A Message from the UH Chief Energy Officer

UH Energy holds in light significant strides this semester in pursuit of our goals to further energy related research and education, togethery together industry and the academy, and to partner with K-12 educators in preparing the next generation.

In January, the Governor of Texas awarded the University of Houston a Center of Excellence funded by monies from the RESTORE Act, and we have named it the Subsea Systems Institute (SSI). The advisory board for the SSI made up of members from the consortium partners (UH, Rice University and NASA) is currently in the process of hiring a director. The Energy & Sustainability minor (see the first page of this newsletter) has seen steady growth and will graduate eleven students this year. We wrapped up the Energy and Education Workforce Workshop Series (see pg. 22) which culminated in the final Critical Issues in Energy Symposium on the same topic – a topic UH is facing on by developing an innovative stackable certificate program to upskill workers in the energy industry. In April, I was honored to have the opportunity to present this program to members of Congress on the Energy & Power Subcommittee.

This semester, UH Energy hosted several distinguished speakers including Mark Finley of BP who presented on the future energy outlook and Mike Gerrard from Columbia Law School who addressed climate change policy. Our Energy Advisory Board (see pg. 2) continues to provide strategic guidance and we are pleased to welcome Stephen Gensler, president of ExxonMobil Exploration Company, as our new chair.

UH students continue to impress (see pg. 4), and UH Energy is pleased to support them; in March we awarded our first Energy Explorers Academic Scholarships (see pg. 3), and in April, hosted a competition where teams were challenged to solve the problem of waste water produced during hydraulic fracturing. The winners went on to compete in, and win, the Power Acros Texas 2015 Texas Energy Innovation Challenge on May 1.

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UH Energy has had a successful 2014-2015 with your support and we’re looking forward to what the next academic year brings.

For more information about UH Energy programs, news and events, visit: uh.edu/energy

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New Courses for the Energy & Sustainability Minor

ENGR 4320 Case Studies in Energy & Sustainability
ENGR 4397 Special Topics – Overview of the Oil & Gas Industry
ECE 5397 Renewable Energy Technology
ECE 4363 Electromechanical Energy Conversion
FINA 4371 Energy Value Chain
FINA 4372 Upstream Economics
Elizabeth Killinger

As president of RRG Retail and Reliant, Elizabeth Killinger is aware of the current and future challenges facing the electricity industry. As a member of the University of Houston's Energy Advisory Board, she has a front-row seat to some of the possible solutions. She has served on the Energy Advisory Board since 2013. Formed in 2010, the board is made up of 25 global industry leaders charged with providing guidance, planning and coordination for the UH energy initiative.

But Killinger said board members, and the companies they lead, also benefit from the expertise. “The board includes top minds in the energy industry, and the University of Houston draws upon their insights to ensure UH offers the right resources for both graduates and the energy industry to succeed in the future,” she said. “UH educates the talent we need to develop the resources and technologies to meet – and solve – the energy challenges of our country and world.”

A Houston native and UH alumna, she earned a degree in Management Information Systems before starting her career in software development. In the years since she graduated, Killinger said, UH has changed for the better.

“I am so proud of the University of Houston and the progress it has made,” she said. “Having a Top 1 University in Houston is an affirmation that we are a world-class city, and it gives us access to the skilled workforce we will need for our industry to continue to grow and develop.”

Her passion isn’t limited to RRG Reliant, and UH, Killinger volunteers for a number of causes. She serves on the Greater Houston Partnership executive committee and the Executive Women’s Partnership, and on the board of directors for both the March of Dimes Houston chapter and the Center for Hearing and Speech. In addition, she is vice-chairman of the school board for Epiphany Lutheran School and is a mentor for NewSpringing for Society, a nonprofit that works with those with disabilities.

“Being passionate about seeing people grow and accomplish their dreams, so I believe the time I spend here is an investment in students who were just like me when I was in school,” she said. “I also value the interaction I get to have with other members of the (energy advisor) board, as well as UH students. The forum brings together leaders in the energy industry to discuss issues that will positively impact the university, our community and the world in the years to come.”

“I do it because it is important,” Killinger said. “Over the next decade, the electricity industry will change more than it has in the last 100 years. Today we generate solar power through portable panels we can hold and on our rooftops, and in the next decade future people will have the ability to generate power with their own home appliances. Battery storage technology is also advancing rapidly.”

“The University of Houston has an important role in playing developers who will define these energy technologies and create new ones we haven’t even thought of yet – so future generations can thrive in a brighter, cleaner future.”

UH Energy 2014-2015 Workshop Series

As part of the 2014-15 Energy Symposium Series, UH Energy hosted three workshops to raise questions and pursue answers regarding education and the energy workforce, with speakers addressing how to build the talent pipeline, what skills those workers will need and how higher education should think about STEM (science, technology, engineering and math) education. Some common themes emerged: energy companies should work with schools to help create programs specific to their needs; filling the workforce gap will require more STEM programs in schools; and funding for those programs remains a challenge.

