Tapia’s White House Moment

Years ago, Richard Tapia and his wife, Jean, had a discussion about the possibility of his winning the highest award in science and mathematics, the National Medal of Science. The Rice University mathematician lamented he didn’t stand a chance. She thought he was wrong — and it turns out Jean was right.

In September 2011, Tapia received a call from the White House saying that he had been selected for the National Medal of Science, but he couldn’t tell anyone, except his wife, until a news release was issued.

“At that point, I started walking on air,” said Tapia. But on Oct. 21, he would soar with euphoria at the awards ceremony in Washington, D.C. Before he left to pick up his prize, though, Tapia told his daughter, Becky, and his son, Richard, to buy new clothes because they were going, too.

At the rehearsal for the formal ceremony, the winners were advised that those in the audience should not holler when the medals were presented. But Jean couldn’t contain herself. “When I went across the stage, Jean shouted, ‘Yay, Richard,’ and President Obama looked at her and smiled,” Tapia said.

Seeking to Eliminate Poverty in Houston’s Fifth Ward

The Community Bridges Fellowship Program, sponsored by Rice’s Kinder Institute for Urban Research and the Center for Civic Engagement, will combine academic course work and active fieldwork in an effort to sustainably reduce poverty in Houston’s Fifth Ward neighborhood.

Students spent the fall in intensive training to prepare for the spring semester, where they will be assigned to one of five participating Fifth Ward organizations: the Small Steps Nurturing Center, the Fifth Ward Community Redevelopment Corporation, the Julia C. Hester House, the Pleasant Hill Leadership Institute and YES Prep Fifth Ward. Students will work with staff members of each organization to develop long-term projects that can address the needs of the Fifth Ward.

Simultaneously, students will be enrolled in the sociology class Inequality and Urban Life, where they will discuss academic literature related to their projects and reflect upon what they’ve learned in the community. Michael Emerson, co-director of the Kinder Institute and the Allyn and Gladys Cline Professor of Sociology, will...
Soledad O’Brien Wows Rice

In September 2011, CNN anchor Soledad O’Brien and six-time national champion boxer Marlen Esparza delivered a one-two punch at a prescreening event of the documentary “Latino in America: In Her Corner” at Rice University.

More than 200 people, ranging from prominent Latino community leaders to journalism students from area universities, packed the Rice Media Center to hear O’Brien and Esparza talk about the making of the documentary.

The documentary, which aired nationally Sept. 25, 2011, used a different format from O’Brien’s other films in that it primarily told the story of one person, Esparza, who is from Pasadena, Texas, and hopes to compete in the 2012 Summer Olympics in London.

In an article in Venture, a multiuniversity collegiate newspaper for Latinos, reporter Ruby Munoz described the film as a “gritty, suspenseful and funny documentary that chronicles Esparza’s road to the Olympics.” She describes it as having “a riveting narrative that leaves more than a few men weepy.”

Esparza, 22, is making history. She is competing for a spot on the first women’s boxing team to compete in the Olympics. In addition to her boxing career, Esparza was an honors student at Pasadena High School and president of the student body.

Esparza wowed the audience with her presentation both on and off screen. Laura Alvarado with the Texas Diversity Council said about Esparza: “It was an inspiration to see such determination to succeed.”

Minerva Perez, producer of “Latina Voices: Smart Talk,” applauded the event and commented that the documentary was “a real gift to the community’s top leaders who attended.”

The event was sponsored by the Hispanic Association of Media Professionals, the Rice Cinema in the Department of Visual and Dramatic Arts, and Rice University’s Multicultural Community Relations in the Office of Public Affairs.

Tapia  Continued from Page 1

As Obama presented the prize, he lauded Tapia “for his pioneering and fundamental contributions in optimization theory and numerical analysis and for his dedication and sustained efforts in fostering diversity and excellence in mathematics and science education.”

