Message from the Chair

Dear alumni and friends,

Welcome to the third edition of our newsletter. Many exciting and new things are happening in our department. Notably, Francisco Vargas, an expert in flow assurance and phase behavior, joined our faculty in August.

In addition to our new faculty, the number of students enrolled in our department has more than doubled in the past five years. In 2013, approximately seven percent of all graduating seniors at Rice received chemical engineering degrees. This fall, approximately nine percent of Rice University sophomores are planning to major in chemical engineering and indications show that they will continue to grow with the current freshman class.

Our department also has the most PhD's awarded per faculty member, number of undergraduate students taught, and research expenditures per faculty member at the George R. Brown School of Engineering. Our faculty and students continue to receive awards for research and teaching. We also provide leadership at Rice in energy, soft materials, and biosystems engineering.

Although we are proud of our accomplishments, the department strives to improve in all areas. We face challenges related to the significant expansion of our undergraduate enrollment and the aging infrastructure of our research facilities. Our nationally ranked peers continue to increase faculty positions and build new research and educational facilities.

With this in mind, please enjoy this edition of our newsletter and we thank our Alumni Advisory Committee for the coordination and production of this edition.

Walter G. Chapman
Professor and Department Chair

Rice Chemical Engineering Alumni Advisory Committee

Starting in 2009, a group of department alumni, faculty, and students have been serving in an advisory role to Rice Chemical Engineering department. The charter of the Rice Chemical Engineering Alumni Advisory Committee is to advise the Rice Chemical Engineering department on short-term and long-term goals, provide student mentoring, encourage faculty research funding, and advance alumni networking opportunities with the ultimate goal to attract and nurture the best students and faculty to the field of Chemical Engineering at Rice University. Priorities of this group have been helping with the department newsletter, sponsoring department seminars, student career mentoring, and fostering networking opportunities. Since the spring of 2010, the committee has helped to coordinate 3 networking events which have provided an opportunity for local alumni to re-connect with faculty and meet new students. If you have an interest in joining the committee or helping out with any events, please email gmalone@alumni.rice.edu.

To help us notify you of future plans, please make sure your contact information is up to date on the online alumni directory (https://online.alumni.rice.edu).
Professional Excellence Award of 2012

WALTER G. CHAPMAN
Recipient of the 2012 Professional Excellence Award

Dr. Walter G. Chapman was awarded the Chemical and Biomolecular Engineering Department’s inaugural Professional Excellence Award in 2012 recognizing his outstanding performance in undergraduate and graduate teaching. This prestigious award is voted on by current and former CHBE students and as such reflects the views of those who are arguably in the best position to judge teaching excellence. Not surprisingly, he has been recognized before for outstanding teaching having been awarded the 2011 George R Brown School of Engineering award for superior teaching.

Professor Chapman is the William W. Akers Professor of Chemical and Biomolecular Engineering and was appointed Chair of the Chemical and Biomolecular Engineering Department starting the Summer of 2013. His research group focuses on the thermodynamic properties and phase behavior of complex fluids in the bulk, interface, and confined systems. Applications include phase behavior of associating fluids and polymer solutions and blends in separations and polymer processing. There are also important applications for flow assurance in the energy industry related to natural gas hydrates, asphaltenes, scale, and corrosion related to brine systems. In 2010, he became the second Rice professor to ever win the Gas Processors Association Donal L Katz Award to recognize outstanding accomplishments in gas processing research and technology and for excellence in engineering education.

His teaching style is to relate abstract concepts in thermodynamics to experiences and processes with which the students are familiar to make the abstract concepts more concrete. Dr. Chapman explains, “I enjoy challenging students at the start of lectures to apply scientific and engineering concepts to explain observations that they experience in daily life. Some of these thought problems seem counterintuitive at first, but they reinforce ideas presented in chemical engineering classes.”

Dr. Chapman is an alumni of Clemson University where he received his B.S. degree in Chemical Engineering in 1983. He was awarded his Ph.D. in Chemical Engineering from Cornell University in 1988. After spending two years as a Research Engineer with Shell Development Company, he joined the Rice faculty in 1990.

Engineering really runs in the Chapman household. Dr. Chapman’s wife Cindy was a fellow Chemical Engineering graduate at Clemson where they met and started dating. They married in 1987 and have two sons who are both following in the family business. The oldest graduated with a Chemical Engineering degree from Rice in 2012 and the younger son is currently a senior in Mechanical Engineering also at Rice.

