

RICE AT LARGE

Engaging with Houston communities.



Now is the time for all young students to pursue an education in engineering, says Reginald DesRoches, dean of the School of Engineering at Rice.



SOLVING THE WORLD'S PROBLEMS

Reginald DesRoches believes that engineers make excellent problem-solvers. He thinks engineers are so good at thinking critically and working together that this country would be better off if there were more of them. That's why, he says, it's crucial to get kids excited about studying engineering.

"Even if kids don't pursue careers in engineering, just having an engineering background will provide them with the necessary skills to solve problems," said DesRoches.

He would like to see engineers occupy all types of jobs and even serve as elected officials. Engineers, he explained, know how to work collaboratively in solving problems and can see the impact that public policy can have on the

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TRACING THE HISTORY OF BLACKS AT RICE

After a year in the making, the exhibition "Blacks at Rice: An Evolving Legacy" opened Sept. 13 at the African American Library at the Gregory School in Houston's historic Fourth Ward. More than 150 faculty, staff, students and community members attended opening night, and many were moved by the show.

"I'm inspired by the people who have brought us to where we are today, and I thank them for their courage, bravery and contributions," said Rice University President David Leebron at the event.

"It's such a privilege to be here today," Leebron said. "This is a great time to be an owl and it may not be for me to say, but I think it's a great time to be a black owl. I say this recognizing the things that have happened in the last few years, including the appointment of Reginald DesRoches, the first African-American dean at Rice. More than 12 percent of the entering class' domestic students are African-American. A high

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REGINALD DESROCHES

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environment. They are also able to communicate technical information to a nontechnical audience.

DesRoches knows the benefit of engineering. Little more than a year ago, he was named dean of Rice University's George R. Brown School of Engineering. He came from the Georgia Institute of Technology, where he was chair of the School of Civil and Environmental Engineering. DesRoches is a fellow of the American Society of Civil Engineers and the Structural Engineering Institute and specializes in research on the design of resilient infrastructure systems under extreme loads and the application of smart and adaptive materials. He served as the key technical leader in the United States' response to the 2010 earth-

quake in Haiti.

Almost as soon as he arrived at Rice, DesRoches decided to expand the School of Engineering's outreach programs. He assigned Yvette E. Pearson, associate dean for accreditation, assessment and strategic initiatives, to lead such activities. Before DesRoches arrived at Rice, Pearson organized the Engineer Big, Dream Big, Lead Big program as part of Engineers Week, which brought 45 middle school students to the Rice campus to solve engineering design challenges. The students learned about the importance of working in teams and how to apply their leadership skills.

During Mathematics Awareness Month in April 2017, the School of Engineering hosted a private screening of "Hidden Figures," a movie about three brilliant African-American women at NASA who were the brains behind the operation to launch the first astronaut into orbit. A group of 70 middle school students from Houston-area schools were invited to watch the film, participate in a robotics demonstration and engage in conversations with minority scientists and engineers from NASA, the National Science Foundation and Rice.

"The event was designed to provide students with role models who look like them or came from similar backgrounds," Pearson said.

Last fall, the dean's office began offering tours of the engineering facilities to high school students. During the tours, students learn about the different disciplines in engineering and attend demonstrations about robotics, neuromechanics, haptics, diffraction and chemistry.

To expand the outreach programs, Pearson is forming a team that includes students, faculty, staff and representatives from industry and government who will plan and organize activities to attract students to engineering. The programs will specifically target students of color, students with

disabilities, and students from low-income families and women.

"I would love to see us involved in a program similar to what they had at Georgia Tech, which brought underrepresented minorities to campus for three to four weeks during the summer to learn about engineering," said DesRoches.

In the Georgia Tech program, students were required to build a project from scratch. One group made a sleeping bag for the homeless, which had a solar panel to provide heat during the cold weather. Another group created a robot. "These projects really help in developing leadership and communication skills," DesRoches said. "It builds confidence and a can-do attitude."

DesRoches and Pearson also want to start a program that will increase the number of transfer students from community colleges to Rice to study engineering. Very few students transfer into the School of Engineering from community colleges, DesRoches said. He would like to increase the number to 10 a year. DesRoches said the program will provide scholarships, academic support and professional development for the students.

