

Fall 2009

Volume 2009-10 - Issue 1 - Fall, 2009

Echoes Staff

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Recommended Citation

Staff, Echoes, "Volume 2009-10 - Issue 1 - Fall, 2009" (2009). *Rose Echoes*. 73.
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ROSE-HULMAN INSTITUTE OF TECHNOLOGY

Echoes

Fall 2009

Vol. 2009-10, No. 1

Rose-Hulman Spanning the Globe to Expand Opportunities in Engineering Education...



*What it means
to the present
as well as the future*

Still Number One, *Rose-Hulman on top for 11 Consecutive Years*

Helping CNN, *Alumnus, students enhance global distribution*

Celebrating Innovation, *Event to recognize Decade of Innovation*



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ON THE COVER

Rose-Hulman's impact goes far beyond the confines of the gates of 5500 Wabash Avenue. Alumni, students and the college itself are having a global impact.



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PUBLICATION CREDITS

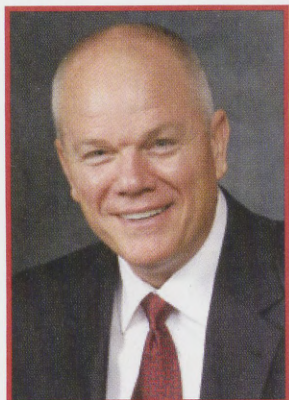
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Echoes is published by:
Rose-Hulman Institute of Technology
 5500 Wabash Avenue, Terre Haute, IN 47803

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Editor's note: As Echoes was moving to press, the Rose-Hulman Board of Trustees elected Matt Branam as the college's 14th president. He had been serving on an interim basis and a column written by him runs on page 11. The news release of the announcement follows.



Matt Branam, president

MATT BRANAM ELECTED AS PRESIDENT OF ROSE-HULMAN INSTITUTE OF TECHNOLOGY

Matt Branam has been elected president of Rose-Hulman Institute of Technology by the college's Board of Trustees, according to an announcement from William Fenoglio, chairman of the Rose-Hulman Board of Trustees. The election took place during a special board meeting in Indianapolis on December 4, 2009.

Rose-Hulman had recently announced its search for a new President, and conducted a successful survey of the market, identifying a number of impressive potential candidates. "Early in that process, the Trustees became convinced that it was in the institution's best interest to ask Matt Branam, who has been serving in an interim capacity, to become our permanent president," Fenoglio said. "We appreciate the interest of a number of academic leaders who responded to our initial search solicitations."

With his election, Branam becomes the 14th president in the 135-year history of the college.

"As the Board conducted its search for president, considering several strong prospects, it became abundantly clear that the Institute had the ideal candidate already serving in the president's office," Fenoglio said. "President Branam's performance as interim president has brought renewed direction and vigor to the campus."

Fenoglio cited various strengths that Branam brings to the position. "Matt is an excellent communicator with a keen understanding of the academic mission of Rose-Hulman," Fenoglio said. "He has a vision to build on Rose-Hulman's reputation as the top undergraduate engineering, science and mathematics college in the country."

"I've always known Rose-Hulman to be a very special place with top faculty, staff and students," Branam said. "Rose-Hulman is the number one college in its class in the country, and the family atmosphere on campus makes it a great place to work and study. But we do much more than teach math, science and engineering at Rose-Hulman; we prepare our best and brightest young people to address the challenges and opportunities our world will face tomorrow. I am honored to be part of it, and thankful to the Board of Trustees for their confidence and support."

"I am delighted to hear the news," said Arthur Western, vice president of academic affairs and dean of faculty. "President Branam has exhibited that he has the vision and leadership necessary for the campus. I look forward to continuing the progress he has initiated during the first five months."

"The selection of Matt Branam as the next president of Rose-Hulman will have a positive and significant impact upon our institution and its future direction," said David Purdy, head of the Department of Mechanical Engineering and member of the Presidential Search Committee. "Matt understands our mission and primary function as a premiere undergraduate institution in engineering, math and science. During his first five months of service as interim president he has pulled together the Rose-Hulman community by communicating the need for transparency and open communication amongst all constituencies."

Branam brings a wealth of experience and knowledge to Rose-Hulman. His expertise in fundraising, board relations, public relations, brand management, legal, labor, and financial affairs brings Rose-Hulman a seasoned leader. He managed the American Red Cross through a period of tremendous growth and change for its then president, Elizabeth Dole, as its first ever chief operating officer.

Branam's experience also includes a distinguished 24-year career with UPS (formerly called United Parcel Service) where his local job as a teenager evolved through numerous positions of increased responsibility, including the position of vice president of public affairs in Washington, D.C. A native of Terre Haute, Ind., Branam has attended Indiana State University, Taylor University and Georgetown University, and he graduated from Rose-Hulman in 1979.

Rose-Hulman Institute of Technology is the nation's leading undergraduate engineering, mathematics and science college. For 11 consecutive years, it has been ranked in the annual U.S. News & World Report annual survey of higher education as the number one college or university that offers the bachelor's or master's degree as its top degree in engineering. Located in Terre Haute, Ind., Rose-Hulman offers a rigorous, hands-on education that stresses development of technical and interpersonal skills in an environment characterized by close personal attention for every student. ■

Biochemistry & International Studies Programs Added to Academic Majors

Bachelor's degree programs in biochemistry and international studies have been added to Rose-Hulman's academic curriculum, starting in 2009-10. The biochemistry degree will be part of the Department of Chemistry and the international studies degree will be offered as a second major by the Department of Humanities and Social Sciences.

Life sciences are a driving force for scientific discovery and economic opportunities in the 21st century. Chemistry and biology are becoming interdisciplinary career fields, with modern researchers using skills from both science areas to understanding biological and chemical systems at their most basic level.

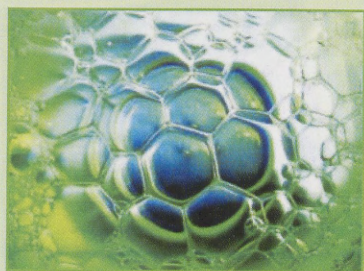
The biochemistry degree adds a new course plan to chemistry department offerings, along with a degree in chemistry and a second degree major in biochemistry-molecular biology. The biochemistry degree meets guidelines specified by the American Chemical Society, has a solid foundation in all areas of

chemistry, including biochemistry, and has a solid foundation in applied biology. The new degree also emphasizes undergraduate research in biochemistry.

Rose-Hulman is rapidly becoming a leader in life sciences education through its chemistry and applied biology programs. The applied biology major was established in 2001. These programs, along with the new biochemistry major, will allow Rose-Hulman to provide uniquely skilled graduates to industry and graduate programs, according to Art Western, vice president of academic affairs.

Technical work has increased in the international and multi-lingual arena. The international studies major provides students with the opportunity to complement their primary major with a second major that prepares them for an interdependent, multicultural and transnational world. ■

FACULTY BEGIN STUDY OF ALGAE AS POSSIBLE BIODIESEL FUEL SOURCE



Algae is one of the fastest growing "plants" in the world—faster than corn and soy beans.

Rose-Hulman chemistry and applied biology professors are studying whether algae could be a potential source for biodiesel, under an agreement between Rose-Hulman Ventures and Quantum Development Corp., a new venture being led by Rose-Hulman alumnus Chester Crow (Elect. Eng., '83).

The project involves growing and optimizing conditions for a number of algae strains that are particularly well suited for Indiana. Professors and students will examine whether bio-fuels can be produced from a variety of sources, along with

investigating the effects of these bio-fuel sources in power production and exhaust emissions in an automobile engine.

The research project will involve as many as six undergraduate students and could lead to other future research initiatives, according to Michael Mueller, head of the Department of Chemistry. Other faculty members participating in the project are Richard Anthony, Peter Coppinger and Jennifer O'Connor of the Department of Applied Biology and Biomedical Engineering.

Crow is enhancing the research project by donating \$40,000 to support the purchase of equipment necessary to study algae for biodiesel production. Besides starting Quantum, Crow is also president of PowerSource.

Multi-disciplinary research teams at Rose-Hulman have already developed several different types of bio-based two-cycle engine oils that have superior lubricating properties to synthetic oils commercially available. ■

Siahmakoun Elected SPIE Fellow

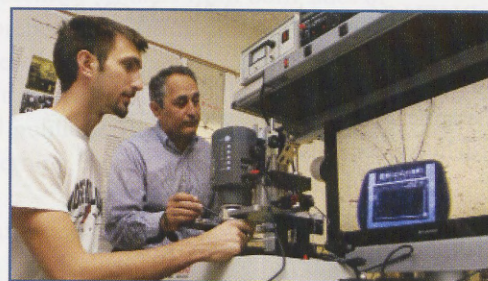
Physics and Optical Engineering Professor Azad Siahmakoun has been inducted into the Fellows of the Society for SPIE, the international optics and photonics society. Fellows are SPIE members of distinction who have made significant scientific and technical contributions in the multidisciplinary fields of optics, photonics and imaging.

Siahmakoun is a leading researcher in optics for antenna controls and was one of the first researchers to use optical phase conjugation and photorefractive moving gratings for interferometry applications.

His chief innovation is the design, development and demonstration of a new kind of multiple FR beams fiber-optic

beamformer for wideband phased array antennas. He has also patented optical A/D and D/A devices with applications to electronic warfare.

Siahmakoun is director of Rose-Hulman's Micro-Nanoscale Devices and Systems facilities and received the Board of Trustees' Outstanding Scholar Award. ■



Azad Siahmakoun with physic student in lab.



TRANSPORTATION DESIGN TEAMS EARN INNOVATION AWARD, FLY TO NEW HEIGHTS

Two advanced transportation student project teams stretched the boundaries of fuel efficiency and soared to new heights in national design competitions. The Efficient Vehicle Team achieved an all-time best 1,800 mpg and earning the Technical Innovation Award at the Shell Eco-Marathon Americas competition. Two vehicles were taken to the track: RHEV 74, a carbureted Honda GX 25 engine with a sprag clutch; and RHEV 74++, a fuel-injected Honda GX 25 engine with electronic engine and power delivery controls.

RHEV 74 garnered fourth place overall, out of 44 teams from six high schools and 29 universities. Rose-Hulman's performances in three seven-lap track runs were a model of consistency: 1800.1 mpg, 1760.6

mpg and 1766.8 mpg — on about 4½ teaspoons of gasoline!

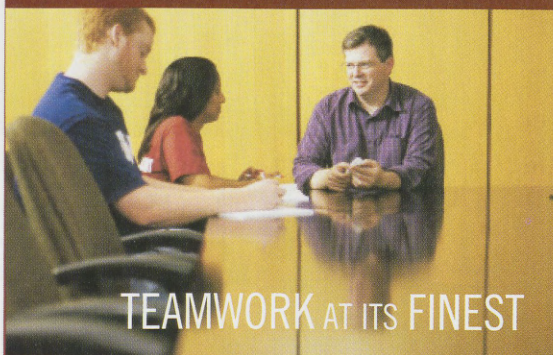
RHEV74++ car attracted a tremendous amount of attention from Shell officials, race organizers, media and competitors. The sophisticated computer-controlled engine and power delivery system, enhanced by technology developed through model-based design principles, were unique in the competition and received the Technical Innovation Award. The honor was presented for demonstrated outstanding initiative and technical ingenuity along with optimal use of new materials in the drive train and instrumentation.

Meanwhile, a student team had its best showing at the American Institute of Aeronautics and Astronautics' Cessna/Raytheon Student Design/Build/Fly

competition, which provides a real-world aircraft design experience for engineering students.

Rose-Hulman placed 22nd out of 41 teams, passing technical inspection, timed assembly mission and a ferry flight mission (plane carrying an empty water bottle) with ease. However, depleted batteries hampered the team's performance during the surveillance flight mission (plane carrying a full water bottle) with 400 feet left in a two-mile course. The batteries were designed to be nearly drained upon landed. The air density difference between Terre Haute and the competition course in Tucson, Ariz., may have contributed to the miscalculation. ■

STUDY REVEALS ROSE-HULMAN VENTURES CREATES POSITIVE EXPERIENCES



TEAMWORK AT ITS FINEST

Rose-Hulman Ventures earns high customer loyalty by delivering positive experiences and business value, according to a recent study by Walker, a consulting firm that specializes in customer strategy.

An online survey of 54 Rose-Hulman Ventures customers from the last two years revealed the following about customer experiences and loyalty:

- Rose-Hulman Ventures creates positive business impact for customers.
- Rose-Hulman students are more attractive for the workforce through their Rose-Hulman Ventures' experiences.
- Customers tend to have positive experiences with Rose-Hulman Ventures.

Rose-Hulman Ventures customer loyalty exceeds the norm for businesses across the many industries in Walker's database. "Rose-Hulman Ventures' performance in customer loyalty stands up to scores achieved by some of the best commercial companies we have worked with," noted Jeff Marr, vice president of strategic accounts for Walker Information. "Our take is there were two main reasons for such high loyalty: how customers enjoyed working with Rose-Hulman Ventures' project managers and students, and how the project deliverables — design or commercialization of a product concept — helped their business." ■

Alpha Chi Sigma Celebrates Centennial, Inaugurates Hall Of Fame

The Iota Chapter of the Alpha Chi Sigma chemistry fraternity celebrated its centennial this spring by honoring seven alumni and former faculty for their outstanding contributions to the chapter, national fraternity, college and chemical sciences.