The workshop series started in September, with Elaine Barber of the Greater Houston Partnership, David Foster of the U.S. Department of Energy, and Jonathan Moore of Debutte Consulting discussing employment gaps within Houston’s energy industry, as well as possible solutions. Demand for middle-skill jobs is growing, the panelists said, requiring more tightly focused academic and training programs for jobs in energy production and the petrochemical industry. To make that happen, the speakers concluded that industry leaders should work with institutions to create specific programs to meet workforce needs.

The second workshop, held in November, focused on building the talent pipeline. Speakers included Robert Sanborn, president and CEO of the child advocacy group Children at Risk and Anne Ford of the Independent Petroleum Association of America/Petroleum Equipment Suppliers Association Education Center.

Sanborn said the 2013 decision by the Texas Legislature to reduce the number of math and science credits required for high school graduation will ultimately hurt efforts to build a new generation of energy workers. Ford suggested more industry involvement in the classroom, and Ford, whose organization works with new “petroleum academies” created within area high schools, said that strategy can spark student interest in energy jobs; industry is also working with those schools to strengthen science curricula and provide student “externships.”

The final workshop was held in January, with Mark Schneider of the American Institutes for Research addressing how society assesses STEM in higher education. Schneider proposed making more information available about graduate outcomes – where students with a particular degree or certificate find jobs and how much money they earn. He said two-year degrees and certificate programs should get more attention. In many states, including Texas, he said people with a technical degree earn more money than those with a non-STEM four-year degree.


UH Energy hosted four symposia addressing the pressing social, practical and economic issues in the energy industry. The first symposium focused on the topic “US Energy Independence: Good for the Nation?” and included Ed Fritz, managing director of Williston Energy LLC; Edward Chinn, assistant fellow at the Center for Strategic and International Studies; and Jane Klehr, founder and executive director of Bold Nebraska, a political action group fighting the Keystone XL pipeline.

The US depends heavily on imported energy resources, despite its potential independence due to hydraulic fracturing and mining. Fritz suggested that the US gradually restrict oil imports, in order to “shrink ourselves from the global market.” The other side of the coin is the effect oil production has on the environment and land owners. The paradox suggested the US should use the economic benefit gained from the shale boom and transition to alternative and renewable energy resources.

UH Energy’s second symposium featured the topic “America’s Energy Transportation Infrastructure: Is it Safe?” Speakers included Charles Fosuer, oil market analyst at the International Energy Agency; Steve Magnan, a partner in Cogent Energy Solutions, LLC; a crude oil, condensate and refined products distribution business; and Carl Weimer, executive director of the Pipeline Safety Trust. The event was moderated by Candace Beke from Houston Business Journal (HBJ).

Safety is one of the most important aspects of the energy industry, and one of the most challenging. As pipelines across the country begin to degrade and the use of railcars rises, new technologies are needed to decrease risk. Participation on the part of everyone, from pipelines and rail companies to regulators, to the governor, the Congress, the public is crucial in order to ensure the continuing safety and productivity of the industry.

The third symposium, “Private Profit Versus Public Good: Do Energy Companies Have a Social Responsibility?” included panelists Badar Khan of Direct Energy; Nate Teti of Stanford University; Aneel Karnani, University of Michigan; Kathleen Huyett White from Texas Public Policy Foundation; and moderator John Bedwell, HBJ.

The question of social responsibility, beyond offering employment opportunities, is a top priority issue. What is the extent of the companies’ ethical duty to the public? Energy companies are forming plans to help their customers conserve energy. However, there is a warning against actions that seem too obvious. But what can be done in the room, meeting face to face, in favor of being “green.” Energy companies cannot underestimate the importance of government regulations. Social responsibility is all well and good, but could impede the development and implementation of government protocols and procedures.

The last symposium topic was “Energy Workforce: How Do We Prepare for the Future?” Guest speakers included John Colburn of Apen Institute’s Skills for America’s Future; Elaine Callen of Pima Consulting Services; and Congressman Pete Olson (TX-22). Laura Isensee of Houston Public Media moderated the debate.

The lack of workers to meet the needs of the energy industry, despite job cuts in the wake of the drop in oil prices, is an imminent problem. All speakers agreed on the divide between what is being taught in the classroom and what skills are actually necessary. There should be a need to develop programs that can accommodate that divide and meet the needs. The panelists suggested that programs should be put in place to support current workers.

Energy Explorer Scholarship Recipient Spotlight: Barrett Schitka

Barrett Schitka received undergraduate degrees in chemical engineering and Spanish from the University of Waterloo in Canada. He is enrolled in the International Energy Lawyers Dual Degree Program, a partnership between UH Law Center and the University of Calgary Law School. He has worked for various law firms, including Latham & Watkins, LLP in Houston, where he will work after graduation. Schitka is a member of the Energy & Mineral Law Foundation.

