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AN OUTSTANDING ACT: Alberto Rodriguez, the founder of the popular group Mariachi Luna Llena, has passed the reins to the next generation of Rice musicians.

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Rice Mariachi Band Breaks Borders

Alberto Rodriguez '15 has left a legacy at Rice that will sing his praises for years to come. In fall 2013, he created Mariachi Luna Llena, the first mariachi band at Rice University. The group became a campus favorite and, with each succeeding act, has extended its popularity throughout the greater Houston community.

Conceived as a student club, Mariachi Luna Llena (full moon) now performs regularly at weddings, quinceñeras, birthday parties, receptions, conferences, retirement homes and even funerals. They play all over Houston and surrounding areas, including Katy, Pasadena and Texas City and in elementary, middle and high schools, free of charge, as an educational outreach service. They have played twice at Miller Outdoor Theatre's Cinco de Mayo concert, where this year they

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Engineering Students Develop Device for Zoo Primates

Naku grabs the box hanging from a line and turns and shakes and turns and shakes. He has to work for his food, at least the good stuff.

The Allen's swamp monkey, one of two at the Houston Zoo, was checking out a puzzle built by Rice University engineering students. The rewards were worth it all around: tasty peanuts for Naku and the satisfaction of a job well done for the students.

The Rice team known as The Monkees took on a challenge posed by the zoo last fall as part of a freshman engineering class taught by Ann Saterbak, a Rice professor in the practice of engineering education.

The goal was to create an interactive enrichment device to engage the two swamp monkeys, Naku, a male, and Oda, a female. "They are very smart," said

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were the opening act for Los Lobos.

Mariachi Luna Llena has become a media sensation as well, receiving recognition from local, national and international news organizations, from the Houston Chronicle to National Public Radio to newspapers in Mexico. And Rice joined a handful of top-tier universities, including Brown, Northwestern and Harvard, that have a mariachi band.

“Mariachi Luna Llena brings a wonderful and unexpected dimension to the Rice experience,” said Richard Tapia, University Professor and the Maxfield-Oshman Chair in Engineering. “Unexpected because few would associate a mariachi with Rice and wonderful because Luna Llena is absolutely excellent. Band founder and director Alberto Rodriguez has been bold and remarkably effective in his leadership,” said Tapia, who is one of the band’s advisers.

“Coming from Laredo, I thought that only Hispanic people liked mariachi music,” Rodriguez said, “but what I’ve learned is that everyone loves it.”

For Rodriguez, mariachi music and mathematics run deep. Born in Dearborn, Mich., Rodriguez grew up in a family of engineers and mariachi enthusiasts. His father, Oscar Rodriguez, who has a business degree, encouraged his three sons to study engineering because he saw that there was a great need for engineers in the automotive industry. Alberto’s older brother studied engineering and, like his father, sings and plays the guitar. Both had a deep influence on Rodriguez.

After his father completed a two-year stint in Dearborn, the family moved back to Monterrey, Mexico, where Rodriguez attended a bilingual elementary school. In the third grade, his family moved again, this time to

Introduction to Engineering and Science), a scholarship-based summer program in which students pay only for their transportation to and from the university.

Such accomplishments helped Rodriguez in being admitted to all six universities to which he had applied, including Duke, Cornell and the University of Texas. He chose Rice for its academic excellence and friendly atmosphere.

At Rice, the idea to create a mariachi group came after the Latin American Graduate Student Association (LAGSA) invited Rodriguez to sing at a party. Rodriguez rounded up three students, to accompany him and the fiesta was so successful that it encouraged Rodriguez to form a mariachi band. He recruited more students, and when he had about a dozen, the group competed in Rice’s International Festival (IFest). When the group won first place, Rodriguez knew he had a legitimate band. Next he sought the help of Tapia, who organized a fundraiser at Irma’s Mexican Restaurant that garnered \$7,000 — enough money to buy mariachi costumes for all the members.

Just as Mariachi Luna Llena received help in the beginning, the group now gives back to the community. In addition to performing at local schools, the band has given free concerts on campus. For the past two years, Mariachi Luna Llena has been a part of Carnegie Vanguard High School’s International Festival, which raises money for different institutions in Africa and Vietnam.

“We always get great feedback from not only the high school students, but from teachers and other community members on how great their performance was,” said Rice junior Truce Pham, who organized the fundraiser when she was a student at Carnegie.

For Rodriguez, sharing his music with others is a way of uniting people. “That’s the reason I do this. It’s my culture, my history, my passion,” he said. “Music really impacts a lot of people. It’s a way of interacting with the community. I really feel that music breaks borders.”