The focus of another strategic initiative is to bring more students of color and women to Rice to pursue advanced degrees in engineering and science through a partnership with the National GEM Consortium, which provides fellowships to minority students seeking graduate degrees in STEM disciplines. Pearson is the Rice campus representative for GEM, and she plans to work with universities in Texas to host a GEM GRAD (Getting Ready for Advanced Degrees) lab to inform undergraduate students about opportunities that advanced degrees have to offer.

Under DesRoches' leadership, Rice is partnering with Texas Southern University and the University of Houston to establish a program that will help minority

Ph.D. candidates and postdoctoral scholars in engineering and computational sciences successfully pursue careers in academia. The ultimate goal of the program is to increase the number of minority faculty, said DesRoches. "It is critically important that people of color hold faculty positions because they will in turn attract more students of color to study engineering."

DesRoches said he knows firsthand the feeling of isolation of attending a school in which there are no role models to emulate. He received three degrees — a B.S. in mechanical engineering, a master's in civil engineering and a Ph.D. in structural engineering — from the University of California at Berkeley, where 200 professors taught engineering and not one was African-American.

Born in Port-au-Prince, Haiti, DesRoches grew up in the New York borough of Queens. His father was an accountant; his mother a nurse, and together they raised four children, all of whom graduated from college. In high school, DesRoches was recruited by Berkeley, a university he had never heard of, but when the school flew him in for a visit, he fell in love with the place. He chose to major in mechanical engineering simply because it sounded like the right thing to do.

"The biggest challenge I faced was not knowing any one in my community who was an engineer. For a kid, that makes you think that maybe this is something not in reach," he said. "That's why it is so important to have as many people of color and women studying STEM fields." ■

— DAVID D. MEDINA

DIRECTOR
MULTICULTURAL COMMUNITY
RELATION
PUBLIC AFFAIRS

THE SCIENCE OF MAKING CHEMISTRY FUN

Can chemistry be fun? Yes, especially if you concoct elephant toothpaste by combining dish soap, food coloring and hydrogen peroxide in a flask, with a splash of potassium iodide in water, and then moments later watch the mixture erupt out of the flask in a colorful, steaming foam. Kids love the experiment.

In 2017, Rice University became home to the first extension chapter of Fun with Chemistry, an outreach program that uses exciting and educational experiments to inspire K-12 students to pursue careers in STEM.

The Fun with Chemistry program was founded in 2014 by Kate Biberdorf, a chemistry lecturer at the University of Texas at Austin. After working with Biberdorf as an undergraduate, Nicole Behnke joined the Rice chemistry department for her graduate studies and started a collaboration to expand Fun with Chemistry. László Kürti, associate professor of chemistry at Rice, is the faculty sponsor. Kürti and Biberdorf secured a \$75,000 Welch Foundation grant to support outreach events for both Rice and UT over three years.

The Rice University Fun with Chemistry chapter is managed by

graduate students Behnke, Kaitlyn Lovato and Katie Miller with the help of graduate and undergraduate student volunteers.

The mission of Fun with Chemistry is to ignite, inspire and motivate young students to develop a passion for science with the hope that they will pursue careers in STEM. To do this, the program introduces educational topics and then conducts hands-on experiments that reinforce and elaborate on the lesson. The program is designed to appeal to students who are intimidated by science or attend schools that do not have the resources to conduct captivating experiments. Specifically, the program targets schools with high minority and disadvantaged socioeconomic populations.

To reach audiences on campus, the program collaborates with Rice's Office of STEM Engagement, the George R. Brown School of Engineering and the Wiess School of Natural Sciences. Last summer, Fun with Chemistry teamed up with university-sponsored camps to perform six demonstration shows for more than 200 kids from elementary and middle schools.

Fun with Chemistry also works with teachers to make their classes more interesting.



CHEMICAL REACTION: Students learn to have fun with chemistry by conducting wacky experiments.

Recently, the group conducted two workshops for teachers in the Rice Elementary Model STEM Lab focused on how to incorporate stimulating and inexpensive experiments into the curriculum. Teachers from more than 50 schools, with an emphasis on Title I campuses, signed up to host Fun with Chemistry events for their students.