Tapia said that he had also been advised by the White House staff not to say anything trivial to Obama. So Tapia thought about what he would say, and while standing on the stage, Tapia said to the president: “You care about community colleges, and I am a product of a community college. I know what has to be done. I can help you. Why don’t you call me.”

According to Tapia, Obama responded: “That’s interesting what you say, and I do care. I will have my staff call you, and we can talk about what kinds of programs are needed.”

Born in Los Angeles of Mexican immigrant parents, Tapia attended Harbor Junior College in Wilmington, Calif. He did not apply to a four-year college because he had not received proper guidance from his school counselor. “No one in my family had ever gone to college, and I didn’t know I could go to a place like UCLA,” he said.

Tapia eventually received his B.A., M.A. and Ph.D. degrees from UCLA in mathematics and began teaching in 1970 at Rice, where he has won a litany of awards for his research and outreach efforts. In 1992, he became the first Hispanic elected to the National Academy of Engineering. In 2005, he earned Rice’s highest academic title, University Professor, becoming only the sixth person to earn that rank at Rice.

In addition to teaching and doing research, Tapia also directs the Center for Excellence and Equity in Education (CEE), which seeks to promote greater participation of underrepresented students in the sciences. Currently, the center is operating two programs, one for undergraduates and another for graduate students.

The first program, Empowering Leadership Alliance (ELA), strives to retain underrepresented students majoring in science and engineering. It encourages them to complete their degrees, to consider research and become academic leaders.

“We do this by maintaining a commu-
Local school district administrators and Rice K–12 leaders gathered at Rice University in the fall to celebrate the launch of the Center for College Readiness, a division of the Susanne M. Glasscock School of Continuing Studies.

Formerly known as Teacher Professional Development, the center was renamed to reflect the growing diversity of its K–12 outreach programs. Executive Director Jennifer Gigliotti said the center will offer specific new programming that will focus on “closing equity and achievement gaps among students, building a college-going culture, and supporting students as they navigate the path to college.”

“The programming has and will continue to be centered on innovative strategies and content to increase the college readiness of students,” she said.

Only 45 percent of students enrolled in postsecondary education will earn a bachelor’s degree, Gigliotti said, primarily because many students find it necessary to take remedial coursework in their first two years. Of those who take remedial courses in their first year of college, only 17 to 39 percent will earn a degree.

“The research is incontrovertible,” Gigliotti said. “Rigorous course work in high school, such as Advanced Placement (AP) and International Baccalaureate (IB), better prepares students for postsecondary education and helps ensure that more students will successfully complete their university degrees.”

The center will continue to offer its current AP and IB programming, she said, adding that Rice is the only institution in the country offering training in both of the two major college-preparatory curricula. In 1995, the Glasscock School began the AP Summer Institute to provide top-level programming to ensure teachers were properly prepared for the AP classroom experience. The institute has been offered 17 consecutive years and is now the largest such training in the nation, attracting more than 2,200 AP teachers this past summer.

Over the years, the school has added training for IB teachers, as well as programs for administrators, counselors and secondary students. Other programs include extensive training in American history, Chinese-language teaching, a Global Education Certificate program, and customized district work for teachers and administrators focused on building and sustaining successful AP programs.

To date, more than 30,000 educators and students from all 50 states and 37 countries have taken part in the programs. Since 2007, annual enrollments have increased 102 percent, now standing at more than 5,700.

More information on the Center for College Readiness can be found by visiting www.collegeready.rice.edu or www.facebook.com/RiceCCR or by calling 713-348-6031.

Seeking to Eliminate Poverty

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Rice Launches Center for College Readiness

teach the course. “We’ve designed the course work around what they will experience in their neighborhoods, and vice versa,” Emerson said.

Community Bridges is the brainchild of Rice alumna Jecca Steinberg ‘11, who serves as its program coordinator. As a student, Steinberg was actively involved in service opportunities in Houston, the U.S. and abroad. She was interested in finding an experiential learning opportunity that incorporated service, but none of the existing community outreach programs at Rice incorporated sustained, long-term field work for academic class credit.

