

The Cougar Engineer

winter 2012

volume 7



Legal Engineering

EE Alumna Practices IP Law



Texas Oil Man

Business Success, Texas Style

A large, circular steering wheel is held by two hands, one at the top right and one at the bottom left. The background is a solid red color with a faint, white circuit board pattern overlaid. The text "BEYOND INNOVATION" is written in large, bold, white capital letters across the center of the steering wheel. Below it, the text "COUGAR ENTREPRENEURS" is written in smaller, yellow capital letters.

**BEYOND
INNOVATION**
COUGAR ENTREPRENEURS



FEATURE

COUGAR ENGINEERS, COUGAR ENTREPRENEURS
Going Beyond Innovation

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UNIVERSITY of **HOUSTON**
CULLEN COLLEGE of ENGINEERING

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Greetings Cougar Nation!

Happy New Year! Last year was a truly remarkable year for the University of Houston. Beyond our designation as a Tier One research university by the Carnegie Foundation and being named one of America's top universities for undergraduate education by *The Princeton Review*, our Houston Cougars had a record-breaking year on the football field! Spirit is extremely high on campus and throughout our alumni family. There's never been a better time to be a Cougar!



Looking forward into 2012, I would like to encourage all Cougar Engineers to show your pride. President Renu Khator launched Cougar Red Fridays on campus and is encouraging all alumni, donors and friends of the university to wear red on Friday as a means of uniting the Greater Houston community to show support for its only public Tier One institution. In fact, this unity goes far beyond the borders of Houston—it's meant to generate an incredible sense of community among everyone connected to UH. There's even a program developed by a UH alumnus for businesses around the Houston area to fly UH flags on game days. If you would like a flag for your business or home, be sure to visit www.crankitupcoogs.com. One of our own Cougar Engineers, Dr. Durga Agrawal, has proudly displayed a flag at Piping Technology and Products and at his home for years. We would certainly like to see more Cougar Engineers participate in this growing tradition.



We would also like to promote another tradition for the 2012 football season. The Engineering Alumni Association and alumnus Mike Lacy have done a terrific job for many years by hosting the engineering tailgates on football game days, which should continue this year when the Cougars play at Robertson Stadium. Be sure to join us this season, participate in the festivities, and reconnect with the college and fellow Cougar Engineers.

In this issue of *The Cougar Engineer*, we feature several alumni who are innovators in science, technology and business. Each one is also an educator at heart—and has given back to the Cullen College either through contributions to the leadership board, alumni association, classroom lectures, mentorships for students or financial gifts. Their dedication to the profession and to the future advancement of engineering is amazing. We hope you enjoy their stories.

Go Coogs!

Joseph W. Tedesco

Joseph W. Tedesco, Ph.D., P.E.
Elizabeth D. Rockwell Dean and Professor

Engineered PHYSIQUE

P

Physical fitness has always been a big part of Truong Le's life. Now, he has found a passion in making it a big part of other people's lives as well. Truong (BSEE '89, MSIE '94), a Software Development Integration Laboratories Operation Manager at NASA, has built a niche second career as a personal trainer who pays house calls at practically any hour.

Through his Ultra Fitness Integrated Training (UFIT) personal training business, Truong currently works primarily with physicians — a group that generally places a high value on health, time and flexible scheduling. With approximately 10 weekly clients, he often conducts workout sessions as early as 6 a.m. and as late as 9 p.m.

He specializes in high-intensity sessions that include a mix of isometric exercises such as pushups and sit-ups, free weights, martial arts, yoga and other activities all aimed at building physical and mental strength. "My motto is 'Develop muscle strength and endurance plus cardio for mental toughness.' When you train hard, your mind becomes stronger."

Putting his engineering background to use, he builds a spreadsheet for each new client that shows how their physical condition should improve at three-month intervals. To help them meet these goals, he texts his clients throughout the day, encouraging them to stay on plan. Often these texts come at times when he knows they'll be tempted to cheat.

"I really personalize the job. I know what they like to eat and when they like to eat it. I tell the people I work with that they can't find someone else like me. They have a guy who works for NASA, who has to get up the next day and go to work. So they know helping people get in shape is really a passion of mine." ©



photo by TBS Photography



CHARLES KIRKPATRICK
1916 – 2011

Cullen College's Second Dean Passes

By Toby Weber

Charles V. Kirkpatrick, who as dean from 1965-1975 led the UH Cullen College of Engineering through a period of tremendous growth, passed away in December at the age of 95.

Born in Jacksonville, Fla., but raised in Texas, Kirkpatrick earned his bachelor's degree in petroleum engineering from Texas A&M University in 1940. He then worked as a professional engineer for a short time before joining the U.S. Army during World War II. He served in the European theater, attaining the rank of major and earning a Bronze Star and the Belgian Croix DeGuerre.

After the war, Kirkpatrick returned to Texas. He joined the college faculty in 1948 and earned his master's degree in 1952. Along the way, he became a recognized authority in the field of gas lift, publishing a book and several articles as well as lecturing internationally on the subject.

During his time at the University of Houston, Kirkpatrick also actively supported engineering students and the profession. He served as advisor to both the UH student chapters of the American Institute of Mining and Metallurgical Engineers and the Society of Petroleum Engineers. He was also a member of SPE's national board of directors.

In the early 1960s Kirkpatrick was named interim dean of the Cullen College and was appointed to the post on a permanent basis in 1965, becoming the college's second dean. During this period the University of Houston became a state institution, resulting in a huge

increase in the college's enrollment and the corresponding growth in faculty count. Kirkpatrick successfully led the college through this time of transition.

Kirkpatrick also oversaw significant improvement to the college's graduate program. Under his watch, the college began offering Ph.D.s in five academic areas and hired several prominent faculty members to support these programs.

These efforts earned Kirkpatrick a number of honors, highlighted by an Honorary Doctorate awarded in 1970 by the College of Chinese Culture in Taiwan.

In 1975, after a decade as the college's permanent dean, Kirkpatrick stepped down from that post. He retired from the college three years later.

Emeritus Professor of Mechanical Engineering Charles Dalton worked with Kirkpatrick for many years, and recalled him to be a good leader with high standards. As dean, Dalton noted, Kirkpatrick was particularly concerned with the needs of the faculty.

"He visited each faculty member several times a year to see how we were doing, what we needed, what we wanted," said Dalton. "That was a big commitment, but he took the time."

Kirkpatrick's family requests that any gifts in his memory be made to the William C. Miller Endowed Chair of Engineering, established by Kirkpatrick's student in honor of the former dean; or the Charles V. Kirkpatrick Scholarship Fund at www.egr.uh.edu/giving.

Mark Your Calendar

FEB 21 **Engineering Alumni Association EWeek Reception & Program**

6-8 p.m., Hilton University of Houston
www.egr.uh.edu/ea/activities/eweek

MAR 8 **IEEE Chili Cookoff**

4 p.m., Outside Engineering Building 2
www.ieee.uh.edu

APR 9 **UH Engineering Golf Tournament**

12:30 p.m., Sienna Plantation Golf Club
www.egr.uh.edu/alumni/events/?e=golf

APR 29 **ASME/UH Cajun Crawfish Boil**

12 p.m., Lynn Eusan Park, UH

MAY 5 **UH Chemical Engineering 60th Anniversary Gala**

Time and Location TBD
www.chee.uh.edu/alumni

JUN 1 **Alumni Awards Gala**

7 p.m., Four Seasons Hotel Downtown
www.egr.uh.edu/ea/activities/?=gala

Cougars Getting Linked

Join the Cullen College's fast-growing LinkedIn group and connect professionally with other Cougar Engineers! More than 900 UH engineering alumni, faculty, staff and students have joined this network. Check it out at linkedin.com, search groups for "UH Cullen College of Engineering."

