

Spring 2014

Volume 2014 - Issue 2 - Spring, 2014

Echoes Staff

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ROSE-HULMAN INSTITUTE OF TECHNOLOGY

Echoes

SPRING 2014

Vol. 2014, No. 2

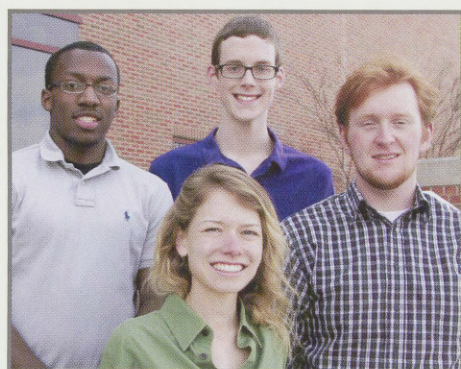
A portrait of Federal Appeals Court Judge Robert Wilkins, a Black man with glasses, wearing a dark suit and a blue patterned tie. He is looking directly at the camera. In the background, a large, circular seal of the United States Department of Justice is visible, featuring an eagle with a shield and the words "DEPARTMENT OF JUSTICE" and "QUI PRO DOMINA JUSTITIA SEQUITUR".

BLAZING NEW TRAILS

Federal Appeals Court Judge Robert Wilkins
Joins Alumni Driven to Make a Difference

'CATS' MEOW:
Drama Club members
presented the musical
'Cats' this spring.

STUDENTS WITH A CREATIVE SPARK



STUDENTS PICKED FOR GLOBAL INNOVATION CHALLENGE

Four mechanical engineering students will spend this summer developing daring solutions to revolutionize automobiles—the team is one of the 20 finalists from 13 countries in the Valeo Innovation Challenge. There were only two American teams chosen from nearly 1,000 worldwide entries. The goal is to create a smart and connected vehicle that produces a cleaner, safer, and more enjoyable ride. Learn more at www.rose-hulman.edu/innovationchallenge.

Hannah Bailey (front) with Wade Stallings, Aaron Jones, and David Johnston

HUMAN-POWERED VEHICLE PEDALS TO ANOTHER TITLE

Rose-Hulman once again came out on top in the national collegiate human-powered vehicle competition—winning a regional title for the 11th time in the past 14 races. This year, the team's three-wheeled vehicle took first overall in the west regional, after placing second at the East Coast event. Technical innovation and design presentation were key elements in this year's success. Find out more at www.rose-hulman.edu/hpv.

Crystal Hurtle rides to victory at west regional



Kristin Uuk, Zach Ernst, Craig Godbey, Dick Neal, and Josh Yoder

DESIGN/BUILD/FLY TEAM SOARS TO NEW HEIGHTS

Students designed, built, and flew a custom model airplane that had a Rose-Hulman-best 13th place finish in this year's national competition. The electric, remote-controlled aircraft was constructed as part of a capstone design course. The team's faculty advisor was Calvin Lui (ME, 1991). Fly high with the team at www.rose-hulman.edu/DBF.

Keep Track of what's happening at Rose-Hulman at www.rose-hulman.edu

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Alumni Can Connect Through RoseSTEM

Stay connected through <http://rosestem.rose-hulman.edu>—finding old friends and classmates, register for social events and other activities, submit your news and class notes, network with alumni in your career field, and live chat with other alumni.



ON THE COVER

Robert L. Wilkins, a 1986 chemical engineering alumnus, uses his engineering background to make decisions on technical issues as a new judge of the influential U.S. Court of Appeals for the Washington, D.C., Circuit. He was approved by the U.S. Senate in January after being nominated by President Barack Obama last year. Wilkins' profile as an Alumni Trailblazer is featured inside this issue. (Photo by Doug Kapustin)



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Will You Be the One?

141 Donors Are Needed to Increase
Our Alumni Giving by One Percent

What makes Rose-Hulman great, a powerful force for innovation, an engine for positive change in the lives of young minds, and, through them, a catalyst for advances we can't even yet imagine? In a word: people.

We know we are fortunate to have students with a personal drive and thirst for knowledge. We have an outstanding faculty and staff that are committed to delivering the highest quality of education. There are hundreds of employers that give our graduates a chance to make their mark in their chosen fields.

And, there's one more critical group of people, without whom Rose-Hulman could not keep moving forward: dedicated and engaged alumni.

