concept of medical home was widely accepted.”

In addition to HIV care, the clinic offers subspecialty care, social services, substance abuse treatment, psychiatry, housing assistance and even an on-site pharmacy.

“We try to give our patients as much as we can under that one roof,” said Giordano. “I think the people who come here on a regular basis definitely have a comfort level with the clinic. There’s a sense that this is a place where they can be themselves.”

For Harris, Thomas Street is not only the place where she goes for care, but also where she can give back by working with others who are diagnosed with the disease.

As a patient mentor, Harris is paired with new and return-to-care patients attending their first appointment at Thomas Street. To become a patient mentor, volunteers must be patients at Thomas Street for at least one year, be open about their HIV status in the community and be compliant with their healthcare regimen.

The program, established eight years ago at the clinic, has proven to be a success.

“We know that it works, and it works well,” said Jackie Wear, volunteer manager at the clinic. “When you look someone in the eye and say, ‘I know what you’re going through,’ and you actually are HIV positive, they believe you.”

Wear established this program at the clinic after losing her son Rusty to the disease in 1998. When he was first diagnosed in college, Wear lived in San Francisco and did not know much about the clinic where he went for his care. She moved to Houston and started coming to Thomas Street to learn about HIV and volunteered with the AIDS Coalition’s program at the clinic.

After her son died, she took a break from volunteering and worked at the Harris Health System’s Ben Taub Hospital for four years, but then returned with the patient mentor program in mind.

“I wanted to do something that really impacted the patient,” she said. “If you’ve been living with this disease for 20 years, then you are a role model for people who think they’re going to die the minute they get here. I like to call the clinic an oasis of hope.”

Five patient mentors are also a part of a study that Giordano is leading, the Mentor Approach for Promoting Patient Engagement and Self Care (MAPPS). Mentors are paired with patients admitted to Ben Taub Hospital who are either newly diagnosed or who have stopped their care for various reasons. Half of the patients receive educational materials and half are paired with mentors, who discuss the importance of being compliant with their care. Mentors accompany patients to their first appointment.
appointment at Thomas Street and then follow up with them for 10 weeks. Giordano says results for the MAPPS study will be available in the next couple of years. However, the mentoring program already in place at the Thomas Street Health Center has improved adherence to care by about 30 percent for new clinic patients. He is hoping for a similar outcome with MAPPS.

“My talent is singing, but my gift is helping patients here at Thomas Street and at Ben Taub,” said Harris, who was part of the first group of patient mentors at the clinic. “Having firsthand experience with someone who has lived with the disease for over 20 years helps the patients. It lightens the load and takes the fear away.”

Harris emphasizes to the patients she works with that she is doing well because she adheres to the health plan her doctor has developed for her—she takes her medicines, eats right and exercises. The levels of virus in her blood have been so low that they have been undetectable for four years. She has a healthy CD4 cell count, indicating a robust immune system.

However, she knows firsthand the consequences of not adhering to her health plan. At one point, Harris stopped taking her medications because she thought she was doing well, but she later found out that as a result of stopping the care, her disease progressed to AIDS.

“I know that I’m not going to reach everybody, but if I can help just one person, then what we do here at Thomas Street is not in vain,” she said. “I really enjoy when patients remember who I was to them.”

“We are in a much better place than we were when I started here,” said Wear. “We have the tools, and now we just need patient cooperation.”

Harris is a proud mother of a 25-year-old daughter and two young granddaughters, and she enjoys the precious moments she has with them.

“I have high hopes for my daughter and granddaughters, and I want to be there for them, and I’m still there for them,” said Harris.
From Farm to Table

Charlotte Grigsby has discovered a love for zucchini and other squashes as well as newfound energy, thanks to the Healthy Harvest Program, which has set up a farmers market in her local Harris Health System clinic.

In early 2012, Grigsby went to the clinic for a routine visit as part of her diabetes treatment. That day the clinic happened to host its weekly farmers market. “Before, I was buying cheap canned food at the grocery store,” said Grigsby. Stores in her neighborhood stock few fresh fruits and vegetables. “Now I try to go to the farmers market every week to buy lettuce, tomatoes, cucumbers, grapes, mangoes and squash.”

With her 13th grandchild on the way, Grigsby makes frequent trips to the clinic for herself as well as other members of the family. Having the market right there in her North Houston neighborhood, with fresh produce at prices she can manage, has benefited not only her health but also her family members’ health.

“My daughter is pregnant and has iron problems,” said Grigsby. “She also shops at the market, and it has really helped her too.”

HEALTHY HARVEST PROGRAM

The Healthy Harvest Program was the brainchild of Baylor faculty member Dr. Ann Smith Barnes and a result of her frustration. Barnes counseled patients about healthy eating daily, emphasizing the importance of fresh produce, but she watched her patients return to their lives in which following her advice often seemed impossible. Some of her patients lived in food deserts—areas with little or no access to fresh produce. Others could not afford the fresh items in their local markets. For others, lack of familiarity with fresh produce meant they did not know how to cook it, even if they wanted to try.

Barnes, medical director of Weight Management Services and Disease Prevention at Harris Health and assistant professor of medicine at Baylor College of Medicine, approached Harris Health leadership with a fresh idea. Why not bring fresh produce directly to the patients in the form of farmers markets physically based in the clinics? She was met with enthusiastic support.

Barnes partnered with Veggie Pals, a Houston-based program focused on helping people learn about healthy eating, to operate the markets. Harris Health won the 2012 Gage Award for Improving Population Health from the National Association of Public Hospitals and Health Systems for this program.
My older sister Jessica has autism. She is extremely funny sometimes. She doesn’t pay attention to where she is going and runs into walls but is OK afterward!

Me and Jessica used to always have a good time in the tub until we got too big to have baths together—we’d always make a big whirlpool and go around in circles faster and faster and the water from our waves would slosh over the top of the tub onto the floor. My mom was not very happy about this. Jessica would carry a million toys to the tub to play with; she still does. On a cold rainy day when we couldn’t go out to play, we loved to play in the nice warm bubble bath tub. For Jessica, anywhere there is water she is happy so that she can use all her toys to pour water from one container to another. Sometimes it takes 2 people to help Jessica outside to the pool with all the toys she tries to carry in her arms. She can spend hours in the pool filling containers from one container to the other.

When Jessica gets hurt she hardly ever cries. One time she rode her scooter out on the street and she scraped a chunk of skin out of her toe but she laughed! It happens to me now too—whenever I get hurt I laugh instead of cry!
Get It Write

Get It Write was first conceived by Baylor College of Medicine medical student Chaya Murali as a way to use her own passion for creative writing to help others struggling with genetic conditions.

With the help of Dr. Lorraine Potocki, professor of molecular and human genetics at BCM, and BCM Director of Genetic Outreach Susan Fernbach, Murali was able to translate her idea into practical workshops. Each workshop consists of children with genetic diagnoses and their siblings writing alongside medical students and faculty from the Department of Molecular and Human Genetics.

The program complements the Department’s long-running Evening with Genetics seminar series. Run by Fernbach, these seminars provide a community forum to communicate current information on healthcare, education and research on a variety of topics in genetics. The seminars, which are free and open to all, are led by experts from BCM and Texas Children’s Hospital. Thanks to a collaboration with the Texas Department of State Health Services, these seminars have expanded beyond the Houston city limits to reach families in areas with limited or no genetic services, including Amarillo, El Paso and McAllen.