Scan this code



The Blackboard

A Mathematical Brain Teaser from the Cullen College

Solve a puzzle, win a prize! In each issue of *The Cougar Engineer*, the magazine staff will present a new alumni challenge.

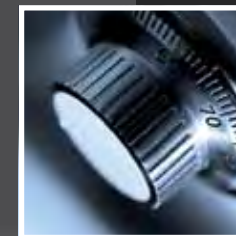
This Issue's Challenge:

WHICH DOORS LEAD TO THE IPAD?

Imagine you're in a hallway with 100 closed doors. Your task begins by opening every door. You then go back to the beginning of the hall and close every second door. On your third trip you open or close every third door (depending on its state), on your fourth trip every fourth door, etc. After your 100th trip down the hall, where you open or close only door number 100, how many and which doors will be open?

Email your answer to cougarengineer@egr.uh.edu by April 1. If your solution is correct, you'll be entered into a drawing to win an iPad, courtesy of the Engineering Alumni Association. The contest is open only to graduates of the Cullen College of Engineering. Good Luck!

LAST ISSUE'S WINNER: **Mark Smith (BSCE '99)**



In the **Crack the Code, Win An iPad** puzzle, readers were given a series of clues to the combination of a safe. More than 100 people submitted the correct combination, **71-19-17-68**. The iPad winner, selected by a random drawing, was Mark Smith (BSCE '99). **Congratulations, Mark!**

Past issues of *The Cougar Engineer* can be found online at egr.uh.edu/cougarengineer



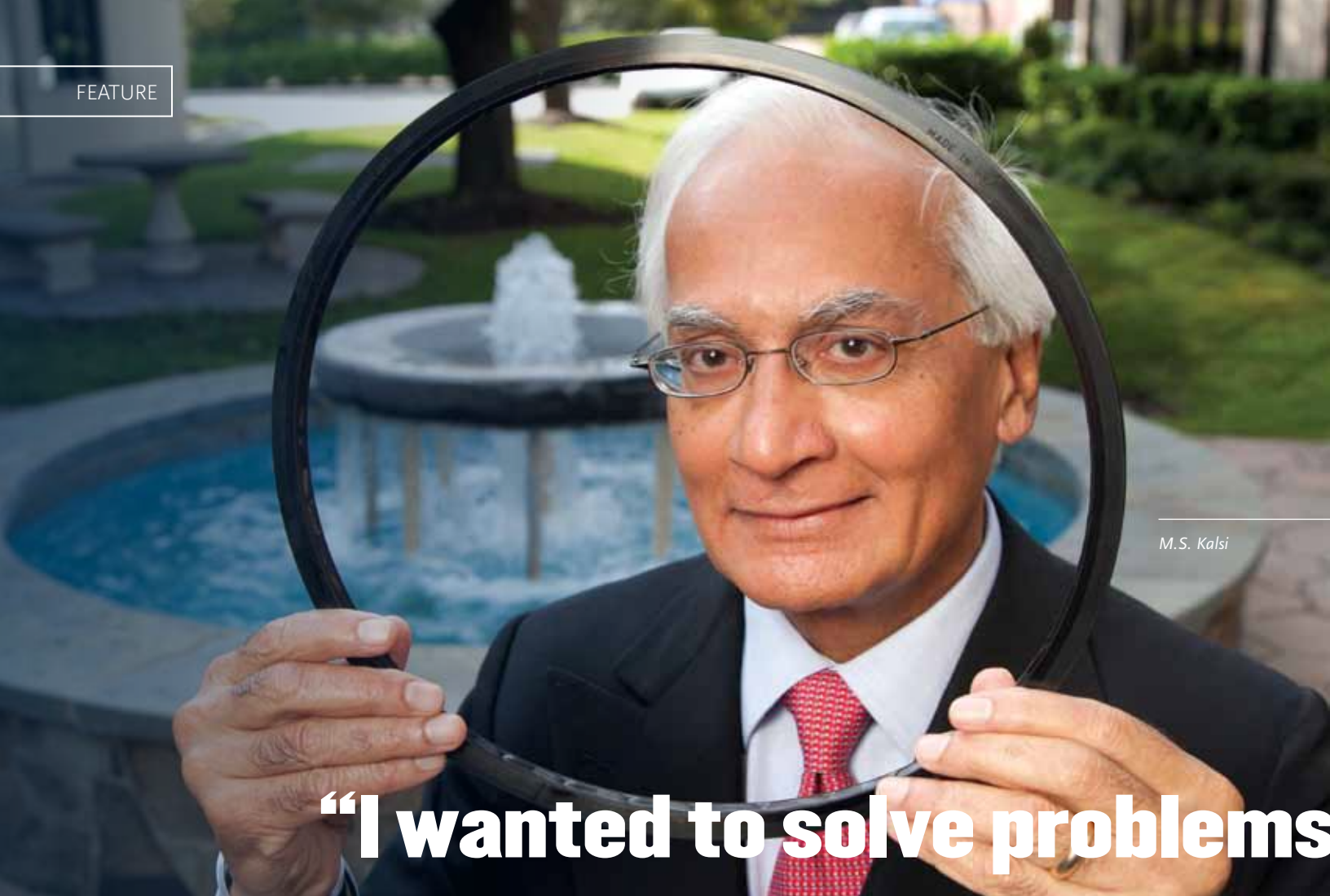
COUGAR ENTREPRENEURS

During its 70-year history, the UH Cullen College of Engineering has produced hundreds, maybe thousands of entrepreneurs. That should come as no surprise. Engineers specialize in devising practical solutions to real-world problems. It's natural that many choose to reap the greatest rewards by starting their own businesses.

In recent years, three of the college's most successful alumni entrepreneurs have been M.S. Kalsi, Stefan Murry, and Tony Catalano. The three work in radically different fields: Kalsi specializes in providing engineering services and proprietary/patented hardware and software products related to valves and rotating shaft seals, primarily for energy applications; Murry on lasers for optical communications networks; and Catalano on midstream natural gas operations.

Despite their different areas, all three have succeeded by performing a classically entrepreneurial role: finding and expertly filling a niche that others have failed to address.

By Toby Weber
Photos by TBS Photography



M.S. Kalsi

“I wanted to solve problems in a manner where I took ownership of providing a reliable solution.”

The path to becoming an entrepreneur can be either crooked or straight. For M.S. Kalsi (MSME '70, PhD ME '75), it was the latter. He planned on starting his own business while still pursuing his graduate studies in mechanical engineering and working full time, pursuing that goal by taking a course in financial accounting and independently studying other business-related topics.

During this period, he worked in research and development at WKM Valves, a major valve manufacturer that is now part of Cameron. Rising to the top of that company's valve R&D department, he displayed the quite-entrepreneurial drive to solve problems in an innovative manner. In addition to applying state-of-the-art analytical models to design valves, he built a test laboratory

where analytical predictions could be validated and valve performance could be verified under real-world conditions. “I wanted to solve problems in a manner where I took complete ownership of providing a reliable solution. I knew that if I could do that within a company I should be able to successfully do that with my own business,” he said.

In 1978, Kalsi decided to strike out on his own and formed Kalsi Engineering. The firm fills an unusual role in the energy industry. Leveraging a deep technical understanding, the company specializes in the design, analysis, testing, failure/root cause investigation and reliability improvement of valves, actuators, and rotary shaft seals. It uses domestic manufacturers for the manufacturing of Kalsi-patented/designed

products, and provides consulting services to companies seeking to improve performance and reliability of their mechanical products and equipment.