You play a vital role in helping us meet our mission of providing the world's best undergraduate science, engineering, and mathematics education in an environment of individual attention and support.

We're in the midst of pursuing ambitious goals and strategies, and we simply can't succeed without the support of a large share of those whose careers have been furthered by their Rose-Hulman degrees.

Without your support we won't be able to implement many elements of our Strategic Plan, crafted by valuable participation from many alumni. Many parts of our plan and future goals have significant price tags attached.

It's essential that we build a new academic center for such growing areas as the life sciences, chemistry, biology, and biomedical engineering. Also, an expanded student union will provide a much-needed boost in the day-to-day experiences of our students.

We know that globalization brings opportunities for Rose-Hulman and our students, but only if we're ready. An engaged alumni



Jim Conwell

MESSAGE FROM THE PRESIDENT



KEY STRATEGIC INITIATIVES

- Construct a state-of-the-art, LEED-certified teaching and learning center to provide advanced classrooms and laboratories, as well as flexible spaces for projects.
- Build a next-generation LEED-certified student life center that will include dining options, meeting space, student organization space, and informal gathering areas.
- Create an endowed Center for Technologically Enhanced Education to support development of online and hybrid courses and to support and inform all activities related to science, engineering, and mathematics education.
- Create and launch an integrated, strategic marketing plan to enhance recognition to Rose-Hulman's excellence and accomplishments through both earned and paid media.
- Establish an endowed Innovation Fund to support creative, innovative, and/or timely new educational initiatives.
- Establish endowed faculty chairs to recognize and support excellence in scholarship, teaching, or professional skills.
- Enhance and expand continuing education and other learning opportunities that can be offered online and in person to constituents.

Learn more about Rose-Hulman's Strategic Plan at www.rose-hulman.edu/StrategicPlan

base will help us spread recognition of Rose-Hulman around the globe, while opening doors for more international experiences for our students.

We also recognize great opportunities to reach students and alumni through new online connections. As an institution known first and foremost for delivering the best classroom instruction and real-world, hands-on experiences in undergraduate science, engineering, and math, we need to be a leader in using technology to provide education to students and continuing education opportunities to alumni. Online education has a bright future, but requires significant resources if we're going to lead the way.

There are other critical issues in our Strategic Plan that need your support—see key strategic areas on this page.

It's impressive that Rose-Hulman has been recognized for 15 years as the No. 1 institution in *U.S. News & World Report's* College Guide. That's a glorious chapter in our recent history,

but we're in the business of building the future, not just celebrating our present and our past. Staying on top of our game means thinking beyond where we are now, setting new trends, and engineering a new tomorrow. We simply can't do that without your involvement.

As I'm writing this message, only **25.6 percent** of our alumni have made a financial contribution to our annual fund-raising effort, The Fund for Rose-Hulman. Our alumni participation rate goal for 2013-14 is **35 percent**. With **141 alumni donors** needed to increase the participation rate by **one percentage point**, we need **1,331 more alumni** to **contribute by** the end of the fiscal year, **June 30**.

And, that's just to meet 35 percent, which is considered low when compared to other higher education institutions. (See graphic)

Alumni participation shows that you support our mission and vision for the future. Many corporations and foundations pay close attention to alumni engagement as an endorsement of satisfaction in the quality of your education, and how it has paved the way for your career success. Your level of support motivates these outside donors to join our winning team. Are you satisfied with the quality of your education?

It's worth noting that any size financial gift contributes to The Fund for Rose-Hulman and the alumni participation rate. It doesn't take much to have a major impact on Rose-Hulman. Any show of support—large or small, whether directed to your academic department, athletic team, or the area of greatest need—builds momentum for our future.

What you earned here is far more than a piece of parchment hanging on your wall. You earned an ongoing seat at our table and a voice in our future. Please join us on this journey, because you have a primary role in building the value of that diploma and enhancing the reputation of the name that's proudly at the top of it. ■

Jim Conwell is Rose-Hulman's 15th president

Follow President Conwell
@RoseHulmanPrez

GIVING BACK

SCHOOL NAME (STATE)	AVERAGE ALUMNI GIVING PERCENTAGE
Thomas Aquinas College (CA)	64
Princeton University (NJ)	62
Williams College (MA)	58
Carleton College (MN)	57
Centre College (KY)	52
Univ. of Notre Dame (IN)	41
Massachusetts Inst. of Tech.	37
Wabash College (IN)	37
Harvard University (MA)	36
Stanford University (CA)	36
Harvey Mudd College (CA)	32
Rose-Hulman Inst. of Tech.	31