“It inspired me to start a new program that combined the two things I was looking for,” she said.

Steinberg is excited to see how the program will benefit Rice students and the historic Fifth Ward neighborhood, which is steeped in culture. It is also one of the city’s most impoverished areas.

“There’s no question about the benefits of this relationship between the Fifth Ward and Rice students,” Steinberg said. “The students will engage in activities specifically aimed at poverty improvement. We’re very excited to see how things unfold.”

Emerson, who also serves as chair of the Fifth Ward Community Redevelopment Corp., has been partnering Rice interns with community organizations for years. He is looking forward to seeing the impact the students can have with a concentrated, sustained effort in one area of Houston.

“Our students have done wonderful work, but the internships typically last only one semester,” Emerson said. “The idea behind this new program is for the next group of students to pick up where the last ones left off. Now there will be a sense of continuity. And we believe the continuous effort will make a bigger impact.”

Kathy Payton, president and CEO of the Fifth Ward Community Redevelopment Corp., is a former resident of the neighborhood, a graduate of Rice’s Leadership Institute for Nonprofit Executives program and has spent her career working toward positive growth in the community. She has partnered with Emerson and Rice students for a number of years and is excited to see how the new program will further impact the area.

“We see this as a mutually beneficial relationship,” Payton said. “We expect to learn as much from the students as they learn from us. Their fresh ideas about the organization and regarding community change will be a tremendous benefit.”

Payton believes the academic part of the class is essential for students to get as much as they can out of the program. “I think it’s really important for the students to understand the neighborhood’s culture and be able to process their experiences,” she said. “I’m so happy that the academic course will parallel what they will do in the community.”

Stephen Klineberg, co-director of the Kinder Institute and professor of sociology, said he expects the program to be popular among Rice students, many of whom are eager to make a difference in the world.

“It’s my impression that students increasingly know just how privileged they are to be at Rice,” he said. “They have a real desire to give back to their community.”
Offering Hope Through the Creative Powers of Art

When Julie Fette and her daughter went to Hope Stone Dance Company for lessons, Fette became more than just another student of modern dance. She became a board member of the organization.

Fette, an assistant professor in Rice University’s Department of French Studies, was so impressed with the organization’s outreach efforts to underserved children that she stepped in to do her part. As a former professional ballet dancer, Fette recognizes the importance of art in shaping young minds and bodies.

“One way to get kids away from junk television, violence, drugs, et cetera, is by offering them an alternative — opening doors for them to explore and express their creativity, and this is what Hope Stone does,” said Fette.

“When I became conversant with this vision, I felt that this was an outreach organization I wanted to be a part of in Houston.” She now devotes a substantial proportion of her time to helping Hope Stone achieve its vision of art for all.

Hope Stone, Inc., located in the Montrose area, is a professional modern dance company and a nonprofit organization that empowers communities through art, specifically through the company’s Kid’s Play, an outreach program that impacts more than 400 underserved children with free arts education annually.

Fette’s active involvement began with her interest in the Kid’s Play program. Established in 2002, the program believes that art is primary education. Skilled master teachers and artists train students in dance, music, photography, theater, improvisation, creative writing, drumming and yoga during a yearlong program at the Hope Center studio.

Executive and artistic director Jane Weiner started Hope Stone in 1997 with the idea to reach out to underserved children and expose them to the performing arts. “I wanted to promote a sense of balance and cognitive ability for creative forms of expression. Hope Stone strives to fulfill this mission every day.”

“ONE WAY TO GET KIDS AWAY FROM JUNK TELEVISION, VIOLENCE, DRUGS, ET CETERA, IS BY OFFERING THEM AN ALTERNATIVE — OPENING DOORS FOR THEM TO EXPLORE AND EXPRESS THEIR CREATIVITY, AND THIS IS WHAT HOPE STONE DOES.”