Compared to Kalsi, both Stefan Murry (BS Phys '94, MS Phys '98, PhD EE '99) and Tony Catalano (MS ChE '79) are accidental entrepreneurs. The decisions to hang out their own shingles arose more out of circumstance than long-term planning.

After graduating with his masters in chemical engineering from the Cullen College in 1979, Catalano spent 18 years working for Chevron and Natural Gas Clearinghouse in various capacities. At 29, he was made head of two natural gas processing plants in

in 2004; and their current venture, Tristream Energy, founded along with partner Mike Urban in 2005.

Both Sago and Tristream focus on acquiring midstream natural gas operations, targeting ones that seem ripe for operational improvement.

“One of the things we're looking for are assets that perhaps are not given the attention they deserve,” said Catalano. “When we buy something from a larger company that is not focused on this side of the business — for example exploration and production companies are not focused on the midstream side — we're hopeful that there are going to be a lot of opportunities to make things better. That certainly has proven to be the case.”

North Texas, overseeing everything from profit and loss to human resources to environmental compliance. At 35, he helped reorganize an entire Chevron division and managed the relocation of 500 employees. And at 42, his group was dissolved, leaving him out of work for the first time in his career.

After taking a few weeks to clear his head, Catalano decided to try his hand at consulting. Having enjoyed the creativity and freedom he had as the leader of those two natural gas plants, starting his own business appealed to him.

Though that effort didn't pan out, during this period he met his future business partner, Ken Purgason. With Purgason, he has started two companies: Sago Energy, founded in 1998 and sold

Kalsi Engineering invested substantially to conduct real-world tests of the valves and seals they develop.



While Catalano opened his own business after years as a professional, Murry's decision to become an entrepreneur came during his time as a Ph.D. student in the Cullen College's Department of Electrical and Computer Engineering.

Studying under Thompson Lin, then a professor in the ECE department, Murry worked to develop laser diodes using molecular beam epitaxy (MBE).

In MBE, highly pure solid-state elements are heated, with the resulting gasses slowly forming crystals by depositing themselves on a substrate. The advantage of this process, said Murry, is that it produces laser diodes that are far more robust than those formed with other methods. Lasers with MBE-based diodes can operate in high and low temperature environments and in the outdoors.

During this period, the military was particularly interested in such robust diodes and set aside R&D funds to speed their development. Some of this money was earmarked for businesses, so Lin and Murry formed Applied Optoelectronics, Inc. (AOI) in 1997 in order to access these funds and perform more advanced research.

After finding some success as a research-based firm, in 1999 the company came to a crossroads, said Murry.

"At some point we had to make a decision whether we wanted to be a small R&D-centric company or to try to make it into something larger," said Murry. "Thompson really took the reins and decided to grow this into a commercial company. That meant finding some commercial market that we could apply our technology to. We decided making lasers for optical telecommunications networks made sense."

Success, Delayed

While all three took different paths to entrepreneurship, they have one thing in common: Success did not come quickly or easily.

In the case of Murry, timing played a huge role in the path his company would take. While in 1999 the decision to enter the telecommunications market seemed like a no-brainer, shortly thereafter the Internet/telecom bubble popped, forcing AOI to change focus on the fly.

"Our core business in tunable lasers for telecommunications networks dried up overnight, so we had to take a look at our fundamental core competencies," said Murry. "The idea of robust lasers that worked at high temperatures was very important. In the cable TV area, they were just starting to deploy lasers outside on poles, where it gets hot, gets cold. So we retooled our product line for cable TV and very quickly became one of that market's leading suppliers for outdoor lasers."

"My background helps me see and communicate the potential of our products in a deep way."

AOI has since expanded its product line to include lasers for data centers, optical fiber-to-the-home buildouts and other applications. In 2006 and 2007, it acquired two companies in Asia. The firm now employs roughly 700 people and has 350 clients on six continents, including many of the world's largest communications equipment manufacturers.

Just as AOI's focus changed with the market, so did Murry's role in the company.

Murry, it should be noted, earned both his B.S. and M.S. in physics. He pursued his Ph.D. in electrical engineering because he was drawn to the practical applications of research. At AOI, this interest took him out of the lab and into the field to help customers and potential customers integrate AOI lasers into their own products. Today, instead of researching, he serves as the firm's vice president of sales and marketing.

"It's fairly unusual to have a highly technical person involved in the sales effort," he acknowledged. "But I think it's an advantage as a salesperson to have that engineering knowledge. It's a lot easier to get customers excited about a product if you have a clear understanding of what they can do with it. My background helps me see and communicate the potential of our products in a deep way," he said.

A deep technical understanding lies at the heart of Kalsi Engineering's biggest successes, as well. In the mid-1980s, the company was already on solid ground. It had roughly 10 employees and had found a market for its work as a designer/consultant for valves and seals.

Then it hit a home run: a durable, high-differential pressure rotary shaft seal for down-hole drilling motors.

Stefan Murry





Tony Catalano

“Being an entrepreneur is not rocket science. It’s common sense and empowering people.”

The development of such a reliable, long-lived seal had been a major drilling industry priority just a few years before, in fact. The Department of Energy (DOE) recognized that such a seal would substantially reduce drilling cost while also allowing for the introduction of electronics and sensors in downhole rotary tools. It therefore instituted a five-year, \$5 million research project at Sandia Laboratories to achieve that goal. The project, though, was discontinued in 1982. While the DOE had set 200 hours of mission life under a high-differential pressure abrasive environment as the benchmark for success, the best seal developed under this initiative had an average lifespan of only around 40 hours.

Kalsi, who had researched rotary shaft seals as a graduate student, reviewed the DOE/Sandia reports from those unsuccessful attempts and devised his own solution. Instead of relying on brute force to maintain an effective seal, his design was more elegant, utilizing hydroplaning action through a unique wave design molded into the inner, dynamic interface of the seal.

and difficult to integrate into existing downhole drilling motor product lines.

A few years later, Kalsi overcame these limitations by inventing a unique, single piece elastomeric seal design. Today, Kalsi subcontractors employ many people manufacturing versions of that seal, which now accounts for roughly 60 percent of Kalsi Engineering’s revenue.

While Kalsi’s success is based on research and invention, Catalano’s career as an entrepreneur is driven by his operational expertise, plus a lot of patience.

After forming Sago Energy in 1998, Catalano and his partner spent about two years looking for assets where they felt operations could be improved. Backed by a private equity firm, they purchased some relatively small natural gas assets in Louisiana for approximately \$7 million.

It wasn’t until 2002, a full four years after Sago formed, that they found the type of deal they had

“After designing and building a test fixture that simulated the same downhole conditions as the Sandia Laboratories tests, our first seal held up for 110 hours,” Kalsi said. “Then we made refinements based on feedback from the first test. The second seal exceeded the DOE mission life of 200 hours and examination of the seal after 250 hours of testing showed it to be in excellent condition. We established consistency by repeating the tests several times and then declared victory. That resulted in the first rotary seal patent we got.”