Source: *U.S. News & World Report, 2014 Best Colleges Guide*

ALUMNI
TRAILBLAZER
ROBERT WILKINS
Chemical Engineering, 1986

Driven to Make a Difference

New Federal Appeals Judge Robert Wilkins Takes
Engineering Approach to Legal, Civil Rights Issues

When federal judge Robert L. Wilkins reminisces about his career as an influential jurist and civil rights activist, he credits his years as a chemical engineering major at Rose-Hulman with providing a solid technical foundation for his legal pursuits, as well as a community of peers who were driven to succeed.

"Success breeds success," Wilkins says. "So when you are around those smart, highly motivated people who are goal-oriented, you can't help but be affected by that. Certainly that was the case at Rose-Hulman. I was assisted by the same dynamic when I went on to law school at Harvard. The peer group, the high standards, and the striving for excellence that I observed at Rose-Hulman helped propel me."

A 1986 Rose-Hulman graduate, Wilkins was appointed to the U.S. Court of Appeals for the Washington, D.C. Circuit in January, after being nominated by President Barack Obama. There he handles appeals from federal administrative rule-making bodies, including disputes regarding environmental, energy, and communications law.

Prior to assuming his appellate judgeship, Wilkins spent three years as a district judge, eight years as a partner with a prestigious D.C. law firm, and a decade as a public defender. He also helped found the National Museum of African American History and Culture and won a settlement in a landmark lawsuit against the Maryland State Police for racial profiling.

Story by Carolyn Duffy Marsan/Photos by Doug Kapustin

"Judge Wilkins is a respected appellate jurist, celebrated litigator, effective community mobilizer, and groundbreaking civil rights leader. The D.C. Circuit Court will benefit from Judge Wilkins' diverse life experiences and commitment to excellence."

—John Page, President
National Bar Association



For Wilkins, the road to an esteemed federal judgeship at the nation's second most important court included many unexpected twists.

Raised by a single mother in Muncie, Indiana, Wilkins first visited Rose-Hulman as a participant in the Operation Catapult summer program after his junior year at the now-defunct Muncie Northside High School.

"I fell in love with the campus," Wilkins recalls. "The engineering coursework was intriguing and a great experience. Rose-Hulman was definitely my first choice...I liked math and science, especially chemistry, so chemical engineering seemed like a good choice."

At age 18, Wilkins had no interest in pursuing a graduate degree. But after three summers spent working in the engineering department at Ball Corporation, he became interested in government and political science, and decided to attend law school. He graduated from Harvard Law School in 1989 and embarked on a legal career dedicated to civil rights issues.

"At Rose-Hulman, I was involved in student government and the interfraternity council. I was being exposed to governance issues," Wilkins explained. "I really wanted to be part of bigger issues in the world, and not just working on an issue that might affect one company, one product, or one plant."

Wilkins, who received an honorary doctorate of engineering during commencement this spring, encourages current and prospective Rose-Hulman students to keep an open mind about their careers.

"I'm the perfect example of someone who thought he was very certain about what he would be doing after four years at Rose-Hulman," he says. "There ended up being a pretty drastic change in plans that worked out well for me."

Wilkins adds that the technical skills he developed at Rose-Hulman have been useful throughout his legal career.

"I rely on the problem-solving skills that I developed as an engineer every day," Wilkins states. "I also rely upon the analytical framework I learned at Rose-Hulman. It definitely



DECISION MAKER: Judge Robert Wilkins has been on the federal bench in Washington, D.C., (left) for the U.S. Court of Appeals and U.S. District Court. He works with staff (right) to review materials to settle appeals in legal disputes.

GETTING PERSONAL

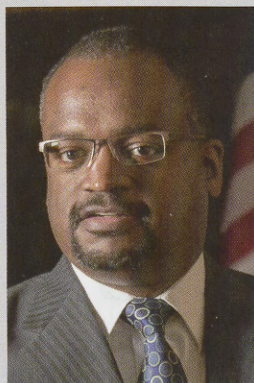
JUDGE ROBERT L. WILKINS

U.S. Court of Appeals
 District of Columbia Circuit
 January 2014-Present

- Nominated by President Barack Obama, June, 2013
- Confirmed by the Senate, January, 2014