—JULIE FETTE

Hope Stone has the tradition of donating large numbers of balcony tickets for their annual performances to underprivileged children, many of whom have never been to a theater. Fette helps coordinate this activity.

“After witnessing an eye-opening performance of live dance and music at the Wortham Theater, they wanted to learn to use their bodies and voices like the performers they had observed,” she said.

“It is such a benefit to have Julie Fette on our board,” Weiner said. “She is an amazing, articulate member who believes in all the facets of Hope Stone. She is also an incredible resource to Rice University. Rice holds a multitude of information as well as ‘people-energy’ that is both beneficial to the community and the work we are doing. Julie is so aware and constant in making sure these connections happen, and that is a gift to us.”

With the aid of people like Fette, Hope Stone’s endeavors will always be received with standing ovations.

SOWMYA NANDAKUMAR
Special to Rice at Large
RUSMP to Celebrate 25 Years of Mathematic Engagement

Since it was awarded a National Science Foundation grant in 1987, the Rice University School Mathematics Project (RUSMP) has evolved into a leading education center with a reputation for improving mathematics instruction and for conducting educational research.

RUSMP will celebrate 25 years of service to the mathematics education community with a two-day mathematics event at Rice. Scheduled for Feb. 24–25, the event will coincide with Rice’s centennial year and will bring together teachers, administrators and other members of the education community who have played major roles in defining and supporting the work of RUSMP.

Over the years, RUSMP has received generous funding from the National Science Foundation, the United States Department of Education Eisenhower and Teacher Quality Improvement grants and from corporations, foundations and school districts. Nearly 8,000 teachers and 5,000 students have participated in RUSMP programs with countless others impacted indirectly. Independent evaluations indicate that teachers who participated in RUSMP programs improved their mathematical knowledge, changed their classroom practice and changed their beliefs about mathematics teaching.

Furthermore, their students performed significantly better on standardized tests than comparable students whose teachers had not participated in the programs. The interchange between RUSMP and Houston-area schools continues to yield a body of research about how teachers teach and students learn mathematics.

The RUSMP approach is founded on the belief that sustained instructional changes can best be supported through the development of professionalism among teachers and the creation of a network of teachers who have extensive knowledge of both mathematical content and pedagogy. All RUSMP activities are designed to support the development of teachers’ professionalism.

RUSMP has developed an extensive array of programs and courses available to teachers and administrators. These include long-term, intensive, professional development for teachers, daylong workshops, and opportunities for networking across schools and districts.

In addition, RUSMP has undertaken several collaborative projects with districts, schools and other community members in the Houston area as well as programs statewide and nationally. All of these programs and activities are anchored by a common curriculum and approach to instruction that serve to give coherence to the diversity of RUSMP’s outreach efforts.

For a more detailed look at RUSMP’s work, visit the RUSMP website at http://rusmp.rice.edu.

Program Offers Public School Students a Chance to Dream Big

In true engineering style, local high school student Jesus Villanova and his teammates started with dowels, folded paper and tape, and after building four prototypes, scrapped them all and turned to a plastic coffee cup.

Their problem-solving spirit landed them in second place in the model wind-turbine competition among teams from Cesar E. Chavez High School in Houston. The contest, held in the fall semester at Rice University, was sponsored by DREAM (Designing with Rice Engineers for Achievement through Mentorship).

“I’m interested in flight. The blades we cut out of a plastic coffee cup work like the blades of a wind turbine. It’s about aerodynamics,” said Villanova, a freshman at Chavez. “Someday I’d like to work for NASA, which would be awesome.”

DREAM was founded in 2007 to help increase the number of underrepresented minority students majoring in STEM fields (science, technology, engineering and mathematics). In 2011, more than 50 Rice engineering undergraduates worked with students from Chavez, KIPP Academy and Stephen F. Austin High School.