“The seminars are a way of offering families, early childhood intervention specialists, special education teachers, nurses, physicians and students current information on care and research regarding genetic conditions,” Fernbach said.

Get It Write complements BCM’s Evening with Genetics seminar series, which offers families, educators and healthcare providers current information on care and research regarding genetic conditions.
Small Steps

As a student in the Baylor College of Medicine School of Allied Health Sciences Physician Assistant Program, Preston Gorman, who had entered the program with a passion for helping others, found he was focusing too much on himself.

“The whole first year in the classroom is intense and stressful,” said Gorman. “It can lead to a disproportionate focus on self-interest.”

Fortunately, all BCM physician assistant students must fulfill a community service requirement.

Having already volunteered at Small Steps Nurturing Center before coming to BCM, Gorman suggested that classmates consider fulfilling their service requirement there. Small Steps Nurturing Center is a non-profit that provides early childhood education and nurtures the social, emotional, physical, intellectual and spiritual growth of economically at-risk children in inner-city Houston.

“It is good for all of us to get out of our shells and see other populations, particularly those who lack many of the privileges a lot of us at BCM have,” said Gorman.

Gorman’s enthusiasm for the program spread among his fellow students and about half of those in his year chose to fulfill their service requirement at Small Steps. The tradition was then passed to the next crop of BCM students, many of whom also chose to volunteer at Small Steps.

Gorman not only rekindled his own passion for helping others, but he also created an ongoing relationship between Small Steps and the BCM School of Allied Health Sciences.

BCM medical, graduate and Allied Health students have developed diverse programs to apply their skills and talents to help those in need throughout the Houston area.
Baylor College of Medicine is working with teachers and students from kindergarten through advanced degree programs to prepare America’s next generation of healthcare providers and scientists.

During the Bioscience Inspiration and Opportunities for Students (BIOS) program at Baylor College of Medicine’s Center for Educational Outreach, students from 11 Houston high schools gained hands-on experience in laboratories. Funded by the National Heart, Lung and Blood Institute, the annual six-week BIOS summer program is a partnership between BCM, University of Houston-Downtown and the Houston Independent School District to provide students with the exposure, skills and knowledge needed to pursue advanced studies in biomedical science.
A School Transformed

Class starts with a brief explanation from the teacher. Then students head to the lab bench where they find cups filled with red ice cubes and water. At first they think the water droplets forming on the outside of the cup come from the water inside—somehow seeping through the plastic. Then they notice the drops are clear while the water in the cup is red. Eventually, through a somewhat-Socratic method of questions from the teacher and the students, students make the connection between a previous lesson and the current experiment. The droplets are condensation from the air.

This lesson is a concrete example of how a teacher-training program operated by Baylor College of Medicine’s Center for Educational Outreach can make learning more fun and effective. Certainly for Lorena Moore, a teacher at Sylvan Rodriguez Elementary School, the program has meant a world of difference. It has taken science teaching at the mostly Hispanic, low-income school into a new era.

When Moore first observed science teaching at the school in 2005, it was traditional, involving little student participation. With science test scores in the 17th percentile, the school’s approach was clearly not working.

Under Moore’s leadership and in partnership with principal Elena Martinez-Buley and faculty at BCM, everything about science teaching at Rodriguez has changed—including the test scores. The school currently scores in the 88th percentile in science standardized testing. Most importantly, the students like science.

Achieving this success was not easy. Many students at Rodriguez are poor, with few resources at home. Many start school speaking little or no English. Fortunately, Rodriguez had a faculty that wanted to learn new teaching approaches and a local partner with extensive experience teaching and practicing science.

Prior to joining the Rodriguez faculty, Moore had participated in several BCM teacher-training programs. Confronted with the challenges and low test scores at her school, Moore’s first step was to call Dr. Barbara Tharp, assistant professor in the BCM Center for Educational Outreach.

Moore and Tharp worked closely together to completely change the way science is taught in every classroom at Rodriguez. “Every teacher in the school teaches science,” said Moore. “Getting everyone on board has been an essential part of our success.”

Using curriculum developed by faculty at BCM, teachers have many creative ways to approach concepts.

“Most of the teachers never knew there were so many ways to present a single concept,” said Moore. Because materials are limited to simple, inexpensive items, the curriculum is easy to implement even in schools without extensive resources.

“For the teachers, everything is there,” said Moore. “They have the support they need.”
Teacher-training and curriculum-development programs run by the BCM Center for Educational Outreach are helping transform the way science is taught at many schools in Houston and across the nation.

**Baylor Summer Science Institutes** are part of a partnership between the Center for Educational Outreach and the Houston Independent School District. Each participating elementary school teacher is immersed for two full weeks in hands-on science labs and science content, as they learn effective strategies for teaching science aligned with state learning objectives. During the school year, teachers participate in additional Saturday sessions. In 2012, 350 elementary and middle school teachers participated in the summer program. These teachers will reach more than 14,000 students during the 2012-2013 school year.

**The Science Education Leadership Fellows (SELF)** program brings scientists into the classroom to work with elementary educators. Scientists work with their partner teachers in classrooms and teachers learn about science. Ultimately educators conduct a short research project in collaboration with their partner scientists. SELF has been funded by the Howard Hughes Medical Institute for 12 years.

More than half of all participating teachers have demonstrated career advancement through promotions or awards. In 2011, on the fifth grade Texas science assessment, SELF schools outperformed non-SELF campuses in Houston.

**K8 Science** is a website that gives teachers instant access to reliable, cutting-edge information and educational tools for biology and related subjects. They provide useful, current and high-quality information and materials that build upon and enhance science educators’ skills and knowledge. K8 Science is geared toward elementary and middle school science educators, while another BCM program, **BioEd Online**, offers support for high school biology teachers. In 2010, the American Association for the Advancement of Science awarded the websites the Science Prize for Online Resources in Education. Website sponsors include Houston Endowment, National Institutes of Health, National Space Biomedical Research Institute (NSBRI), National Science Foundation and the Agency for Healthcare Research and Quality.

Partnerships with NASA Johnson Space Center, NSBRI and the University of Colorado have also allowed BCM to engage thousands of students in real experiments conducted in their classrooms and on the International Space Station. These programs, such as Butterflies and Spiders in Space, develop students’ early interest in scientific questions and research.
As a senior in high school, Dr. Ronald Cotton vividly recalls witnessing open heart surgery. “Seeing the heart beating in the chest was life-changing for me,” he said.

For a high school kid who longed to be a doctor, this experience was a dream come true. For Cotton, now a surgical resident at Baylor College of Medicine, witnessing this surgery was one of a plethora of experiences he was able to have because he attended the Michael E. DeBakey High School for Health Professions, part of the Houston Independent School District.

“I always knew I wanted to be a doctor,” said Cotton. “The exposure and experiences I had at DeBakey made the path to a career in medicine clear.”

“When I was in high school, it was common to see Dr. DeBakey walking the halls,” said Cotton. “We had no idea what a giant he was among us, but he always encouraged and inspired us.”