ACADEMIC BACKGROUND

Bachelor's Degree in Chemical Engineering,
 Rose-Hulman, 1986
 Juris Doctor, Harvard Law School, 1989



CAREER BACKGROUND

- Judge of the U.S. District Court for the District of Columbia, December 2010-January 2014
- Partner at Venable, LLP, a Washington, D.C., law firm, 2002-2010; specialized in white collar defense, intellectual property, and complex civil litigation.
- In 2000, founded a non-profit organization that successfully lobbied to create a National African American Museum and Cultural Complex.
- Staff attorney and head of special litigation for the Public Defender Service-District of Columbia, 1990-2000
- Law clerk for Judge Earl Gilliam of the U.S. District Court-Southern District of California, 1989-1990

ROSE-HULMAN CAREER/AWARDS

- Honorary Doctorate of Engineering, 2014
- Speaker, Martin Luther King, Jr. Celebration Week, 2008
- Alumni Association's Honor Alumnus Award, 2005
- Herman A. Moench Commendation (distinguished graduating senior), 1986

PERSONAL RECOGNITION

- Helped establish the Smithsonian Institution's National Museum of African American History and Culture, serving on a special commission established by President George W. Bush. The museum is scheduled to open in 2015.
- Filed *Wilkins, et al v. State of Maryland* in 1992 after being subjected to a vehicle search when pulled over for speeding. He won a landmark settlement in this civil rights lawsuit against the Maryland State Police, and brought national attention to the practice of racial profiling. The settlement requires systematic compilation of data for all highway drug and weapons searches, including the race of the motorist.
- Named one of the "90 Greatest Washington Lawyers of the Last 30 Years" by *Legal Times*, 2008

FAMILY/NOTABLES

- From Muncie, Indiana
- Resides in Washington, D.C.
 - Wife, Amina
 - Sons, Bakari and Alim

affects how I look at the law and how I deal with legal issues. I try to sort through the law to determine what the rule is...To the extent that I can help formulate a clear rule, I think my training as an engineer pushes me to do so."

On the bench, Wilkins runs into technical issues on a daily basis. That's when his engineering background is most useful.

"We've had cases involving international satellites, regulation of telephones, mining issues, and intellectual property involving helicopter design," Wilkins says. "Every week, there is some aspect of technology or science that I have to delve into for a case."

Wilkins also has found that being an engineer is an advantage in the political realm. For example, Wilkins took an objective, analytical approach to successfully lobbying for the Smithsonian Institution to create an African American history museum.

"Lots of people had worked on trying to make the museum happen for decades. When I got interested in the issue, the first thing I did, using my engineering training, was to study those efforts and determine what went wrong so we could change our approach and get it right this time," Wilkins says.

"[Judge Wilkins] has applied the law with the utmost impartiality and integrity. I am confident that he will continue to do so on the D.C. Circuit."

—President Barack Obama
 Following Wilkins' Confirmation

Similarly, Wilkins took a problem-solving approach when he was pulled over for speeding by the Maryland State Police and subjected to a drug-sniffing dog search. As lead plaintiff and co-counsel in a lawsuit stemming from that incident, Wilkins exposed racial profiling practices and won a settlement that requires the police to track traffic stops and the race of the driver involved.

"The lawsuit was an opportunity to take a negative experience and turn it into something positive," he states.

Wilkins is excited about continuing to make a difference for society as an appellate judge, and he is confident that he will continue to rely on his Rose-Hulman education.

"I believe my education from Rose-Hulman has helped me to get here and will help me to, hopefully, be a good judge by taking a problem-solving approach in the cases that come before me, understanding technical issues, and articulating clear, workable, and effective rules and guidelines," he sums up. ■

Carolyn Duffy Marsan, a frequent Echoes contributor, is also a national correspondent for Network World, and has written for MacWorld, PC World, and CEO magazines..



Olivencia Calls Right IT Moves in Global Markets

By Michael Kratage-Dixon

David Olivencia uses his engineering skills to set international business strategies that have helped Global 500 organizations and prominent international non-profits remain ahead of the competition in the high-tech marketplace.

"When an organization spends a significant amount of money on information technology systems to enable business results, the engineer must find ways to apply those resources in the most efficient manner," the 1994 electrical engineering graduate says of his work. "The key strategically is figuring out a way to use these resources better and faster than your competition."