“These kids are learning by doing. The Rice mentors guide them along the way, answer their questions and give them encouragement, but the kids themselves do the work,” said Juan “Tony” Castilleja Jr., who co-founded DREAM as an undergraduate at Rice, along with Brent C. Houcens, assistant professor of mechanical engineering.

Castilleja earned his bachelor’s degree in 2009 and his master’s in 2011, both in mechanical engineering at Rice. As an undergraduate, he interned at The Boeing Company in Houston, and now he works full time for the company as a commercial crew development rotation engineer.

“I always had people to help me along the way. That’s what the program’s mentors are doing for these kids,” said Castilleja, who was named recipient of the 2011 Boeing Exceptional Volunteer Service (BEVS) Award.

Dayni Alba, Boeing’s community investor for global corporate citizenship, presented Castilleja with a BEVS check for $10,000 and another for $12,000 in charitable contributions from Boeing. The money will be used to fund further DREAM projects.

When Castilleja accepted the checks and a ceremonial cup from Boeing, he said to the Chavez students: “You see what can happen? You see what you can do? Go to college. It’s your ticket.”

“Boeing is proud to encourage young people to enter the fields of science and engineering and to strive for excellence,” Alba said.

Villanova and his teammates Jose Rios, Andres Aguirre and Vu Nguyen worked for eight weeks with their mentor William Martin, a Rice junior in mechanical engineering. Their engineering design teacher at Chavez, James Moore, said, “It’s like these mentors turn on a light for the kids. They make it so the students want to succeed. They want to be all that they can be.”

Patrick Kurp
Science Writer

George R. Brown School of Engineering
In a new and innovative program, Rice University students are learning Spanish while engaging in civic activities.

One of the Spanish 201 sections requires students to fulfill community service hours with organizations that serve the Spanish-speaking community. Last fall, some students chose to work with Step Ahead, a program that helps Rice maintenance workers, many of whom are Spanish-speaking, gain computer skills.

Each week during the fall semester, several students volunteered with Step Ahead during their lunch hour and taught maintenance workers how to use a computer. The employees, in turn, spoke Spanish to the students. Once the students completed 10 hours of service, they wrote a reflection in Spanish about their experience.

For sophomore Eric Bradford from Jones College, the experience was the perfect combination of practicing Spanish and giving back.

“I loved it. First of all, I get to practice a ton of Spanish. Second, it’s great for all the participants. Computers open so many doors to people, through communication, employment or networking, and Step Ahead gives these people the jump-start many of them need,” Bradford said. “I might have volunteered extra hours, I liked the program so much.”

Valerie Bolaños, a junior from Martel College, regards Step Ahead as an integral part of her Rice education. “Step Ahead has transcended academic limits and has created a much more profound experience,” said Bolaños, who is president of Step Ahead. “The Rice students and maintenance personnel experience a cultural and linguistic exchange that makes the campus community closer.”

Step Ahead was founded in 1996 by Ellen Butler, who was an administrative assistant and is now retired. Butler began the program by offering informal and quick computer lessons to Rice maintenance workers. Eventually, the organization transformed into a student-led endeavor.

Recently, IT Vice Provost Kamran Khan donated computers to the Rice workers who take the courses. The Center for the Study of Languages lab is used to house the weekly classes.

This year Step Ahead formally became an independent student organization through the support of their faculty sponsor Jose Narbona, the associate director for Center for the Study of Languages. For Narbona, Step Ahead is the perfect example of students using their Rice education for community service.

“This is a unique experience for students to give back to the Rice community by helping one of the most underprivileged but most hard-working groups on campus: our maintenance workers,” said Narbona.

Teachers as Students

The Rice University School Science and Technology Program (RUSST) in the Wiess School of Natural Sciences has added four semesters of free professional development classes for Houston-area high school teachers.