The inaugural Hall of Fame Class featured Harold Cowan (Chem. Eng., '90), an engineering consultant for Eli Lilly; Edmond Earl Dunlap (Chem. Eng., '23), a former design engineer with the Indiana Department of Transportation; Joseph Hepp, a charter chapter member; William Noyes Jr., a faculty member; Joseph Weaver (Chem. Eng., '35), who supported student and faculty research initiatives; John White, a chemistry faculty member (1903-1936) who twice served as acting president; and Hugo Edmund Wiedemann (Chem. Eng., '03), a former State Chemist of Missouri.

The Iota chapter was chartered in 1909 and has a proud history of providing personal and professional development for its members. The fraternity will have approximately 100 members after this year's pledge initiation. ■



Terrence Casey and his book

POLITICAL SCIENCE PROF EXAMINES BLAIR'S LEGACY IN NEW BOOK

Rose-Hulman political science professor Terrence Casey has edited a new book that examines the legacy of former British prime minister Tony Blair in "The Blair Legacy: Politics, Policy, Governance, and Foreign Affairs" (Palgrave Macmillan Publishers).

Casey has brought together the foremost scholars from both sides of the Atlantic to provide a comprehensive examination of the long-term impact of Blair's three New Labour Governments. The book explores how Labour changed the terms of political debate, established an ideological stamp, reformed public services, revised economic management, transformed governing institutions, and repositioned Britain in a wider world.

Besides editing the book, Casey also contributed to the introduction, covering "The Blair Decade in Perspective," and a section that examined "New Labour and the British Economy," written with Alistair Q. Howard, professor of political science at Temple University. Casey, a member of the Rose-Hulman faculty since 2000, is executive director of the British Politics Group. ■

CAMPUS RECOGNIZED FOR COMMUNITY SERVICE COMMITMENT

Rose-Hulman was cited by the Corporation for National and Community Service on this year's President's Higher Education Community Service Honor Roll that for exemplary service efforts and service to their communities.

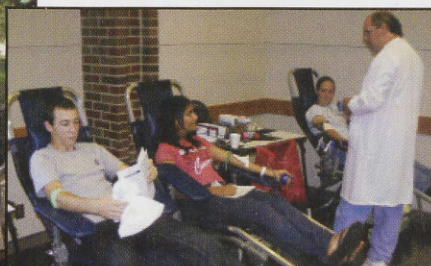
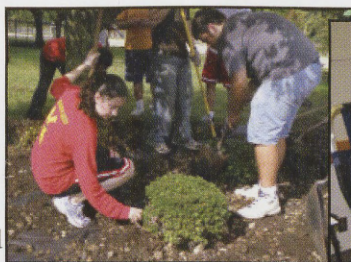
The honor roll is the highest federal recognition a college can achieve for its commitment to service-learning and civic engagement. Honorees for the award were chosen based on a series of selection factors including scope and innovation of service projects and percentage of student participation in service activities.

Rose-Hulman was recognized for its involvement in several projects, including Bikes For Tykes, in which students put their engineering and problem solving skills toward assembling more than 400 bicycles and tricycles for needy children; the Homework Hotline, which has students serving as tutors and mentors for Indiana middle school and high school students; classroom design projects, which has had students designing devices to help improve the lives of persons and services

provided by organizations; and Explore Engineering, a program encouraging youths toward engineering and science careers.

Also, Rose-Hulman's Engineers Without Borders chapter completed a brooder house and community training center for a small village in Ghana; American Society of Civil Engineers members constructed wheelchair accessibility ramps for handicapped persons; and National Society of Black Engineers members helped tutor local middle schools.

"Rose-Hulman's commitment to community service helps create alumni that become productive citizens in their communities," stated President Gerald



Jakubowski.

More than 190 events and projects were completed by campus organizations last school year,

including tree plantings, hosting fund-raising events and campus beautification projects, according to a report from the Office of Student Activities. Financial contributions totaled \$54,000, including \$15,000 to St. Jude Children's Hospital from an "Up Til Dawn" event by several Greek organizations. ■

ALUMNUS & DOW EXECUTIVE URGES STUDENTS TO EXPAND HORIZONS



Mike Gambrell

Expanding world views is a necessary skill for Rose-Hulman students to thrive in today's competitive marketplace, Dow Chemical Company executive and 1976 chemical engineering alumnus

Mike Gambrell during the 2009 Dennis Paustenbach Lecture.

As executive vice president, Gambrell is responsible for the Fortune 500 corporation's manufacturing and engineering organization, and leading the corporate restructuring and mega-project activities critical to the company's transformation.

"Diversity and inclusion are the future," stated Gambrell to students in the



Hatfield Hall Theater. "Embrace diversity and advance it as a leader. Travel. Engage with other cultures . . . Get out of the 'Engineering Box.' Today, engineering decisions are not made for the sake of engineering, but to deliver a greater corporate benefit — profits, reputation and good will."

This advice has been a key element of Gambrell's 33-year career with Dow. He has traveled throughout the world in a number of roles, including business director for North America Chlor-Alkali Assets, vice president of operations for Latin America, corporate director for technology centers and global process

engineering, senior vice president for Chemicals and Intermediates, and executive vice president of Basic Plastics and Chemicals before being named to his current role. He is also now a member of U.S.-India Business Council.

"Being able to elevate and see the 'Big Picture,' when at the same time being capable of detail work, will build success," Gambrell advised. "In leaders, I see a pattern -- a progression of skills from being a detailed thinker to visionary to high creativity to strong innovator." Gambrell is a member of Dow's executive leadership, business operations and management committees. He also serves on the company's sustainability team, co-chairs the corporate crisis management team, and is an ex officio member of Dow's board of directors' environment health and safety committee.

Continued on page 7

Livesay Named First Hulbert Chair in Biomedical Engineering

Samuel Hulbert will be forever endowed with Rose-Hulman's biomedical engineering faculty and students through a new faculty chair that recognizes the former president's contributions as an inspirational educator and biomedical pioneer. The first recipient is **Glen Livesay**, associate professor of applied biology and biomedical engineering.

The establishment of the faculty chair was announced as Hulbert returned to campus to participate in a special presentation on visionary leadership, with biomedical engineering pioneer Bill Cook, founder of the Cook Group. Cook joined several alumni, trustees and friends in making donations to support the faculty chair.

Hulbert served as Rose-Hulman's president from 1976 to 2004. He is recognized as a leader in the use of ceramics to create artificial knees, hips and dental prostheses. His career has included teaching and serving as investigator on several major research projects.

"Samuel Hulbert's name is synonymous with Rose-Hulman and biomedical engineering, and thanks to the generosity of alumni and friends, this innovative educator will continue to influence future generations of biomedical engineering professors and students," stated President Gerald S. Jakubowski. "Endowed faculty

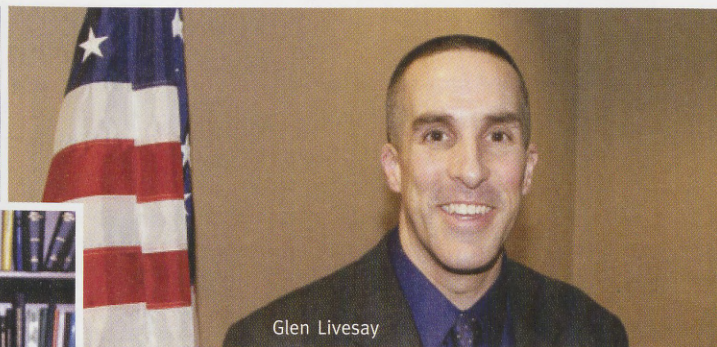


Dr. Samuel F. Hulbert

chairs are significant for any college, but the person that we're recognizing with this honor makes this such a special honor."

The Samuel F. Hulbert Faculty Chair will honor a faculty member with a distinguished career in teaching and research. The chair holder will receive a summer stipend, plus professional development funds to cover summer undergraduate research assistant stipends, equipment, supplies and travel. The chair will be reappointed every three years. Livesay has been a member of the faculty since 2004. He specializes in orthopaedic biomechanics, continuum mechanics and engineering education.

"Samuel Hulbert was known for fanning the flames of undergraduate students' interests in biomedical engineering through his passion for teaching and research, and I feel very fortunate to be



Glen Livesay

"...through his (Samuel Hubert) passion for teaching and research, and I feel very fortunate to be able, in a small way, to continue that legacy at Rose-Hulman."

– Glen Livesay, award winner

able, in a small way, to continue that legacy at Rose-Hulman," stated Livesay, who plans to utilize three undergraduate students each year in fundamental, yet currently relevant, research projects.

Supporting the establishment of the Hulbert faculty chair were James Baumgardt, Charles Boesenberg, Jack Bokros, Robert Compton, Bill Cook, Anton Hulman George Jr., Guidant Foundation, David Jones, Medtronic Foundation, Niles Noblitt, Jack Ragle, George Rapp, J. Lewis Stoelting, John Titsworth, Richard Treharne, Alexander Vogl and Dennert Ware.

Persons that would like to support the chair fund or set up an endowed faculty chair should contact Mark Lindemood, vice president of institutional advancement, at (812) 877-8211 or Mark.Lindemood@rose-hulman.edu. ■

Continued from page 6

The Paustenbach Lecture was funded by 1974 chemical engineering alumnus Dennis Paustenbach to encourage students to think in new ways about a career in science and technology. Paustenbach

is a board-certified toxicologist and industrial hygienist with nearly 25 years of experience in risk assessment, environmental engineering, ecotoxicology and occupational health. He is currently

the president of Chemrisk, Inc., a consulting firm which specializes in human and ecological risk assessment and risk analysis of pharmaceuticals and medical devices. ■

Four Inducted Into Athletic Hall of Fame

Rose-Hulman added four new members into its Athletic Hall of Fame on Oct. 10.

Bryan Hagelskamp ranked second in school history with 378 career tackles and was a two-time first-team all-conference honoree. He was also named team Defensive Most Valuable Player three times before graduating in mechanical engineering in 1999.

Troy Halt claimed all-region honors and scored 1,099 points with 595 rebounds in his Rose-Hulman career. The 1997 electrical engineering graduate helped the Engineers reach NCAA Division III Tournaments in 1996 and 1997.

Amanda Speich Witter became the first woman inducted into the Athletic Hall of



Amanda Speich Witter, Troy Halt, President Matt Branham, Sean Valentine, Bryan Hagelskamp.

Fame after scoring 1,411 points with 623 rebounds in her basketball career. The 1999 chemical engineering graduate was a member of the first four squads in school history.

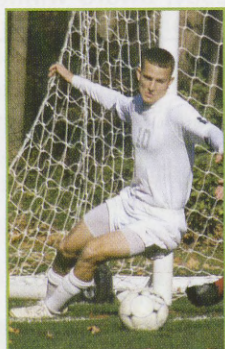
Sean Valentine became the first swimmer inducted into the Hall of Fame after completing a career that featured two All-American honors and three conference titles for the 1999 electrical engineering graduate. ■

SOCCER TEAMS SWEEP CONFERENCE CHAMPIONSHIPS

The Rose-Hulman men's and women's soccer teams each won Heartland Collegiate Athletic Conference regular season championships to highlight the fall campaign.

The men's squad finished a perfect 8-0 in HCAC play and 12-6-1 overall for their second straight regular season league title. Senior Rhys Evans led the team with eight goals and 17 points, and junior **Corbin Clow** scored five times with seven assists. Junior Andy Kruth led the goalkeepers with a 0.53 goals against average and a record of 6-3.

The women's squad rebounded from an 0-7 non-conference start to win the league title with a 7-1 HCAC record. Junior Molly Richardson led the conference with nine goals and 24 points, and junior **Annmarie Stanley** earned academic all-district honors after leading the league with seven assists. ■



Annmarie Stanley was one of six Fightin' Engineers named academic all-district in the fall.



Corbin Clow and the Rose-Hulman men's soccer team finished a perfect 8-0 in league play.

FOOTBALL SMASHES OFFENSIVE RECORD BOOK IN WINNING SEASON

The Rose-Hulman football team rewrote its offensive record book with its fourth consecutive winning season by finishing 6-4 this fall.

Rose-Hulman set team school records for total points, passing yards, total yards and touchdown passes. Individual records included career passing marks for completions, yards and touchdowns by senior Derek Eitel, along with the most prolific receiving season in school history for junior **Reed Eason**.

The Fightin' Engineers also gained more than 500 yards in a game three times, highlighted by a 589-yard school record performance in their first victory over Franklin College since 1997. Six Fall Sports Student-

Athletes Named Academic All-District

Rose-Hulman fall sports teams combined for six ESPN The Magazine academic all-district awards during the 2009 season, in results released by the College Sports Information Directors of America.

First-team honorees on all-district squads included football players Ben Hopf and Thomas Reives, along with women's soccer midfielder Annmarie Stanley. Second-team honors were earned by men's soccer player Corbin Clow and football safety Kyle Stevens, with volleyball setter Leah Pelzel claiming third-team recognition.