For off-campus events, the group travels to one elementary, middle or high school a month. In 2018, Fun with Chemistry visited six schools, reaching approximately 4,200 elementary students in the Houston area. Fun with Chemistry has received wide-

spread success in its first year and has a waitlist for event requests. In the future, the group plans to increase its activities and organize a large outreach event to expand its range of influence in the community.

It's not only the young students who benefit from Fun with Chemistry. The undergraduate and graduate students who conduct and manage the experiments enhance their communication and leadership skills through the presentations. This invaluable experience allows the volunteers to also mature as scientists. ■

— NICOLE BEHNKE

THIRD-YEAR GRADUATE STUDENT



COLORFUL CONCOCTIONS: Chemistry graduate students conduct a lab on how to make elephant toothpaste.

EXHIBITION

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in our history and we're making progress on our faculty, and we've set our goals high."

On display and free to the public through Feb. 23, 2019, the exhibition celebrates black life at Rice through a multimedia presentation that includes photographs, newspaper and magazine clippings; books, posters, banners and documentaries; and an assortment of alumni memorabilia. Rice will host five workshops over the course of the exhibit to further highlight Rice's black community.

The exhibition tells the story of black life at Rice — from the university's first black athletic trainer, to the first black undergraduate and graduate students, to current students and black alumni, who are making a difference in their communities. It also recognizes all the people — housekeepers, cooks, coaches, faculty, staff and administrators — who provided a warm and supportive environment for the black students to

"The exhibit is wonderfully conceived and curated. It tells a complex and nuanced story in a very personal and compelling way. A must see for anyone interested in the history of Rice University or the city of Houston."

TERRENCE GEE '86



THE LEGACY CONTINUES: Many in the audience, such as Velma McAfee Williams '67, were moved and delighted to see themselves in the exhibition that celebrates the history of blacks at Rice.

succeed at one of the most academically rigorous universities in the country.

Raymond Johnson was the first black student admitted to Rice in 1964. Johnson was seeking a Ph.D. in mathematics. A year later, the first black undergraduates matriculated at Rice. In 2016, Rice

celebrated the 50th anniversary of black life with a series of events, including a panel discussion about Rice's integration and a gala recognizing the important contributions that black alumni have made to the betterment of the world. This exhibition serves as a continuation of the 2016 50-year

milestone celebration.

"The Gregory School is the third special collection from the Houston Public Library (HPL) System, and our mission is to promote and preserve the rich history of African-Americans in Houston and in the surrounding areas," said Danielle Wilson, cura-

tor and manager for HPL's African American Library at the Gregory School.

Rice University's Multicultural Relations and the Association of Rice University Black Alumni (ARUBA) in collaboration with the African American Library organized the exhibition. The show was sponsored by Lemond Kitchen, Bank of America/Merrill Lynch, the city of Houston, Houston Public Library, and Terri and Terrence Gee '86.

"At Bank of America/Merrill Lynch, we are committed to supporting education and alumni groups like ARUBA," said Derek Ward, vice president associate market manager of Merrill Lynch. "We are honored to be a sponsor of such a special event."

The exhibition is a result of more than a yearlong process of



REFLECTING ON THE PAST: Aurra Fellows '12 looks at an assortment of the exhibition's multimedia memorabilia.



A CLOSE LOOK: Rice trustee Terrence Gee '86 was one of more than 150 people who attended opening night of the exhibition.

gathering memorabilia.

"Many bright minds came together to plan this project for all of its moving parts," said Monique Shankle '86, president of ARUBA. "Committee members reached out to their friends and colleagues to gather materials, camped out on Saturdays at the Rice Memorial Center to receive memorabilia, set up dropboxes for photos and fleshed through ideas for the structure of this exhibition."

Members of the committee included ARUBA members from across the decades, faculty and staff, including Gloria Bean, Donald Bowers '91, Alexander Byrd '90, Sharae DeWitt '16, Aurra Fellows '12, Andrea Karow, Karen Kossie-Chernyshev '85, Akilah Mance '05, June Marshall '00, David Medina '83, Rodney Norton '76, April M. Frazier Peters '11, Monique Shankle, Jan West '73 and Althea Jones Williams '75.