Finding those strategies has made Olivencia an invaluable resource for a list of technology heavyweights that features Verizon, Oracle, Ford Motor Company, Nippon Telegraph, and Accenture. For the past three years he has been director of information technology strategy and planning for Verizon, leading a team that's been focused on leveraging technology to meet business objectives.

Olivencia's next challenge will be leading the media and technology industry service lines as senior vice president for

Softtek, a Mexico-based global information technology solutions company. It's another step toward achieving his career objective to serve on the board of directors for a Fortune 500 company.

That's a long way from Whiting, Indiana, from whence Olivencia came to Rose-Hulman as a first-generation college student.

"I have received so much from this great

country, and I give back whenever possible," he says.

Olivencia had been recognized as one of the most influential Hispanics in America by *Hispanic Business Magazine*, serves on the Hispanic IT Executive Council, and is a part of the Congressional Hispanic Leadership Institute with 10 members of the U.S. Congress. He also has discussed science, technology, engineering, and math (STEM) issues to Congress, NASA, NASDAQ Opening Bell, and the National Association of Corporate Directors.

"Our nation has a huge STEM issue, and it's even more severe in our inner cities," says Olivencia, who appreciates that diversity and global issues are being addressed in Rose-Hulman's Strategic Plan. "Business leaders are well aware that they compete in a diverse world, and we need to encourage more diverse leaders in the technology sector."

Olivencia completed Harvard University's corporate governance program and earned a master's of business administration from the University of Notre Dame. He and his wife have three children. ■

Michael Kratage-Dixon is a marketing manager for Rose-Hulman.

Meneghini Breaks Medical Barriers With Cementless Knee Replacement

By Michael Kratage-Dixon

Groundbreaking procedures and research have earned alumnus Michael Meneghini, MD, recognition on a list of 22 top knee surgeons in North America. The industry publication *Orthopedics This Week* states the list features “the super elite in the knee world.”

The list was determined through a survey of leaders in orthopedic surgery, according to the publication.

Meneghini, an orthopedic surgeon with Indiana University Health Physicians Orthopedics and Sports Medicine, led a groundbreaking live broadcast of a cementless total knee replacement surgery in January.

The procedure was live-streamed from an operating room at IU Health’s Saxony Hospital in Fishers, Indiana to an audience of more than 200 orthopedic surgeons from around the world attending the International Congress for Joint Reconstruction in Vail, Colorado.

Meneghini demonstrated an effective technique for performing a total knee replacement using next-generation cementless technology, durable orthopedic implants he helped to design, and some of the latest surgical navigation devices. Conference

Meneghini has been chosen as one of the top 40 emerging leaders among orthopedic surgeons. His main research interests involve improving patient outcomes in hip and knee replacement, and improvements in implant design.

participants were able to observe and interact with Meneghini in real-time throughout the surgery.

“It was truly an honor to participate in this live presentation and to share surgical techniques with our medical peers around the world,” says Meneghini.

The 1995 civil engineering graduate specializes in adult hip and knee reconstruction. His practice includes total hip



ALUMNI
TRAILBLAZER
MICHAEL MENEGHINI
Civil Engineering, 1995



AMONG NATION’S BEST:
Michael Meneghini, MD,
(CE, 1995) has been
named one of the top knee
surgeons in North America
(Photo Courtesy IU Health)

and knee replacement, cementless and partial knee replacement, hip impingement, and dysplasia as well as minimally invasive surgical techniques.

Meneghini is an educator who leads Indiana’s only joint replacement fellowship program and lectures across the country, teaching other surgeons. He is also an active researcher who has authored more than 55 scientific articles on hip and knee replacement.

He attended the Indiana University School of Medicine and received his residency training in orthopedic surgery from Rush University Medical Center in Chicago. Following residency, he completed a fellowship in adult hip and knee reconstruction at the Mayo Clinic. ■

Michael Kratage-Dixon is a marketing manager at Rose-Hulman.

Hubbard Stays on Cutting Edge of Auto Technology

By Michael Kratage-Dixon

Involvement in building and racing Rose-Hulman's innovative solar car vehicle provided the impetus for Greg Hubbard's rewarding 20-year career bringing technological change to the automotive industry.

The 1994 mechanical engineering graduate was a freshman member of the Solar Phantom II team that competed in the General Motors-sponsored Sunrayce 93, a seven-day, 1,100-mile race from Arlington, Texas, to Minneapolis, Minnesota. With a new motor system, solar array, and electrical system, the vehicle finished 15th out of 34 college teams.