The first team honorees advanced to their respective national ballots. Check the Rose-Hulman athletic website to see whether any of the first-team honorees were chosen for national honors. ■

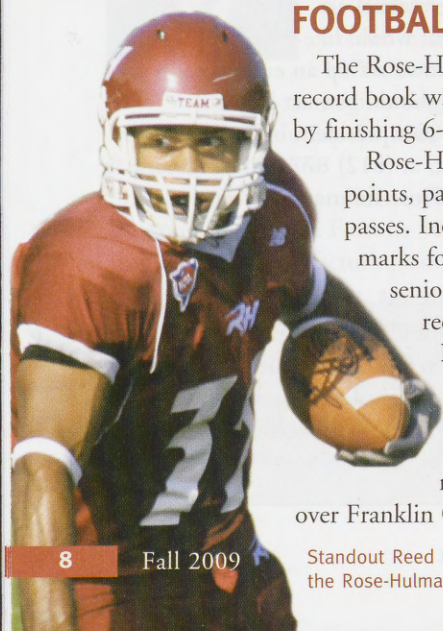
CROSS COUNTRY TEAMS HOST NCAA DIVISION III REGIONAL



Rose-Hulman added to its history of hosting major NCAA championship events by welcoming the NCAA Division III Cross Country Championships to the LaVern Gibson Course in mid-November.

More than 35 teams and 400 student-athletes competed in the cross country championships, with two men's and women's teams joining seven individuals in automatically qualifying for the national meet.

Rose-Hulman most recently hosted the NCAA Division III Indoor Track and Field National Championships in 2007 and 2009. ■



Standout Reed Eason helped rewrite the Rose-Hulman record book in 2009.

Bailey Challenge

By Professor Emeritus Herb Bailey

We had less than the usual number of solutions for the Winter Challenge. This may be in part due to the dragging economy leaving very little time for recreational thinking. I may apply for a bit of stimulus money to pay you for shovel ready solutions of the following problems.

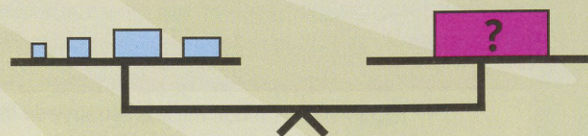
WARM-UP.

What is the minimum number of pitches (both teams) in a major league baseball game (not called for weather etc.)?

	1	2	3	4	5	6	7	8	9	R	H	E
AWAY												
HOME												

PROBLEM 1

You own a beam balance and you need to buy some standard weights, each of an integer number of grams. You must be able to weigh any item of an integer number of grams from 1 to 8000. The Federal Cross Contamination Control Agency (FCCCA) requires that none of the standard weights be placed on the same pan as the weighed item. Clearly this can be done with 8000 one gram standard weights. Show that it can be done with only 12 standard weights.



PROBLEM 2

If you ignore the government regulation and risk jail, what is the minimum number of standard weights required to weigh any item of an integer number of grams from 1 to 8000?



Solution of the Summer Handshake Problem.

Thirty people in a room and each shakes hands with all the others. How many shakes in all?

FIRST SOLUTION:

Person 1 shakes hands with the other 29 and leaves the room. Person 2 shakes hands with the remaining 28 and leaves the room, etc. Thus $N = 29 + 28 + \dots + 1$.

A SECOND SOLUTION:

Person 1 shakes hands with the other 29 and stays in the room. Person 2 shakes hands with the other 29 and stays in the room, etc. Thus $N = 30 * 29 / 2$. We have divided by 2 since each shake has been counted twice.

With $k + 1$ people initially in the room, then
$$\sum_{i=1}^k i = \frac{k(k+1)}{2}.$$

Send your solutions to Herb.Bailey@rose-hulman.edu or to Herb Bailey, Math. Dept., Rose-Hulman, 5500 Wabash Ave., Terre Haute IN 47803. Please include your class year if you are an alum.

Solvers of the previous problems are listed on page 26.



ROSE-HULMAN CONTINUES #1 NATIONAL RANKING

For the 11th consecutive year, Rose-Hulman Institute of Technology has been ranked the number one college or university that offers the bachelor's or master's degree as its top degree in engineering. The ranking is based on a national survey of deans and senior faculty conducted by U.S. News & World Report for its annual college guidebook.

Individual Rose-Hulman engineering departments once again received number-

one rankings as well. Those programs are chemical, civil, computer, electrical and mechanical.

Rose-Hulman tied this year for the top spot with Harvey Mudd College of Claremont, Calif.

"This ranking affirms the quality of our faculty, staff, students and alumni," said Rose-Hulman President Matt Branam. "While we are pleased with the ranking and the recognition from our peers, this ranking is not our guide to achieving our mission of educating the engineering, mathematics and science leaders of the future. We continue our commitment to

being a great school. Our goal remains to provide the best education that we can design. We owe it to our students and their families who have put their trust in Rose-Hulman."

In this year's U.S. News ranking, Rose-Hulman received a 4.5 peer assessment score on a scale of one to five. Harvey Mudd also received a 4.5, Cooper Union in New York a 4.3, the United States Military Academy 4.1, and the United States Naval Academy 4.0.

The overall and specialty rankings are based solely on a spring 2009 peer survey of deans and senior faculty. ■

INSTITUTE LISTED AMONG TOP 80 MOST COMPETITIVE

"Rose-Hulman is essentially a utopian community of engineers and scientists... Rose-Hulman is unique because of it is a true community"

– Stephanie Meyer, '06 Applied Biology Grad



from Rose-Hulman. However, the jubilation is nostalgic because students know that they are leaving an incredibly special living and learning community. Rose-Hulman is a cooperative learning environment where

Rose-Hulman Institute of Technology is listed among the nation's top 80 colleges and universities in Barron's 2009 Guide to the Most Competitive Colleges. The publication includes an extensive profile that describes in detail each college, its academic and social life experiences, job placement and financial aid. Rose-Hulman is joined on the list by schools such as Harvard, Massachusetts Institute of Technology, California Institute of Technology, Northwestern and Georgia Institute of Technology.

"These schools accept only the best and brightest students," states the College Division Staff of Barron's Educational Series, Inc.

Rose-Hulman's 12-page profile was written by Stefani Meyer, a 2006 applied biology graduate who later earned a

master's degree in engineering management from the college. She was former president of the Student Government Association, a resident assistant and Homework Hotline tutor, and is now pursuing a degree in intellectual property law at George Washington University.

"Rose-Hulman is essentially a utopian community of engineers and scientists," Meyer writes. "Rose-Hulman is unique because it is a true community . . . I loved walking up and down the halls and seeing my classmates hard at work or play in their rooms. The open doors made the residence halls feel like a giant family hallway instead of a hotel with isolated rooms."

In concluding her essay, Meyer pointed out: "The day of Commencement, student spirits run high because the graduates are so excited to have made it and earned a degree

students are challenged intellectually and given the freedom and nurturing needed to mature into responsible citizens. The learning process forges lifelong bonds between students, staff and professors. Every year, members of the Rose-Hulman family earn their wings and leave the nest, but none of the graduates ever forgets 'Dear old Rose.'"

Each profile also includes the standard "need-to-know" facts and figures, such as admission requirements, academic programs, up-to-date tuitions and fees, application procedures, sources of financial aid, library and research facilities, student body composition, and admission contacts.

More information about the Barron's Guide to the Most Competitive Colleges can be found at www.barronseduc.com/0764142267.html ■



OFFICE OF THE PRESIDENT



On the Path Toward Greatness

In the thirty years since I was a student here, Rose-Hulman has been transformed from a very good engineering college, to first-in-class in engineering education. We are excited to be ranked the #1 undergraduate engineering college for 11 consecutive years. Now that we are established as the leader, we have a license, if not a responsibility, to become a truly great engineering college. We are positioned to set the pace for how undergraduate education in engineering, math and science should be delivered. I can observe with an unbiased "outsider's" view, as an alumnus who has not been actively involved on a day-to-day basis until this summer, Rose-Hulman is poised for greatness.

Take a walk through the Rose-Hulman Alumni Center and you will be reminded of what has made our college such a special place for 135 years. The cases are filled with memorabilia and photos of our long heritage. A Rosie the Mascot uniform is perched on a shelf next to a "Give 'Em Hell Rose" banner that once dropped from the Shook Field House rafters to open the basketball games. Photos of bonfires gone-by and newspaper articles about Rose-Hulman going coed tell bits and pieces of our story—and no Rose-Hulman historical display is complete without a freshman beanie. But while our heritage reminds us of a great past, it is what makes us great that foretells our future. What stands out in the Alumni Center may be the collection of photos of the faces of many of us who have crossed the bridge in route to graduation, but it is the people who are here today who are crafting our future, and the future course of engineering education.

My Rose-Hulman experience has left me curious about all things technical; I revel in what I see taking place in our labs and classrooms. I know that our achievements are built on the foundation of a faculty committed to teaching, a staff committed to supporting, and many of our many alumni who hold a conviction that education is the solution to many of the problems we face in our world today. Rose-Hulman has some of the most up-to-date laboratories and classrooms for undergraduates in the nation, and we continue to offer a cutting-edge curriculum. Strong facilities and curricula are necessary for a nationally recognized program, but they are only as good as the people who bring them to life. This is both a challenge and an opportunity for Rose-Hulman.

As we pursue the next level of leadership in education, Rose-Hulman will carefully guard what has made it such a special place for our students. We will move forward informed by our heritage and emboldened by our success. In our pursuit of greatness in education of engineering, we will always face challenges and unmet needs. The recent economic slump has affected the ability of many of our students, and their families, to pay for a Rose-Hulman education. We have maintained our commitment to support our student families by increasing our financial aid even though our endowment has been impacted as well. Now, more than ever before, we need the commitment of our Rose-Hulman community to our mission of "providing students with the world's best undergraduate education in engineering, mathematics and science in an environment of individual attention and support".

There is not a challenge we cannot meet if we all work together as the Rose-Hulman Community. Now more than ever, our world needs the very best and brightest problem-solvers to meet the global challenges we face. Rose-Hulman will do our part to prepare tomorrow's leaders to meet those challenges. We will do so as a community of faculty, staff, students and you—our alumni—committed to taking the world's best and making it great.

Sincerely,

Matt Branam
President

5500 WABASH AVENUE TERRE HAUTE, IN 47803 PHONE: 812-877-1511 FAX: 812-877-8362 WWW.ROSE-HULMAN.EDU



ON TARGET



Drew Houvener, Matthew Jacobs and Steve Schiavoni, and computer science graduate Micah Weaver.

FREEDOM FIGHTERS TO BENEFIT FROM AMMUNITION TESTING PROJECT DESIGNED FOR NAVAL SURFACE WEAPONS CENTER

A team of Rose-Hulman computer science and software engineering students has developed a state-of-the-art software program that measures various accuracy attributes of small arms impacts on a target for weapons testing at the Naval Surface Warfare Center's division in Crane, Ind.

With the warfighter in mind, the practical and user-friendly Small Arms Naval Target Analyzer (SANTA) will take the place of a system currently used.

"We needed a better way of giving our customers what they need, cheaper and faster," stated Chuck Zeller, senior engineer and small arms and weapons technical warrant holder for NSWC Crane, in a military news release. "With this quality solution in place, the elite warrior will have better weapons and ammunition with proven testing."

Typically, small arms accuracy test data is compiled using modern acoustical targeting systems to automatically collect shot placement data and generate the needed statistical data for analysis. When a targeting system is not available or firing is done on a range where it is impractical to use an automated system, firing is done on paper targets and data is measured and entered into spreadsheets by hand, a time consuming and laborious process.

SANTA is intended to replace the traditional method of measuring targets by hand with a fast and efficient means of collecting data on used targets.

Starting out as a senior student project, SANTA was produced

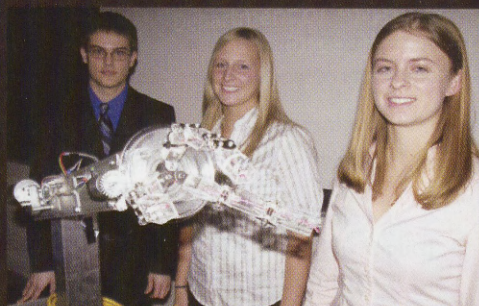
through a teaming effort to allow technical experts at NSWC Crane Special Missions Center to analyze small arms targets, perform image recognition of bullet holes, calculate group sizes and generate statistical data on the targets.

The old, MS DOS-based system consisted of testing on a paper target and physically plotting and analyzing the bullet holes. Data was entered into a spreadsheet on a computer with the target eventually thrown away. Re-analyzing the testing at a later date was not an option.

"When you're analyzing as many as 1,000 targets during one weapons testing session, it can become quite a time-consuming process for our technical staff. This time and our employees' expertise could be better utilized in other support operations," added Jeff Johnson (Mech. Eng., '90), NSWC's engineering branch manager.

With SANTA, digital photos are taken of the tested target and uploaded to the software. Information is entered into data fields from which testers can easily select data, such as type of gun, quantity of bullet holes, distance from the target, type of weather and any other field need to provide accurate testing data.

Once the basic testing data is entered into SANTA, reports can be generated based on the specific analysis needed. The information will also be housed in a complete database for testing comparisons. ■



Meeting the challenge were biomedical engineering graduates Keldon Reller, Kristin Wilson and Katy Zawadski.