"The exhibit is wonderfully conceived and curated," said Terrence Gee, senior vice president of Technology and Enterprise Transformation at Coca-Cola Beverages Florida. "It tells a complex and nuanced story in a very personal and compelling way. A must see for anyone interested in the history of Rice University or the city of Houston."

"I've seen Rice and the black alumni student communities grow over the years as a former ARUBA president," said Akilah Mance, attorney at Olson and Olson LLP. "It's amazing to see all of this in a beautiful, historic space and to share our story with the Houston community is exciting."

"The exhibit is a fitting tribute to the legacy — and the potential for the future — of blacks at Rice," said Donald Bowers, vice president of the Federal Reserve Bank of Dallas' Houston branch and

a member of the Rice University Board of Trustees.

"I consider myself to have a fair amount of knowledge regarding the black experience at Rice, but I learned so much more from the exhibit. Our legacy at Rice is complex and inspiring. I hope all Houstonians and especially all members of the Rice family take the opportunity to visit the exhibit over the coming months." ■

— **KENDALL SCHOEMANN**
STAFF WRITER
PUBLIC AFFAIRS

IMPROVING STEM SKILLS

What do software developers really do? How do scientists and computer science professionals work collaboratively to solve problems? These questions were answered at the Rice University School Mathematics Project (RUSMP) Fall Networking Conference at the Rice School/La Escuela Rice in September.

The conference showcased the work of the RUSMP Tex2 Externship Program, which is funded through the University of Texas at Austin STEM Center. This program provided teachers with firsthand STEM experiences in which professionals helped teachers gain insights into the knowledge and skills necessary to be successful in STEM careers. RUSMP collaborated with Bluware, a company founded by Rice alum Richard Jones '76. The company is dedicated to developing software solutions for the oil

and gas industry and to provide the externship experience for the teachers.

The networking conference kicked off with a keynote presentation by Andrew Kennedy, Agile practice manager for Bluware, titled "Organization Culture in Software Delivery." During his presentation, attendees interactively explored aspects of collaboration by developing a movie pitch for a romantic comedy. Several teachers commented on how they could use this model in their own classrooms. The conference continued with presentations from nine of the teachers who participated in the externship program. These presentations provided an overview of their own externship experiences, the Agile software development process used by Bluware and the application of the Agile methodology to their classrooms.

Participants from the externship represented five Houston Independent School District high schools: Bellaire, Challenge Early College, Energy Institute, Lamar and Milby. Three of these participants are master teacher fellows, who are funded by RUSMP National Science Foundation. "I was pleased to have the oppor-



CAREERS IN STEM: Professionals who work in the STEM industry shared their knowledge and insights about their careers.

TEACHING TEACHERS: HISD teachers learned what it takes to be successful in STEM careers.

tunity to learn more about the oil and gas industry and see how STEM professionals work collaboratively," said Lan Wu, Lamar High School mathematics teacher and Noyce Master Teacher Fellow.

Richard Parr, RUSMP executive director and externship project manager, added, "the

externship provided an authentic opportunity for teachers to see how the content and skills they are teaching students are being applied in industry, and also to see how some ideas from industry can be used in their teaching."

The conference concluded with discussions about literacy and numeracy facilitated by RUSMP directors Carolyn White and Susan Troutman. Conference attendees shared activities and tips for promoting connections between mathematics and language arts. The plethora of tweets after the conference confirmed the huge success of the event. ■

— ANNE PAPAKONSTANTINO
DIRECTOR
RICE UNIVERSITY SCHOOL
MATHEMATICS PROJECT



WELCOME TO #STARTUPLIFE

Rice University's startup accelerator, OwlSpark, provides hands-on entrepreneurship experience that helps founders develop a roadmap from innovation to commercialization. OwlSpark organizes and delivers nationally recognized programming, and creates events in which aspiring Rice entrepreneurs work together and learn from one another.

Established in 2012, OwlSpark was founded to ignite a passion for entrepreneurship at Rice. Since then, OwlSpark has been cultivating relationships with entrepreneurs and business leaders from the Greater Houston community. In this way, founders can propel their ideas forward with a broad range of mentorship and resources supporting them.

For 12 weeks each summer, OwlSpark deploys an accelerated learning experience in which promising Rice startup teams validate and refine business models in preparation for launch. Through a rigorous application and vetting process, OwlSpark selects teams of entrepreneurs from the Rice community to be part of the annual cohort.