DAVID D. MEDINA

Director
Multicultural Community Relations
Public Affairs

“Coming from Laredo, I thought that only Hispanic people liked mariachi music, but what I’ve learned is that everyone loves it.”

—**Alberto Rodriguez '15**

Rodriguez never expected the mariachi group to reach such heights.

“This is crazy,” Rodriguez said. “I didn’t know that it was going to take off the way it has. When I created the mariachi group, I wasn’t thinking beyond Rice.”

Unexpected too is that Rodriguez is not a music major. In May, he received a B.S. degree in civil engineering and will be working in Warren, Mich., at General Motors as a buyer in the global purchasing and supply chain department.

In fact, most of the 11 members of Luna Llena, except for a couple, are engineering, mathematics or science majors. One local TV reporter was tempted to label the band “The smartest mariachi in the world.” Smart and talented, the group is racially and ethnically diverse as well, comprised of Hispanic, white, Asian and Middle Eastern students.

With three members now graduates, the group will hold its annual audition in August to fill the empty positions. At last year’s audition, 15 people tried out and five were selected.

Laredo, Texas. Struggling with his English, Rodriguez watched soap operas to polish his accent, but in math he soared above his classmates. “The reason I like math,” Rodriguez said, “is because it is an international language; it’s the same everywhere you go.”

Music might have been in his soul, but not in his body — at least early on. When Rodriguez was in sixth grade, he was diagnosed with rheumatoid arthritis and had to take steroids, which enlarged his body and limited his movements. At one point he couldn’t walk and had to use a wheelchair. Luckily by middle school, Rodriguez’s health improved and he was able to join a mariachi club.

It was at United High School, a magnet for engineering and technology, where Rodriguez excelled in academics and mariachi music. In his junior year, he performed at Laredo Community College in a concert that was broadcast locally. That same year, he was admitted into the prestigious Massachusetts Institute of Technology’s MITES (Minority



A CHOW-TIME CHALLENGE: Teammates, from left: Nathaniel Williams, Alexandra Eifert, Emily Lisa, Jack Kaplan and Julio Ledesma.

Helen Boostrom, a senior primate keeper. “They like to take things apart and mess with things.”

The students delivered their final version of the project to the zoo in April and watched with glee as Naku went straight for the device and began to play.

“It’s awesome to see how much they love it,” said Emily Lisa, one of the inventors. “It took them a good amount of time to figure out how to use it and tilt the device in the correct way to get the food. So it’s great to see that they not only enjoy it but that it also challenges them.”

Lisa and her teammates, Julio Ledesma, Jack Kaplan, Alexandra Eifert and Nathaniel Williams, designed three other prototypes before arriving at the final version. The simple puzzle has three shelves with staggered holes in a heavy-duty plastic box with a clear cover. Zookeepers put nuts or sunflower seeds on the top shelf so the monkeys have to work them down to the hole at the bottom.

The device, built at Rice’s Oshman Engineering Design Kitchen, will join a rotating set of challenges for the monkeys. “They get different enrichment devices every day,” Boostrom said. “Sometimes they’re puzzle feeders like this. Sometimes we make substrate forage piles, where we hide sunflower seeds and other things in wood shavings.

“We give them as much variation as we can, because in the wild they’d encounter all kinds of problems. Their habitat would

be changing, so we want to be sure they’re exhibiting natural behaviors by challenging them. They have a lot to do here,” she said.

The box was designed primarily for Oda, “because if we design it for her, we design it for everyone else,” Kaplan said. “She can unscrew things, so we had to use lock nuts to make sure she couldn’t take our device apart. We also had to make sure there wasn’t a place where they could get a finger or hand stuck.”

Not unlike a baby’s rattle, the plastic box is built to be noisy. Corn in the rounded handles keeps Naku and Oda interested even if the food is gone. “If the handles pop off somehow, whatever comes out isn’t going to hurt them if they swallow it,” Eifert said.

An early prototype was partially successful, puzzle-wise. “The problem was, it was completely mobile,” Williams said. “The male figured out that if he submerged it in the pond, which he liked to do, it would fill up with water. When he took it out all the food would rush out with the water.”

That’s why the students added a tether, a steel line inside sections of plastic pipe that protects the monkeys from harm. The monkeys can pick up and manipulate the box, but not move it too far. “Even though we knew they were smart,” Williams said, “they were a lot cleverer than we gave them credit for.”

MIKE WILLIAMS

Senior Media Relations Specialist
Public Affairs

Rice Students and Scholars Extend a Helping Hand

Rice University Nepalese students and scholars may be far away from their homeland, which suffered a devastating earthquake in April, yet they found a way to help by serving as a bridge between the Rice community and Nepal.