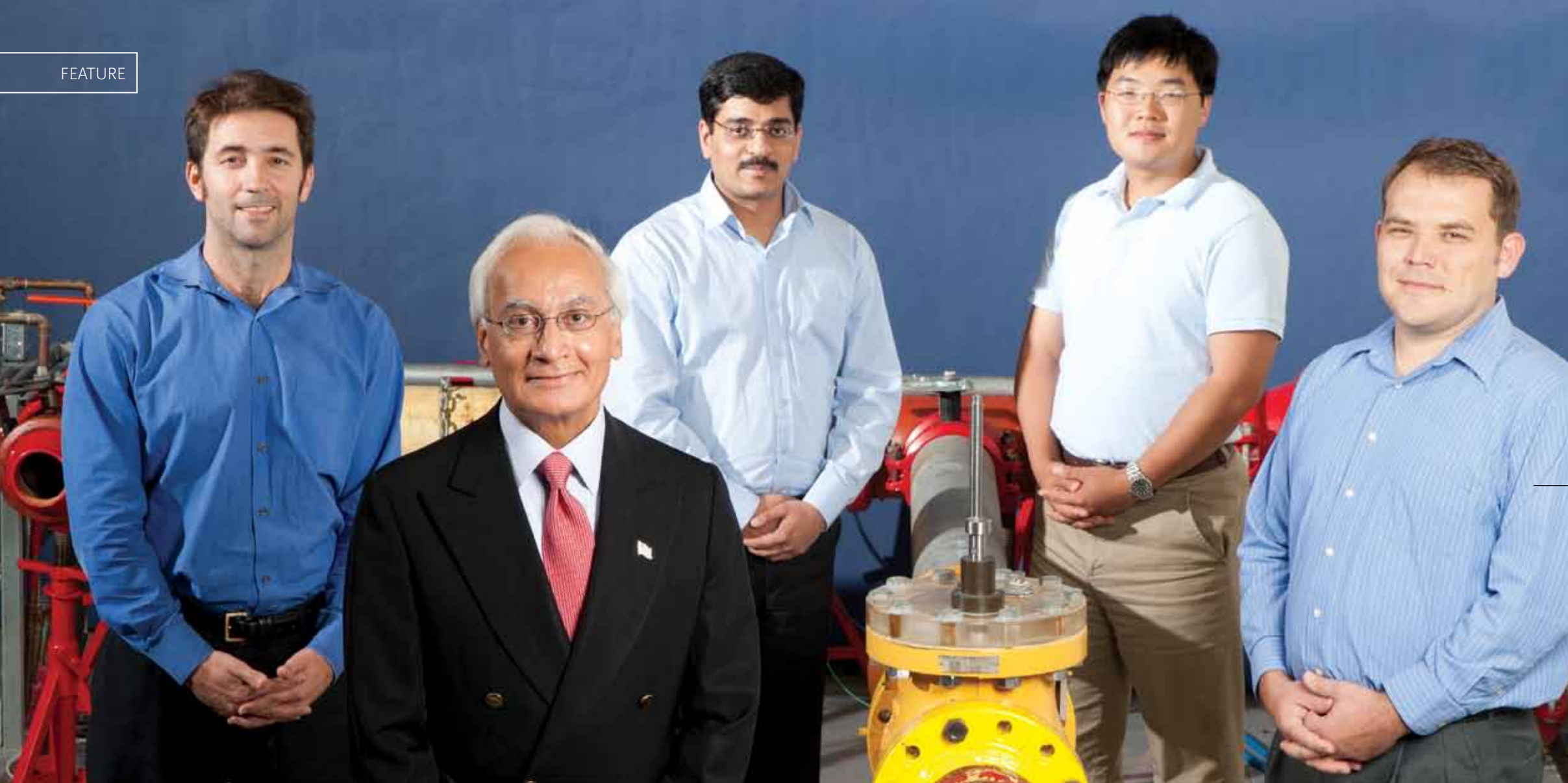
Despite its technical success, it took some time for this seal to catch on. Large drilling equipment manufacturers, having tried and failed to create such a product a few years before, were hesitant to experiment with the technology again. What’s more, the seal included some metal parts that required complex machining, making it somewhat expensive

wanted all along: A natural gas processing plant and 2,200 miles of pipeline in Coke County, Texas.

While the owner of those assets was looking to sell, the deal was complicated by a necessary environmental cleanup and took nearly a year to complete. Once again backed by private equity partners and now supported with a bank loan, Sago officially purchased the plant in 2003 for \$34.5 million.

At that point, Catalano and his partner implemented a two-year plan to lower the plant’s operating expenses and improve revenues. They hit their targets in just three months.

Achieving the plant’s revenue goal so quickly took a sophisticated understanding of the midstream natural gas market, Catalano said. In one case, for instance, Sago took advantage of the full capabilities



Kalsi's team of Cullen College graduates (left to right): Aaron Richie (BSME '02, MSME '07), M.S. Kalsi, Mital Mistry (MSME '10), James Kong (BSME '08), and Zach Leutwyler (BSME '02, MSME '04).

of the plant's equipment and produced natural gas-based products that were in high demand and therefore generated more revenue.

On the expense side, a few common-sense changes made all the difference. Under the previous ownership, managers at the plant never knew what they paid their vendors. Invoices were simply sent to one of the parent company's accounts payable offices. Sago changed that, having managers view and approve the invoices for all the services they ordered.

"People told me, 'Tony, we had no idea what we were getting charged. We're going to find somebody else,'" said Catalano. "It's amazing what people can accomplish if they have the information to do their jobs. Being an entrepreneur is not rocket science. It's common sense and it's empowering people. If you've got good people, they want to know what's going on."

Achieving such immediate success, one of Sago's private equity partners suggested that the company's assets were worth significantly more than just a few months prior. Though a bit skeptical Catalano and his partner agreed to explore a sale.

That was the right decision. One year after Sago acquired the plant, the company sold for \$95 million, tripling investor money and earning both founders a sizable bonus.

After enjoying a well-earned break, Catalano and his partners formed Tristream Energy in 2005. Operating with the same strategy of purchasing assets ready for operational improvements, it has so far acquired a natural gas plant in east Texas, and is currently exploring other purchases.

Giving back to UH

Even with the busy schedules they keep as businessmen, employers and leaders, Catalano, Murry and Kalsi have all found time and ways to support the Cullen College.

Murry, for example, is a past member of the Engineering Leadership Board (ELB), which assists the Cullen College's senior leadership through advice and council, and has served on the UH Engineering Alumni Association (EAA) board.

Kalsi, meanwhile, is a current member of the ELB and funds a number of scholarships for Cullen College undergraduate and graduate students. Many of these students, in fact have gone on to take jobs at Kalsi Engineering — a natural progression, given the company's market niche as a leader in research and technology.