The partnerships with university and community organizations create an environment that cultivates entrepreneurs and startup teams. OwlSpark enables founders to share ideas, experience the value of collaboration, and surround themselves with the best people and resources.

OwlSpark has built an ecosystem for entrepreneurs to connect and for startup teams to launch. The success of OwlSpark alumni speaks for itself: 125 founders have launched 47 startups since 2013. Companies such as Arovia, AtmoSpark, Bidly, Emergency Floor, Medical Informatics, One Jump, Topl and Ziel Sensory have found success in the United States and international markets after finding their footing at OwlSpark.

For each cohort, OwlSpark designs a curriculum that includes industry mentors and subject matter experts who share stories about their entrepreneurial experience, which enables founders to discover new customers. OwlSpark provides exclusive opportunities for founders to make personal connections at many junctures in the Houston business ecosystem, and build a much-needed foundation for their entrepreneurial network.

The culmination of an OwlSpark summer is a final pitch at the annual Bayou Startup Showcase, where founders present their business to more than 400 potential investors, mentors and business leaders from the local community. But the founders' journey doesn't end at the pitch — OwlSpark teaches them to fly, and the community helps them soar. ■

— JESSICA FLEENOR

ASSISTANT DIRECTOR FOR PROGRAMS
RICE ALLIANCE FOR TECHNOLOGY AND ENTREPRENEURSHIP



LIGHT A FIRE: OwlSpark was created to ignite a passion for entrepreneurship at Rice. Teams of Rice entrepreneurs partner with community organizations and make recommendations for improving their businesses.

BUSINESS SCHOOL HELPS NONPROFITS

Thanks to a program that teaches students strategic planning, Rice University's Jones Graduate School of Business has been a leader in Houston's nonprofit community for the past 10 years.

The Capstone program is part of the core curriculum for professional MBAs in their last semester. Through the program, student teams are matched with nonprofit groups to solve such problems as how to grow an organization in three to five years to better serve its constituents. At the end of the course, the students present recommendations to the leaders of the various organizations.

More than 200 nonprofits in the Greater Houston area and beyond have worked with Rice business students. The nonprofits range in focus from education and early childhood development, health care, social services, arts, and environment and conservation. About 90 percent of those organizations have implemented several, if not all, recommendations received from their teams. Some of the organizations come back for another round after completing one set of strategic recommendations.

From the outset, student teams bring together classroom learning and experience into one high-impact project for the community. They fully assess their organization and develop multiple options for its future strategic direction before settling on one recommendation, which is then built out with detailed designs, financial projections, implementation plans and risk assessments. After the final presentation, the organizations can take the findings and hit the ground running.

Nonprofits interested in the program must apply and be selected. The comprehensive strategic planning by students is confidential.

"We don't shy away from tough problems," said David VanHorn, professor in the practice of management and founder and lead for the program. "Capstone was not developed to focus on the narrow or tactical — it was developed to tackle the big and strategic and to make us a change engine in our community."

Aijaz Ali Khowaja, CEO of Ibn Sina Foundation, low cost clinics providing care for underinsured and low-income Houston populations, remembered his experience



LEADERS LISTEN: Rice business students help nonprofits solve problems by assessing them and offering strategies in reaching their goals.

with Rice business Capstone students. "The teams understood the spirit of our mission," Khowaja said, "and crafted growth strategies and associated implementation plans that not only provided an actionable blueprint for our expansion plans, but also provided professional presentation materials that we used to procure a sizable funding grant from Houston Endowment."

Capstone also has a lasting impact on its Rice business students. They build long-term relationships with their organizations as they work closely and collaboratively for four intense months. Some students stay

involved with their project organizations after graduation through service on the board of directors or other leadership positions. Some continue to support the organizations financially through galas and other fundraising activities. Others will move on to other organizations where their passions move them to serve in leadership positions. But all walk away from their Capstone experience with a new perspective on the impact they can have through service and leadership in their community.