We congratulate Professor Chapman for being awarded the 2012 Professional Excellence Award and wish him a long and prosperous career with the Rice Chemical and Biomolecular Engineering Department.

Professional Excellence Award Voting: http://tinyurl.com/chbefaculty
Class of 2003 A Few Updates...

**Chung Yin Stanley Chan**
After Rice, he went to medical school and became a dermatologist. He recently took a 3 month trip around the world to visit 13 different destinations. He would recommend Zambia for the safari and Vietnam for the food.

**Nicole Dooley**
After Rice, she went on to get a JD and Masters of Public Policy from the Harvard Law School. She clerked for the Alaska Supreme Court from 2009-10. Since September 2010, she has been an attorney at the Legal Aid Justice Center in Petersburg, VA representing children in special education and discipline matters. She has two cats - both names “cat” but in different languages. Igmu (Lagota) and Iring (Cebuano).

**Danielle Dunn**
After Rice, she went to work for Merck in the vaccine manufacturing, primarily in the Technology organization. She supports the vaccines for hepatitis B and Gardasil (prevents HPV infections which leads to cervical cancer). She is very active in the Society of Women Engineers, currently servicing as the Philadelphia section’s Vice President of Outreach to encourage girls to study engineering. She writes that to further embrace her geekdom, she went to a taping of The Big Bang Theory in 2011.

**Garrick Malone**
After Rice, Garrick joined BP and has worked for them in Colorado, France and Angola. Currently he is back in Houston working on offshore developments in the Gulf of Mexico. His current role is Interface Lead - Mad Dog Phase 2, Deepwater Developments. He has become a triathlete and completed his first Ironman in 2012.

**Eric Lee**
After Rice, Eric got a Ph.D. in Chemical Engineering at Cornell University. He is currently working as an Engineering Instructor at Clackamas Community College in Portland Oregon. He was been a two time Apple Pie eating champion.

**Robert Gillette**
After Rice, Robert joined Schlumberger as a field engineer in the Oil Well Completion Operations. He is currently an instructor at the Schlumberger Global Training Center in Abu Dhabi, UAE for Oil Well Sandface Completion Tools. He enjoys staying active in sports and has been playing a lot of squash.

**Burt Kobyliver**
After Rice, Burt went to work for Lyondell as a production engineer in the olefins plants in Channelview, TX followed by an internal rotation doing project engineering. He then completed an MBA at Columbia in 2009 and has worked in the investment banking industry covering the chemicals sector. Currently, he works for Evercore doing chemicals M&A. He enjoys spending his free time with his baby, Leila, born in June 2013.
The careers of chemical engineering students at Rice culminate in their senior year, the students are faced with a real world design problem aimed to holistically test what they have learned during their time at Rice. In 2012, senior design teams were required to perform a complete design and economic evaluation of converting shale gas into useful, economically competitive, and environmentally friendly products. The only starting point the students were given was the composition of the gas and the proposed plant location. As an added challenge, the delivered solutions had to be “green” and sustainable, while also tailored to the specific needs of the communities in specified project locations.

Team advisor and Rice professor in the practice of Chemical and Biomolecular Engineering Dr. Ken Cox was inspired to issue the assignment by the recent shale gas boom. “We tried to give the students problems for which there’s no current solution,” said Cox. “Major companies are looking at ways to upgrade shale gas, but no one’s built a plant to do that yet.”

Also, Cox said, “There are a lot of issues associated with the public perception of fracking, and part of the assignment was to help change that perception by offering something that was environmentally friendly, gave benefit to the community, helped clean up the water and was still able to pull a profit at the end of the day.”

A solution proposed by the design team CHBE Pandas rightfully claimed the grand prize at the Engineering Design Showcase and made history – a chemical engineering design project not only won for the first time, but also became the first project in the history of the competition to get perfect scores in every category.

The team designed a process by which shale gas extracted in the rich Sichuan Basin could be turned into methanol, hydrogen and carbon disulfide, all valuable products in the booming Chinese economy.

“We approached the project from both top down and bottom up perspectives,” Apoorv Bhargava, one of the team members, said. The Pandas carefully researched the chemistry of shale gas and many of possible products that can be derived from it, while keeping in mind the location of their plant and the needs of surrounding community.

