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**HANDS-ON ENGINEERING:** SEEK participant Liz Vanacor works with students from Ortiz Middle School.

## Graduate Students Encourage Kids to Study Science and Engineering

The number of American students studying engineering and science has been steadily declining in recent years, but a group of Rice graduate students have embarked on a program that plans to locally reverse that trend.

This past year, several graduate students created Student Engineers Educating Kids (SEEK), an organization that promotes interest in science and engineering among elementary and middle school students. SEEK strives to create opportunities for undergraduate and graduate students from science and engineering departments at Rice to teach and mentor younger students.

Funded by a Graduate Student Association Enrichment Grant, SEEK organized tutorials and school projects at local schools, such as Ortiz Middle School and Alief Middle School. The group has also done volunteer work with local nonprofit organizations.

Once a month during the school year, SEEK students visited Ortiz Middle School in southeast Houston and were

greeted enthusiastically by students who couldn't wait to see what was in store for them.

Some of the demonstrations included building and launching bottle rockets, exploring the physics of sound waves using a Reuben's tube and iTunes, and using boiled eggs and chocolate milk to explain plate tectonics.

Cara Buis, a science teacher at Ortiz, said: "While SEEK has helped my students academically, I am even more pleased about the interaction my students have with college students. The variety of backgrounds that are represented by SEEK members open the eyes of my students to many opportunities that exist for them outside of southeast Houston."

In addition to running after-school tutorials at Ortiz, SEEK began working with an undergraduate



PAGE 2: Rice students contribute to communities in Guatemala.

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## Rice Students Volunteer in Guatemala

The semester had barely ended when Rice students Meghali Goswami and Darren Arquero boarded a plane to Guatemala, along with a dozen other students, to volunteer as part of the International Service Project, a program sponsored by Rice's Community Involvement Center (CIC).

The group, accompanied by Christa Leimbach, assistant director of the CIC, spent two weeks in May in the Mayan town of San Lucas Toliman located on the shores of Lake Atitlan. The students lived in a dormitory-style hotel in the town of approximately 15,000 and ate simple food, including tortillas, black beans, fruits and an occasional stew. The group worked during the day digging holes to collect dirt for seedlings used to reforest the mountains and chopping down rotten trees for kindling. They helped build a foundation for a Catholic school by preparing



**LEARNING THROUGH SERVICE:** (Left) Natalia Heredia, Darren Arquero, Alicia Allen, Michael Taylor and Julia Mann. (Right) Students help prepare rebar for the foundation of a school.



ing the rebar and moving buckets of dirt in an assembly line and sorted coffee beans — “an excruciating monotonous job,” Arquero admitted.

For the past 12 years, the CIC has been sending students to underdeveloped countries in Latin America to do volunteer work. While helping others to improve their lives, many of the participants come back with a new outlook on life.

“I talked to many different people and I learned so much,” said Goswami, who will start her senior year at Rice this fall. “I talked to people who are oppressed and live in poverty and to kids whose houses are the size of a bedroom, yet they think they are really big. Since my trip, I have spent a lot of time thinking about what makes people happy.”

**WHILE HELPING OTHERS TO IMPROVE THEIR LIVES, MANY OF THE PARTICIPANTS COME BACK WITH A NEW OUTLOOK ON LIFE.**

the people. They took a couple of tours across Lake Atitlan, an area surrounded by steep hills and three volcanoes, to small towns and even attended a quinceñera, a birthday celebration for a 15 year-old girl, in the town square. They also climbed into an active volcano and came within 20 yards of flowing lava.

After two weeks, the students admit that although the trip was exhausting, it was rewarding. And they all developed a sense of hope that the

world can improve.

“Overall, I expected it to be labor intensive and it was,” said Arquero. “I feel that even though the work I did was short term, I at least helped. But a lot still needs to be done.”

—DAVID D. MEDINA

Director  
Multicultural Community Relations

## Essay Competition Winners Expound on Social Issues

The Houston Enriches Rice Education (HERE) project concluded its first essay-writing contest with an awards ceremony in May at Rice University. Ten local high school students were honored with cash prizes and free SAT preparatory classes.