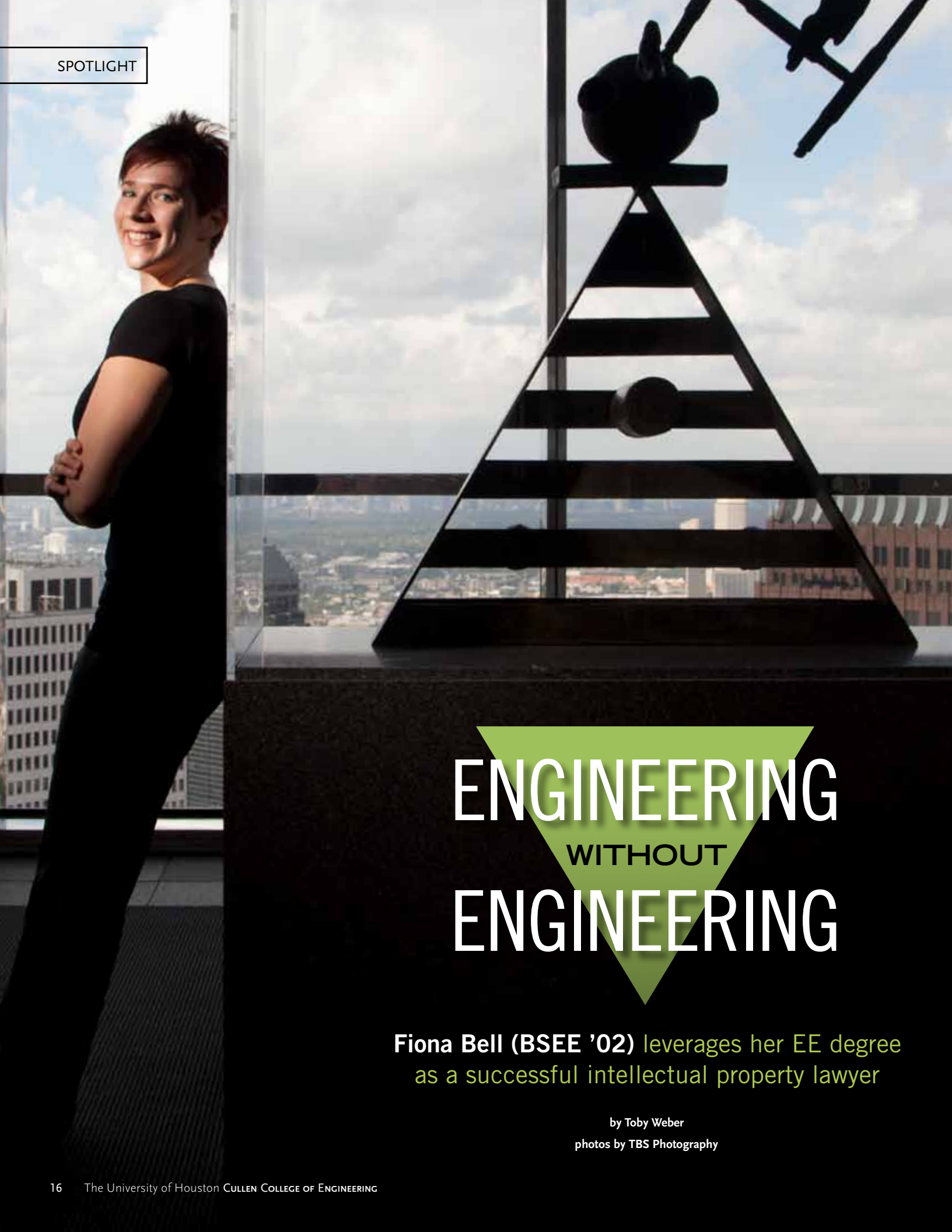
Since these employees are valued for their intellectual contributions to the company, Kalsi makes a point of giving them

as much responsibility as they can handle. "Everyone here essentially is allowed to almost be an entrepreneur. They're allowed to take on as much as they can. At a small company you don't draw so many boundaries. If a person can do more, he's given more responsibilities."

Catalano, also an ELB member and former EAA board member, similarly has a history of fostering the entrepreneurial spirit in Cullen College students. He has given talks on several occasions about the nature of entrepreneurship and the ins-and-outs of starting and running a business.

On top of the personal satisfaction he gets from working with students, Catalano sees encouraging entrepreneurship among engineers as a service to the college and to fellow engineers. Having reaped great personal satisfaction and financial rewards from starting his own business, he wants other engineers to experience the same.

"I think that engineers have a great basis for being entrepreneurs but either they don't think of it or they don't think about it in a way that a business school graduate does," he said. "In business school, people who have the idea of starting companies find technical people who can work for them and help develop a product. But engineers have both the technical ability and the ideas. If they had the inclination and some assistance on how to make it their company, I think more engineers could end up being very successful." ©



ENGINEERING WITHOUT ENGINEERING

**Fiona Bell (BSEE '02) leverages her EE degree
as a successful intellectual property lawyer**

by Toby Weber

photos by TBS Photography

The engineering toolkit. It's a phrase Fiona Bell heard more than a few times during her years as an undergraduate with the UH Cullen College of Engineering. Even if she didn't take up engineering as a profession, the skills and knowledge she was developing would allow her to pursue any number of different careers, she was told.

"‘Why don't you get an engineering degree? You should get an engineering degree because with that, you can do anything.’ At the time I thought it was cheesy. But it turned out to be true in my case."

Indeed. Bell has leveraged her bachelor's degree in electrical engineering into a budding career as an intellectual property lawyer focusing primarily on electrical and computer engineering-related patent cases.

**"YOU SHOULD GET AN ENGINEERING DEGREE
BECAUSE *WITH THAT*, YOU CAN DO *ANYTHING*."**
At the time I thought it was cheesy, but it turned out to be true in my case.

Law wasn't always in Bell's plans. At the time of her graduation from the Cullen College in December 2002, the engineering job market in Houston was soft. Instead of accepting a post she really wasn't interested in, she worked as a dancer and choreographer with a handful of Houston-based dance companies while trying to figure out her next move.

During some casual chitchat with a father of a junior dancer, Bell mentioned her electrical engineering degree. The father happened to be an environmental lawyer with an undergraduate degree in environmental science. "He asked me if I had thought about doing IP law," she said. "I didn't even know what that was, but he explained that I could use my engineering background within a legal context to look at patents."

After a few weeks of mulling it over, Bell decided to take the LSAT and apply to law school. She ended up enrolling in The University of Texas School of Law, graduating with a JD in 2007. She took an associate post directly out of law school at Heim, Payne & Chorush, a Houston-based IP litigation firm that specializes in representing small technology companies in patent cases against larger businesses.

Bell now finds herself in the right place at the right time. The explosion in mobile computing tied to smart phones and tablet

computers — and all the attendant patent filings and infringement claims — has made IP lawyers with electrical engineering backgrounds particularly valuable.

Most obviously, her engineering education allows her to more easily understand the technology in front of her, educate herself further when necessary and determine the likelihood of cases being successful.

It also puts her in a position to essentially serve as a translator for the different parties working on a patent case. She can discuss the interplay of patent law and technology with patent holders and expert witnesses and explain the technological aspects of a case to fellow lawyers who lack an engineering background.

On a more basic level, Bell said, having an EE degree allows her to communicate more easily and freely with clients. Not only does this make her better at her job, it is something she genuinely enjoys.

In fact this level of communication played a big role in her ultimate decision during law school to focus on IP law. While spending one summer as an intern with an IP firm in San Francisco, she met with the founders of multiple technology startups. They reminded her of her time at the Cullen College.

"They were people I already kind of knew, people I was familiar with, was comfortable with," she said, noting that this comfort level goes both ways. "If you have a background in engineering or computing, [clients] feel like they can talk to you on an engineering level. It brings down a lot of barriers. If you can say you've written computer code, you're not just an attorney to them anymore." ©

Making it BIG being

S M A L L

BY
TOBY WEBERPHOTOS BY
THOMAS CAMPBELL

Wine is big business, and Micky Fleischer (MSChE '75, PhD ChE '78) is making it in that business by being small.

Fleischer, an adjunct professor with the Cullen College's Department of Chemical and Biomolecular Engineering, is also a co-owner and CEO of Fleischer International Trading, a wine import and distribution firm based just a few miles from the University of Houston campus.

Founded in 2000, the company came to be more out of circumstance than anything else. At the time, Fleischer's brother, Roby, owned a beeper business that was rapidly being made obsolete by the rise of mobile phones. A friend, meanwhile, was retiring from a job with U.S. Customs and had the idea of starting a wine import business. Seeing the need and opportunity, the three started talking. While their friend ultimately did not join the company, the two brothers came together to form Fleischer International Trading. A third partner, Joe Blog, joined them six years ago.