For information about the Capstone program, contact VanHorn at David.vanhorn@rice.edu. ■

RICE MBA STUDENTS GIVE BACK

Twice a year, MBA students at Rice University's Jones Graduate School of Business take a Saturday morning to volunteer in Houston. They call it Jones Gives Back, and it's part of a growing effort by the students to provide more outreach opportunities for their classmates. Since 2011, Jones Gives Back has supported more than 30 organizations and involved MBAs from the full-time, professional and executive programs.

In September, 80 students and their family members spread out across Houston to serve the communities. Some spoke to high school kids about life and business skills at a leadership conference sponsored by Junior Achievement. Others held a workshop to help challenged individuals develop resumes through Career and Recovery Resources. Still others

rebuilt houses destroyed by Hurricane Harvey so that people could return to their homes. During a rainy day, more than half of the Jones Gives Back volunteers participated in the Houston Zoo walk to support the Muscular Dystrophy Association and fellow classmate, Tim Masters, who was recently diagnosed with the disorder. The group raised over \$3,000 toward MD research.

"It's clear that our students have a desire to give back and put their skills and knowledge to practical use through active community engagement," said Dave Barron, a professional MBA student and one of the leaders organizing the community service committee's broadening scope.

That desire to give back has increased over the years. As more students want to participate, the committee, which is responsible for service outreach programs at the Jones School, wants to meet that demand and has created an outreach model that will allow organizations to have access to a new website where they can post community service opportu-

MBA STUDENTS IMPACTING NONPROFITS

What happens when Rice MBA students sit on nonprofit boards in Houston? Organizations advance critical projects, the next generation of leaders are inspired to continue long-term professional service and the community experiences positive change.

Founded in 2008, Rice Business Board Fellows is a year-long experiential learning program that matches talented, energetic and committed MBA candidates with local nonprofit boards.

Organizations gain access to the ideas and energy of future business leaders and potential new board members, while students learn valuable leadership skills and gain experience in nonprofit management and governance.

A diverse set of organizations and students participate, adding to the richness of the program. From new, working boards to mature organizations, the program continues to expand each year. This upcoming year, Board Fellows will welcome 51 new students paired with 51 nonprofits, with representatives from the full-time, professional and executive MBA programs. Based on a thorough matching process, students are



matched with nonprofits based on interests and desired skill-sets, such as marketing, finance, operations and strategy expertise. Participating nonprofits include those focused on women and children, immigrants, education, arts, the environment and more.

Students engage with their organizations beyond just serving on the board. Some have joined committees, planned and participated in events, and attended galas and fundraisers. For example:

Jenna Thomas, who served on the board of The Mercer Society, helped build a partner-

ship between her employer and the nonprofit by establishing an annual volunteer event.

Rishija Misra, who served on the board of Workshop Houston, developed financial analytics dashboards to help them understand the health of their organization and plan for sustainable growth.

Heather Morgan, who served on the board of H.E.A.R.T., helped adults in the program with learning disabilities earn a paycheck by working alongside them at the Houston Open.

Hiram Gonzalez, who served

on the board of Fifth Ward Enrichment Program, helped to develop the group's strategic marketing plan by tracking its social media engagement and suggesting ways to extend their reach.

Many students continue to stay involved as board members or volunteers with their nonprofit organizations even after they graduate, leaving a lasting impact on the students, the organizations and the Houston community. ■

— JENNA THOMAS '19
MBA STUDENT

nities. The committee wants to make it easier for students to pick a nonprofit, sign up and record hours volunteered. They want to leave a well-oiled legacy of giving at the business school. And they're on their way.

With more opportunities to volunteer, especially for those MBAs with full-time jobs, more students are able to participate, impact the community and enhance the school's presence throughout the city. The new outreach program is expected to launch in early 2019. ■

GIVE BACK: A rainy day did not stop Rice MBA students from participating in the Houston Zoo Walk to support muscular dystrophy research.



SPREADING STEM EDUCATION ACROSS TEXAS

The Rice University School Mathematics Project (RUSMP) team consists of award-winning educators and researchers who are recognized leaders, compassionate collaborators and brilliant problem-solvers.

RUSMP's mission is to create a better understanding of the nature, beauty and importance of mathematics and to promote effective teaching of mathematics. The mission has expanded to support science, technology, engineering and the arts as they relate to mathematics.

funding from the National Science Foundation; the United States Department of Education Eisenhower and Teacher Quality Programs; and from corporations, foundations, schools and school districts. RUSMP has reached more than 12,000 K-12 students and 10,000 teachers and teacher leaders from over 100 districts and private and charter schools.