“We spent a lot of time, probably much more than other teams, doing initial research, which in the end gave us a leg up in developing a tailored solution,” Prachi Bhawalkar, another team member recalled. The extra time definitely paid off, as the team was able to design a process that not only minimized waste and environmental impact, but also
converted a hazardous and dangerous hydrogen sulfide present in shale gas into carbon disulfide, a chemical in high demand on the Chinese market.

While CHBE Pandas claimed the grand prize at the Poster Competition, another senior design group, TEXIJI, won the annual William W. Akers Senior Design Award, as judged by a panel of industry professionals.

TEXIJI’s project was situated in Burgos Basin (Mexico), and the given inlet shale gas composition was characteristic of the assigned location. Although the gas was “sweet”, free of hydrogen sulfide, the team faced the added challenge of lack of water in the region. The students came up with a sustainable way to clean up the fracking fluid and made water as part of their suggested conversion process, thus providing clean water to the community surrounding the plant.

The team decided to produce DME (dimethyl ether) from the shale gas, a clean fuel commonly used for transportation and cooking. To make their design more sustainable, the students optimized the feed that powered the entire plant and also built an air separation facility that provided oxygen necessary for the chemical conversions. The proposed design also minimized the amount of waste and side products. Not only would it provide an economically sound and environmentally friendly solution, but also generate a large amount of clean water and some electricity for the local community.

Besides facing the technical challenges presented by their capstone design projects, senior design teams also had to quickly learn how to work together efficiently and smoothly, a good practice for their future careers in industry. “We were very honest and upfront with our strength and weaknesses, and had a discussion that allowed us to match students’ capabilities to the project’s needs,” Bhargava recalled.

The six “Pandas” split their team into three pairs that tackled separate tasks and later double checked each other. TEXIJI followed a similar work ethics, allowing students to work on the areas they were most interested and checking each other along the way. John Chapman of TEXIJI also emphasized the importance of being honest about your abilities with yourself and your teammates and always “finding something to do in the project.”

Unlike other engineering design projects, CHBE projects are very conceptual in their nature, since they deal with economic scale-up of chemical processes. While other engineers have the ability to design a prototype and test their ideas, the nature of chemical engineering does not provide that option. Bhargava said that this “added the complexity of never being able to see the final product.”

Most students really enjoyed their design projects and found the experience to be extremely rewarding. “You will not believe how much you learn in this one year,” Chapman commented. When asked about the economic viability of his team’s proposed design, he said he would be willing to invest his own money were the design to be implemented. He also pledged that he would do the project all over again, given the opportunity.

At the end of the day, the goal of senior design projects is to inspire students and get them excited about engineering while preparing them for careers in the industry. Judging from the quality of submitted projects and students’ feedback about the course, this goal was accomplished.
We are here to celebrate the life of Riki Kobayashi. I would like to share with you my personal experience with Riki as a family friend, student, and fellow professor.

Riki was born to Misutaro and Moto Kobayashi in 1924. Misutaro was a mechanical engineer in Japan who came to San Francisco in 1904. After the earthquake of 1906, Misutaro moved to the Saibara colony in Webster. In 1913 Moto came to America as a “picture bride”.

Riki told me that our families are related by marriage in Japan. My grandmother’s maiden name was Kobayashi, but then Kobayashi is a common family name in Japan.

Riki’s father raised Satsuma oranges in Webster and planted cucumbers between the orange trees. Once when the orange trees froze, the cucumbers saved his business. My father told me that he once visited Riki’s father to discuss cucumber culture.

When I decided to go to Rice for graduate studies, my father said to look up one of the Kobayashi boys who is on the faculty at Rice. I got an appointment with Riki and he told me to come to Rice for my graduate studies. After that, I did not apply elsewhere. I recall Riki as one of the young faculty members who would throw football with his students.

When I was a student, the Chemical Engineering Department was well known for the “Riki boxes” for measuring thermodynamic and transport properties at cryogenic conditions. These were complex instruments to measure properties of fluids at low temperatures for separation of components of natural gas. The instruments were surrounded by a “box” to hold the refrigeration coolant while making measurements but could be lowered when working on the instrument. The data from this technology is now used to liquefy natural gas (LNG) for transportation of natural gas from places like the Middle East and Australia to markets in Europe and Asia.