The company started out importing just five wines from a single winery in Chile, Fleischer's native country, and selling them to restaurants and retail outlets in the Houston region. While their

initial plans were to stick with just those wines, customer demand soon forced a change of strategy.

"We were naïve. We thought we'd just keep those five, but customers like to rotate. So we decided to bring more in. Then they asked us for wines from California, or Argentina, and to sell in other Texas cities. The thing just mushroomed from there," Fleischer said.

Today, Fleischer International Trading imports wines from five countries in South America, Europe and the Middle East, as well as four states. Each month it ships out about 1,000 cases of wine, each holding 12 bottles.

While 12,000 bottles of wine per month may sound like a lot, it actually makes Fleischer International one of the smaller players in the wine distribution business. The largest companies operate nationally, and can easily ship more wine than that in a single day.

So how does Fleischer compete with the giants?

"We get an edge because we have good wines at a good value and we provide good service," he said. "We have a warehouse in the heart of Houston. If a restaurant is hosting a party on Saturday night and is in desperate need of wine, they can call us. We'll open the warehouse, let them choose the wine, fill out an invoice and deliver immediately."

Still, competing in this market can be tough. Making payroll for the company's 14 employees is a serious responsibility, Fleischer said, while much of the business' income must be reinvested in order to maintain and expand inventory.

In spite of these challenges, the job's upside makes it more than worth the effort. "You get to travel to wineries around the world, meet a lot of people and a lot of restaurant owners," said Fleischer. "This is a tough business, so it's a lot of work. But it's also a lot of fun." ©

1990s

Frederick Johnson (BSChE '94) is now a supply chain leader for Dow Formulated Systems, North America.

Matthew Rejmaniak (MSIE '96) is now a quality assurance administrator in the Information Technology Department at El Paso Corporation.

Luis Mendez (BSChE '97) is now working as a project engineer at the Shell Deer Park Refinery.

2000s

Brian Webster, CRE (MIE '00) was promoted to reliability manager of the Shell Puget Sound Refinery in Anacortes, Wash.

Brian Daly (BSChE '02) and wife, Virginia Hui Daly (BA Psych '07, MA Counseling '09) are proud to announce the birth of their daughter, Marilyn, on June 21, 2011.

Mrinal Shah (PhD ChE '05) is now the senior engineer of process development at LifeCell Corporation in Branchburg, N.J.

Hakeem Ogunbunmi (BSME '10) is now a design engineer in Halliburton's WellDynamics division.

Passages

Parke Taylor Reid (MSCE '79) age 67, of Houston, passed away in Seattle, Wash. on July 21, 2011. Parke attended Wichita State University on a golf scholarship and graduated in 1969 with a Bachelor of Science in Mechanical Engineering. He received a Master of Science in Civil Engineering from the University of Houston in 1979. His career as a civil engineer spanned a period of 30 years. He retired in 2002 as a senior engineer from the City of Houston Public Works and Engineering Department to pursue his passion of golf and fishing. Prior to working for the city, he worked with his father at Robert Reid Consulting Engineer, Inc. and Bendix Corporation. He became a member of the Society of Civil Engineers in 1981.

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R. Gerald “Jerry” Bailey has had the type of career MBA students dream about. Singled out early in his professional life as a rising star by the chairman of a major corporation. Recruited away by one of the largest companies in the world, where he rose to a high-level executive post. Early retirement followed by a second career as a consultant and entrepreneur. He’s one of the most successful businessmen the Cullen College of Engineering has ever produced, no question.

Just one thing, though: Bailey is not a businessman.

“I’m an engineer,” said Bailey (BSChE ’63). “When I give a speech the first thing I say is that I’m a Texas oil man and an engineer from the University of Houston.”



written by Toby Weber • photography by Andy Rich



Choosing Oil

Bailey looks and sounds the part. Lean bordering on wiry, he speaks with a twang fitting for a native of Aldine, Texas. Boots and a cowboy hat are staples of his wardrobe.

Growing up in oil country, a family connection to the petroleum industry played a central role in Bailey’s decision to become an oil man. His most financially successful family member was an uncle who worked as an engineer with Humble Oil in the 1950s and 1960s. Hoping to match that success, Bailey enrolled in the Cullen College as a chemical engineering major in the late 1950s.

His reasoning paid off. When he graduated in the spring of 1963, demand for engineers was so high that Bailey couldn’t schedule interviews with all the companies that wanted to meet with him. He ultimately accepted a position with Texaco, working in the research division of the company’s Port Arthur refinery.

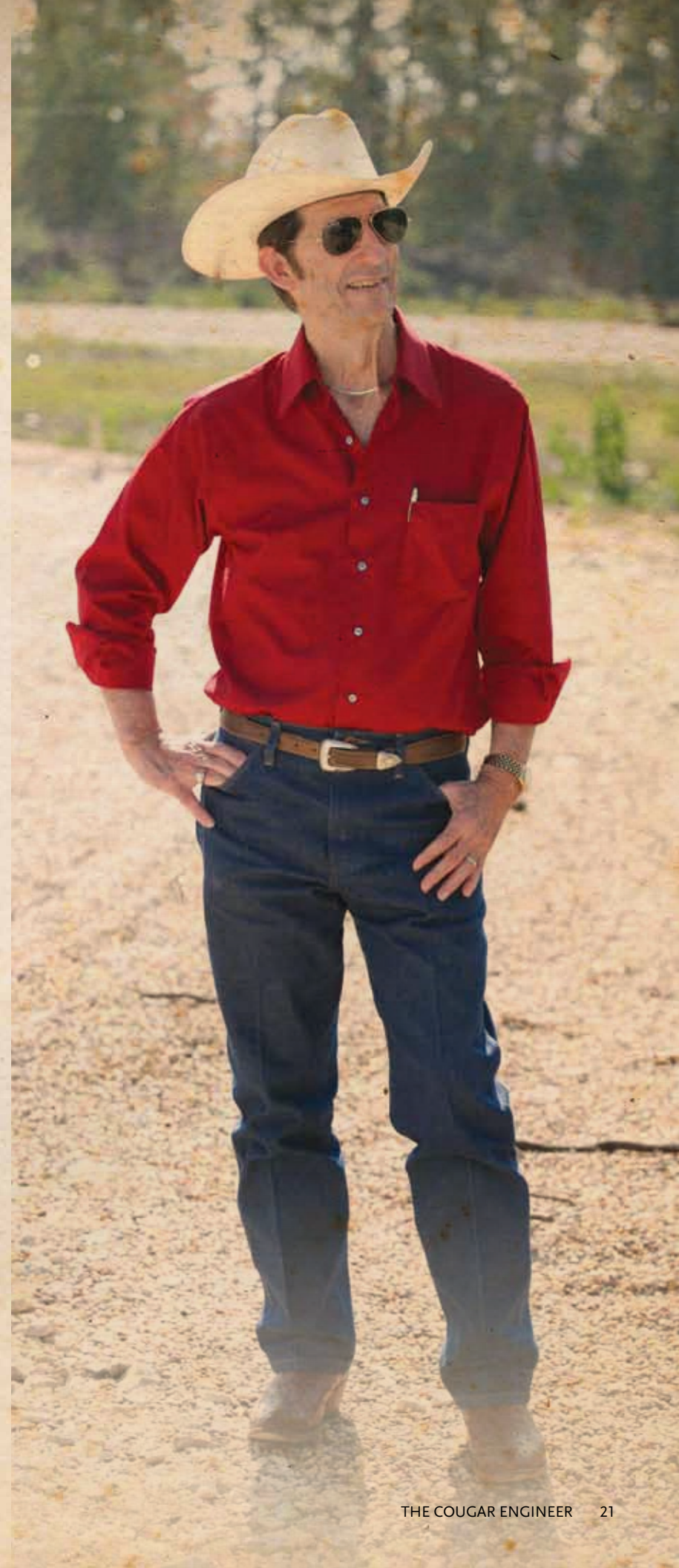
Bailey wasn’t there for long, though. In 1966, he took his first step up the corporate ladder. “They transferred me to New York and put me on the staff of the chairman of the board,” he said, “so I knew somebody was watching me.” After four years in New York, Bailey got another bump up, moving back to Port Arthur to oversee the refinery’s chemical operations.