AN EMG CONTROLLED ROBOTIC ARM:

A robotic arm, controlled by electromyography signals from a person's muscle contractions, was developed as a teaching aid for a Rose-Hulman neuroprosthetics class. The robot's intricate mechanism features two motors and a pulley system, two joints and three fingers to simulate three-dimensional movement. The project had elements of biomechanics, mechanical engineering, electrical engineering and software development. One prototype was developed, but multiple copies could be created to enhance the classroom educational experience. ■

BASKETBALL FOR THE BLIND:

Earning the Electrical Engineering and Computer Engineering Senior Symposium's Best Project and Best Presentation Awards was a device that makes playing basketball more possible and enjoyable for the visually impaired through a sound-emitting basketball and associated sound-emitting backboard device. The system was originally designed for students from the Hadley School for the Blind (Chicago, Ill.), but has now been used by students at the Indiana School for the Blind (Indianapolis). The basketball's sound emitter utilizes a microcontroller, amplifier, dynamic cone speaker, batteries and a custom-printed electronic circuit board — enclosed in an aluminum tube within a Spalding Infusion basketball — to generate an audible signal. ■



The project was designed and assembled by computer engineering graduates Ian Thomas, Mitchell Thomas and Justin Fuller, and electrical engineering graduate Thomas J. Kelley.



PATIENT TRANSPORTING DEVICE:

Mechanical engineering students came to the rescue of the Riley, Ind., Fire Department, which needed an effective and efficient device to transport patients from an accident scene in remote areas to a medical support center. The push cart-type device allows one staff member to carry a patient on a standard emergency backboard through a variety of terrain and weather conditions. A special feature is that the cart can be attached to an All-Terrain Vehicle for removing patients from remote locations. "This was a creative solution to a challenging problem," cited Fire Chief Jeff Fox. Coming up with this novel idea were Kevin Butler, Kyle Cornelius, Anne Hawkins and Josh Zarecky. ■

STUDYING HEAD INJURY TRAUMA:

A device that investigates head injuries through force and acceleration data obtained by simulating a variety of football-related impacts was created by biomedical engineering students Richard Baker, Kyle Horton, Abisha Varatharaj and Zachary Wagner. There are two aspects to the project: a data-collection mechanism, featuring flex force transducers imbedded in the air rubber cushion bladder inside a football player's helmet; and a force arm device that simulates various angles of helmet hits. The team's project shared the Best Student Poster Award at the American Society of Engineering Education's Indiana/Illinois Conference. ■



A 'GREEN' TEAM:

A 36.5 acre residential subdivision in rural Shelby County, Ind., was proposed by a team of civil engineering students using "green" design and construction techniques using the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) as a guide. The subdivision meets requirements of a Conservation Subdivision, which allows for increased home density within a development in exchange for protecting the natural features of property and providing centralized waste treatment in areas where municipal services are not available. Completing the project were Jason Cooper, de Pinho Nogueira, Katrina Mader, Andrew Pinkstaff and Dustin Whalen. ■

Rose-Hulman Spanning The Globe to Expand Opportunities in Engineering Education...



5 ROSE-HULMAN GRADUATES. DIFFERENT LOOKS AT GLOBALIZATION.

AND HOW IT AFFECTS OUR LIVES, OUR COLLEGE, OUR CAREERS.

As societies and economies of the world come closer and closer together, people, money, knowledge and businesses move easily across borders. **Globalization**, the connectivity in economic and cultural life, is becoming increasingly more important for business survival. Rose-Hulman recognizes this and has made one of its academic initiatives the incorporation of a globalization focus to its curriculum. Engineers located across the world currently participate in design teams that allow work to continue 24 hours a day and chances are almost assured that Rose-Hulman graduates will have to work with companies and engineers outside the United States at some time during their career. Rose-Hulman's goal is to prepare students for this reality by exposing them to other customs, cultures and languages, and assure that all students have some sort of an international experience before they graduate, better preparing them to perform as leaders in today's world of blurred business borders. We contacted several Rose-Hulman graduates with global experiences and asked them a few questions about the importance of international experiences. Here we take a look at those graduates and what they had to say on the issue.

Ryan Barton is a 2001 Rose-Hulman electrical engineering and computer science graduate. He also completed his masters in engineering management degree at Rose-Hulman in 2006. Ryan currently is co-founder of Cetani, www.cetani.com and works in CTO (computer software and integration). Although the business is located in Carmel, Indiana, Ryan resides in Guelph, Ontario Canada, where he works remotely for Cetani. His move to Canada was not related to his work but his ability to work remotely allowed the move. A few years back, prior to living outside the United States, Ryan travelled to Helsinki, Finland for a week to meet with a partner company. That was Ryan's first and unexpected global experience. While the aforementioned partnership with the Helsinki company recently came to an amicable ending, Ryan's company wouldn't exist today without that relationship and that global experience.

"Today," Ryan said, "your market is global and your competition is global. Failure to understand this (at least at a basic level) will keep you from connecting to a huge user base, and will also keep you from spotting potential partners or competitors in your space. This is especially true in computers and software, since the deliverable is so easily transported." If students today don't think globalization is important," Ryan said, "just turn on the news and see how many stories involve only domestic issues as opposed to global issues."

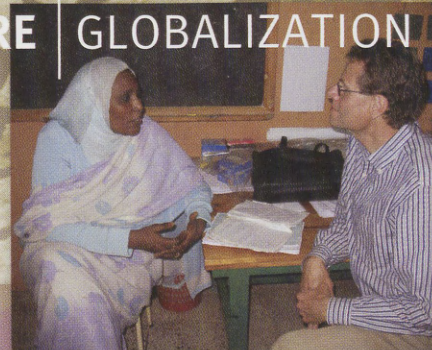
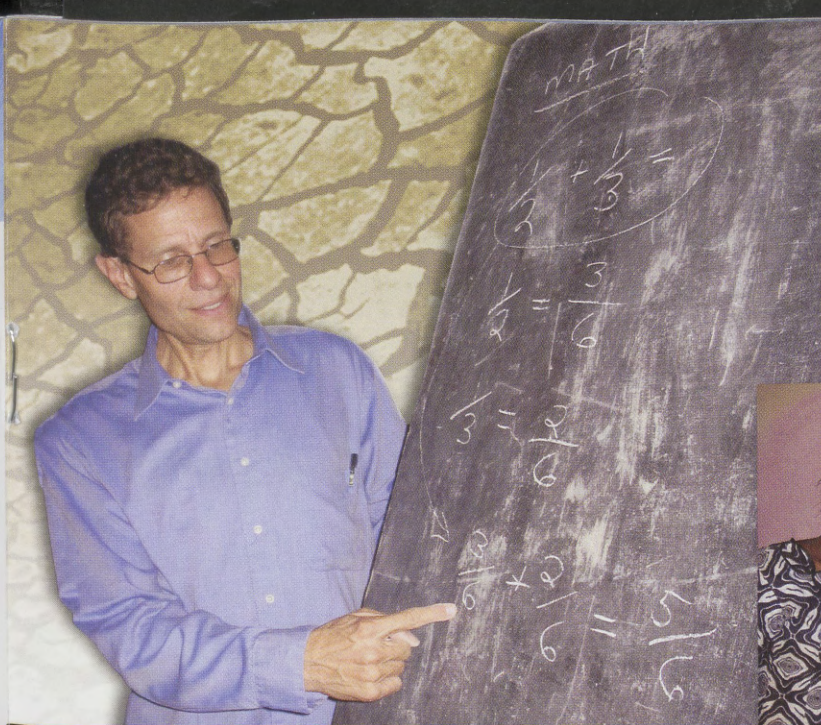
Scott Crockett is a 1986 electrical engineering Rose-Hulman graduate who is senior manager, navigation engineering for Denso International America. Denso International America makes navigation systems/radios for the automotive market as a Tier I supplier. Their main customers are GM and Toyota in North America. Scott has worked for two different Japanese companies over the past 16 years, travelling many times to Mexico and Korea on business trips. Scott's career growth mainly occurred while working for overseas companies.

He said students who do recognize globalization's role in today's world will be severely limited in their opportunities. "As globalization continues and products are designed, developed, and marketed in an increasing number of countries, it will be critical for engineers to work with many different cultures and groups of people. Engineers who can work successfully alongside people of different backgrounds, communication styles, languages and cultures will succeed."

Mitch Reinoehl is a 1994 Rose-Hulman graduate with a degree in civil engineering. Mitch has worked for the Johnson & Johnson company, currently for DePuy Orthopedics as a portfolio manager, since graduating from Rose-Hulman. Over the past ten years Johnson & Johnson has required him to travel in France, Germany, England, Scotland, Ireland, Denmark, Belgium, Brazil, Mexico and Puerto Rico. He and his family recently spent a year in Ireland. Mitch's central responsibility is working with Johnson & Johnson global research and development, marketing and supply chain organizations to ensure the Johnson & Johnson products developed and offered are the right products given current market trends and opportunities; are differentiated from competitive products within the same market space, maximize the company's return on its resource investment, both human monetary and; enable sales growth and profitability goals to be achieved. Mitch said when he graduated from Rose-Hulman in 1994 he had no idea this travel was in front of him. But he said the likelihood a young professional will work with someone from outside the United States is growing each year. And, while on the surface there are many similarities between cultures, the differences often run very deep. "Developing the acumen that enables one to understand and accommodate those differences is critical to one's effectiveness. Whether securing investment capital for a large project, increasing the efficiency of a customer support network or working to improve supply chain profitability, professionals must be able to navigate the complexities of leading and working on international teams." Mitch said he would advise students that international experiences are an "investment—No different than a four-year degree from Rose-Hulman. A degree opens doors and gives you knowledge and skills employers need; International experience opens doors and gives you knowledge and skills an increasing number of employers need. If given the opportunity ... take it. It will likely be difficult in the short term but over time it becomes an advantage and an irreplaceable experience."

David Ubank, a 1988 mechanical engineering graduate is now General Manager for Elli Lilly SA Irish Branch. This branch is Elli Lilly's primary bulk manufacturing site for monoclonal antibodies. This bio technology is seen to be a huge part of Elli Lilly's future, David said. Since graduating from Rose-Hulman, David's job has involved travel to Germany, England, and Ireland and while David didn't really expect the international experience, he welcomed it and actively sought it. "The world is a global place now—so much broader than just the U.S. Anyone who thinks business is only in the U.S. is very shortsighted. It is a global world." This melding of inter-continental business lines gives individuals a much broader perspective of how things work, what the best business practices are, how to be more effective, David said. "It teaches you to operate in a much broader and more diverse way." He encourages students to look beyond Indiana and the United States and to view business in a global environment. "There are huge opportunities out there. Try to do it while you're young. It gives you a great competitive advantage, as well as personally and professional diversifies you and how you see things in the business world." David added.

Zachariah Yoder, a 2004 computer engineering major is working globally in a different venue. Zachariah oversees working in the social sciences as a socio-linguistic researcher/surveyor for Wycliffe Bible Translators. He lives and works in Jos, Plateau state, Nigeria. His international experience was expected and pursued even during his time at Rose-Hulman. "The very nature of my work requires a person to go where minority languages are spoken," he said and the friendships that he's developed with Africans have expanded his understanding of this world. Even though Zachariah is not working in the industrial sector, he said he realizes the impact of today's world without boundaries and encourages students to gain a global experience. "There is so much to the world beyond what we know in the U.S. Even a relatively short visit to another country reveals that there are so many different ways to see an issue." ■



Need quotes for this article, as well for these images too. Need quotes for this article, as well for these images too. Need quotes for this article, as well for these images too.

HOUGHTALENS SUDAN BOUND

A year-long humanitarian journey to serve and bless the people in the Republic of Sudan wasn't a life-changing experience for Robert and Judy Houghtalen. Rather, it was an experience that changed their perspective on life.

That's why the longtime Rose-Hulman civil engineering professor and his wife are leaving the comforts of life in the United States to spend the rest of their professional careers to help improve living conditions in Africa's largest country whose landscape is scattered with unpurified water, poor economic conditions and civil strife.

The Houghtalens will be returning in August to Sudan's capital city of Khartoum — Robert to work with humanitarian organizations or the University of Khartoum; Judy to lend her accounting skills to support human relief agencies. These are some of the same tasks that the couple undertook last year during an 11-month educational sabbatical to the country, which is split by the Nile River and contains the war-torn Darfur region.

"There's a lot of need there," admitted Robert during an interview in his Olin Hall office, where he has served as chair of Rose-Hulman's Department of Civil Engineering since 2001. "Judy and I kept

"An individual has not started living until he can rise above the narrow confines of his individualistic concerns to the broader concerns of all humanity."

— Martin Luther King, Jr.

asking ourselves 'How can we make a difference?' We have some basic skills that can help others. We had a test drive for a year. Now, we're ready for a longer trip. We hope we can give as much as we get from the experience."

Judy added: "A lot of people think that we're doing this because the Sudan needs us. Really, at this point in our lives, we recognize that we need the Sudan much more than they need us."