Gas Hydrates: Riki’s interest in gas hydrates spanned his entire professional career, from his PhD research until even after he retired. At the time of Riki’s PhD research, gas hydrates were known as the ice-like material that would plug-up natural gas pipelines. I visited him in the 1980s and he was conducting a graduate seminar on how to produce natural gas from methane hydrate deposits below the permafrost. At that time hardly anyone was thinking about producing natural gas from hydrates. Earlier this year, Japan did a successful production test of natural gas from marine deposits of methane hydrates off of their coast in the deep waters of the Nankai Trough. Also, earlier this year, Lee told me that Riki was lecturing about gas hydrates to someone at Bayou Manor. Until recently, Walter Chapman and I continued research in our department on gas hydrates.

NMR: Riki was a pioneer in using NMR, i.e., nuclear magnetic resonance to measure the diffusion coefficient of hydrocarbon fluids. He was doing this with Raph Dawson and Fouad Khoury in the 1960s when I was a student. When I joined the faculty in 1993, Riki encouraged me to do NMR research. He gave me piles of literature, dating back to 1948 to get me up to speed on the NMR science. His dream was to discover the unifying
connection between viscosity, diffusivity, and thermal conductivity with the NMR T1 and T2 relaxation time. He was hoping to use the principle of corresponding states to unify these properties. We were awarded a research grant by the National Science Foundation and Sho-Wei Lo earned her PhD showing that methane in live oil relaxed by the spin-rotation mechanism rather than the dipole-dipole interactions as was commonly assumed at that time. Subsequently, Shell, Schlumberger, and Marathon donated NMR spectrometers to Rice to encourage us to continue the research.

Riki graduated from the Rice Institute in 1944 when he was 19 years old. He graduated with a Ph.D. from The University of Michigan in 1951 and immediately joined the faculty of the Rice Institute. His thesis advisor was the famous Donald Katz. Riki was one of the co-authors with Katz on the Handbook of Natural Gas Engineering, published in 1959. Riki was also a co-author with Rice Professor Tom Leland for the chapter on “Thermodynamics” in the Handbook of Chemical Engineering, the bible for the chemical engineering profession. Riki co-authored with Kuy Song and Dendy Slone the chapter on “Phase Behavior of Water-Hydrocarbon Systems” in the Petroleum Production Handbook. Riki co-authored with Patsy Chappelear and Harry Deans the chapter on “Physico-Chemical Measurements by Gas Chromatography” in Applied Thermodynamics in 1968. In all, he has over 200 published papers.

Riki’s professional contributions were well summarized in 1994 in his nomination to the National Academy of Engineering. “Perhaps more than any other living individual, Professor Kobayashi has provided the engineering data base for the natural gas industry. The Gas Processors Association recognized this outstanding lifetime accomplishment in their first Donald L. Katz Award. His work was characterized in a 1987 AIChE symposium in his honor as "one of the century's most prolific and lasting efforts in thermodynamic and transport properties." He had the vision to pioneer: (1) the measurement of hydrocarbon vapor - water - gas hydrate equilibrium, (2) the use of gas chromatography to measure vapor-liquid and vapor-solid equilibria, phase transitions and molecular diffusivity, (3) the use of laser light scattering to measure properties in the critical region, (4) the use of NMR relaxation measurements to determine the connection between diffusivity and viscosity with NMR relaxation times through the corresponding state principle of thermodynamics. His exceptionally high quality PVT, vapor-liquid equilibria, and viscosity data have become the standard of the industry for the development of correlations and have found immediate use by industry. His low-temperature VLE data have permitted the design and development of the turboexpander plant, the most prevalent process in the gas industry. Recent industrial applications of his data include (1) design of CO2 processing facilities for enhanced oil recovery, (2) design criteria for dehydrating natural gas in North Slope and North Sea production to prevent hydrate formation, and (3) water content criteria for gas transmission in the proposed Alaskan Gas Pipeline.”

Riki's contributions to the engineering profession is recognized by the following citation: For advances in the knowledge and measurements of the thermodynamic and transport properties of natural gas, liquids, and gas hydrates.

Particular recognitions for which Riki was especially proud were the 1st Donald L. Katz Award by the Gas Processors Association, Fellowship from Japan Society for the Promotion of Science, and the Outstanding Engineering Alumni Award by Rice University, all in 1985. Riki was recognized by election into the National Academy of Engineering in 1995.
Riki’s legacy at Rice University is remembered by the Riki Kobayashi Graduate Fellowship in Chemical Engineering. This is a perpetual fellowship from an endowment raised by Riki’s friends, associates, and former students who want to recognize Riki and the impact he had on their lives and careers.