Soon after the earthquake, the Nepalese Association of Houston held a candlelight vigil. Rice Nepalese students and scholars attended the event and shared sorrow and prayers for Nepal with other Nepalese students and local Houston community members.

Partnering with Rice’s Office of International Students and Scholars (OISS), the Nepalese students and scholars created a book so that the Rice community could write thoughts of support and love for the people of Nepal.



FROM ONE COMMUNITY TO ANOTHER: Rice Nepalese students and scholars contributed to a book with thoughts of support and love for Nepal.

There also was a donation box to collect monetary donations. All undesignated monies were donated to the International Red Cross with a designation for Nepal. The book of support was sent to the Nepalese Association of Houston, which is working with the government of Nepal in the relief efforts.

ADRIA L. BAKER

Associate Vice Provost for International
Education

Art in Mathematics Classrooms? Why Not?

Most people think of visiting an art gallery to view works of art by masters such as Picasso, Warhol and Kandinsky. One can, however, find art galleries in mathematics classrooms in Houston.

This past spring, Rice University School Mathematics Project's (RUSMP) Robin Ward, director of curriculum integration, and Alice Fisher, director of technology applications and integration, interacted with 11 elementary school teachers through a blended online course, Put on Your Math Goggles! Discovering Mathematics in the Visual Arts.

Ten HISD K-2 teachers as well as a K-8 charter school art teacher from Suffolk County, Mass., enrolled in the course. The goal of the course was to inspire teachers to transform their mathematics classrooms into art galleries by learning how to use the lens of the visual arts to see, explore and discuss mathematics.

This innovative course began with a three-hour, face-to-face evening meeting (the art teacher participating via Skype), during which Ward encouraged teachers to put on their "math goggles" and look for math in art.

For example, teachers used Wayne Thiebaud's "Three Machines" as the foundation for a lesson focused on data analysis. More specifically, using simple supplies such as crayons and markers, teachers colored their own gumball art in the spirit of Thiebaud and then created bar graphs depicting the number of colored gumballs.

Teachers then compared, contrasted and interpreted their bar graphs. Similarly, teachers made their own compositions in the spirit of Mondrian's primary-colored art and then created the number sentence that



A CREATIVE CURRICULUM: Using artwork and creative graphs helps make mathematics more colorful for both students and teachers.

represented the number of red, yellow and blue regions appearing in their art. The goal of these activities was to model for teachers how to integrate a piece of art into a mathematics lesson, so that they can implement this innovative way of teaching.

Over the next five weeks, teachers participated in the online component of the course, administered through Rice's course management system, OWL-Space. Teachers watched 11 videos during which Ward shared research on academic and social benefits of integrating the arts into the curriculum, highlighted works of a variety of artists and showcased mathematical masterpieces of students whose teachers engaged them in integrated math-art activities.

Teachers completed weekly assignments and posted in discussion forums. The culminating assignment was for teachers to create and submit a lesson plan that described a mathematical activity featuring an artistic masterpiece as a springboard to learning.



A COLORFUL WAY OF SEEING THE NUMBERS: Wayne Thiebaud's "Three Machines" (1963) served as the inspiration for a lesson in the Rice University School Mathematics Project's online course, Put on Your Math Goggles!

Upon successful completion of the course, teachers received Texas Association for the Gifted and Talented and Continuing Professional Education hours. Additionally, teachers gained intrinsic benefits from collaborating and sharing ideas with colleagues near and far.

One teacher said, "I really enjoyed stepping outside of my comfort zone and putting on math goggles. I gained further insight into my own teaching, and I have identified new exciting ways I can implement math into my classroom and share that knowledge with my colleagues."

Based on the success of the online course, RUSMP plans to offer the course again in spring 2016.

"I really enjoyed stepping outside of my comfort zone and putting on math goggles. I gained further insight into my own teaching, and I have identified new exciting ways I can implement math into my classroom and share that knowledge with my colleagues."

Cancer Patient Signs National Letter of Intent

Frederick “Ziggy” Stoval-Redd, a 7-year-old from Mississippi, inked a national letter of intent to become an honorary member of the Rice University football team. He did it with the help of Team IMPACT and Rice’s head football coach David Bailiff.

Team IMPACT is a national organization that pairs Division I athletic teams with children suffering from life-threatening illnesses. Ziggy has fought off acute lymphoblastic leukemia twice and is in remission. He is relocating with his mother, Phila Stoval, to the Houston area to be closer to his doctors.

The announcement was made at a news conference in the “R” Room of Rice Stadium, which was attended by a large number of Rice football players and the media.