For Cotton and fellow students, attending DeBakey meant opportunity. “We were a diverse group of kids,” said Cotton. “At DeBakey, it became clear to us that any kid from any background could transcend where they were to reach where they wanted to be. We were all ambitious. The school provided a roadmap for us to fulfill our dreams.”
Cotton credits Dr. James Phillips, senior associate dean at BCM, and many others on the BCM faculty with opening many doors for him and showing him a career path that likely would have been hard for him to find on his own.

Cotton was selected to participate in the Houston Premedical Academy, creating a continuous link to BCM from his high school days through medical school. Students chosen for the Houston Premedical Academy receive admission to the University of Houston and provisional acceptance to BCM directly out of high school, as long as they maintain certain academic standards. After medical school, Cotton decided to pursue his residency and fellowship at BCM as well.

“If it hadn’t been for this program, I probably would have left Texas after high school,” said Cotton. “I had a lot of scholarship offers for other schools. If I had left, I doubt I would have come back.”

“Because of everything BCM has done for me, I feel obligated to help others in the Houston community who are willing to make their dreams come true,” said Cotton. Following in the footsteps of DeBakey, “I go back to the high school frequently to give research talks and connect with students.”

DeBAKEY HIGH SCHOOL

A joint program between Baylor College of Medicine and the Houston Independent School District, the High School for Health Professions opened in 1972. It was the nation’s first high school for health professions, with 45 students attending classes at BCM.

Ranked 36th in the United States, fourth in Texas, the school is the highest-ranked high school in Houston, according to Houston-based research and advocacy non-profit Children At Risk.

The school’s creation was a key part of famed heart surgeon Dr. Michael E. DeBakey’s vision for BCM. He felt strongly about BCM creating its own pipeline to medicine and biomedical science for members of minority groups who had not contemplated medical school before.

The school, now named the Michael E. DeBakey High School for Health Professions, was designed to give all students, including ethnic and racial minorities, the secondary education they needed to attend college and ultimately medical school or graduate school in the biomedical sciences.

Building on the success of this school, BCM later established similar programs with six high schools in the Rio Grande Valley.
BCM Magnet High School Network

Health Science Academy at Foy H. Moody High School (HSA) – Corpus Christi
HSA has a current enrollment of 1,813 students, of whom approximately 90 percent are Hispanic and five percent are African-American. Nine graduates have entered the BCM-University of Texas-Pan American (UTPA) BS/MD program.

Health Science Magnet at J.B. Alexander High School (HSM) – Laredo
This “school within a school” has a current enrollment of 435 students, approximately 90 percent of whom are Hispanic. Twenty-six graduates have entered the BCM-UTPA/MD program.

South Texas Academy for Medical Professions (Medical Academy) – San Benito
The school currently enrolls 516 students, 94 percent of whom are Hispanic. In 2012, Newsweek ranked Medical Academy 91st of 500 highly ranked U.S. high schools.

South Texas Business, Education and Technology Academy (BETA) – Edinburg
Originally opened in 1993 to address the shortage of Hispanic school teachers (especially in science and mathematics) and to increase professional development opportunities for teachers in South Texas, the Teacher Academy was the nation’s first pre-college school designed specifically for students wishing to pursue careers in teaching. Located in the South Texas Independent School District, approximately 90 percent of BETA’s student population is Hispanic. The school was ranked 161st nationally and 18th in Texas in U.S. News & World Report’s ranking of best high schools.

South Texas High School for Health Professions (Med High) – Mercedes
Med High currently enrolls 856 students, of whom approximately 80 percent are Hispanic. More than 90 percent of graduates have enrolled in college, and most reported interest in medicine, science and/or the health professions. Med High has been named a “Blue Ribbon” school by the U.S. Department of Education and ranked by both Newsweek and U.S. News & World Report as one of America’s best high schools. Each year, up to 20 of the school’s rising seniors are selected for summer programs at BCM. To date, 69 Med High graduates have entered the BCM-UTPA BS/MD program.

South Texas Preparatory Academy (STPA) – Edinburg
STPA was established in 2008 to prepare junior high school students (grades 7-8) for the academic rigor of high school. After leaving STPA, students choose to go to one of four high schools in Baylor’s High School Network.

The Science Academy of South Texas (Sci Tech) – Mercedes
Sci Tech is one of the top-scoring schools on the Texas Assessment of Academic Skills. The school currently enrolls 712 students, of whom 74 percent are Hispanic. Sci Tech was ranked 48th nationally, 6th in Texas, and 103rd in the “Best High Schools for Math and Science” category in U.S. News & World Report’s ranking of best high schools. Nine graduates are in the BCM-UTPA BS/MD program.
The Houston Premedical Academy (HPA), an eight-year high school-to-medical school program, was established in 1996 as a partnership among the DeBakey High School for Health Professions, the University of Houston (UH) and BCM. Each year, up to 10 students from DeBakey High School are selected for the program. To date, 157 students have matriculated into the program as undergraduates at UH. Of these students, 28 percent are African-American and 44 percent are Hispanic/Latino.

Eighty-eight HPA students have graduated from UH, and 87 have entered a Texas medical school (84 at BCM).

“BCM is committed to making medical care available to the underserved in our country,” said Dean Phillips, who acts a mentor to the program. “The groups most underserved—African-Americans, Mexican-Americans, mainland Puerto Ricans and Native Americans—constitute 25 percent of our country, but only 6 percent of our physicians. By addressing this disparity, BCM can have a positive effect on the provision of medical care to these groups.”
BCM faculty, staff and trainees tap into their creativity to develop innovative approaches to educating Houstonians about health, medicine and science.

You Are What You Eat

The Office of Outreach and Health Disparities of the Dan L. Duncan Cancer Center at Baylor College of Medicine partnered with students from the Michael E. DeBakey High School for Health Professions, under the supervision of their art teacher, Treena Rowan, and artist and health professional Shelley Buschur, to design and decorate a unique golf cart to take part in the Art Car Parade.

The students enrolled in the art class came up with a theme that promotes healthy eating to decrease the risk of cancer and other chronic diseases. The cart has a variety of fruits and vegetables attached to the golf cart and is topped off with a cabbage head.

Toni the Healthy Eating Cart has made several appearances throughout the greater Houston area, including Main Street Drag, the Children’s Museum of Houston, the Art Car Sneak Peek, and at Baker Ripley Neighborhood Centers.

OFFICE OF OUTREACH AND HEALTH DISPARITIES

The Office of Outreach and Health Disparities (OOHD) was established to ensure that the large, diverse and underserved population of Houston/Harris County receives the latest information about cancer prevention and treatment. To meet this goal, the OOHD partners with institutions throughout Houston to develop and distribute innovative educational programming including theatrical performances as well as materials; creates tools such as A Patchwork of Life, an award-winning web tool to help breast cancer patients make informed treatment decisions; and participates in community fairs and other events.
Leap of Faith

Growing up in the small town of Sharyland in the Rio Grande Valley, Dr. Lyssa Ochoa had a keen interest in science and math, but the idea of turning that interest into a future career seemed impossible. That changed during her senior year at Sharyland High School, when Ochoa heard about a new joint program between the University of Texas-Pan American and Baylor College of Medicine.

“For the first time, it dawned on me that I could be a doctor,” said Ochoa. “But believing a career in medicine was actually within my reach was not easy.”

Taking a leap of faith, Ochoa applied to and became a member of the first class of the Premedical Honors College.