Riki, we honor you and will miss you.
A bachelor's degree in Chemical Engineering was among the first degrees offered when Rice opened its doors in 1912, and it is still a ticket to some of today's best-paying careers in industry, including oil and gas, petrochemicals, pharmaceuticals, and microprocessor manufacturing and, most recently, in the production of biochemicals and biorenewables.

In 2005, in an effort to stay ahead of industry trends and provide students with the skills they needed to succeed, the Department of Chemical Engineering developed a strategic plan to put equal emphasis on Molecular Biology, Chemistry, Mathematics and Physics as fundamental sciences of the discipline. This new plan called for the Department to change its name to Chemical and Biomolecular Engineering. The strategic plan reaffirmed Rice’s commitment to core skills — quantitative, systems-based approaches — that made Chemical Engineering successful.

“Over the past century, our profession has consistently been called on to take molecular-level discoveries from the lab and scale them up for the marketplace,” said department chair Kyriacos Zygourakis, the A.J. Hartsook Professor of Chemical and Biomolecular Engineering.

For example, although penicillin was discovered in 1928, it wasn’t tested in animals until 1939, and even then, researchers couldn’t produce enough of the drug to conduct human trials. After the entry of the United States into World War II, drug-makers worked together to scale up production to treat secondary infections from battlefield wounds. In a research-and-development undertaking rivaling the Manhattan Project, chemical engineers created entirely new systems for fermentation, mixing, cooling, eliminating foam, separating penicillin from the fermentation broth and freeze-drying it into a powder.

Today, revolutionary advances in molecular biology are opening new avenues for the development of materials, biological products and medical therapeutics. At the same time, economic and social forces are driving a transition toward more sustainable energy sources and environmentally friendly production methods.

“With their proven ability to translate molecular-level discoveries into new and cost-effective products, chemical engineers are uniquely qualified to play leading roles in these revolutions”, Zygourakis said. “To meet these new challenges, we must integrate molecular biology into the scientific foundation of our discipline. This expanded knowledge base will enable us to engineer new products by scaling up processes from the molecular to the system level.”

Chemical engineers are increasingly turning to systems-based approaches in their efforts to understand biological processes and develop bio-based products. Many traditional chemical and petrochemical companies, such as CargillDow, DuPont, and Shell, have begun to use “green” production methods to make commodity chemicals.

“We are not becoming bioengineers or biologists,” Zygourakis said. “Our goal is to integrate molecular biology into our core in order to equip a new generation of chemical engineers with the theoretical, computational and experimental skills necessary to design products and processes that are sustainable and friendly to our environment.”

Since 2005, the department of Chemical and Biomolecular Engineering has diversified its perspective and has been enriched with a group of exceptional faculty members that have made great advances in different areas combining Chemical Engineering and Biomolecular approaches. The effects of this name change and the move towards an interdisciplinary preparation have diversified the opportunities of ChBE students and have made them high value assets in the ever-evolving Engineering field.
Chevron Energy Lecture

Thanks to the generous sponsorship of Chevron, the Rice Chemical and Biomolecular Engineering (ChBE) community was able to spend an evening of education and networking last Spring. Lynn Orr from the Precourt Institute for Energy at Stanford University presented "Transforming Energy in the 21st Century" on April 4, 2013, to a group of over 100 Rice ChBE students, alumni, faculty and friends. The lecture in Keck Hall was followed by a networking dinner in the Grand Hall of the Rice Memorial Center.

Dr. Orr's lecture focused on the challenge of meeting the world's growing energy needs under constraints on CO2 and other greenhouse gas emissions. This challenge, Orr explained, is one of the grand challenges that humans must face this century. Though not a lecture about climate change, the first few slides titled "Is the Climate Really Changing?" showed animations of the temperature variability from 1951 to 1980. Additionally, animations of summer arctic ice recession between 1979 and 2010 demonstrated increasing global temperature. Orr showed that if we carry on with "business as usual", we will cross a threshold of 1000 gigatons of carbon emissions by 2050 - a level that climate models predict will hold the average increase in global temperature to 2°C. Orr used the 1000 gigaton-threshold as a point of reference to show how various world energy policies may delay surpassing that level. Efficiency gains can buy us an additional 10-15 years and aggressive implementation of renewable energy sources could add an additional 5 years. It is only when we employ a full suite of greenhouse gas-reducing practices and continue to develop new technologies that we can delay crossing the 1000 gigaton-threshold to 2100. The mix of energy supply, currently comprised of nuclear, oil, gas, coal, etc., has evolved over time and we are continuing that evolution with no single solution to the impending challenge. A multi-decade transition is underway; in order to meet energy needs while watching our emissions, we must explore all possible solutions. Orr sent the group on its way with a mission - "let's get to work".