RUSMP has received many grants from such organizations as the NSF Robert Noyce Master Teaching Fellowship to develop mathematics teacher leaders in the Houston Independent School

“After attending the RUSMP Summer Campus Program, I feel empowered to motivate my students through inquiry and discovery as a facilitator rather than an instructor.”

LASYNDRIA GNAGBE



NUMBER 1 TEAM: The RUSMP group, consisting of educators and researchers, are on a mission to create a better understanding of the importance of mathematics and promote effective teaching of mathematics.

“RUSMP has been key in developing the content, planning and accountability pieces for highly effective math instruction. Our students are making gains in great part due to our partnership,” said Faye McNeil, the principal at Montgomery Elementary School.

Established in 1987 to provide a bridge between the Rice mathematics research community and Houston-area mathematics teachers, RUSMP has received

District and from the University of Texas at Austin STEM Center to provide authentic STEM experiences for high school teachers. RUSMP has also received several research grants, including one from the prestigious Spencer Foundation to study factors that affect students' motivation, achievement and future career plans in STEM.

RUSMP's excellent reputation as a change agent and a trusted partner has resulted in its selec-

tion as a regional partner by Code.org, a national nonprofit devoted to expanding access to computer science education. Texas Instruments selected RUSMP to host its annual Regional Summits for teachers on the Rice campus.

While maintaining its many long-standing partnerships, RUSMP strives to develop new ones. RUSMP creates research-practice partnerships to collaborate with schools, school districts, community organizations, government agencies and corporations to address the challenges facing education. RUSMP is an integral part of the Rice community, collaborating with academic departments and centers across campus, including the Richard Tapia Center for Excellence and Equity, the Glasscock School for Continuing Studies and Rice Athletics. RUSMP also collaborates with other universities across the country.

The RUSMP approach is grounded in research that supports the belief that sustained instructional changes can best be cultivated by developing a professionalism among STEM teachers and by creating a network of teachers who have extensive knowledge of both content and pedagogy.

“After attending the RUSMP Summer Campus Program, I feel empowered to motivate my students through inquiry and discovery as a facilitator rather than an instructor,” said LaSyndria Gnagbe from Burrus Fine Arts Elementary School.

To inspire and encourage students to pursue STEM course-

work and consider STEM careers, RUSMP has expanded its efforts through camps and programs for K-12 students and its college awareness activities.

“The RUSMP team has had and continues to have a remarkable positive impact on K-12 STEM education across Texas and beyond,” said Anne Papakonstantinou, RUSMP director. “Schools and school districts consider the RUSMP team as valued collaborators since we are willing to ‘roll up our sleeves’ and do the hard work necessary to help solve the problems that their schools face.”

RUSMP exemplifies Rice University's Vision for the Second Century, Second Decade through its efforts to engage Houston and empower its success as well as to elevate research achievement and reputation. Richard Parr, RUSMP executive director, added, “The longevity and success of RUSMP is due to the experience, creativity and hard work of our remarkable team.”

Please visit the RUSMP website at <http://rusmp.rice.edu>. The RUSMP team members welcome inquiries about how they may help. ■

STUDENTS AND TEACHERS LEARN COOL IDEAS IN STEM

Reginald DesRoches, dean of Rice University's George R. Brown School of Engineering, addressed a room full of inquisitive students who had just completed an engineering challenge.

He expressed how excited he was that their engineering problem-solving and critical thinking skills would blossom during the week. DesRoches was a guest judge at Say STEM Camp, a summer program for more than 200 students hosted by the Tapia Center for Excellence and Equity at Rice.



BUILDING A PIPELINE: The Tapia Center engages high school students in the sciences and teaches them how to work in teams.

One of the missions of the Tapia Center is to build and support the pipeline of STEM students, with an emphasis on groups that are under-represented. With that in mind, the center developed Say STEM Camps as a way to engage high school students in the sciences and to teach them how to work in teams and effectively communicate what they learned and to expose them to life on a college campus.