Last year, Robert Houghtalen applied his expertise in hydrology, environmental engineering, and point-of-use water treatment to educate residents of rural Sudanese villages on how to create bio-sand filters that provide clean water for family units. Over 25 percent of the country's people lack access to a pure water supply. The simple concrete filter purifies polluted water through biological and mechanical processes. Each filter costs approximately \$200 (covering equipment, labor and education) and can provide clean, safe drinking water for a compound of 20 people. Robert also

conducted educational workshops on bio-sand filters, and one of his trainees has implemented more than 220 filters in the sugar cane region of eastern Sudan.

"Really, it's inspiring to see how one person, by educating another, can make a significant difference. Clean water is such a delicate resource in that region of the world. Each water filter has the opportunity to impact so many — young and old, men and women, city and village dwellers," says Robert, who also helped write fund-raising proposals to support the bio-sand filter program. The upcoming journey may have Houghtalen also assisting the Swedish-based International Aid Services humanitarian agency in designing and building small water supply reservoirs throughout the country.

The couple lived in a modest basement-level apartment on approximately \$18,000 a year. They will be looking for similar living arrangements as permanent residents.

"Living outside of your comfort zone

Students Named KAUST Discovery Scholars

Five Rose-Hulman students were among the first recipients of Discovery Scholarships, paving the way for them to complete graduate studies and international research programs at the new King Abdullah University of Science and Technology in Saudi Arabia after earning their undergraduate degrees in engineering and science fields. Rose-Hulman had the most students chosen to receive Discovery Scholarships this year and hopes to have more students participating in the program in the future, according to Daniel J. Moore, associate dean of faculty.

Through the Discovery Scholarships, KAUST is extending its hand to talented and deserving students from across the world with full knowledge that the minds and lives of these students will provide humanity with the next generation of scientific discoveries, according to Ali

Ibrahim Al-Naimi, minister of petroleum and mineral resources of Saudi Arabia and chairman of KAUST's board of trustees.

"KAUST understands that developing and nurturing relationships with leading institutions in global science, technology and engineering is a must," Al-Naimi stated.

The scholarships cover Rose-Hulman tuition and a monthly stipend for the rest of the student's career, along with providing an excellent graduate school experience, according to Moore.

Rose-Hulman's budding relationship with KAUST allowed the Institute to provide advanced undergraduate and graduate courses for several international students who have graduated from their undergraduate programs and are part of the inaugural KAUST Discovery Scholarship students who will be attending



The flag of Saudi Arabia.

KASUT for their master's degree, starting this fall. Attending Rose-Hulman this spring were students from the American University in Cairo and Arab Academy for Science and Technology, both of Egypt; Monterey Institute of Technology and Universidade Iberoamericana, both of Mexico; King Fahd University of Petroleum and Minerals, of Saudi Arabia; and Universidade Estadual de Campinas, of Brazil. The visiting students will live in the apartment residence hall. ■

CROSSING INTERNATIONAL BOUNDARIES

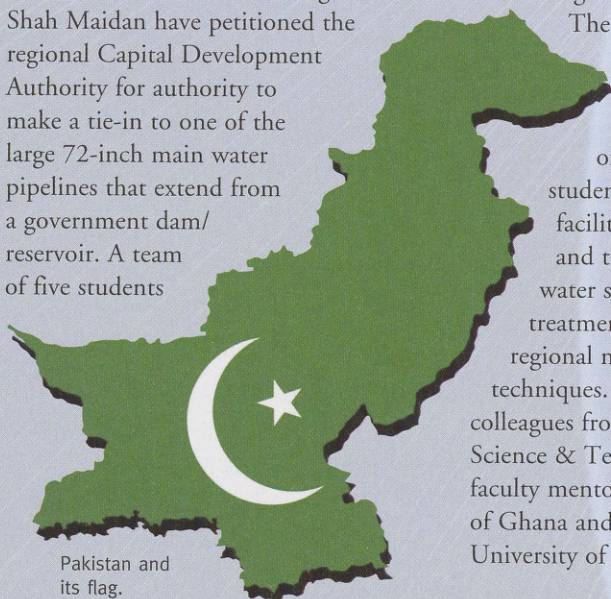
Senior-year civil engineering capstone design projects had students this year designing a water supply system in Pakistan and warehouse facilities in Ghana.

Elders for the Pakistan village of Shah Maidan have petitioned the regional Capital Development Authority for authority to make a tie-in to one of the large 72-inch main water pipelines that extend from a government dam/reservoir. A team of five students

designed the branch tie-in and branch water line of approximately one mile length, navigating through steep, rocky terrain. A concrete water storage tank, able to contain 40,000 gallons, also were designed.

The Ghana Cocoa Board wishes to develop and improve cocoa storage facilities in the village of Kumasi. A team of five students designed warehouse facilities, pavement, parking and traffic planning, drainage, water supply and wastewater treatment --- taking into account regional materials and construction techniques. The team worked with colleagues from Ghana's University of Science & Technology. The project's faculty mentor was John Aidoo, native of Ghana and a graduate of the country's University of Science & Technology.

Past international civil engineering experiences have had students completing projects in Trinidad, Sudan and Ghana. ■



Pakistan and its flag.



Ghana and its flag.

INSTITUTE OPENS DOORS WITH KOREAN INSTITUTE

Rose-Hulman has entered into agreement with the Korea University of Technology and Education (KUT) to promote cooperation in engineering education, to facilitate an international exchange of students and faculty, and to promote applied research of mutual interest. KUT adds to the growing list of international universities and colleges that Rose-Hulman is working with improve engineering education.

The colleges will develop collaborative senior design projects and joint applied research projects; exchange faculty, students, books, tutorial materials and joint publications; and organize international conferences in the areas of science, engineering and mathematics education.

"This collaboration opens educational avenues for Rose-Hulman students and faculty, and help us achieve our institutional strategic objectives in areas of globalization," stated President Gerald S. Jakubowski.

KUT President Un-ki Jeon Jeon stated: "As mankind becomes increasingly aware that borders are imaginary, and

that we are all neighbors and even family, it also becomes wiser. This agreement commits us to work together more closely towards our common goal: the pursuit of improved educational opportunities for Rose-Hulman's and KUT's upcoming generation of students."

With more than 3,600 undergraduate students, KUT is a government-supported university in Cheonan City, South Korea, that was opened in 1992 to specialize in teaching practical engineering and human resources development. The college is highly regarded for its 100 percent graduate career placement, lab-based practice program and re-education vocational programs for field engineers.

Namho Kim, KUT's dean of external cooperation, added that KUT wanted to partner with Rose-Hulman because of both institutions' central missions: undergraduate engineering education.

"Rose-Hulman is the American university that puts education at the core of its value structure. We share the same ideals and values. It would only be natural for us to work together to help create better engineers and scientists -- on both sides of the world," Kim said. ■



■ South Korean temple. ■

Rose-Hulman Facts:

Twenty international undergraduate and graduate students attended Rose-Hulman during 2008-09 from the following countries:

Bangladesh

Brazil

China



Columbia

Ecuador

Egypt



France



Germany

Guatemala

India



Japan

Jordan



Mexico

Morocco

Saudi Arabia

South Korea



Sri Lanka



Taiwan

Thailand

Turkey

Source: Office of International Student Services

Computing in a Global Society

For the fifth year, Rose-Hulman computer science and software engineering students expanded the boundaries of international design projects with colleagues from Sweden's Uppsala University. The project is part of a Computing in a Global Society course taught by Cary Laxer, head of the Department of Computer Science and Software Engineering. This year, the joint project developed an Internet-based health care account for patients at Uppsala's medical center.

During the project, several student groups traveled to Sweden to make presentations about the project and participated in a guest lecture by Helena Bernáld, who specializes in cross-cultural communication. The students conducted small group exercises and had a pizza party. ■

changes your perspective, your values and what's important to you," admits Judy, former conference organizer for Rose-Hulman's Office of Institutional Research, Planning and Assessment. "You find that our way of living (in America), with all of our conveniences, drains the life out of you. Instead, you spend more time on interpersonal relationships — the way things used to be here."

The Houghtalens' humanitarian efforts were recognized at Rose-Hulman's 2009 Martin Luther King Jr. Leadership Awards Dinner. In nominating the couple, Diversity Council member Carey Treager Huber proclaimed, "I believe that (the Houghtalens') work and their commitment to improving the conditions for the people living in their impoverished areas of the Sudan resonate well with the leadership ideals of Dr. Martin Luther King Jr., who said 'An individual has not started living until he can rise above the narrow confines of his individualistic concerns to the broader concerns of all humanity.'"

The service component of engineering has always been important to Robert Houghtalen, who has helped oversee

the civil engineering department's senior design course since 1988. In 2005, he brought the first international capstone project when the couple's son, Jesse (Civil Eng. '06), and three other students designed a battered women's shelter and soup kitchen complex in Trinidad (following a 2005 church-sponsored family trip). Other international projects have had students designing an agricultural training center in Ghana (2007), academic and athletic facilities for Nile Valley Academy in Sudan (2008), and a water supply system for a village in Pakistan and warehouse facilities for the Ghana Cocoa Board (2009).

"These projects should change students' world view and make them better engineers," stated Robert Houghtalen. "For me, my work in Sudan and Trinidad has put engineering in a new context. Now, I appreciate the service aspect of engineering."

If you would like more information and want to stay in touch with or make a donation to the Houghtalen's ministry, email Robert at Robert.houghtalen@gmail.com. ■

PROJECT TAKES COMPUTING STUDENTS TO TURKEY

Rose-Hulman computer science and software engineering students and a faculty member spent this spring collaborating with colleagues from Bilkent University in Ankara, Turkey, to design and development a software application for the International Children's Center. The project will be used to educate and inform children and adults about child rights issues.

Traveling to Turkey for meetings were Christine Price, a junior software engineering major, and Chris Routh, a junior computer science major, along with project supervisor Archana

Chidanandan, assistant professor of computer science and software engineering.

When asked about the project, Price told Bilkent University officials said that she believes it provides a unique opportunity to work with a diverse group of people. While working with a large team, she is hoping to improve her skills in teamwork and division of labor. Routh is excited to work on a project which can have far reaching effects for children around the world. It also provides an opportunity to learn how to communicate across languages and

cultures.

The recent visit has served as a good starting point for students from both sides of the project. Chidanandan believes that, in the future, the students should find it easier to communicate with each other in spite of the time and cultural differences between students of the project teams. ■



Bilkent University, Turkey

Rose-Hulman and Kanazawa Relationship Still Strong

Rose-Hulman students and faculty continue to benefit from its educational relationship with Japan's Kanazawa Institute of Technology, one of the Institute's most inspiring international collaborations. For more than a decade, there have been collaborative international student design projects involving most recently "green" materials and sustainability issues.

This summer, seven students will participate in KIT's Intensive Japanese Exchange Programs for Science and Engineering. Sixteen students traveled to Japan for the program last year.

The program gives students a rich experience in improving their communication skills in Japanese language, learning basic technical terms and related scientific expressions in Japanese through various activities with Japanese students, and understanding Japanese culture and society through lectures and cultural programs. Students take courses in Japanese communication, academic Japanese, Japanese for science and technology, and Japanese language and society.

Among Rose-Hulman professors



Kanazawa Institute of Technology (KIT)

spending time teaching at KIT have been Wayne Sanders, Rick Stamper, Lee Waite, Allen Broughton, Heinz Luegenbiehl, Andy Mech, Scott Clark, Roger Lautzenheiser and Patrick Ferro. ■

RELATIONSHIP BUILDS WITH LEADING JAPANESE UNIVERSITY

Rose-Hulman continues to forge a relationship with Japan's University of Aizu, one of the country's leading technological institutions, through collaborative student/faculty design projects and educational adventures.

This March, Aizu President Shigeaki Tsunoyama, visited Rose-Hulman to learn more about the Advanced Transportation Initiative program, RosE Portfolio student assessment project and hands-on teaching models.

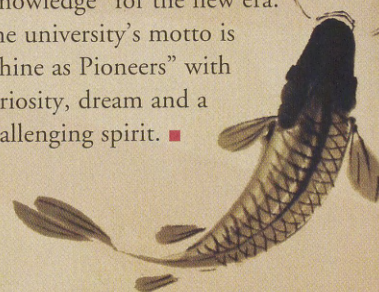
Three students from Aizu spent time during the 2008-09 school year at Rose-Hulman after four computer science students studied at the Japanese

university during a four-month visit last spring. Cary Laxer, head of the Department of Computer Science and Software Engineering, also gave seminars regarding Rose-Hulman's undergraduate education curriculum during a sabbatical semester at Aizu in 2007-08. The seminars were organized by Aizu's Ministry of Education, Culture, Sports, Science and Technology, which aims to promote internationalization of higher education in Japan.

"I believe this four-month stay was a good opportunity for (the Rose-Hulman group) to see and learn about the history and culture of Aizu,

while studying at the University," Tsunoyama stated.

Rose-Hulman and the University of Aizu concluded a general agreement in 2006. The University of Aizu specializes in nurturing computer scientists and highly-skilled computer engineers who will create and exploit "knowledge" for the new era. The university's motto is "Shine as Pioneers" with curiosity, dream and a challenging spirit. ■



BOB SCHUKAI: “AT THE CENTER OF E ALUMNI, STUDENTS WORK TO ENHANC

Bob Schukai doesn't need to be reminded that these are turbulent times in the crowded world of cable television. It is his job to keep one of the largest entertainment companies on the forefront of technology and meeting the demands of viewers desiring news and information 24 hours a day.