"I really enjoyed that a great deal," Hubbard says. "That race week, in June of 1993, inspired me for the work that I am still doing today."

Hubbard has spent his professional career as an innovator in the automotive industry. He was recently appointed chief engineer for General Motors' extended-range electric vehicle and hybrid propulsion systems, leading engineers from throughout the world to develop propulsion systems for the Chevrolet Volt, Cadillac ELR, and other sustainable cars of the future.

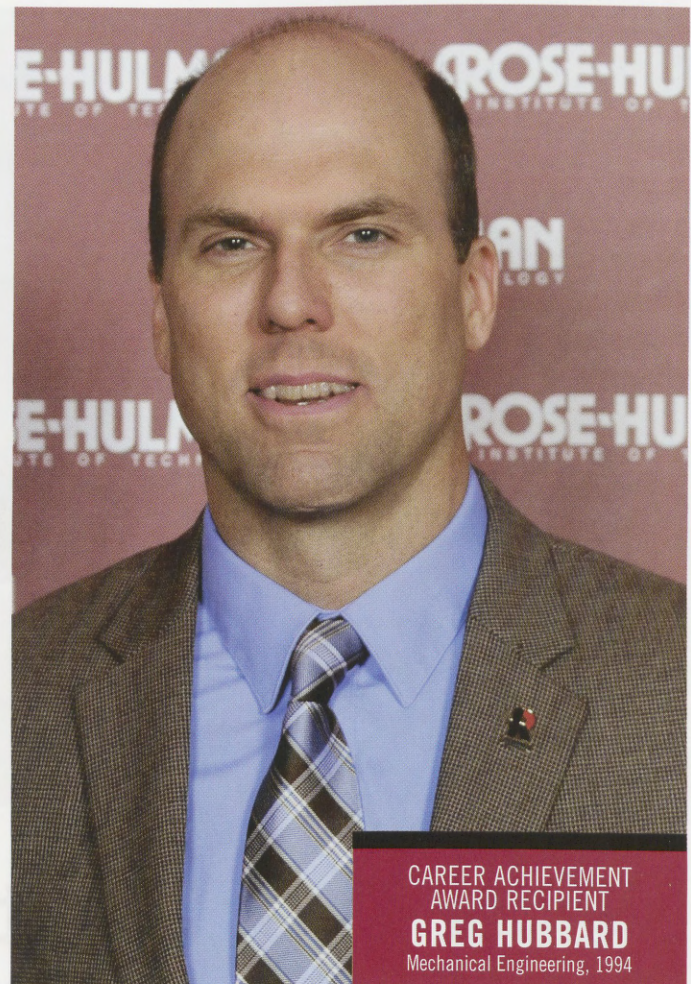
Since 2001, Hubbard had been a group leader for a team that had grown from 12 to 200 people worldwide, and grew in importance to GM's emerging high-tech line for the Volt, Chevrolet Spark EV, Buick LaCrosse with eAssist, and Cadillac

"With the electric car, we're dealing with finding ways to motor a pretty heavy car down the road, and carrying its occupants around safely, with the range and performance expected."

—Greg Hubbard, Engineer, General Motors

Escalade. While at Allison Transmission, he contributed to control systems for hybrid electric buses and GMC pick-up trucks.

"My team developed software that seamlessly blends together the engines and transmissions, the battery packs, and the electric motors in one unit," says Hubbard. "Now [since April 1], I am responsible for pulling together the engine, motors, transmission,