Now a vascular surgeon with Peripheral Vascular Associates in San Antonio, Texas, Ochoa recalls that when she learned she could have an eight-year scholarship for college and medical school, it became clear that her dream of being a doctor could become reality.

During the summer between freshmen and sophomore years, she participated in a pre-med honors program run collaboratively by Rice University and BCM. The next summer she had the chance to conduct research at Louisiana State University with funding from the Howard Hughes Medical Institute. Her last summer as an undergraduate was spent shadowing a family practice doctor in the Rio Grande Valley. On top of all these experiences, the program offered early MCAT preparation.

Both of Ochoa’s parents grew up as migrant workers and put themselves through Pan Am College before it became a university.

“They had a strong belief in the power of education and always told me I could achieve anything,” said Ochoa. “When I graduated from medical school, my father admitted that even though he had always said I could do whatever I wanted to, never in a million years did he think it would be possible for me to become a physician.” Ochoa credits her
The Premedical Honors College (PHC) was established in 1994 as a partnership with The University of Texas-Pan American (UTPA) to increase the number of medical students from South Texas.

- **45** Undergraduate students are currently enrolled at UTPA.
  - 64% of students are from underrepresented minority backgrounds.

- **288** Participants at UTPA are from South Texas high schools.
  - 119 students are from BCM’s magnet high school network.

- **171** Have attended a Texas medical school.
  - 85% of students are from underrepresented minority backgrounds.

- **112** MDs to date are from underrepresented minority backgrounds.

- **61** MDs are in training programs.
  - 72% are from underrepresented minority programs.

- **51** MDs are practicing, including 44 in South Texas.

PHC served as the model for the State of Texas Joint Admissions Medical Program (JAMP) established in 2002.
When I graduated from medical school, my father admitted that even though he had always said I could do whatever I wanted to, never in a million years did he think it would be possible for me to become a physician.”

BCM faculty members, including Dr. William Thomson, director of the Center for Educational Outreach at BCM, and Dr. Mary Brandt, professor and vice chair of surgery and associate dean of student affairs at BCM, also helped her throughout. “The support and passion people at Baylor show for helping others is priceless,” she said. “People like that set an example of the person and physician you want to be.”

When the time came to interview for residency and fellowship training, Ochoa traveled the country looking at programs. But she found no place that could match the Texas Medical Center in terms of diverse training experiences.

Now, 18 years after first realizing medicine could be part of her future, Ochoa credits her own experience and the Premedical Honors College program with changing prospects for students from her hometown.

“Now people from my high school can look at someone like me and see that it is possible,” she said.

When Ochoa was packing to leave BCM after completing her fellowship training, she gave all her medical school books and equipment to a young woman from her hometown who is now a second-year medical student at BCM.

“When I graduated from medical school, my father admitted that even though he had always said I could do whatever I wanted to, never in a million years did he think it would be possible for me to become a physician.”
Preparing Tomorrow’s Teachers

Baylor College of Medicine postdoctoral fellow Dr. Ryan Udan has always been interested in teaching, but his career path thus far had not offered him many opportunities to gain teaching experience, which made it difficult for him to commit to an academic career path.

Then Udan learned he could get the teaching experience he sought while also engaging minority students in science through REACH IRACDA.

“As part of the program, we are encouraged to design classes that are relevant to the types of research we do in the lab,” said Udan.

Udan and Dr. Maria Fadri-Moswitz, also a postdoctoral fellow at BCM, developed an interdisciplinary undergraduate course in biomedical imaging that incorporated current research in the field. When they taught this course to students at Prairie View A&M University, they focused on the physics of different imaging modalities and how these modalities are applied in medicine and biomedical research.

REACH IRACDA

The Houston Research Education and Career Horizon Institutional Research and Academic Career Development Award (REACH IRACDA) K12 Postdoctoral Fellowship Program, prepares postdoctoral biomedical researchers to teach research-oriented courses to undergraduates at minority-serving institutions in the Houston community, including the University of Houston–Downtown, the University of St. Thomas and Prairie View A&M University.

The three main goals of the program include:

• Facilitating postdoctoral candidates’ progress toward research and teaching careers in academia;
• Motivating the next generation of scientists at minority-serving institutions; and
• Promoting linkages between research-intensive institutions and minority-serving institutions that can lead to further collaborations in research and teaching.

The three-year program begins with a one-year teaching course where postdoctoral fellows learn about topics such as developing a syllabus and implementing pedagogical approaches. In the second year, they choose an affiliated institution and observe undergraduate science classes taught by professors at the institution. The final year is dedicated to developing a new course or enhancing an already established course and teaching it at the affiliated institution.

“BCM post-docs have wonderful teaching mentors who help them leap ahead in their development. Teaching partner campus faculty and leadership are extremely enthusiastic about the IRACDA program,” said Dr. Gayle Slaughter, director of the program at BCM and senior associate dean of graduate education and diversity at BCM’s Graduate School of Biomedical Sciences.
Udan had to learn how to teach as he went along, discovering which strategies were most effective in his classroom. He found that integrating technology into his teaching helped students learn better—the hands-on experience reinforced concepts they were taught in lectures.

Throughout the course, Udan discussed different career options in biomedical imaging with students, including what type of degree they would need, salaries and job descriptions. Udan also mentored students when they applied to graduate programs.

“By working at minority-serving institutions and exposing students to different career fields, we may pique their interest and start to recruit more minorities into science,” he said.
Michelle Rubin chose to pursue a Ph.D. at BCM after her experience with an IRACDA mentor as an undergraduate at the University of St. Thomas.

OPENING CAREER PATHS

For Michelle Rubin, the interaction and connection with her IRACDA mentor reaffirmed her desire to go into academia.

As an undergraduate at the University of St. Thomas, Rubin took a course taught by Dr. Albert Ribes-Zamora, then a BCM postdoctoral fellow participating in the IRACDA program. Although Rubin initially wanted to pursue a career as a physician, the class in molecular techniques and the research that she conducted with Ribes-Zamora got her interested in the impact research could have.

“He helped me grow as a scientist in reference to my abilities in the lab, as a presenter and all around,” said Rubin.

Rubin is now pursuing her graduate degree at BCM.

“I wouldn’t be where I am today without meeting and working with Albert, and that is thanks to the IRACDA program,” she said.
Unconventional Path

Early in life, Chris Bland developed a distrust of doctors. “My mother had a protracted illness and died after five or six years of being in and out of hospitals,” he said. “I felt helpless. We were a poor Native American family with limited education.”

Bland started to use money he earned from odd jobs to buy medical textbooks. By age 12, he became the family leader in speaking with and questioning the doctors caring for his mother.

“Doctors were at first surprised when I would question and even argue with them,” Bland said. In his small town of El Paso, Texas, most people did not question doctors. “But, eventually they started encouraging me.” Bland was 16 when his mother died, but the experience would shape his life and inspire independent learning.

With his father in the military, Bland had a non-traditional education.

“We traveled all over the world while I was growing up. I didn’t have a formal education,” he said. Instead Bland pursued his own interests and shaped his own learning. He took and passed a GED test at 16, but was too young to apply to college. In the interim he took a series of random jobs.

At 22, Bland enrolled in El Paso Community College. On campus, he saw

THE SMART PROGRAM

Back in the 1990s, the National Science Foundation predicted that the United States would have a shortage of half a million scientists and engineers by 2012. This became a hot topic of conversations in the offices and hallways of Baylor College of Medicine.