What are your defining moments at UH?

“The whole experience has been very valuable. I think the big thing is being able to access the opportunities that are here such as these through available organizations like the AIPEP (Association of International Petroleum Negotiators) and the Rocky Mountain Mineral Law Foundation. Being in Houston and seeing the vibrancy of life and passion for the industry in this city: everything revolves around energy but at the same time isn’t so completely tied in to it so the city seems to have an existence apart from it.”

Who has contributed to your success as a student?

“UH Law Center) Professor Jacqueline Weaver, hands down. She has been absolutely spectacular, especially on the energy side of things. She knows so much and is so good at sharing her passion for it. She’s very much about providing opportunities to students, showing them the way and giving encouragement.”

Energy Explorer Scholarship Recipient Spotlight: Christian Kuhasz

Christian Kuhasz is a junior in the Mechanical Engineering Technology Program and hopes to work for an exploration and production company as a drilling engineer. Christian has worked as a research assistant for the Petroleum Technology Initiative (PTI), a sales and engineering assistant at CAJ Energy Services Inc., and as a consultant for the Energy Detective Services. Kuhasz is a member of the UH chapter of the Society of Petroleum Engineers, the Society of Manufacturing Engineers and next fall will be industry liaison officer with the American Association of Drilling Engineers.

What are your defining moments at UH?

“I really like the University of Houston’s diversity. You’re always going to be exposed to different cultures, people and mindsets. With upper level classes, you have to do group work, so you have to try to make a cooperative environment to accomplish a task. You’re always going to have strains and difficulties, and it is how you overcome those that define your success individually. I think UH is able to instill that in their students, give the diverse student population.”

What has contributed to your success as a student?

“I wanted to be extremely involved in school. I already had that in mind; I wanted to go over and beyond to be successful. As far as my professors are concerned, there’s Dr. (Farook) Attia, who always encourages students to get involved and also offers extra credit for doing so, whether it be for PTI or other professional activities. My boss, Gaila Sheridan, has also been a huge influence in regard to my success here. Her dedication to PTI along with the energy she devotes to the growth of the students is worthy of recognition.”
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Sanborn told the group that strategy can spark student interest in energy jobs; industry is also working with those schools to strengthen science curricula and provide student “experiences.”

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“I think it’s the diverse student body. UH has a very diverse student body. I think that I learned a lot from my classmates in terms of their backgrounds and experiences. I think that UH is able to instill in that students, the diverse student population.”

What are your defining moments at UH?

“I really like the University of Houston’s diversity. You’re always going to be exposed to different cultures, people and mindsets. With upper level classes, you have to do group work, so you have to try and make a cohesive environment to accomplish a task. You’re always going to have strains and difficulties, and it is how you overcome those that define your success individually. I think UH is a place that is diverse in their student population.”

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“I have been very involved in extracurricular activities, but I’ve always tried to balance my time and make the best of it. I think I’ve been able to balance my time between my studies and extracurricular activities.”

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Farhad Tahir is a junior majoring in Accounting and Finance and minoring in Energy & Sustainability. He is working as a Projects Finance Intern at Siemens in their Wind Services group. Tahir became a member of Beta Alpha Psi last year, a professional organization for students pursuing Accounting, Finance or MIS degrees. He is also a member of World Affairs Council of Houston.

Why did you choose the University of Houston?
"I always wanted to be in Houston; the University of Houston runs in my family. My dad came here from Pakistan when he was eighteen years old for Electrical Engineering and went on to get his MBA from UH. I just see UH as a place where you get to learn more about how the city changes and how to adapt to it."

Why did you choose E&S as your minor?
"I have always been fascinated with energy. When I heard about what is taught in the Introduction to Energy & Sustainability class, I thought it would be a good mix to have with my major. I took the class and enrolled in the minor because it adds another aspect to my academic experience by mixing fundamental and technical energy studies."

Are there any instructors who have contributed to your academic success?
"Dr. Joe Pratt provides a simplistic and pragmatic view on energy. This semester I’m doing research under Dr. Pratt on the transition of the United States’ energy mix to a more sustainable future using natural gas. I’m researching how natural gas is the most viable ‘bridge fuel’ to get to a more desirable and sustainable future. Currently, renewables are not at a point where they can support our entire economy."

You’ve interned with Siemens since May 2014 — tell us more about that.
"I am in their Wind Service Americas group, which is stationed here in Houston and we spend some time in Orlando, also. I assist the other financial managers who manage about six to seven sites each—everything from all of the costs and forecasting for different sites. When I started off, I was in a warranty role, making sure that claims are reimbursed. I started off with a project to improve the efficiency of our warranty reimbursements and the tools I came up with, I was able to implement nationwide. It was a good stepping stone."

Tahir expects to graduate in May 2016 and hopes to make an impact in the future by learning as much as he can about energy companies and the industry.

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