The winners, their parents, several Houston Independent School District (HISD) officials, and Rice staff and faculty attended the ceremony. Caroline Levander, professor of English and director of the Humanities Research Center, which provided funding for the essay contest, presented the awards.

The essay contest, a component of the HERE project, required students to write about the most challenging issue facing Houston in the 21st century. Competition winners were selected from 11 HISD high schools, and the winning essays focused on a variety of topics, including crime, education and pollution.

First-place winner Kierra Lee, a junior at Yates High School, won \$1,000 for her essay that cited violence as a sickness plaguing Houston. Second-place winner LaWanda Turner, a junior at Westbury High School, won \$750. Turner, who had served as an intern at the Audubon Zoo in New Orleans for several summers before coming to Houston as a result of Hurricane Katrina, wrote about her concern for the Houston environment. Maria Andrade, a junior at Jefferson Davis High School, took third place and a prize of \$500. Andrade’s essay focused on the high school drop-out rate in Texas public schools. Her research revealed that 93 students drop out of schools in Texas each hour.

Seven other students received honorable mention: Andre Benson, a junior at Worthing High School; Estefani Fuentes, a sophomore at Stephen F. Austin High School; Aleli Mora, a junior at Stephen F. Austin High School; Neidy Ramos, a junior at Westbury High School; Eduardo Saenz, a sophomore at Reagan High School;

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## Alternative Spring Break Provides Service, Fun and Self-Discovery

When most college students think about spring break, they likely imagine white sandy beaches or lazy days glued to a TV. But for the 116 Rice undergraduates who participated in the Community Involvement Center's (CIC) 2008 Alternative Spring Break program (ASB), spring break was more work than play.

Established in 1995, the CIC's ASB programs have been an important part of the center's mission to establish a culture of service and an ethic of social responsibility within the university. This year, selected students participated in one of nine trips to various locations throughout the U.S. and Mexico.

My trip, hosted by the Rice Outdoor Club, took me to Boulder Creek, Calif., where I was a counselor at Camp Campbell, a YMCA-run camp in the Santa Cruz Mountains. The camp encourages kids from local cities to become acquainted with their natural environment while teaching them how they can help protect it.

As a counselor, I was responsible for the safety and well being of 10 fifth-grade students, and taking care of a group of active young girls was not an easy task. From getting them settled to meals to classes to showers, it

was a full-time job. But by the end of the week, I knew I wouldn't have wanted to spend my spring break any other way. I had bonded with my fellow ASB participants and had discovered a lot about myself. I found I had the patience

and wisdom to provide a safe and fun environment for the children under my care. The camp also awakened in me a deep interest in protecting the environment.

ASB programs, though they serve an important purpose in the communities, are not entirely selfless propositions. The majority of participants walk away knowing that their lives are much fuller and that they have changed for the better.

For more detailed information about the CIC or ASB programs, visit [www.ruf.rice.edu/~service/about/about.htm](http://www.ruf.rice.edu/~service/about/about.htm).

—KELLI NEWMAN '08

ASB Program Participant



**A BREAK FOR THE BETTER:** 2008 Alternative Spring Break participants

## Academies Highlight the Advanced Placement (AP) Summer Institute

Approximately 200 high school teachers attended the Advanced Placement (AP) Summer Institute at Rice University and delved deeply into specific course content taught by faculty from Rice and other institutions of higher education.

These content-specific courses called Academies were among the 100 AP and pre-AP classes offered during the first week of the month-long AP Summer Institute. The institute is administered by the Susanne M. Glasscock School of Continuing Studies.

AP training equips high school teachers with the ability to teach college-level, subject-specific courses and emphasizes course structure and assessment techniques. Pre-AP training equips middle and high school teachers with strategies and tools they need to engage their students in critical thinking for success in AP and college courses.

The Academies were added to the institute in 2005 at the request of experienced AP teachers and lead consultants who wanted more in-depth knowledge of their specific subject.

This summer, 191 teachers completed the course, a 49 percent increase in participation since 2007 and a 114 percent increase since 2005. The Academies have grown from five course offerings to nine, featuring Advanced Topics in AP biology, AP calculus, AP chemistry, AP English literature, AP music theory, AP psychology, AP Spanish literature, AP U.S. history and AP world history.