Far from being resigned to this fate, BCM faculty wondered what they could do to alter the course. From these conversations the Summer Medical and Research Training Program (SMART) was born. Now directed by Dr. Gayle Slaughter, SMART provides biomedically related summer research projects for undergraduates in a supportive environment with supplemental educational activities tailored for each individual.

BCM received initial funding from Pew Charitable Trust and Dr. Bobby Alford, distinguished service professor at BCM. Alford established a tradition of BCM faculty financially supporting SMART, which continues today.

The success of SMART in creating a pipeline for talented students to pursue careers in science has led to additional programs. Since 1998, the Initiative for Maximizing Student Diversity (IMSD) at BCM has received three $2 million grants from the National Institute for General Medical Sciences to provide resources that help optimize Ph.D. student success.

IMSD offers a variety of services to support underrepresented minority Ph.D. candidates during their training, including a pre-matriculation summer program, seminar series specifically geared toward the challenges facing minorities in science and skill-building workshops. Since IMSD funding started, 72 underrepresented minority students have earned their Ph.D.s and gone on to careers in science.

“They have not only graduated, they have thrived,” said Slaughter. “As a group, they have earned over 230 awards for their research and teaching.”
people working in laboratories, but he did not know how to go about earning a place in one. Taking a chance, he walked into one of the labs and started a conversation with one of the student researchers. That conversation led Bland to the RISE to the Challenge Program, a National Institutes of Health-funded initiative aimed at providing underrepresented students with the tools to succeed in college and pursue a biomedical research career and a Ph.D. Through RISE, Bland was eventually connected with Dr. Todd Primm at the University of Texas El Paso. Primm had trained at Baylor College of Medicine. “He taught me how one went about pursuing a career in science,” Bland said. “He also told me about what a great place BCM was.” Once he started looking into BCM, Bland discovered the Summer Medical and Research Training Program (SMART). After a summer getting to know “a lot of really smart people,” Bland recalled feeling completely welcome and at home at BCM.

When it was time to consider graduate school, he was accepted to every program to which he applied and received a Ford Fellowship. With so many choices before him, his preference remained clear and he accepted a spot at BCM.

As a graduate student in the laboratory of Dr. Thomas Cooper, the S. Donald Greenberg Professor of Pathology at BCM, Bland received numerous awards for his research and teaching skills. When he graduated, he was selected as the commencement speaker for his class. Having met his fiancée Wendy Tie, a fellow BCM graduate student at the time, Bland eschewed offers from other top programs around the country, and remained at BCM for his postdoctoral fellowship.

His ties with the SMART program have allowed him to find many ways to give back over the years. “I’ve done a lot of tutoring throughout my training, particularly with kids from minority communities like El Paso,” said Bland. “For most of these kids, there is a lot of pressure from their families to focus on just a few, very practical career options. Without the support of programs like SMART, most of these kids would never view science as an option.”

“Doctors were at first surprised when I would question and even argue with them. But, eventually they started encouraging me.”
Without the support of programs like **SMART**, most of these kids would never view science as an option.
Baylor College of Medicine builds partnerships around the world to facilitate the sharing of knowledge, skills and talents that leads to better lives for people from Honduras to Botswana, from Romania to China, across the United States, and in Texas, right in our own backyard.
BCM is currently engaged in projects to conduct research, provide healthcare services and create educational opportunities on six continents.
Global Partnerships

Baylor College of Medicine has a long record of successful international partnerships. Current partners include institutions in Latin America, Africa and Europe.

Over the years, some of these partnerships have developed organically. One example in particular highlights this:

In 2006, Dr. Mark Kline, now chair of pediatrics at BCM and physician-in-chief at Texas Children’s Hospital, was in Botswana as part of his work as director of the Baylor Pediatric AIDS Initiative (BIPAI). While there, Kline learned about efforts to establish the nation’s first medical school. Upon his return to Houston, Kline engaged College leadership in discussions of how BCM could help with this effort.

In an elevator ride at the apartment building in which they both lived, Kline mentioned the initiative to Dr. Major Bradshaw, then dean of medical education. This conversation started a process that led to Bradshaw volunteering to serve as interim founding dean of the University of Botswana Medical School. Over the ensuing years, Bradshaw and other BCM faculty have been involved in developing many facets of this new school, which has made it possible for aspiring doctors to stay in Botswana for their training, greatly increasing the likelihood that they will stay in their homeland, where healthcare providers are critically needed.

While such fortuitous interactions are valuable, strategically extending BCM’s reach around the world requires a more structured approach. The BCM Center for Globalization, established in 2011 with a generous gift from BCM trustee Wallace S. Wilson, is providing this structure.

“We are reaching out to communities with underserved populations who can benefit from our medical expertise in the clinic and the classroom,” said Dr. Bobby Kapur, assistant professor of medicine and pediatrics at BCM and founding director of the BCM Center for Globalization. “We also have much to gain from learning about healthcare systems and teaching methods from other countries. What we learn will help us improve care for patients around the world and here in Houston.”

One of the key ways in which the Center is pursuing its goals is through grants to students, residents, fellows and faculty to
address global health priorities across the full spectrum of medical training and clinical practice at BCM. “These grants allow physicians and physicians-in-training to strengthen BCM's global research initiatives and inspire them to share ideas with global colleagues,” said Kapur.

Three grant recipients shared their inspiration.

**Rachel Elizabeth Finn, fourth-year medical student at BCM** and recipient of a Student Global Scholarly Activity Grant to spend a month in Constanta, Romania, working at the Baylor International Pediatric AIDS Initiative (BIPAI) at Texas Children's Hospital Clinical Center of Excellence.

“I will be instituting a tuberculosis education initiative for clinic patients. Tuberculosis remains a significant cause of death in the HIV population in Romania. This initiative aims to improve patient understanding of tuberculosis prevention and treatment. I want to truly understand the experience of illness from other cultures’ perspectives by embracing those communities firsthand.”

**Dr. Natalia Khalaf, second-year resident in internal medicine at BCM** and recipient of a Global Scholars Grant that allows her to conduct research through the American University of Beirut to identify the risk factors for colon cancer in the Lebanese population.

“I work with the hope of saving the life of someone’s mother, wife, sister, grandmother, aunt or daughter.”

“Dr. Natalia Khalaf, second-year resident in internal medicine at BCM and recipient of a Global Scholars Grant to work in Malawi, Africa with the program One Woman Screened, One Life Saved. The goal of the program is to assume a proactive, preventive role toward cervical cancer, which is too often a terminal diagnosis in this region.

“This project represents my first major global health initiative since becoming a faculty member, and this work has allowed me to experience firsthand the unique rewards and challenges that come with global work. Global health has always been at the crux of my academic and professional aspirations. The Center has provided the necessary support to develop and engage in meaningful and sustainable initiatives and has served as an exceptional resource.

I work with the hope of saving the life of someone’s mother, wife, sister, grandmother, aunt or daughter.”

**Dr. Maame Aba Coleman, assistant professor of obstetrics and gynecology at BCM** and recipient of a Globalization Demonstration Project Grant to work in Malawi, Africa with the program One Woman Screened, One Life Saved.