Bob Schukai in the CNN newsroom.



OF EVERYTHING IN THE WORLD”

ANCE DISTRIBUTION FOR CNN by Dale Long

The 1986 electrical engineering alumnus is vice president of wireless/broadband technologies for Turner Broadcasting System Inc., a media entity that provides news, entertainment, animation and young adult environments on television and other platforms for consumers around the world. The Atlanta-based company started the ground-breaking network, CNN, and is also home to familiar entertainment networks such as TBS, TNT, Cartoon Network, Turner Classic Movies, Adult Swim and truTV and operates the digital properties for NASCAR, NBA, and the PGA Tour.

Schukai is part of Turner Broadcasting's research and development staff, examining advanced technology innovations – with a global focus.

That's why the Missouri native could be found in the middle of the Australian outback trying to download video from CNN's web page on his Blackberry and other mobile communication devices – similar to the popular Verizon mobile telephone commercials. Instead, Schukai asked “Can I see CNN now?”

“We want Turner programming content to be accessible 24 hours a day anywhere in the world,” he says. “We're constantly seeking ways that technology can enhance the viewing experience, and getting news faster and cheaper from wherever it's happening.”

The search brought Schukai back to Rose-Hulman this academic year as a team of computer science and software engineering students developed a prototype application for the iPhone enabling users to send stories into CNN's iReport service. Most user-generated content is placed on the iReport.com web site, much like youtube.com, but several stories have been used in CNN's global news coverage.

“CNN has become a world leader in news coverage through live, immediate news content. The iPhone makes delivery of CNN possible – from Terre Haute, Indiana to Tel Aviv, Israel,” Schukai stated. “We're excited about the capabilities of the iPhone in enhancing our operations. It's advantageous that we utilize new technologies for distribution across all of Turner's brands.

“Mobile devices have joined the key ring and billfold as important staples in a person's daily lives. That's why we (Turner Broadcasting) are putting so much resource into research and development in these areas,” he says. “The future of media is making news and information content available through mobile and broadband technology, in addition to cable television. That's what is on my radar screen for the future.”

Working with Schukai on the iPhone development project were 2009 graduates Isaac Heyveld (team leader), Derek Baker, Bobby Bennett, Sean Feeney and Caleb Allen. Rose-Hulman joins universities in Georgia and the United Kingdom as conducting research activities for Turner Broadcasting.

“This (iPhone reporting) is new territory for us and the students are learning on the job. This is an area filled with boundless opportunities,” Schukai said. “These students will have marketable skills. There are a handful of people in the world that can program the iPhone for applications, and four of them have graduated this year from Rose-Hulman. As an alumnus, I'm proud of that fact.”

Schukai joined Turner Broadcasting four years ago after spending 18 years at Motorola, spending time in the mobile phone group and departing as director of



3G strategic and business development units in the corporation's United Kingdom operations center. He is now in charge of 10 Turner technical staff members at offices in Atlanta, England and Hong Kong.

“I walked away from Motorola and haven't looked back,” he stated. “There's a point in your career where you can be a lifer or do something cool and different. Every day I walk into the CNN's world headquarters and say, ‘Wow, I'm at the center of everything that's happening in the world.’”

Schukai is a second-generation Rose-Hulman alumnus (his father, Robert, was a 1960 graduate; uncle, Charles, was a 1957 graduate) who serves as class agent for the Class of 1986. ■

Career Achievement



Reynolds, Yager, Kokoska and Young accept their awards.

Award Winners

EVAN KOKOSKA

Evan Kokoska likes doing things with his hands. With those hands he has helped thousands of persons as a general and pediatric surgeon at hospitals for the past 15 years — fulfilling a lifelong dream of making a difference in the medical profession.

The chemical engineering major has helped patients overcome physical deformities, intestinal and lung conditions, tumors, and hernias as associate professor of surgery and director of minimally invasive pediatric surgery at Peyton Manning Children's Hospital in Indianapolis.

Previously, Kokoska served as assistant professor of pediatric surgery at the Arkansas Children's Hospital and University of Arkansas for Medical Sciences, where he became the state's first surgeon to successfully execute a minimally invasive approach for the operative management of numerous pediatric conditions. Prior to that, he was a pediatric surgeon resident at the Riley Hospital for Children in Indianapolis.

"Pediatrics is the last bastion of true general surgery," he asserts. "Children are resilient. You can perform a complicated surgery on a 1-year-old child and they're back up in a week. That's very gratifying . . . I enjoy being the point person in the medical care process. I like the interaction with the families. When things go

well, that's great. When they're not going well, I don't sugar coat things. After all, I'm a parent, too."

In Arkansas, Kokoska was named one of the Best Doctors in America after initiating a bariatric surgery program as part of a multi-disciplinary approach as treatment of adolescents with morbid obesity. He is following four children who have undergone the Laparoscopic Adjustment Gastric Band. Also, he started a laser treatment program for hair removal as a novel treatment for pilonidal disease.

"I may be a surgeon, but I'm also still utilizing my engineering skills as a problem solver," he says. "For example, the GI tract is a complicated system of pumps, pipes and valves moving liquid — like the problem statements that I faced in chemical engineering classes. Sometimes, those pipes get blockages or were deformed from the start. I have to straighten things out."

Kokoska performs an average of 10 surgeries each week at the Manning Children's Hospital on babies (550 grams-4 kilograms) to teenagers; visits a stable of patients daily; and gives advice and inspiration to medical residents and colleagues within other specialties. He is a licensed surgeon in four states. ■

DAVID REYNOLDS

Thanks to David Reynolds, Chicago is no longer just the Windy City, but also has been transformed into one of America's greenest cities.

The civil engineering alumnus has been directly responsible for many of Chicago's signature green projects, such as the Chicago Center for Green Technology, the Green Bungalow Initiative and the Green Homes for Chicago.

"From the beginning, we were so over the top and real trailblazers," Reynolds admits. "The message is getting across: Green is the future. We have shown that green technology isn't a science fair project, it's a better way of using property, and conserving energy, water and resources."

Now, all new public construction in Chicago (such as libraries, fire and police stations) must be LEED certified. Reynolds' work also influenced Chicago's municipal code; for example, 75 percent of all construction debris at building sites in Chicago must be recycled.

Two of Reynolds' keystone projects were included on the American Institute of Architect's listing of the "Top Ten Green Buildings" and one received a Phoenix Award for Excellence in Brownfields Redevelopment from the U.S. Environmental Protection Agency.

"Sustainability helps keep cities competitive by providing a

healthy place to live, open space to play and a reliable power source. It is going to keep Chicago competitive for the next 100 years," said Reynolds, who is active in the Friends of the Chicago River and Delta Institute civic organizations that strives to improve the urban quality of life.

Reynolds' career has included positions in industry, consulting and government. He is vice president for AECOM, a global provider of professional technical and management support services; has been invited to participate in three international workshops, including the Swiss Consulate's Water Study Tour; and is a licensed Professional Engineer and a LEED Accredited Professional.

Reynolds also has helped train the next generation of architects and business leaders in the principles of sustainability through teaching positions at Illinois Institute of Technology and North Park University. He developed a course on "Ecology, Sustainability and Site."

"Green design is different and integrated," Reynolds stated. "Traditional building is a linear process while green building has everyone (architects, engineers, contractors and designers) in the room at the same time. Green design is becoming second nature, like seat belts in cars . . . This was a way for me to apply my faith and engineering skills -- to make things a better place." ■

FLOYD YAGER

Floyd Yager's love of numbers has him in an ideal situation — overseeing mathematicians, statisticians and predictive modelers as vice president of quantitative research and analytics for Allstate Insurance, the nation's second largest insurance company.

"We have lots of data. You name it, we have it," states the mathematics alumnus. "It's our job to make sense of all that information for the benefit of the company and our customers. Data is useless unless it helps us learn from the past and make better decisions in the future."

Yager's 90-person staff develops new rating algorithms and provides expert analytics and decision support for product managers. The department is also responsible for competitive analysis and tools, and models catastrophes to improve Allstate's ability to understand and manage losses from rare events such as earthquakes and hurricanes.

"Everything has risks. It's our task as mathematicians to figure out the best ways to predict those risks," cites Yager. "We know how hurricanes are formed, but we don't know where they are going to strike in any hurricane season. That great unknown challenges insurance companies and can impact the rating system throughout America."

Yager has spent his 20-year career with Allstate, working through various levels, departments and subsidiaries. In 2001,

he became a director in the actuarial research department, being responsible for major initiatives, including development of strategic risk management, and patents related to the popular Your Choice Auto coverage.

Yager's rise continued in 2005 with assignments as the Assistant Field Vice President for Allstate's Midwest Region, managing internal operations for a division that has approximately \$2 billion in revenue and two million policies for 850,000 households. He became Assistant Vice President of Product Operations and California State Manager in 2006, leading product development, pricing and underwriting for all personal line business in California (\$2.5 billion in premiums).

Along the way, Yager received the 2003 Industrial Grand Challenge Award from the National Center for Super Computing Applications and twice earned Allstate's departmental Employee of the Year Award.

"I'm a mathematician, but I couldn't have calculated my personal or professional success," Yager stated. "Recently, I was riding in a limousine around Washington, D.C. That's when it struck me: I'm a first-generation college graduate and destined to be a firefighter, just like my father. Now, I'm one of 50 vice presidents of the largest publicly-traded insurer in the U.S. Who could have predicted that?" ■

BRENT YOUNG

A list of "Hot Topics in Physics" produced in the late 1980s by Rose-Hulman's Azad Siahmakoun helped Brent Young turn into one of the nation's leading innovators in the field of optic sensor and laser system development.

Young approached Siahmakoun to find out more about an emerging field involving the laser cooling of atoms. Throughout the research, Young determined that the industry leader was a key scientist at Bell Laboratories named Steven Chu.

Chu later would leave Bell Laboratories to become a faculty member at Stanford University, where his efforts included a Nobel Prize for Sub-Doppler cooling of atoms in 1987. Young chose to attend the Doctoral program at Stanford under Chu's direction, with a directed study that made the Rose-Hulman graduate one of the first to gain precision measurements using atom optics. Chu continued to advance in the profession and today serves as the United States Secretary of Energy for President Barack Obama.

Young's career included a two-year stint at the Jet Propulsion Laboratory in Pasadena, California, where he contributed to the development of optical systems intended for space applications. His main contribution involved working on the laser system for the Laster Interferometer Space Antenna program.

Following a three-year stint as Senior Research Scientist at Stanford University, Young served as one of three founders of

AOSense, Inc. Young collaborated with James Spilker Jr., one of three inventors of the first Global Positioning System (GPS) device, and Mark Kasevich from Yale and Stanford to form the company that works with Atom Optic Sensors.

AOSense works with various programs to develop atom optic sensors and sensor hardware for the Defense Advanced Research Projects Agency (DARPA), the Air Force, the Navy and the Army. Their efforts include creating a device to compliment current GPS technology by creating a solid structure that can read satellite signals in any situation, including inside buildings, underwater, within forests and wild areas, and within a large city metropolis.

Despite the notoriety of the Stanford faculty and program, along with his subsequent work at the University of Colorado and Yale University, Young considers his Rose-Hulman experience one of the key turning points of his academic career.

"I have always been very thankful for the strength of my education at Rose-Hulman, which provided a strong foundation for graduate school at a top research university and my career in academia and industry," said Young, who earned degrees in electrical engineering, mathematics and physics. He also noted the work of Dr. Jerry Wagner on photolithography modeling that served as Young's introduction to physics research. ■

Marriages

1975

Phillip Wheeler (ME) married Terry Goodman on March 14, 2009.

2002

Joseph Henry Hilger (ME) married Sarah Ann Harmeyer on April 12, 2008 at Saint Mary Catholic Church in Rushville, Ind. Harmeyer is a 2002 graduate of Purdue University and works for the Diocese of South Bend. After graduating from Rose in 2002, Joseph received his graduate degree in 2004 from Purdue University and graduated from the Indiana Wesleyan MBA program in 2007. The couple resides in Ft. Wayne, Ind.

2004

Jessica Farmer (ChE) and **Matthew Albert (CE)** Jessica and Matthew were married on Oct. 11, 2008 at Brownsburg United Methodist Church in Brownsburg, Ind. They currently reside in Houston, Texas. Jessica works as a process engineer for Dow Chemical and Matthew works at Haynes Whaley as a structural engineer. Matthew received his masters degree in Structural Engineering from the University of Texas in 2006.



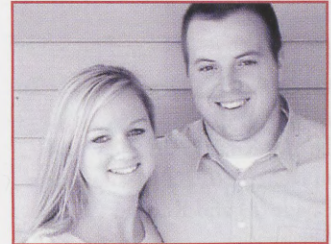
2006

Gregory Lyons (BME) and **Jessica Zapf (ME '07)** were married on Oct. 11, 2008 at Bradley United Methodist Church in Greenfield, Ind. Greg works as a research scientist for Roche Diagnostics. Jessica works as a systems engineer for Beckman Coulter.