Experienced AP teachers, who also serve as College Board consultants, facilitated the academy. Each Academy was composed of eight different presentations given by distinguished faculty, including 20 from Rice and more than 43 from institutions throughout Texas and the U.S.

These courses were made possible with funding from Arthur Vining Davis Foundations and the Texas High School Project Fund of Communities Foundation of Texas, which recognized the Academies as an "exemplar program."

"We are particularly proud of our Academy model as it serves to enrich teacher content

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## HISD Students Become Experts at 3-Dimensional Visualization

The Rice University School Mathematics Project (RUSMP) is helping a group of third-and-fourth-grade children at HISD's William Wharton Elementary School become experts in solving and creating three-dimensional visualization problems.

Jackie Sack, RUSMP's associate director for curriculum development, collaborates with Wharton teachers, Irma Vazquez and Raquel Moral, every Wednesday during Wharton's after-school program. Children in third and fourth grade attend the one-hour classes to solve spatial problems using Soma figures and dynamic computer simulations.

The students have become so proficient at solving the problems that they now create interesting and challenging problems for each other using the software, said Sack. "They also have developed their own coding system for cuboid figures and can argue a strong case for justifying their solutions or critiques to each other," she explained.

The program has provided participating children opportunities to develop critical literacy skills in mathematics and increase their sense of self-confidence. A fourth-grade teacher commented how easily

the children in this program have mastered new material in her classroom compared with others who have not had the same experiences. "And the children themselves tell stories of their successes as a result of participating in this program," added Sack.

While the children benefit from this unique learning experience, Sack and Vazquez also are finding out how children develop understanding of 3-D concepts. Their findings will be reported in the future at various educational meetings, including Psychology for Mathematics Education and the National Council for Teachers of Mathematics.

Support for this project has been provided by RUSMP and by Imelda Alamia, principal of Wharton Elementary School. The research team hopes to obtain additional funding to continue this work over the next three to four years and add new groups of third graders.

HISD's research department has permitted the research component to be enacted and Lance Menster, manager of elementary mathematics for HISD and Coach Lance on HISD TV's Math-A-Letics, has visited and endorsed the program.

"I observed the 'blokkies' program in action," Menster said. "Through interactions with concrete objects and the use of innovative technology, children were devel-

**"THERE IS NO QUESTION THAT THESE STUDENTS HAVE A DEEP CONCEPTUAL UNDERSTANDING OF IMPORTANT GEOMETRIC CONCEPTS THAT WILL PREPARE THEM FOR HIGHER LEVEL MATHEMATICS IN LATER YEARS."**

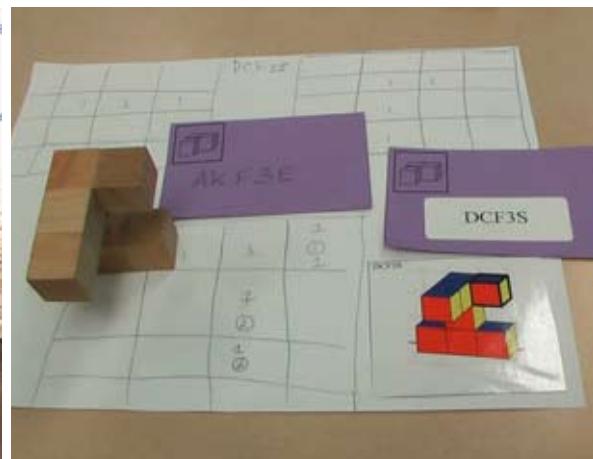
LANCE MENSTER

oping robust mental images of what shapes look like and the ability to use these images as a tool for problem solving. There is no question that these students have a deep conceptual understanding of important geometric concepts that will prepare them for higher level mathematics in later years."

Sack plans to publish the instructional materials on Rice's Connexions, a Web site that shares educational material that can be organized as courses or books. Educators all over the world will have access to the resources and will be able to adapt them to meet their particular needs.

—JACKIE SACK

Associate Director for Curriculum Development  
Rice University School Mathematics Project



**SOLUTIONS TAKING SHAPE (ABOVE):** Third-grade students built the figure from two different Soma figures and reproduced it using dynamic computer software. The written code they created is used as a puzzle for others to try to reproduce the figure.