“We’re really excited today,” said Bailiff. “This young man has been wrestling with this decision, and he’s finally made his choice. His choice is Rice University. We want to welcome Ziggy to Rice University and to the Rice football family.”

After a long applause, Ziggy said, “Thanks for allowing me to be a part of the team.”

His mother added, “I just want to say ‘thank you’ for allowing the opportunity for him to be a part of the team and for allowing him the

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“We know in this program that it’s important to give back. We know it’s important to make a young man smile and to feel a part of it, and that’s what we’re going to do.”

—David Bailiff

.....|
opportunity to live life like a regular kid.”

Donning a Rice football cap, Ziggy grabbed a blue thin marker and signed his Rice University national letter of intent and officially became a Rice Owl.

“We know in this program that it’s important to give back,” Bailiff said. “We know it’s important to make a young man smile and to feel a part of it, and that’s what we’re going to do.”

Stoval said that this generous gesture by Rice University will make Ziggy’s life a bit more normal. “Every week he’s in a hospital life, he really doesn’t get a chance to enjoy being around just regular everyday things.”

Referring to Ziggy’s new Rice teammates, she said, “I feel that he has bigger brothers now. We’re from Mississippi, so it’s like an extended family. They are making us part of the family.”

Bailiff said that Ziggy will always be part of Rice University and the Rice football family. “When they are here (for medical treatment at MD Anderson Cancer Center), he’s got a place to come and hang out. He’s now got 100 brothers and 10 granddads (football coaches) who are always going to be here for him, and we will be with him



WELCOME TO THE RICE FAMILY: Ziggy Stoval-Redd, a two-time survivor of acute lymphoblastic leukemia, joined the Rice football family.

every step of the way. That’s our pledge to Ziggy’s mom.”

After the news conference, Ziggy hit the Rice Stadium field with his new family to run football drills.

In just four years, Team IMPACT has recruited teams from nearly 300 colleges and universities in 42 states and paired them with close to 600 kids between the ages of 5 and 15 who have cancer or other life-threatening or chronic illnesses.

DAVID RUTH

Director
National Media Relations
Public Affairs

Energized Summer Program

The Rice Office of STEM Engagement (R-STEM) seeks to improve K–12 science, technology, engineering and mathematics education in Houston-area school districts by offering summer programs, including the Schlumberger Energy Explorations Academy.

This program exposes rising 10th-graders to the field of energy through exciting laboratory experiences, energetic hands-on activities and various tours.

During two weeks on campus, students gain an understanding of energy transformations as well as valuable experience in basic laboratory skills. From designing and building solar ovens and roller coasters, to operating fuel cell cars and making microrockets, students engage with energy on many different levels.

They also get to tour Rice’s Oshman Engineering Design Kitchen, the Thomann research labs, the 3-D Visualization Lab and the BioScience Research Collaborative.

Throughout the program, speakers discuss science, engineering, and the integral role of energy in society, as well as their paths in education. Students also go on docent-led tours and scavenger hunts at the Ocean Star Offshore Drilling Rig and Museum in Galveston and the Houston Museum of Natural Science.

The program, offered free of charge, hopes to encourage and enable students from backgrounds historically underrepresented in STEM. All Houston-area ninth-grade students are eligible to apply to this program; however, priority is given to students from Milby, Westside, Energy Institute, Young Women’s College Preparatory Academy and Young Men’s College Preparatory Academy high schools.



ENGAGING WITH ENERGY: Schlumberger Energy Explorations Academy participants enjoy hands-on experiments.

more interested in science. Pursuing science or engineering in the future is something I will strongly consider because of this program.”

The partnership between Schlumberger and R-STEM has provided an exciting educational opportunity for students since 2008.

CARRIE OBENLAND OWENS

STEM Education Postdoctoral Fellow

RUSMP Helps Students Find Balance

The Rice University School Mathematics Project (RUSMP) team was called to action in May at the Third Annual Student Leadership Conference, which took place at Rice University’s Jones Graduate School of Business and at Reckling Park.



STICKS, STRINGS AND STEM: Children play games that teach them how to live a balanced life.

More than 800 middle school students from IDEA Schools attended the conference, which included multiple sessions covering topics from time management to how to set your goals to student life at Rice University. IDEA Schools is a network of

charter schools that serve students in the Rio Grande Valley, Austin and San Antonio.

During RUSMP’s session, titled “Finding Balance With STEM,” each student was given a popsicle stick tied with a string at the center and weighed down by one or two pennies at the other end. Then they were asked to move the position of the string to a point where the popsicle stick was in balance.