2009

Paul Spreen (ME) Ashley Craig of Bedford, Ind., and Paul Spreen of Williams, Ind., will exchange vows at 7 p.m. June 13 at St. Vincent de Paul Catholic Church. Spreen is the son of Bill and Kristi Spreen of Williams. He works for Archer Daniels Midland.



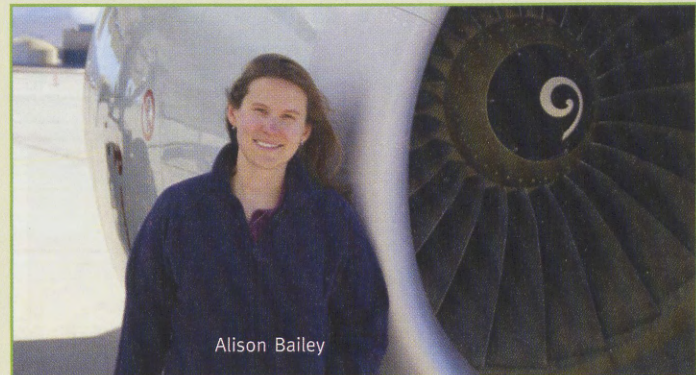
ALISON BAILEY NAMED NORTHROP GRUMMAN'S ASD EMPLOYEE OF THE YEAR

Performing in highly-intense situations on the most advanced airborne early warning radar program in the world has earned Rose-Hulman Institute of Technology alumnus Alison Bailey the respect of her peers and the Employee of the Year Award from Northrop Grumman's Aerospace Systems Division.

Bailey, a 2003 electrical engineering graduate, is one of only two people to receive such recognition in the division.

Bailey works in Seattle at the Military Flight Center at Boeing Field, where Northrop Grumman MESA radar systems are installed on Royal Australian Air Force Wedgetail and Turkish Air Force Peace Eagle aircraft. The award recognizes Bailey's work as a software engineer on the 737 Airborne Early Warning and Control (AEW&C) Multifunction Electronically Scanned Array (MESA).

"Northrop Grumman's MESA team is in charge of everything with respect to the aircraft radars," stated Bailey in a feature article published in the company's Circuit magazine. "We work closely with the Boeing experimental flight test team, which includes officers from the Royal Australian Air Force. We conduct ground testing, system checkouts, and perform maintenance whenever it's needed. When we're up in the air



Alison Bailey

for flight tests, we operate the radar and handle the flight data afterwards."

Throughout Bailey's work on the MESA program, she has spent months at a time running flight tests in Victorville, Calif., and Brisbane, Australia. Wedgetail test flights can be up to 10 hours long, Bailey noted.

"I've had the opportunity to fly with Alison and the team at least three times, and what's always caught my attention was her solid performance under what for many would be considered a highly intense-pressure situation," said Jeff Leavitt, vice president of Surveillance Systems, in the corporate magazine. "Her leadership is so apparent on the MESA program. She holds the respect of our prime — Boeing — and when problems arose with the radar during the flight, the team would look to her to respond. She's a true professional." ■

Rosebuds

1989

Floyd Yager (MATH) and his wife, Kristin, announce the birth of daughter Kaelyn Joy Yager. Kaelyn was born Jan 16, 2009. She weighed in at a healthy 9 pounds, 8 1/2 ounces and measured 19 1/2 inches. Kaelyn joins big brothers Thomas (age 8 1/2), and Michael (age 6 1/2).

1992

Alexander Charles Koziol (CE) and Sara welcomed Alexander Charles Koziol into the world on March 16, 2009. Big sisters Taylor (8) and Katelyn (5) are very happy.

1996

Craig Cutforth (EE) and Liane had a baby girl on February 3rd, Gracin Caroline.

1997

Nathan W. Warfel (EE) and Tiffany had their third girl on April 14, 2009. Her name is Aubree Jane Warfel. She was 10 lbs. 13 oz. Big sisters Whitney and Kaycie are loving it!

Erik Z. Hayes (ME) and Mel announce the birth of their second son, Ronan Z Hayes. He arrived May 30, 2009 weighing in at 8 lbs. and measuring 20 in. Ronan joins big brother Ryland, now 3.

1998

Nathan Jenniges (EE) and his wife, Sarah, are proud to introduce their new daughter Meghan Elizabeth Jenniges. Meghan was born on Nov. 24, 2008 and joins big brother Adam (5 yrs) and sister Kacie (2 yrs). Nathan continues to work at Motorola Mobile Devices and is now a senior manager on the Portfolio team responsible for global product planning and portfolio analytics.

1999

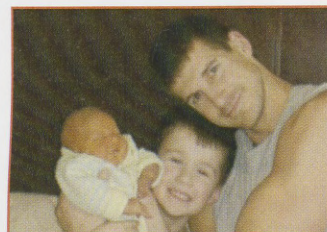
M.J. Kratoska (AO) and his wife, Hanna, would like to introduce their new baby boy, Wesley Roderick Kratoska. He was born Feb. 11, 2009, and was 6 lbs 15 oz. and 19 in. long. M.J., Hanna, big brother Will, and Wesley are now living in Beavercreek, Ohio, near Dayton. M.J. is working as an optical engineer at Sensor Technology Systems in Beavercreek.

2000

Eric Haenlein (CE) and his wife welcomed Audrey Elise into their family on Nov. 3, 2008. Big brother Ethan turned three in August.

2002

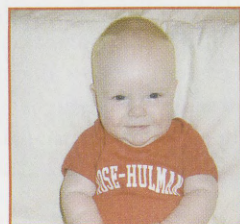
Ryan Harris (ChE) and his wife, Heather, announce the birth of their second son Ryker Dennis Harris. Ryker was born Jan. 16, 2009. He weighed 8 lbs. 12 oz. and was 22 in. Ryan is finishing his masters degree in Bio Medical Engineering from Rose-Hulman.



John Rykowski (ChE) and his wife, Angela, announced the birth of their daughter, Marygrace Lucia, in March 2008.

2004

Steven Hoelle (CS) and his wife, Audrea, welcomed their first child, Isaac Orion, on Jan. 15, 2009.



Class Notes

1972

Ronald L. Loyd (ChE)
Robert was elected President and CEO of Ohio Valley Gas effective November 1, 2008. Robert began his career with Ohio Valley in 1972 as project engineer. He was promoted to chief engineer in 1979, vice president in 1990 and assumed the role of vice president and general manager in 2005.

1987

John Luekin (CE) relocated to southern California last September to lead McDonald's real estate and construction team.

1988

Peter E. Haug (CE) registered professional civil engineer and mechanical shop supervisor at the University of Iowa College of Engineering's renowned IIHR-Hydroscience & Engineering research center, has received a \$466,980 grant from the University of North Carolina at Chapel Hill to design water research equipment for UNC.

Todd S. Kost (ChE) of New Albany, Ind., received the Jess R. Lucas Alumni Leadership Award in recognition of distinguished career success as a former residence life staff member. Kost is president of the Kentucky Financial Group Inc., in Louisville. Kost helps manage KFG Enterprises, Inc., overseeing every facet of its practice. Under Kost's leadership, KFG has experienced significant growth with financial professionals in 12 states.

1991

Dave Hall (ChE) has been promoted to the role of executive vice president of

corporate development for The Hagerman Group. In his new role, Hall is responsible for innovative strategic initiatives at The Hagerman Group, namely the advancement of four corporation initiatives: green building commitment, diversity initiative, institutionalized learning and forum for the future, an innovation incubator.

1998

Renee Schweske (CE)
Renee, a project manager and water/wastewater engineer in HDR's Phoenix office, was recently awarded the Edmund Friedman Young Engineer Award for Professional Achievement by the American Society of Civil Engineers. The award is the highest individual honor designated for a member age 35 and under. Renee earned her master's degree in civil engineering from Arizona State in 2006 and has technical experience that spans a broad range of water resources, water, wastewater and industrial projects.

1999

Kirk Myers (CE) Kirk is stationed in Italy and working as a logistics officer. He has been promoted to major. In Sep. he married an Italian lady named Erika.

2001

Greg Gotwald (ChE) Greg has received one of only 13 "Up & Coming Lawyers" awards in Indiana, given by the statewide publication, Indiana Lawyer. Gotwald is an associate with the law firm of Plews Shadley Rancher & Braun LLP, a leading environmental law firm in the Midwest with 34 attorneys in offices in Indianapolis and South Bend. Gotwald received his J.D. cum laude from Vermont Law

School. He has been an associate at Plews Shadley Racher & Braun LLP since 2004. "Up & Coming Lawyers" must not have been out of law school more than five years and are selected for having already demonstrated leadership and a talent for making an impact.



2002

Jaret Gaither (CE) took a new position with E. Roberts Alley & Associates, Inc. in Johnson City, Tenn. as a senior engineer.

Nathan Stevenson (CE) was awarded Employee of the Month for Dec. at LA County Public Works.

2004

Matt Horne (CE) reports he is moving to Calif. with Kimley-Horn and Associates, Inc.

2005

Laura Reese (BE) graduated from Wayne State School of Medicine in May 2009. She will

be starting a medical residency in psychiatry at the University of Michigan. She and her husband, James "Bobby" Reese (C.E. Class of 2007), who works for Golder Associates in Wixom, Mich., will be residing in Ann Arbor, Mich.

2008

Nate Bloss (CE) reports he has been in Africa (Namibia) since the first of Nov. He is learning to speak Oshindonga and basic African. He is in a small village in the North teaching math.

Bailey Challenge Update

In the Winter issue of Echoes, the solver was listed as a friend of Rose-Hulman. In fact, Ralph Llewellyn was a member of the class of 1955. Our apologies. ■

Send Class Notes to Bryan Talyor at bryan.taylor@rose-hulman.edu or call him at 812-877-8258.

HANIFORD NAMED MANUFACTURING VICE PRESIDENT AT ALCOA HOWMET



Joseph Haniford

Alumnus Joseph Haniford has been promoted to vice president of manufacturing for Alcoa Howmet's North American operations. He will be driving the company's manufacturing strategy toward 2011 goals. Located in Cleveland, Haniford will continue to serve as a key member of the Alcoa Power and Propulsion management team.

Haniford, a mechanical engineering alumnus, joined Alcoa after graduating in 1980 as a mechanical engineer at the company's Warrick, Ind., operations. Since then, he has built an extensive career in manufacturing, having held various operational and management positions in the company's primary metals and the rigid packaging division and Alcoa forged and cast products.

In 1996, Haniford was named to general manager of Alcoa's KAAL Australia facility, a joint venture between Kobe Steel and Alcoa. Two years later, he assumed the position of manufacturing manager for Tennessee and Warrick plant operations; in 2000, he was appointed vice president of sales for the rigid packaging division; and in 2001, he was named vice president and general manager of Tennessee operations. Most recently, Haniford served as vice president and general manager of Alcoa forged and cast products.

Haniford, a distinguished alumnus of Rose-Hulman in 2000, is also a member of the executive committee of the Ohio Chamber of Commerce and serves on the board of directors of the Cleveland United Way-2009 Campaign Cabinet and a regional co-chair. He also is a member of the board of directors of the Cleveland Foundation Scholarship Program which focuses on the development of Hispanic and African American youth. ■

BAILEY CHALLENGE Solvers of the last issue problems are:

Continued from page 9

ALUMNI: J. Hurt, 1948; W. Rinker, 1951; C. Hirschfield, 1954; C. Cooper, 1956; A. Sutton, 1956; B. Waggener, 1957; D. Bailey, 1959; J. Tindall, 1961; S. James, 1965; J. Born, 1970; B. Wade, 1983; K. Shafer, 1983; C. Hastings, 1986; C. Abdnour, 1989; P. Marken, 1989; J. Huss, 1991; D. Hector, 1992; D. Holscher, 1994; M. Ley, 1997; W. He, 1997; M. Pilcher, 1998; C. Hayden, 2001; B. Elliott, 2002; S. Dupal, 2006; B. Sherman, 2012; T. Tran, 2013; P. Hand, 2013; K. Zimmerman, 2013; J. Wimmers, 2013; A. Hastings, 2017

FRIENDS: J. Marks, M. Weil, M. Harris, M. Rosene, P. Hines, J. Ley, J. Parks

ALUMNI UPCOMING EVENTS

SATURDAY, JANUARY 09, 2010

Alumni Meeting & Reception
Location: San Diego, California

SATURDAY, JANUARY 16, 2010

Young Alumni Council Meeting
Location: Indianapolis, Indiana

FRIDAY, JANUARY 29, 2010

Alumni Meeting & Reception
Location: Sarasota, Florida

SATURDAY, JANUARY 30, 2010

Alumni Meeting & Reception
Location: Naples, Florida

FRIDAY, FEBRUARY 12, 2010

Alumni Meeting & Reception
Location: Houston, Texas

SATURDAY, FEBRUARY 13, 2010

Alumni Meeting & Reception
Location: Dallas, Texas

FRIDAY, FEBRUARY 26, 2010

Alumni Board Meeting
Time: TBD

SATURDAY, MARCH 06, 2010

Alumni Meeting & Reception
Location: Washington,
District of Columbia

WEDNESDAY, MARCH 17, 2010

St. Patrick's Day Event
Time: TBD

SATURDAY, MARCH 20, 2010

Alumni Meeting & Reception
Location: Phoenix, Arizona

FRIDAY, APRIL 02, 2010

Alumni Meeting & Reception
Location: Spartanburg, South Carolina

SATURDAY, APRIL 10, 2010

Young Alumni Council Meeting
Location: Terre Haute, Indiana

Rose-Hulman Institute of Technology
@ Bump Day

Location: Indianapolis, Indiana

FRIDAY, MAY 28, 2010

2010 Senior Soiree
Location: Terre Haute
Time: TBD

Alumni Board Meeting

Location: Terre Haute
Time: 2p.m.