With how his career was progressing, at that point Bailey thought he might spend his entire professional life with Texaco.

Then in 1978, Exxon called.

Though he wasn’t looking to make a move, Bailey agreed to come in to discuss a job opportunity. There, Exxon made him the proverbial offer he couldn’t refuse, one that included a 300 percent raise. “That was a no-brainer,” he said, “but the kicker was they wanted me to go to Libya. I hardly knew where Libya was!”

With his wife, Sue, and daughters Debra and Barbra, seeing the move as an adventure, Bailey accepted the post, loaded up the family, and kicked off what would become 19 years spent overseas.





I hope in some small way today's students can see from my career that engineers are a valuable resource for the nation and that dedication and effort do pay dividends.

Life Overseas

In truth, Bailey expected at some point to be offered an assignment outside the United States, and he had resolved to accept it. "I was told very early in my career by a senior guy that to get ahead, wherever they ask you to go, just go. So that's what I did. If you don't go, it's embarrassing for the management, because they picked you. Turn them down and chances are they won't pick you again."

This first overseas assignment lasted only a few years, however. In the early 1980s, hostilities between the United States and Libya forced Exxon to sell its holdings in that country, a process that Bailey participated in.

Instead of sending him stateside, Bailey was then transferred to the then second-largest oil refinery in the world, where he was in charge of all operations. This assignment came with a big bonus: The refinery was in Aruba. "Talk about a good deal," said Bailey. "Lago was considered the best Exxon location outside the United States. You could work all day then go play at the casinos or go to the beach in the evening. Aruba's a great place."

But once again, international affairs changed the course of his career. At that time, almost all of the oil sent to the Aruba refinery came from Venezuela. That country, though, built its own refineries and dramatically cut its oil exports.

With no petroleum to process, Exxon decided to sell the refinery and everything in it — from processing equipment to tugboats to desks and chairs. Like in Libya, this task fell to Bailey.

Though it took Exxon a few months to find him a new assignment, eventually Bailey was sent back to the Middle East: First to Qatar to run Exxon's percentage of its partnership with the state-owned oil company, and then to Abu Dhabi where he filled the same role.

Successful in both positions, he reached a high point in 1992, when he was named president of Exxon Arabian Gulf, overseeing all of the company's operations in the region (Saudi Arabia excluded).

Knowing How to Lead

In all these roles, and really for years before, Bailey's job shifted away from being primarily about engineering and into management. Bailey, though, has no formal management training. His ability to lead, he suspects, is part natural ability and part learned skill based on his observations of other leaders — both good and bad.

He has developed and has published his own management theory that encapsulates his thinking. Dubbed HELP (Honesty, Encouragement, Leadership and Professionalism), this philosophy is just what one would expect from an engineer. Leaders should know not just numbers and spreadsheets, but the actual work of their business — in the case of the petroleum industry, everything from digging ditches to fighting fires. Employees should be encouraged to take the initiative and problems should be dealt with calmly and rationally.

"I believe in giving people all the responsibility they can handle and then a little bit more," he said. "And if someone messes up, ok, we'll deal with it. Anybody can avoid messing up if they don't do anything. I want people around me who do things."

A Short Retirement

In 1997, Bailey surprised his colleagues at Exxon when he retired at just 56 years old. After nearly two decades working overseas, it was time to come back to the states and just enjoy life.

He soon found, though, that enjoying life meant more than just passing the time. "I played a lot of golf and went fishing, bought a ranch and started raising cattle, but I got tired of all that. That's the quickest way to go downhill. You'll just rust. So I decided to do some consulting work."

This consulting work, performed under the name of Bailey Petroleum, includes working with independent petroleum producers and equipment makers.

In recent years, these efforts have evolved into more permanent responsibilities. He is now chairman of a private company that has developed a new tool for cleaning dirt and corrosion out of oil wells; chairman of one publicly held independent petroleum producer; and chairman and CEO of another public oil company.

These aren't just titles, Bailey stressed. With each company, he acts as the final decision maker. "I'm a working chairman. I don't need any figurehead jobs. My reputation is too important to me. Besides, if something goes wrong they're going to call me no matter what."

One of his responsibilities in these executive roles is to raise money from investors in order to expand operations. This often entails giving speeches at energy investment conferences where a handful of other companies are presenting.

Typically, these speeches are followed by an audience Q&A. One question that is always asked, he said, is why they should support his company ahead of the others presenting at the conference.

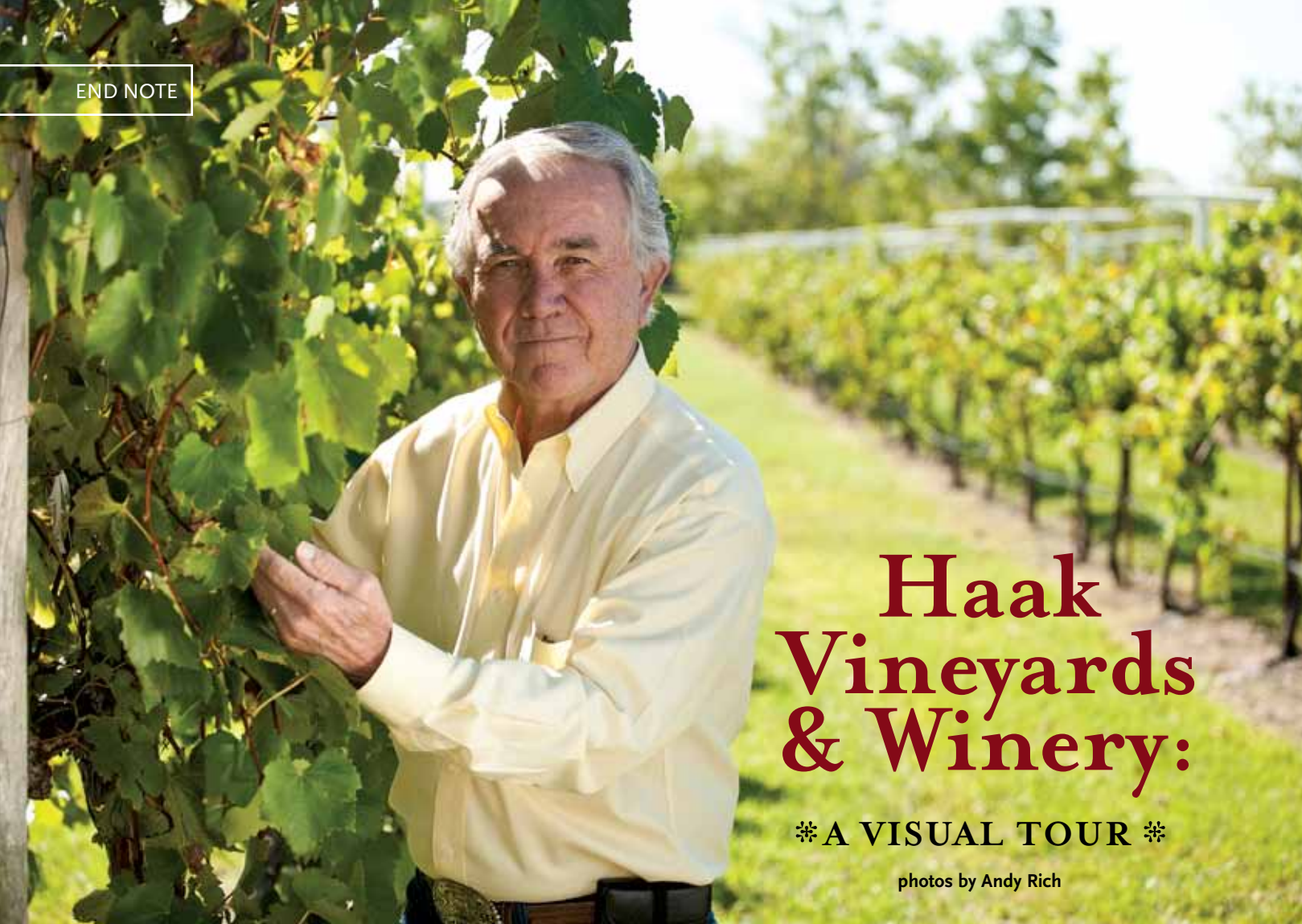
It's a question he's ready to answer. Dressed in his boots and a button-down shirt with no tie, he lays it on the line in a way only a Texas oil man can.