“The physicians at the American University of Beirut have created a research project to identify the risk factors for malignancy possibly specific to the local community. This project allows me to not only collaborate with colleagues and mentors I admire in my field, but also provides me with exposure to how medicine is approached and practiced in a part of the world that is close to my heart,” said Khalaf.
I never thought I’d say this, but

**BEING HIV-POSITIVE HAS HAD ITS BLESSINGS.**

If I had never gone to Baylor Clinic or Teen Club, maybe I wouldn’t have developed my optimistic perspective.
Empowering HIV-Positive Teens Around the World

Three teens from the Baylor International AIDS Initiative Teen Clubs in Africa shared their stories in their own words. Given the continued stigmatization of HIV, each individual varies in how much of his or her name and other personally identifiable information he or she is open to sharing. Below are excerpts from their personal stories.

THATO CHRIS RAMOTSWE, JR.

In 2004 I got really sick, so sick that it worried my mother. She didn’t know what was wrong; doctors said it was flu, some said it was just fever. My mother took me to a private doctor in Kanye (Botswana). He suggested that I take an HIV test. That shocked and frightened me a lot; I was afraid to hear that I might have HIV because I thought of it as the worst disease that ever existed. My teachers at school said it was a death sentence.

The doctor started by saying, “Chris, your test results have come. You are not alone in this; there are a lot of people in Botswana who are in your situation, so please don’t think that you’re alone. I’m sorry but your results have come back positive for HIV.” I was just 12 years old. How could I have possibly got HIV?

The doctor referred us to the Botswana-Baylor Children’s Clinic in Gaborone. We went for our first check-up, and I was so shocked to see a whole lot of children who were HIV-positive like me.

I live a normal life now, one in which I know I’m not the only child living with HIV.

The year 2004 eventually passed and then came the year 2005 when, in May, a lady who worked at Baylor started what is now called Teen Club. Teen Club is a peer support group for HIV-positive adolescents who are treated at the Baylor Clinic. This club started with only four members. We usually met twice a week and, during our meetings, we would paint, draw and just enjoy ourselves. For me, Teen Club is my second home because those of us in the club understand each other, know each other, and are proud of ourselves.

We also started holding a camp called Camp Hope, for children at the clinic ages 9 to 12. 2009 was the first time they had teen counselors, including me, at the camp. The campers had a chance to learn from the teen counselors about how to live positively and how to keep fit. It was amazing for me to hear the younger kids saying they didn’t think us teen counselors were HIV-positive; they thought that because we looked big, fit and healthy, we weren’t infected.

Gaborone Teen Club, our club in Botswana’s capital city, has grown from me and the other original three members to an average attendance of over 150 every month. With 10 Teen Leaders, of which I am one, helping lead the activities, everything goes smoothly.

There was a time I never thought I’d say this, but being HIV-positive has had its blessings. If I had never gone to Baylor Clinic or Teen Club, maybe I wouldn’t have developed my optimistic perspective.

Now I live a cautious life, one in which I look after myself well, eat well and take my meds every day on time, a life in which I have accepted who I am.
**A TANZANIAN TEEN LEADER**

The moment that I will never forget in my entire life was the day that they told me that I am HIV-positive. It was 2007. My dad and my uncle took me and my brother to a referral hospital called Bugando Hospital. We were still too young to know what was going to happen that day. After they tested us for HIV, they didn’t tell us.

It was not until I matured enough that they told me that I am HIV-positive and that is a day that I will never forget in my entire life. I was depressed, sad and I lost hope. I wanted even to die; life became meaningless to me. So one of the doctors at Bugando Hospital gave me hope and told me “to be an HIV-positive is not the end of life.”

In April 2011 I was transferred to Baylor Clinic, and that was a day that I discovered to my surprise that there were many children and teens my age living with HIV. That has made a world of difference to me. Since day one at Baylor the services were very good, and I have understood many things about HIV/AIDS knowledge that I didn’t know before. I learned many things about stigma and discrimination, and from the day I learned those things, I stopped discriminating myself and moved forward with my life.

I also joined Teen Club where I learn many things and meet new friends. Because of Teen Club I get a different experience from other teens. I have learned a lot and I am very happy now because I got a chance to become a Teen Leader, and I am leading others. I hope I can support peers that are feeling the way I felt. Teen Club makes me want to be a better person and makes me a stronger one. I believe I have a lot to offer.

“I have plans just like you; I see myself growing old just like you, and with the support of Teen Club, I believe I can overcome all the challenges that come my way, because I’m not alone.”

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**100,000+**

HIV-infected children and families are treated by BIPAI. This is almost twice the number of HIV-infected children living in the United States, Canada and Western Europe combined.
K.B.

My life story, I would say, is no different from that of any other teenager living with HIV. Born in the year 1982, the second oldest of four, I lived with a single mother who worked in the immigration department.

I fell terribly sick in mid-2004 and was diagnosed with TB. A few months later my mom and I were diagnosed with HIV. I must admit the news hit me hard. But I couldn't be weak for the sake of my mother. I had to show her that I didn't blame her and assure her everything would be fine.

When I was 15 years old, my mom quit her job and decided to move to South Africa, leaving me with my alcoholic sister and her two kids. My life crashed right there. I started blaming everything on being HIV-positive. I knew I wasn't alone, but I felt like it. A year later, I was referred to Baylor as a patient and became a Teen Leader for other teens like me.

A position for Peer Educator opened at Baylor; I decided to apply and was hired in 2010. This gave me the strength to move out of my sister's house into my own small place.

Being HIV-positive might make me vulnerable in a way, but it does not prevent me from reaching my goals. People just like you; I see myself growing old just like you, and with the support of Teen Club, I believe I can overcome all the challenges that come my way, because I am not alone.
Launched with the compassion and vision of one doctor moved by a 1996 visit to Romania, the Baylor International Pediatric AIDS Initiative (BIPAI) began with the opening of a single Romanian clinic in 2001. That clinic and the children it treats has flourished, as has a network of clinical operations stretching across sub-Saharan Africa.

“We now have cared for more than 100,000 HIV-infected children and families, about double the number of HIV-infected children living in the United States, Canada and Western Europe combined,” said Dr. Mark Kline, founder and president of BIPAI, J.S. Abercrombie professor and chair of pediatrics at BCM, and physician-in-chief at Texas Children’s Hospital.

BIPAI offers care and treatment to children and their families for HIV/AIDS, malnutrition, malaria, tuberculosis, pneumonia and other concurrent diseases and provides health professional education and clinical research in resource-limited settings. BIPAI operates in the United States, Romania and 11 countries in Africa. It also provides specialized training and technical assistance to numerous partner programs worldwide.

BIPAI’s physicians and healthcare providers were among the first to recognize that adolescents with AIDS represent a special group with special needs. They established Teen Clubs, many based at the BIPAI Centers of Excellence in Africa and others at satellite locations, to provide these teens with creative ways to cope with their disease at a time in their lives when they are challenging authority and its rules.