The courses, Teaching Chemistry Concepts Via Inquiry I & II and Teaching Physics Via Inquiry I & II, are held weekly during the fall and spring semesters at Rice and provide teachers with new and exciting ways to engage their students in science. The goal of this program is to provide resources to teachers so that their students can actively learn about science concepts. Research in science education has shown that inquiry-based experiences allow students to probe their understanding of science concepts and gain critical thinking skills.

While Rice instructor Milijana Suskavecovic provides teachers with lesson plans and materials, the teachers in the program also work together to adapt the activities to address the needs of students they teach. An example of a teacher-developed lesson is Popper, an activity in which teachers were asked to determine a number of physical quantities associated with the launch of “popper” (a rubber-made semisphere), such as launch speed, acceleration, time of flight, distance, displacement, constant of elasticity of the popper and more. Three physics teachers from Galena Park High School worked with the physics department at their school and implemented the “Popper Olympics” in 37 classrooms at a cost of only $14.

“As a bonus, I found that once the students were finished with the lab and I allowed them to play with the poppers, they gained even more knowledge about the characteristics of projectiles,” said José Flores, a teacher in Galena Park ISD.

“They made attempts to get the poppers to go higher and farther by changing variables,” he added. “They did all of this without being told what to do, and when we discussed it the following day, the students laughed and told me that I deceived them into learning.”

RUSST is able to provide professional development in science to Houston-area teachers through generous support from the Texas Regional Collaboratives, Baker Hughes, Toshiba America Foundation, ConocoPhillips Foundation, the National Science Foundation and other generous sponsors.

For more information about the classes, please visit http://sst.rice.edu.
Like Manna From Heaven

When Rice University’s Boniuk Center for Religious Tolerance launched the Sacred Sites Quest, they never expected it to be an award-winning program. But in 2011, the Houston Press named the Sacred Sites Quest Houston’s Best Public Art Project.

The Sacred Sites Quest, a program for high school students, was designed to build religious and interfaith literacy, nurture multi-faith relationships, and leave a legacy through a collaborative work of art. In spring 2011, 23 students representing different faith traditions and 14 Houston-area high schools enrolled in the Sacred Sites Quest program and proceeded to create a series of murals.

The 11 sites around Houston that the students visited included temples, churches, mosques, chapels, a labyrinth and the Live Oak Friends Meeting House. The four-paneled mural they produced functions as a visual narrative of the students’ shared experience and the meaning they derived from visiting the sites together.

Focusing on universal themes of light and water, the murals also invoke the motif of spiritual growth on the path to divinity. Each of the four panels stands on its own, yet each is also intimately related to the three others.

Like Manna From Heaven

The students worked for six weeks in the studios of the Museum of Cultural Arts Houston (MOCAH) to conceive and execute their mural designs. They worked under the tutelage of MOCAH’s president and CEO, Reginald Adams, who partnered with the Boniuk Center’s director, Mike Pardee, to coordinate the quest.

As they worked together to complete the four mixed-media panels, the students’ enthusiasm and collective energy was palpable. “Don’t you feel it?” Adams said as he marveled at their productivity and teamwork in the studio. “We’ve created a sacred space here, too.”

When the students met on the first day of the quest, they were all strangers. But they managed to form lasting bonds of friendship, mutual respect and understanding by collaborating closely over the course of the five-month program.

“These new relationships have changed us all for good,” Eduardo Belalcazar of the Chinquapin School in Highlands, Texas, said.

INSPIRED WORKS: Each of the capstone murals’ four panels draw on spiritual motifs that reappear throughout a range of sacred sites, without overtly using religious symbols unique to any particular faith.

“We probably wouldn’t otherwise have met each other.”

The murals were installed on the façade of the Interfaith Ministries for Greater Houston building at 3217 Montrose Blvd. and were unveiled in a celebratory ceremony May 15.

—EDUARDO BELALCAZAR
MAKING A DIFFERENCE FOR 25 YEARS: Nearly 8,000 teachers and 5,000 students have participated in Rice University School Mathematics Project (RUSMP) programs with countless others impacted indirectly. See story on Page 5.