**LEARNING IN 3-D (LEFT):** Wharton Elementary School students listen as a teacher explains a computer task in the spatial visualization class.

## Seattle Firm Wins Affordable House Design Competition

The Rice Design Alliance (RDA) and the American Institute of Architects (AIA) Houston chapter announced the winner of the affordable housing design competition that addresses the needs of a low-income family in Houston's Fifth Ward.

The Seattle firm and one of the five finalists, Hybrid / ORA, won the competition. "Their design addresses both affordability and the environment through energy savings and offers attractive opportunities for home ownership in the Fifth Ward," said Bryan Bell, founder and executive director of Design Corps. Bell was one of five jurors for the competition. "The design not only met the 99k budget, a critical criteria, but it allows for a range of specific users to personalize the space," he added.

tive, donated a site for the house located at 4015 Jewel St. in Houston's historic Fifth Ward, a residential area east of downtown. Harvey Builders has offered their services as the project's general contractor, and Haynes Whaley has donated his engineering expertise.

Once constructed, the winning house will be sold or auctioned to a low-income family through the Tejano Community Center.

This year, the RDA celebrates 36 years as a nonprofit, public education outreach program



**DESIGNING OPPORTUNITY:** A rendering of the winning design of the 99K House competition.

Announced in October 2007, the competition called for a single-family house with up to 1,400 square feet, including three bedrooms and one-and-a-half to two bathrooms, to be built for \$99,000 or less. The competition challenged designers and architects to design a sustainable, affordable house, with special consideration given to affordability, longevity, energy savings benefits, and appropriateness for Houston's humid climate. The competition, supported, in part, by generous grants from Houston Endowment Inc. and the National Endowment for the Arts, drew 182 entrants from 16 countries and 29 states. An exhibition of selected entries will be on display in the fall at the Architecture Center located at 315 Capitol St., Suite 120, the new home of the AIA Houston chapter.

The city of Houston, through the Land Assemblage Redevelopment Authority initia-

of the Rice School of Architecture. RDA is dedicated to the advancement of architecture, urban design, and the built environment in the Houston region through educational programs, active programs to initiate physical improvements and its journal Cite: The Architecture + Design Review of Houston.

The AIA Houston chapter is the professional society for architects in the greater Houston area and has more than 1,700 members. Its new location was made possible by a collaboration with the Houston Architecture Foundation, which gives grants for architecture-related projects and provides educational programming for the Houston community.

For more information, please visit the competition Web site at [www.the99khouse.com](http://www.the99khouse.com).

—LINDA SYLVAN

Executive Director  
Rice Design Alliance

## Rice University to Host Second Season of Starlight Movie Nights

**Starlight Movie Nights**, Rice's popular free Friday night film series, returns to Rice Stadium this fall for a much-expanded second season.

The free movie series is one of many events Rice hosts for members of the campus community and the university's Houston neighbors. "Free movie nights proved very popular when we tested the concept last December for two weeks, so we're looking forward to expanding the program this fall," said Greg Marshall, senior director of University Relations.

This year's film series will span four months and will kick off in September with a special month of space-themed movies in honor of the 50th anniversary of the founding of NASA. The season begins on Sept. 5, with "Muppets from Space;" on Sept. 12, the anniversary of President John F. Kennedy's 1962 speech in Rice Stadium, audience members will enjoy space-themed exhibits and activities followed by highlights of the JFK speech and the movie "In the Shadow of the Moon;" and rounding out the space theme on Sept. 19 and 26 will be the 1956 science fiction classic "Forbidden Planet" and Ron Howard's 1993 film "Apollo 13," the screenplay for which was written by Rice alumnus Bill Broyles '66.

Though the movie series is a fun campus activity, Marshall also hopes to educate people about Rice. "We hope our visitors enjoy their free movie experience and in the process learn about other things the university has to offer."

The Office of Public Affairs in cooperation with Rice Athletics sponsors Starlight Movie Nights. For a complete schedule of upcoming films and other important details, please visit [www.rice.edu/movie](http://www.rice.edu/movie). And to sign up for a weekly "Open Invitation" e-mail to all of Rice's public events, please visit [www.rice.edu/neighbor](http://www.rice.edu/neighbor).