After the lecture, the ChBE group migrated to the Grand Hall where a networking dinner had been organized by the alumni advisory committee, students and faculty. Graduate students proudly displayed posters demonstrating their varied research and stood by ready to engage fellow students and alumni in conversation about what is new in their respective areas of study. The group mingled over a delicious dinner, allowing students and faculty to connect or reconnect with alumni and for all to get a brief snapshot of what is going on in the department.

The Chevron lecture and networking dinner was a great evening for the Rice Department of Chemical and Biomolecular Engineering. We intend to continue planning events such as this, so keep an eye out for email invitations and join us next time!
CHBE Faculty

Sibani Lisa Biswal, Assistant Professor; Ph.D. Stanford, 2004. Interactions of colloidal particles with solid and liquid media, interfacial behavior of biomolecules.

Walter G. Chapman, W. W. Akers Professor and Department Chair; Ph.D. Cornell, 1988. Thermodynamics, statistical mechanics, polymer solutions, surface-fluid interactions, molecular simulations, gas hydrates, waxes and asphaltenes.

Kenneth R. Cox, Professor in the Practice; Ph.D. Illinois, 1979. Product and process design, phase equilibria for advanced separations design.

Ramon Gonzalez, Associate Professor (joint appointment in Bioengineering); Ph.D. University of Chile, 2001. Metabolic engineering, functional genomics, systems biology, microbial fermentations, chemicals and fuels from renewables.

George J. Hirasaki, A. J. Hartsook Professor; Ph.D. Rice, 1967. Foams and emulsions, aquifer remediation, NMR-measured transport properties of fluids and rocks, enhanced oil recovery, gas hydrates and carbon capture.

Clarence A. Miller, Research Professor; Ph.D. Minnesota, 1969. Interfacial phenomena, surfactants, foam, emulsions, aquifer remediation.


Matteo Pasquali, Professor (joint appointment in Chemistry); Ph.D. Minnesota, 1999. Micro- and nano-structured liquids, carbon nanotubes, free surface flows, computational modeling of processing flows.

Marc A. Robert, Professor; Ph.D. Swiss Federal Institute of Technology, Lausanne, 1980. Thermodynamics, interfacial phenomena, thin films, random media.

Laura Segatori, T.N. Law Assistant Professor (joint appointments in Bioengineering and Biochemistry and Cell Biology); Ph.D. University of Texas at Austin, 2005. Molecular engineering of protein folding catalysts and chaperones.

Francisco Vargas, Associate Professor, Ph.D. Rice University, 2010. Phase behavior and flow assurance.

Rafael Verduzco, Louis Owen Assistant Professor; Ph.D. California Institute of Technology, 2007. Polymer design and synthesis, organic electronics, liquid crystals, and polymer self-assembly.

Michael S. Wong, Professor (joint appointment in Chemistry); Ph.D. MIT, 2000. Catalysis, quantum dots, hollow microspheres, materials chemistry, green chemistry, nanotechnology.

Kyriacos Zygourakis, A. J. Hartsook Professor (joint appointment in Bioengineering); Ph.D. Minnesota, 1981. Cellular and tissue engineering, chemical reaction engineering, biochar for soil amendment, energy and sustainability.
Attend next years Fall Networking Dinner!

Join current and former students and faculty at a casual networking dinner organized by the CHBE Alumni Committee, the CHBE Graduate Student Association and the Rice Chemical and Biomolecular Engineering Department.

Check the website chbe.rice.edu
The CHBE alumni board is under advisory groups.

Second Professional Excellence Award is now open for voting.

The Alumni Advisory Committee has established this award to honor the professor who has most impacted your career. Please go to the Professional Excellence Voting Page http://chbe.rice.edu/pea to help us determine who gets the next award.

For a multi-media journey through 100 years of Rice University go to http://timeline.centennial.rice.edu/