"This sounds egotistical, but I say the difference is in who's in charge. Who would you rather have running your oil business, a banker or a former Exxon president? I know oil, I can find oil and can produce it," he said. "They give me the money and I'll give them the oil and the profits."

Bailey is motivated by more than money, though. At this point in his life and career, he is financially secure. With the demand for energy continuing upward, he views his work as something akin to a public service. And just maybe, he said, young Cougar Engineers will be inspired by his example.

"Our country needs energy and I am glad I can be a part of the solution in my own way," he said. "And I hope in some small way today's students can see from my career that engineers are a valuable resource for the nation, and that dedication and effort do pay dividends." ©



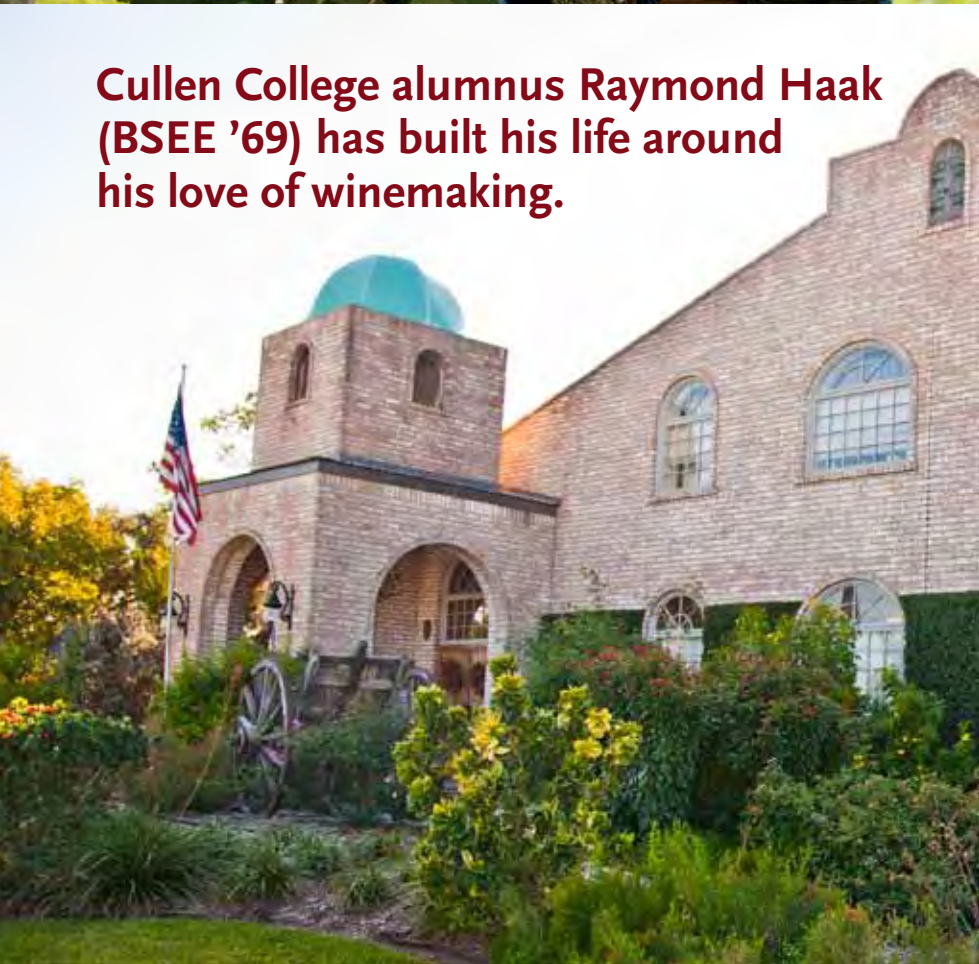


Haak Vineyards & Winery:

✿ A VISUAL TOUR ✿

photos by Andy Rich

Cullen College alumnus Raymond Haak (BSEE '69) has built his life around his love of winemaking.



This love can be traced to the purchase of just two grapevines by his wife, Gladys, in 1969. Seeing the vines produce grapes, Haak decided to try his hand at winemaking, and planted 30 vines on his property. What started out as a hobby soon grew into something much more. "I thought that if 30 vines is fun, 300 would be a whole lot more fun," he said. "This developed into a passion. I don't know how else to put it."

In January 2001, Raymond and Gladys turned this passion into their livelihood by opening Haak Vineyard and Winery. Today, the 12-acre operation, located in Santa Fe, Texas, about 20 miles northwest of Galveston, produces roughly 8,000 cases of wine each year, making it one of the larger wineries in the state. It also hosts community events such as concerts and a grape harvest day, and serves as a venue for weddings, anniversary parties and other special occasions.

► While undeniably romantic, winemaking is also a highly technical process. Winemakers can test grapes to determine several days in advance the ideal time for harvest. Though Haak Vineyards has a drip irrigation system, this year's drought pushed the harvest up by about two weeks and resulted in fewer, smaller grapes. The upside? These smaller grapes have more intense flavors, meaning Haak's Vineyards and Winery's 2011 vintage should be its best yet.



◀ Haak has put his electrical engineering degree to good use in his career as a winemaker. He designed the winery's electrical system and made or modified other devices used in the wine-making process. He is now attempting to market his most recent invention, designed to make filling barrels with wine more efficient. This sensor-based tool automatically shuts off the flow of wine to a barrel when the barrel is full. The patent pending device is a vast improvement over the current practice of looking through the fill hole with a flashlight and shutting off the valve by hand.

▼ Barrels in fact play a key role in the wine-making process. After grapes are crushed, their juice is fermented in vats capable of holding thousands of gallons. The liquid is then aged in oak barrels. Oak is key. It has high concentrations of tannin, a compound that prevents wine oxidation. While some wines are intentionally oxidized, accidental oxidation can impart sour, metallic or chemical odors and flavors.



▲ After anywhere from 10 months to several years of aging, Haak wines are bottled and sold at retail outlets throughout the state and beyond.

These wines have won more than 100 Gold, Silver and Bronze awards at wine competitions around the country, marking them as truly outstanding. ©

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