—STACY CERVANTES

Department Coordinator  
University Relations

## Houston Businesses Benefit From RBI Three-Year Study

The Rice University Building Institute (RBI) teamed up with seven non-profit professional organizations to help local Houston businesses prosper. The nonprofits offered the selected firms a series of workshops aimed at cultivating their companies.

RBI extended \$15,000 worth of scholarships to 12 local business people to attend the half-day seminars, which started in May and took place at Rice once a month for four months.

The seminars explained the findings of a three-year research project conducted by RBI. The study, the first of its kind, identified 12 actions a firm in the architecture, engineering and construction (AEC) industry must take to attain and retain competitive advantage despite uncertain market conditions and an influx of international competitors.

"When we surveyed local AEC industry leaders about what keeps them up at night, their responses were overwhelmingly focused," said Joe M. Powell, executive director of RBI. "The paramount concern of firm leaders is their ability

to maintain a high level of competitiveness."

The seminars groomed participants to become the next generation of global market leaders by exploring the critical performance characteristics of the world's most competitive companies. During the seminars, Powell presented and explained strategies that drive the most successful firms.

The strategies include inspiring with vision, leading with values, attaining competitive focus, capturing category ownership, using persistent branding, creating marketing breakthroughs, exploiting competitive intelligence, launching a competitive culture, establishing customer intimacy, acquiring and nurturing high-impact people, developing a culture of obsessive improvement, and formulating new

strategic alliances.

The scholarship recipients were identified by their professional organizations as AEC industry up-and-comers. About 55 other industry leaders also attended the seminars.

Camilo Parra, principal of Parra Design Group and one of the scholarship recipients said that this research comes at an ideal time for his industry. "With the real estate bubble burst, this is an important time to be able to differentiate."

Rice's research on competitiveness has produced two valuable outcomes —the new workshop series designed to teach the 12 strategies and the publication of the findings by John Wiley & Son in a new book "The New Competitiveness in Design and Construction: 12 Strategies That Will Drive the 21st Century's Most Successful Firms."

—JESSICA STARK

Media Relations Specialist  
News and Media Relations

## Hispanic/Latino Summit Held at Rice

Hispanic business leaders, author and award-winning journalist Maria Hinojosa and Rice University sociologist Stephen Klineberg gathered at Rice's Jesse H. Jones Graduate School of Management for the Hispanic/Latino Summit May 14 to discuss some of the most pressing social issues affecting Hispanics in Texas.

"The Hispanic/Latino Summit focused on overarching issues, such as immigration and economic opportunity, and more specific topics that relate to Hispanics in the corporate world," said Cecilia Orellana-Rojas, co-chair of the summit and associate director of corporate diversity for AT&T.

Consisting of a series of panel discussions, the summit opened with "Deconstructing the Texas Glass Ceiling: Hispanic/Latino Leaders in the Corporate World," which discussed characteristics of successful leadership, a road map to success, the role of mentors, and challenges and opportunities for Hispanics in corporate America.

Speakers included Sonia Perez, senior vice president of external affairs for AT&T; Ron Acosta, regional general manager of Wal-Mart Stores; and Lora Villarreal, senior vice president and chief people officer of Affiliated Computer Services. Vicente Arenas, anchor and reporter for KHOU-TV, moderated the panel.

In the second session two panels ran concurrently. The first panel discussion, "Immigration Debate: Public Policy, Business and Nonprofit Perspectives," included speakers Beto Cardenas, attorney with Vinson & Elkins LLP and Stephen Klineberg. Hope Andrade, executive director of Mexicans & Americans Thinking Together (MATT), was the moderator.

"Our current immigration system is broken and attempting to expand the immigration debate is too politically toxic for congressional leaders," said Aracely García-Granados, co-chair of the summit and MATT's director for Mexico. "Our distinguished panel members addressed the immigration debate from a public policy and business perspective."

The second panel discussed "Entrepreneurship Among Hispanics: Avenues to Creating Wealth and Opportunities." Speakers were Regina Montoya, CEO of New America Alliance; Sonia Clayton, president of Virtual Intelligence Providers, LLC; and Bill

Treviño, executive vice president of the Treviño Group. Laura Murillo, president and CEO of the Houston Hispanic Chamber of Commerce, was the moderator.