Rose-Hulman Ventures – Celebrating 10 Years of Innovation

This year marks the 10th anniversary of the beginning of Rose-Hulman Ventures.

Real **students** directed by
real **project managers** developing
real **engineering solutions** for
real **companies.**

If your company or organization wants to take advantage of the Rose-Hulman Ventures difference, contact William Kline, associate dean for professional experience, at telephone 812-244-4000 or via e-mail at william.kline@rose-hulman.edu.

ROSE-HULMAN VENTURES 1999-2009

Obituaries

1939

Francis A. "Frank" Marasco (EE) 91, of Martinsville, Ind., died Monday, March 16, 2009, in Martinsville, Ind. He was a Naval Aviator for 39 years, retiring in 1973. He was born Jan. 3, 1918 in New Goshen, Ind., to Anton and Elizabeth Marasco. He was a lifelong member of the Elks Lodge. He played the violin, enjoyed playing golf and baseball, hunting and was an avid bowler. He also was a licensed pilot owning his own plane for many years.

1944

Donald E. Alexander (ME) passed away on Sep. 6, 2008, at Reid Hospital. After graduation, Don was chief engineer in the Navy on the U.S.S. Hobby and the U.S.S. Campbell during WWII. He was employed from 1946-68 with Richmond Steel Service, Inc., Crosley Division of AVCO Manufacturing Corp., and MotoMower Inc.,

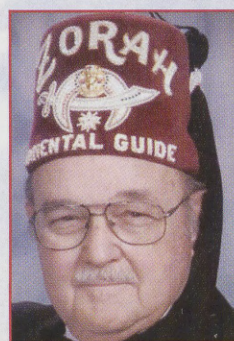
and Dura Division of Walter Kiddie in Zanesville, Ohio. Following his engineering career, he was president of World Life and Accident Assoc.. At the same time he founded World Central Inc., a data processing service. He retired in 2001. He is survived by his wife, Jean; and children Debi, Shari, Anne and Denis.

1957

William R. Small (ChE) 73, of Richmond, Ind., died Nov. 6, 2008. He is survived by his wife, Mary K. Small; two daughters, Cynthia S. Robinson of Leonardtown, Md. and Kathleen S. Young of LaPlata, Md. William retired from Westvaco in 1997 after 40 years of service. He was a member of Derbyshire Baptist Church and retired as a Board Member of Virginia Baptist Homes.

Bill Joe Came 73, Center Point, Ind., died Sunday, May 31, 2009, at St. Vincent Seaton Specialty Hospital, Indianapolis, Ind. He had a career as an

aerospace engineer. He had also worked as a high school math teacher and a mathematics professor at Santa Ana College. He served in the Indiana National Guard. He married Linda Lou Cravens. He was a Clay County Reserve Deputy Sheriff and had attended the Center Point United Methodist Church. He was an active member of Center Point Masonic Lodge 597, Zorah Shrine and Scottish Rite. He is survived by daughter Katherine Sue Ellis.

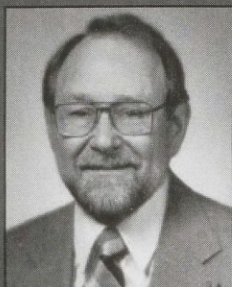


1977

Lawrence Lee "Larry" Lidster (CE) died February 26, 2009, in Costa Mesa, Cal. Funeral

services with full military honors were conducted on Monday, March 23, 2009, at Arlington National Cemetery. While a student, Lidster was active in student government and the student chapter of the American Society of Civil Engineers. He enlisted in the US Marine Corps in 1965 and retired with combat-related disabilities in July 1971 after receiving the Purple Heart, Vietnamese Cross of Gallantry and a Presidential Unit Citation. He married Elizabeth Stump on July 6, 1968. Lidster started many companies after graduating from Rose-Hulman. He is survived by his mother of Clearwater, Fla; a sister, Linda, of Dunedin, Fla; twin brother Loren; his dear friend, Beth Lidster of Rohnert Park; and five children, Heather Shepardson, Jennifer Lidster, Logan Lidster, Rachel Armour and Brooke McFadden, all of California; and grandchildren, whom he adored and knew him as "Papa Larry." ■

Rose-Hulman loses a Professor, Frank Guthrie passes



Chemistry Professor Emeritus Frank Guthrie died on June 11 in Terre Haute after a lengthy illness. He is survived by his wife Marcella and four sons.

Guthrie served as professor for 42 years (1952 to 1994), Department of Chemistry chair (1969-72) and health professions adviser (1974-1993). He continued to be active in professional associations, serving in various positions with the American Chemical Society,

Alpha Chi Sigma and the Indiana Academy of Science.

"The Department of Chemistry is saddened to lose one of its special friends and colleagues," stated Michael Mueller, Head, Department of Chemistry and Biochemistry. "Frank had an

indelible imprint on Rose-Hulman, its faculty and its alumni. He was proud of each of his student's successes and was always concerned about what was best for Rose-Hulman students."

A display case in the Department of Chemistry was named in Guthrie's honor in 2003.

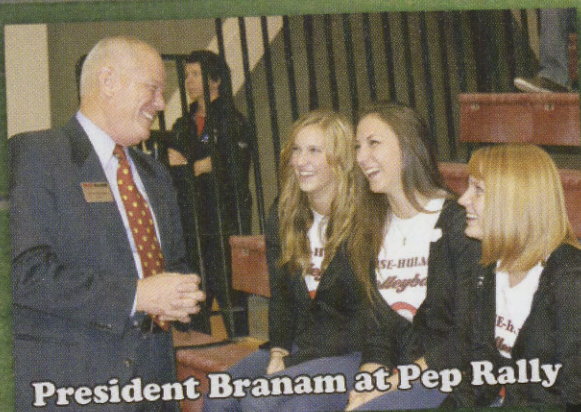
When asked in a 1994 interview what he enjoyed most about teaching, Guthrie answered: "The influence I've had on the lives of several students. It's very satisfying to see people succeed and know you've had some part in it."

Guthrie was a walking compendium of facts about former students, particularly those who went onto medical school or chemistry graduate school. He also knew the route they took to Rose-Hulman and he knew what they were doing today."

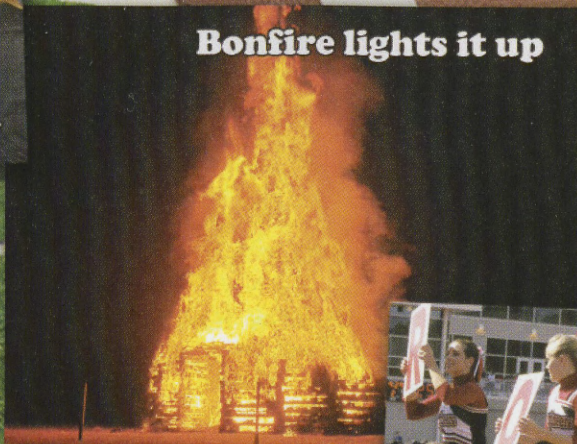
Guthrie was a Hanover College graduate who earned a doctorate degree from Indiana University. ■

ROSE-HULMAN

HOMECOMING
2009
SEPT. 26



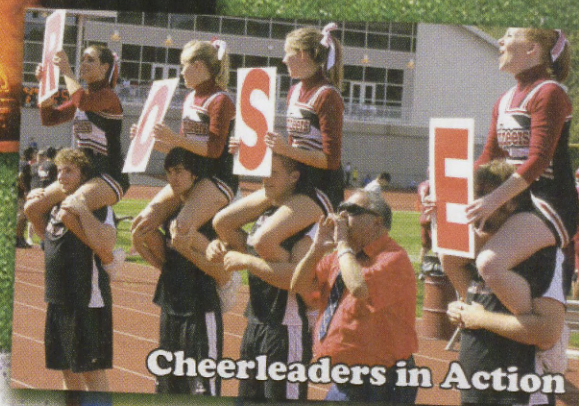
President Branam at Pep Rally



Bonfire lights it up



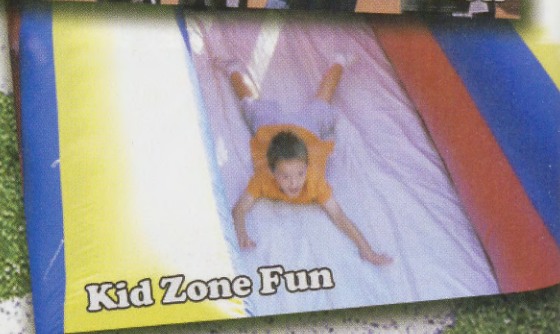
Fans at Cook Stadium



Cheerleaders in Action



Academic Open Houses



Kid Zone Fun



Academic Open Houses




Gridiron Alumni




ROSE-HULMAN INSTITUTE OF TECHNOLOGY

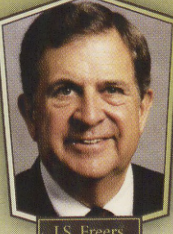
**Make plans now to attend
Homecoming 2010
OCTOBER 1-3**



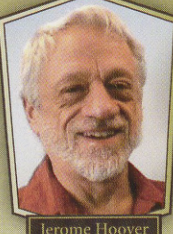
George Freers



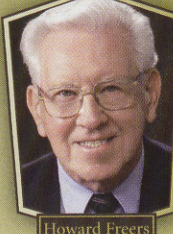
Sydney Freers



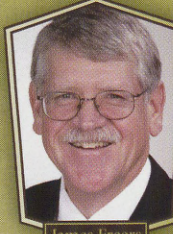
J.S. Freers




Jerome Hoover




Howard Freers



James Freers



Frederick Freers



Frederick Freers

A Lasting Legacy The Freers Scholarship

For more than a century, the Freers family has been an important thread in the fabric of life at Rose-Hulman with several family members attending the Institute. To honor that legacy, Howard Freers has established the George H. Freers Scholarship Fund in the name of his father, a 1908 Rose Poly graduate. **For information about how you can honor your Rose-Hulman legacy, contact the Office of Institutional Advancement at 812-877-8211.**

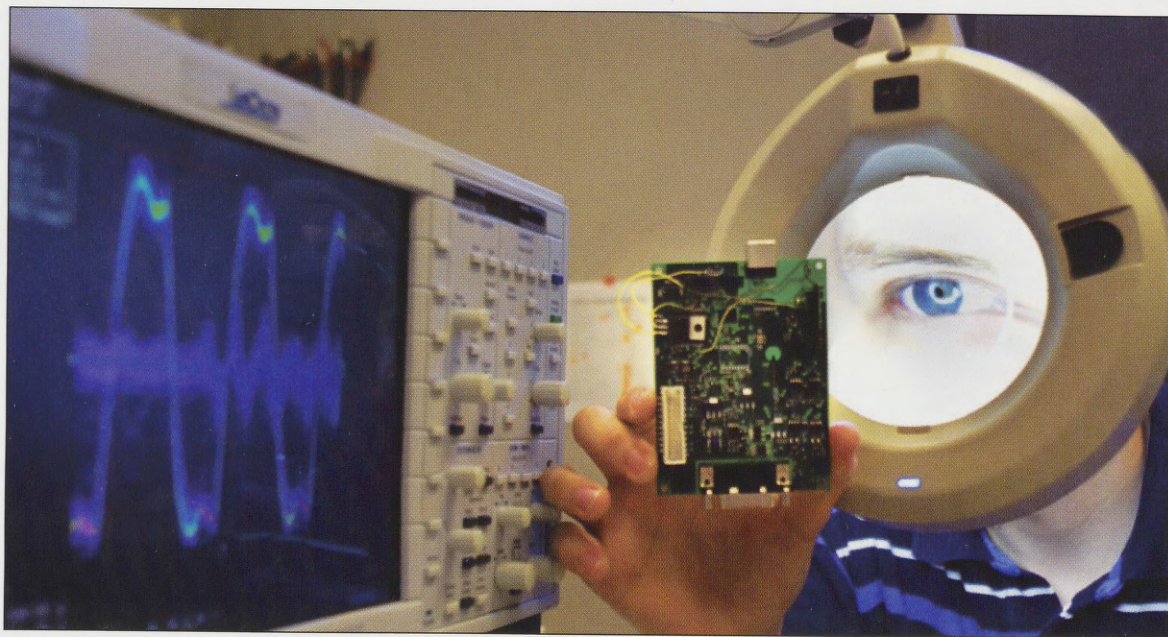
Echoes

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PARTING SHOT

Eye on Innovation

Paul "Trey" German works on a project at Rose-Hulman Ventures for Simma Software. Rose-Hulman Ventures is celebrating its 10th anniversary.