“My hope is that the skills we are learning from Baylor will become part of the public health system and part and parcel of response,” said Dr. Haruna Jibril, paediatric clinical advisor for the Department of HIV and AIDS within the Botswana Ministry of Health in a news report from UNICEF. “Now with few children being born positive, we have to cater to those teenagers who are growing up.”
HOU STON TEEN CLUB

BIPAI has also established a Teen Club program in Houston to help local adolescents growing up HIV-positive. One of the participants, who did not want to be identified by name, said, “Since learning about my status and with help from family members, doctors and organizations like Camp Hope and many other youth programs through Texas Children’s Hospital, I am no longer afraid of my HIV and disclosing my status to others because I realize I have HIV, HIV doesn’t have me!”

She also shared a poem* about her experience with HIV:

*This poem appears in its original form and has not been altered or edited.

see not to many people can say they know what im going threw...even doe million of
people got it but who goes and get tested any
more to know they status, only a few...

see going threw life i have to deal with out
breaks and body ache there are times when
all I could do Is stare into the dark and cry
frm a major headache and they tell me to be
strong it won’t last always...

but when do it go away or become the past
how much more can I take? I guess it never
becomes the past when all u can hear is the
people you trust enuff to disclose to laugh in
your face.

Participants in the Teen Club at the BIPAI Bristol-Myers Squibb-Texas Children’s Hospital–Children’s Center of Excellence at Mulago Hospital in Kampala, Uganda.
Shoulder to Shoulder

Stella Benavides vividly recollects walking into the hut made of sticks with a straw roof in rural Santa Ana, Honduras. The eight-by-eight foot room had a dirt floor, two doors with chickens and dogs wandering in and out and hammocks slung from the rafters. The one internal wall, made of straw, shielded a bed on which a 78-year-old woman lay curled in fetal position.

As Benavides and her fellow students from Baylor College of Medicine aimed the beams of their flashlights, they discerned that half her body was swollen because she had lain on the same side for weeks. When they tried to speak with her, they were unsuccessful. Even though Benavides is a fluent, native Spanish speaker, the old woman’s indigenous dialect was unintelligible.

When Dr. Carol Gomez, the lone, full-time practitioner in the clinic run by the Houston Shoulder to Shoulder Foundation in this remote, rural area of Honduras, joined them, the situation changed. She facilitated the conversation and the students learned that the anemic old woman had been bleeding from the colon for weeks. A discussion about how to care for her followed.

On another day of her two-week trip to Santa Ana, Honduras through the Houston Shoulder to Shoulder Foundation, Benavides and her peers set up a temporary clinic in a neighborhood school. The custodian of the school brought in her 18-month-old son. While the mother’s main concern was that the child was “just not feeling well,” Benavides and her fellow trainees noted that the boy had a club foot, undescended testicle, umbilical hernia, a heart murmur and hydrocephalus. The mother was unaware of all of these conditions, but the team explained the problem to her at the clinic and connected her with the Department of Health to gain access to a social healthcare plan in Honduras.

The experience had a significant influence on Benavides, who grew up in Rio Grande City in Texas, smack in the middle of one of the poorest areas of the United States. After many hours of volunteering at a hospital and completing the training as an emergency medical technician, she realized...
that her passion for medicine extended even further. She began to pursue a medical degree at the Premedical Honors College, a partnership between the University of Texas Pan-American and BCM to increase the number of students from South Texas who access medical education.

“There is a great need for primary care in underserved areas in the United States and around the world,” she said. “It is easy to feel overwhelmed by the need and think there is no way one doctor could ever make a difference. I learned on this trip that I can make a big difference, and I did!”

HOUSTON SHOULDER TO SHOULDER FOUNDATION

Founded as a partnership between BCM and the Santa Ana Honduran community, the Houston Shoulder to Shoulder Foundation was created to offer Santa Ana residents a higher standard of healthcare and provide an ongoing opportunity for BCM residents, students and faculty to be involved with international health in an underserved area.

The program was modeled on an existing relationship between the University of Cincinnati and Santa Lucia, Honduras, which is called Shoulder to Shoulder. The two programs work together to improve community health throughout Honduras. Today the Houston Shoulder to Shoulder Foundation serves some 15,000 people in Santa Ana and eighteen surrounding villages within walking distance.

“Academic medical centers share a common mission to improve health and outcomes not only for individuals, but also for the community,” said Dr. Stephen Spann, former professor and chair of family and community medicine at BCM and one of the founders of Houston Shoulder to Shoulder Foundation. “Working in underserved areas with few resources and minimal technology helps trainees focus on the essential elements of communication and public health to address community needs.”

Santa Ana, a small village of about 700 inhabitants located in the mountains of western Honduras and bordering El Salvador, offered an ideal setting in which trainees could gain this experience and have a real and lasting impact on the health of individuals, families and a vibrant community. The nearest hospitals are hours away. Before the alliance between Santa Ana and BCM, the town and its large surrounding rural population had no physician.

Teams of physicians and students from BCM periodically visit Santa Ana to conduct health clinics and to do community-oriented primary care.

“Each trip is a wonderful opportunity to work shoulder to shoulder with people in rural areas,” said Dr. Robert Parkerson, associate professor of family and community medicine at BCM and director of the program. “They are geographically isolated in one of the poorest countries in the western hemisphere. They have a great desire to improve available resources, and there are always eager volunteers to help us achieve our shared goals.”

15,000 people are helped by Shoulder to Shoulder in Santa Ana and 18 surrounding villages.
The National School of Tropical Medicine (NSTM) at Baylor College of Medicine is the first school in the United States solely committed to addressing the world’s most pressing tropical disease issues. It is also one of the few schools in the world devoted to the neglected diseases that disproportionately afflict “the bottom billion,” the world’s poorest people who live below the World Bank poverty level.

The School applies strong traditions in basic, translational and applied biotechnology research brought by the BCM faculty and staff with the newly affiliated Sabin Vaccine Institute Product Development Partnership (Sabin-PDP). The NSTM works in partnership with Texas Children’s Hospital, home of the Sabin Vaccine Institute & Texas Children’s Hospital Center for Vaccine Development.

The mission of the NSTM is to:

• Provide training for health scientists and global healthcare providers in tropical medicine.

• Establish capabilities and core competencies for the discovery, development and delivery of a new generation of appropriate global health technologies (e.g., vaccines, drugs and diagnostics) for the world’s major tropical diseases, neglected tropical diseases, malaria and other neglected infections of poverty.

• Establish and enhance capabilities to treat and prevent neglected tropical disease and neglected infections of poverty in Texas.

• Provide training that will lead to the shaping of public policy around the delivery of new and appropriate technologies for tropical diseases affecting the poorest people in low-income countries.

NSTM will launch a variety of basic and clinical research programs, biotechnology initiatives and educational programs.

National School of Tropical Medicine: Quelling Public Anxiety

West Nile virus deaths confirmed in Houston. Potential hantavirus discovered in a home in The Woodlands.

In the summer of 2012, many cases and several deaths were linked to West Nile virus in Houston and surrounding areas. Dr. Kristy Murray, associate professor of pediatrics – tropical medicine, had been researching the virus since the first time it appeared in New York in 1999. At the time, Dr. Murray was working for the Centers for Disease Control and Prevention and was one of the first responders on the ground to work with people affected by the virus.

Dr. Murray responded to dozens of media calls, providing reliable health information and advice to the local community and the nation through news interviews and other media appearances. In a five-week period, Murray talked to over a dozen news reporters. In the thick of the event, she was scheduled for back-to-back television interviews, from CBS Evening News to every local television network. She and Dr. Peter Hotez, dean of the National School of Tropical Medicine, appeared several times together, explaining the particular issue and the overall concerns about tropical disease. Similarly, when there was a potential case of hantavirus, a disease spread to humans by rodents, in the Woodlands, news reporters called on faculty to explain the disease and potential health threats.