Students from across the state and around the world attended the six-day residential camps, where they solved hands-on problems, heard renowned scientists and experienced student life at Rice. A large part of the camp also focused on developing communication skills by teaching students how to explain the phenomena behind the formulas they learned.

"There's so much room for creativ-

ity in these areas, and it's so important in the professional world to be able to communicate what you discover," said Paul Hand, director of the camps and adjunct assistant professor of computational and applied mathematics at Rice. "Our goal is to give these students the best resources and opportunities to prepare them for college while simultaneously inspiring them to pursue a STEM career."

At the end of the camp, students had the opportunity to showcase their skills through visual and oral presentations as part of a competition. One student said the camp "took away all hesitations about joining a STEM field, was motivating and challenging, and offered engaging experiences and critical thinking benefits."

But students weren't the only ones who attended. More than 65 educators also explored the world of STEM and honed their teaching skills in Project Based Learning.

"This was a unique and immersive experience for educators," said Deidre Barnes, a teacher from Midland, Texas. "Teachers

were given an opportunity we are seldom afforded — to take on the role of students and experience the lessons we are going to facilitate."

Since 2015, the camps have grown from 40 participants to more than 200 students and 65 teachers. Plans for 2019 include four weeks of Say STEM Camps, with special weeks for dual-language learners and students ranked in the top three of their class.

"Students and teachers alike leave our camps understanding how math, science and English can all work together to solve a real-world problem," said Ben Olsen, director of camp curriculum and instruction. "It's a wonderful thing, knowing our program is inspiring the next generation of creative innovators." ■

PROMOTING THE COMMON GOOD

Once a month more than 30 religious and civic leaders meet in the home of Elaine Howard Ecklund, Rice sociology professor, to exchange ideas and resources that will promote the common good of the city, nation and globe.

Ecklund, the Herbert S. Autrey Chair in Social Sciences and a Rice Scholar at the Baker Institute for Public Policy, also serves as director of the Religion and Public Life Program (RPLP) at Rice University. Established in 2010, the program's vision is to facilitate and promote deeper and better conversations about the role religion plays in society.

To carry out this vision, RPLP created Religious and Civic Leader Gatherings, a new initiative that brings people of different backgrounds and faiths together to share research resources that will benefit the community. Because they are typically held in Ecklund's home, the intimate setting facilitates informal conversation between people who might not have the opportunity to interact or even meet each other.

"We sometimes become so steadfast in our beliefs and worldviews that we forget or dismiss the viewpoints of others. It is possible for people to share differing opinions with one another in a thoughtful and respectful space. I've seen it happen firsthand," said Laura Achenbaum, RPLP's associate director of research.

"If you have the chance to speak face-to-face with someone who has a different opinion, you are more likely to be open and receptive to what they have to say," added Ecklund. People who attend the meetings come from different religious traditions, theologies and politics. And yet, there is commonality: All who gather are invested in the work of the RPLP and are interested in having an engaging and informative conversation.

Gatherings are organized around a particular topic, for example, religious discrimination, faith in the workplace, or race and religious understandings. At the halfway point of the meeting, an RPLP team member will interview an expert or present information from research on the topic. Guests are then encouraged to discuss the information with others in the room.

Leaders of faith-based organizations in Houston, such as churches, synagogues and mosques; directors or staff of local nonprofits; and students, faculty and administrators of Rice are invited to the meetings.

People who have attended a gathering usually leave feeling that they can work with others on common projects. They also have said that the research and discussions have broken their stereotypes of other faith traditions. Reactions and comments like these drive Ecklund to continue opening her home for these gatherings, each time wondering whose mind will be changed or worldview broadened. ■

— HAYLEY HEMSTREET

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RICE AT LARGE

FROM THE OFFICE OF PUBLIC AFFAIRS AT RICE UNIVERSITY
DAVID D. MEDINA, DIRECTOR, MULTICULTURAL COMMUNITY RELATIONS

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RICE AT LARGE is a quarterly newsletter that showcases the university's outreach programs. Each issue of the newsletter includes a series of stories that raise the awareness of Rice's engagement with the city and beyond. Rice At Large has a circulation of 2,500 and is sent to members of the Rice and Houston communities, including alumni, educators, business and political leaders, program funders and others with whom the university would like to engage.