Following the panel discussions, Maria Hinojosa, senior correspondent for the PBS newsmagazine NOW and managing editor and anchor of National Public Radio's "Latino USA," delivered the keynote speech. She encouraged people to be aware of social issues and be active in finding solutions to those problems.

Rice's Office of Public Affairs, the Jesse H. Jones Graduate School of Management and MATT sponsored the summit. The event was part of the Texas Diversity and Leadership Conference hosted by the Texas Diversity Council.

"I am very excited to have offered a venue for Hispanic voices at our conference," said Dennis Kennedy, founder and CEO of the Texas Diversity Council. "Texas is home to 8.4 million Hispanics representing 36 percent of the state's population, and my hope is that this inaugural summit contributed to the understanding of Latino issues in our state."

—DAVID D. MEDINA

Director  
Multicultural Community Relations

## **HERE** *Continued from Page 2*

Kimberly Velez, a sophomore at Stephen F. Austin High School High; and Judy Ughanze, a sophomore at Madison High School.

Parents praised the HERE contest. Parent Felicia Ughanze said that the program was a great motivator for both students and parents. "Students need to see that their hard work pays off, and parents need that as well."

When asked what she planned to do with the unrestricted prize money, first-place winner Lee said: "I plan to buy a graphic calculator to help with my homework and buy something for my grandmother, who really deserves it."

In addition to the prize money, students received a free SAT six-week preparatory course from Princeton Review. The course

took place on the Rice campus during July and August.

The HERE project, founded in 2007 by Anthony Pinn, the Agnes Cullen Arnold Professor of Humanities and professor of religious studies at Rice, advances the university's engagement with Houston. "I wanted to engage young people from different Houston communities in a writing process, which encouraged them to reflect on their future and practice their writing skills," Pinn said. "This project also gives students the opportunity to dialogue with the Rice community as they participate in the on-campus Princeton Review classes."

—JAN WEST

Assistant Director  
Multicultural Community Relations

## **Summer Institute** *Continued from Page 3*

knowledge and invigorate teachers for the coming school year," said Jennifer Gigliotti-Labay, director of teacher professional development for the Glasscock School. "Participants repeatedly tell us that Academy courses are the best professional development they have ever attended. We are thrilled to be able to provide this caliber of training."

This year marked the Glasscock School's 14th annual AP Summer Institute. Over the years, more than 2,400 participants from 29 states and five countries, including Colombia, Mexico, Qatar, Nicaragua and China, have attended.

For more information, visit [teachers.rice.edu](http://teachers.rice.edu).

—KRISTAL SCHEFFLER

Marketing Specialist  
Susanne M. Glasscock School of Continuing Studies

## **Encouraging Kids to Study Science and Engineering** *Continued from Page 1*

organization, Engineers Without Borders (EWB), to mentor an engineering class at Alief Middle School.

The goal was to help students understand engineering design concepts by developing a mousetrap car. The class was divided into five groups and each group was given the tools and supplies to create their cars, and SEEK members conducted lessons that explained general engineering concepts. At least three Rice students visited the class

every week to measure progress and mentor groups.

SEEK members also participated in the Sally Ride Festival on the Rice campus by hosting a booth and performing various science demonstrations, such as using liquid nitrogen to explore different states of matter and using a light bulb made from a pickle to explain chemical energy states.

In addition, several SEEK students presented posters at NanoDays, an event hosted

by the Houston Children's Museum.

In its first year, SEEK proved to be a popular organization with more than 30 students actively volunteering at various events.

For more information, visit [www.owlnet.rice.edu/~npt1/](http://www.owlnet.rice.edu/~npt1/).

—NADHI THEKKER

Rice Graduate Student  
Optical Spectroscopy and Imaging Lab  
Department of Bioengineering



**CELEBRATION OF SCIENCE:** SEEK participants Noah Bedard and Mike Cordray demonstrate a liquid nitrogen experiment at the Sally Ride Festival.



**WHEN CONCEPTS TAKE SHAPE:** Andy Coughlin (left) prepares a bottle rocket demonstration with Ortiz Middle School students.

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



**INSIDE THIS EDITION:** Melody Muñoz talks with local kids in a Guatemalan village. See Page 2.



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