For several days, Dr. Laila Woc-Colburn, Murray and Hotez provided information to the community through the news media.
This again was a national news story as well as an important issue of local concern. Fortunately, in this case, the threat turned out to be a false alarm.

“More than any other state in the United States, Texas has the greatest number of people at risk for tropical infections, both because of the climate and pervasive poverty in parts of the state. These diseases require appropriate responses in order to diagnose and treat patients in a timely manner and prevent the diseases’ dissemination throughout the community,” said Hotez, who is the Texas Children’s Hospital Endowed Chair of Tropical Pediatrics, chief of the Section of Pediatric Tropical Medicine at BCM, and president of the Sabin Vaccine Institute.

“These diseases require appropriate responses in order to diagnose and treat patients in a timely manner and prevent the diseases dissemination throughout the community.”
Baylor College of Medicine physicians and alumni provide care in facilities throughout Houston and Texas.

THE MICHAEL E. DEBAKEY VETERANS AFFAIRS MEDICAL CENTER (MEDVAMC):
- BCM physicians and trainees care for over 128,000 United States armed services veterans.
- BCM provides specialized care to veterans from around the country referred to the MEDVAMC.
- BCM directs and teaches within the MEDVAMC residency programs, which are among the largest in the VA system with 269.7 slots in 40 sub-specialties.

THE MENNINGER CLINIC, ranked among the top hospitals for psychiatry on U.S. News & World Report’s best hospitals list for more than 20 years, moved to Houston, TX after forming an affiliation with BCM and the Methodist Hospital. This move gave Texans local access to the best psychiatric care.

Across affiliated hospitals, BCM physicians care for patients regardless of their ability to pay, providing hours of direct provider time billable.

$84.2 MILLION

THE BEN TAUB HOSPITAL, THOMAS STREET HEALTH CENTER AND OTHER HARRIS HEALTH SYSTEM FACILITIES:
- BCM physicians and trainees staff one of the busiest Level 1 Trauma Centers in the nation with over 100,000 patients annually.
- BCM provides care across all medical specialties to thousands of insured and uninsured Houstonians.
- BCM meets or exceeds national averages for quality measures, including having one of the nation’s fastest door-to-balloon times, the most critical predictor of good outcomes for heart attack patients.
- BCM’s higher patient satisfaction rankings are higher than national averages.

3,706 doctors in TX earned their M.D. at BCM.
486 physician assistants in TX trained at BCM.
3,118 doctors in TX conducted post-graduate clinical training at BCM.
227 nurse anesthetists in TX trained at BCM.

TEXAS CHILDREN’S HOSPITAL
BCM physicians and trainees give the children of Houston and the region access to the high-quality pediatric care that can only be found at one of the nation’s top five children’s hospitals.
With programs starting in kindergarten and continuing through multiple professional and undergraduate programs, Baylor College of Medicine is preparing Texans to be the physicians and scientists of tomorrow.

66.4% of current BCM Allied Health students are Texas residents.

32.8% of current BCM graduate students are Texas residents.

6,427 Texas high school students attend schools that partner with BCM as part of the Texas High School Network.

350 elementary and middle school teachers representing 14,000 students participated in BCM-led teacher training last year.

85% of current BCM medical students are Texas residents.

**Curriculum Developed by BCM Scientists is Widely Used in Texas and Around the World**

- 1.5 million users annually access BCM-developed teaching resources on BioEd Online and K8 science.
- 6,000 teachers representing 370,000 students from all 50 states and 40 countries have used curriculum related to experiments on the International Space Station developed by BCM and partner institutions.
- 50,000+ copies of the HIV curriculum for health professionals developed by the Baylor Pediatric International AIDS Initiative have been distributed in 51 countries.

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BCM CReaTeS JoBS foR TexaNS

By successfully competing for research dollars from the federal government and other sources and developing technologies that launch Texas-based companies, BCM researchers create jobs in Houston and across the state.

BAYLOR COLLEGE OF MEDICINE EMPLOYS NEARLY 9,500 MEMBERS OF THE HOUSTON COMMUNITY.

Over 385 researchers currently working in Texas trained at BCM. Many of these researchers bring additional funding and jobs to Texas via grants and industry support for their work.

Businesses launched based on BCM research advances are bringing jobs and capital to Texas:

LEXICON PHARMACEUTICALS was started by BCM Technologies in 1995. Today the company employs approximately 300 people at its headquarters in the Woodlands, TX.

OPEXA THERAPEUTICS was launched by BCM Technologies in 2001. Today, Opexa is headquartered in the Woodlands, TX.

BELLICUM PHARMACEUTICALS is a Houston-based company that was started by a former BCM faculty member and has licensed technologies from BCM. The company recently successfully competed for a Cancer Prevention Research Institute of Texas (CPRIT) commercialization grant and received over $20 million in private equity financing.

VGX PHARMACEUTICALS acquired the assets of ADViSYS, Inc., a company that was started by BCM Technologies. VGX is using the former ADViSYS site in the Woodlands, TX as a research and development laboratory.

MABVISTA INC. is a Houston-based biotechnology firm founded by two BCM researchers and started by BCM Technologies.

TWISTER BIOTECH, INC. was formed by BCM Technologies in 2011 to commercialize technology developed in a BCM laboratory.

CELL MEDICA, a UK-based medical company, is opening operations in Houston after licensing a technology from BCM. They have successfully competed for CPRIT and venture capital funding.

IN 2012 BCM RECEIVED

$329 MILLION

in research funding, including $207 million from the National Institutes of Health—more than any other medical school in Texas.

Research funding helps recruit talented trainees, keeping top students from Texas in Texas and attracting students from elsewhere to Texas.

Research funding also supports jobs for maintenance workers, security guards, information technology workers, human resources personnel, administrators and a wide variety of other staff with diverse levels of training.
Baylor College of Medicine

On the cover, Baylor College of Medicine surgical resident, Dr. Ronald Cotton is teaching basic physical examination skills to students at his alma matter, the Michael E. DeBakey High School for Health Professions. A joint program between Baylor College of Medicine and the Houston Independent School District, DeBakey High School recently celebrated its fortieth anniversary. Ranked among the best high schools in the nation, DeBakey provides a path to medicine and biomedical science for Houston public school children who may not have otherwise had the resources and the opportunities necessary to pursue these careers. "Because of everything BCM has done for me, I feel obligated to help others in the direction I was able to follow and to help others do their dreams come true," said Cotton.

For more about the DeBakey High School and Dr. Cotton, see page 28.

Service
Making a difference in our community
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For the past forty years, the BCM President’s Circle has supported the College of Medicine’s research, education, and clinical programs through a variety of generous gifts. The Circle’s $1,000 annual giving level is the base for all other giving, and the philanthropic spirit of our members is the cornerstone of the College’s success.

The BCM President’s Circle invites contributions from individuals, corporations, and institutions that wish to support the very best in the field of biomedicine and health care. To become a member of the President’s Circle, contact giving@bcm.edu or call 1-800-770-3874.

https://www.bcm.edu/mission/presidents-circle