After the students experimented with their popsicle sticks, RUSMP’s Richard Parr facilitated a discussion that focused on Archimedes’ law of the lever and how a popsicle stick held up by a piece of string is an example of a lever.

IDEA students enthusiastically shared other real-world examples of levers and solved mathematics problems that applied this principle. In addition, a photo of an Alexander Calder mobile was displayed and the connection between art and mathematics was emphasized. At the end, many students expressed their passion for continuing their studies in mathematics and science.

The student conference was organized by Rice’s Athletics Department. RUSMP has a long tradition of promoting Rice University’s excellence beyond the hedges. It continues to be the primary catalyst of sustained, progressive change in mathematics education in Houston-area schools and across Texas, and this conference is another example of collaboration that provided a bridge between Rice and middle school students from all over Texas.

ALICE FISHER

RUSMP Director of Technology Applications and Integration

JOY ZHOU

Rice junior

Rice and HISD Develop the Next Generation of Teachers

A characteristic that distinguishes the Teacher Education program at Rice is the yearlong classroom experience that is required by all Master of Arts in teaching and certification candidates.

Instead of just hearing about teaching practices and theory, students actively execute and troubleshoot these exercises in an actual classroom.

As the Teacher Education department expands, more classrooms are needed in which to place these student teachers. The Houston Independent School District (HISD) offers an attractive student teacher placement option. They have 283 schools in the greater Houston area and encompass a diverse population. Teacher Education seeks to develop

net middle school, has two student teachers on campus and three recent hires from Rice's Teacher Education program. One of the student teachers, Chardenay Davis, earned the 2014–2015 Beginning Teacher of the Year award. Malhan's continued involvement with the program is based on the student teacher's rigorous training and excellent performance in the classroom.

"The candidates from the Teacher Education program are very strong in their knowledge and mastery of the content that

students at Reagan also benefit from having the student teachers on campus.

"They are bringing another layer of flavor, another layer of dynamics, not just to the classroom, but to the campus culture overall," Michaels-Johnson said.

The relationship between HISD campuses and Rice Teacher Education also encompasses the generous support system provided to the student teachers. Professors and other members of the Teacher Education department are frequently on campus to observe and assist



PUTTING THEORY INTO ACTION: Left: Teacher Education student teacher Isaac Chao at Reagan High School. Right: MAT student teacher Stephanie Teague at Baylor College of Medicine Academy at Ryan.

teacher leaders who are prepared to teach diverse learners in an urban, public setting.

Over the past couple of years, the Teacher Education program's leadership team, led by Judy Radigan, director of teacher preparation, and Jennifer Gigliotti, executive director of the Center for College Readiness, has developed relationships with many deans of instruction and principals in HISD.

"We feel strongly that the Rice Teacher Education students must have robust field-based experiences in our urban schools, and our partner campuses in HISD have been incredibly open and collaborative throughout," said Gigliotti.

Jyoti Malhan, principal of the Baylor College of Medicine Academy at Ryan, a mag-

net middle school, has two student teachers on campus and three recent hires from Rice's Teacher Education program. One of the student teachers, Chardenay Davis, earned the 2014–2015 Beginning Teacher of the Year award. Malhan's continued involvement with the program is based on the student teacher's rigorous training and excellent performance in the classroom.

Robert Michaels-Johnson, dean of instruction at Reagan High School, had five student teachers on his campus in spring 2015. "Within the classroom they're bringing the strengths of their own educational background, having come from an institution such as Rice University," Michaels-Johnson said.

Two out of the five Rice student teachers at Reagan have been hired to work full time for the school beginning in fall 2015. In addition to providing classroom experience for the student teachers, Michaels-Johnson finds that the

students at Reagan also benefit from having the student teachers on campus. "They are bringing another layer of flavor, another layer of dynamics, not just to the classroom, but to the campus culture overall," Michaels-Johnson said.

The relationship between HISD campuses and Rice Teacher Education also encompasses the generous support system provided to the student teachers. Professors and other members of the Teacher Education department are frequently on campus to observe and assist

the student teachers. The student teachers use this resource to their best advantage, requesting help when they are trying a lesson plan for the first time or just feel they need additional support.

"The level of the support that is there is fantastic," Michaels-Johnson said. "The individuals from Rice, such as Dr. Radigan, are in communication with me and our school principal, so we really feel like we are in partnership in developing the next generation of teachers."

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AT LARGE



INSIDE THIS ISSUE: MAT graduate Robert Giasson is learning to be a teacher leader at Baylor College of Medicine Academy at Ryan middle school.

David D. Medina, Director, Multicultural Community Relations, Office of Public Affairs