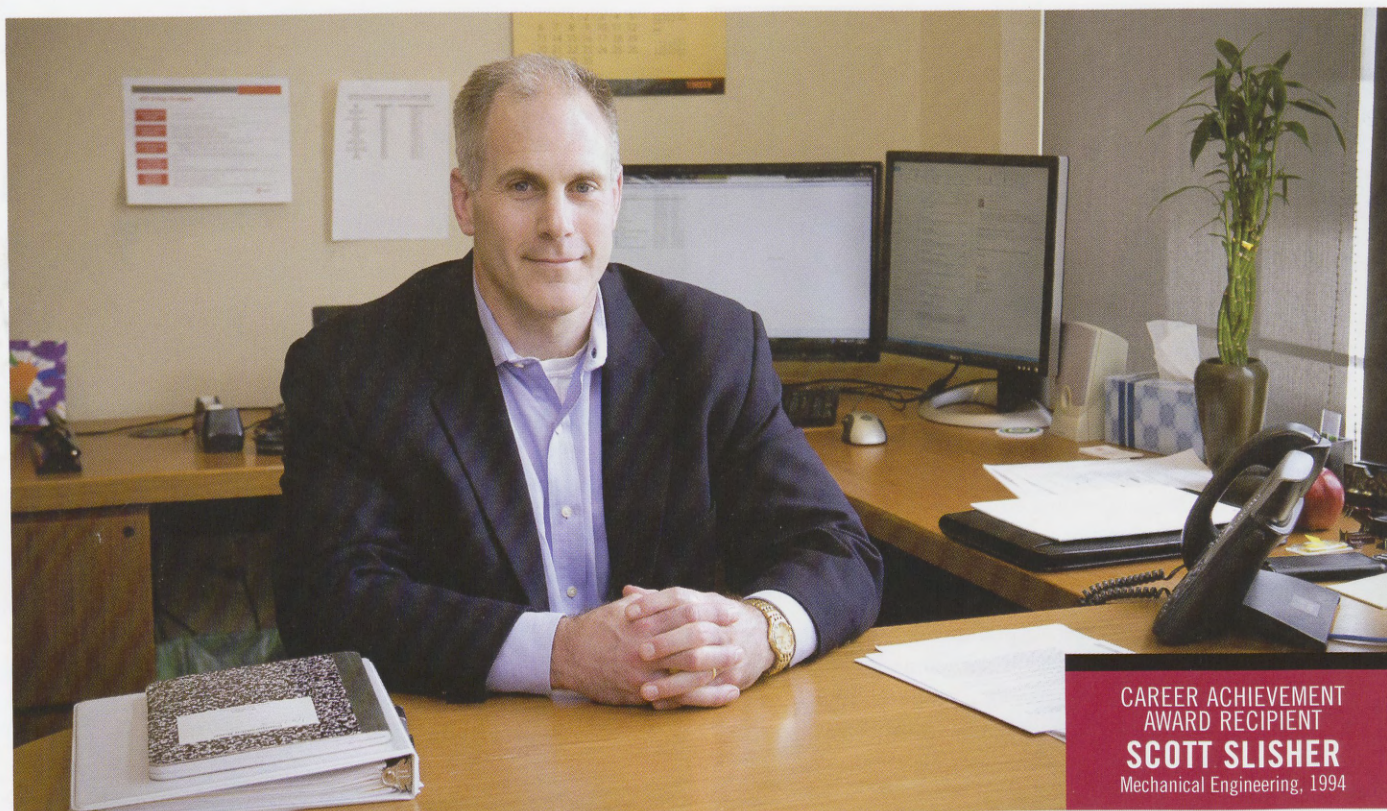
battery pack, and cables, and making sure that the whole propulsion system works flawlessly."

Hubbard is used to meeting challenges. He completed Rose-Hulman's rigorous academic challenges with a perfect 4.0 grade point average, was a starting offensive lineman on the football team, and a member of the successful Solar Phantom team. He was a two-time first-team football Academic All-American (1992-1993).

Stringent worldwide emissions standards have made more need for the sustainable vehicles that Hubbard's team is designing. He acknowledged that there are some complex technological and societal obstacles that still need to be overcome if extended-range and hybrid vehicles are to succeed in the mainstream.

"While the mobile phone has changed significantly over 20 years, the fundamentals of the car are relatively unchanged, with the same size and weight," says Hubbard, who lives in Michigan with his wife and six children. "With the electric car, we're dealing with finding ways to motor a pretty heavy car down the road, and carrying its occupants around safely, with the range and performance expected. That's a challenge that excites me every day." ■

Michael Kratage-Dixon is a marketing manager at Rose-Hulman.



Slisher Energized to Meet Changing Times

Story by Michael Kratage-Dixon/Photo by Sara Knight

Energy is at the core of what has driven Scott Slisher's super-charged engineering career.

From his time as a management trainee with NiSource, to being chief operating officer of Solargenix Energy, and, ultimately, his current position as president of energy management for AEP Energy Inc., Slisher's career has been full of energy.

"I enjoy the technology and the human need element of energy. It's such a core foundation to our civilization," says the 1994 mechanical engineering alumnus.

At AEP Energy, Inc., a wholly owned subsidiary of American Electric Power (one of the largest electric utilities in the United States), Slisher's teams are responsible for the growth and execution of strategy and sales for residential and large-scale customer opportunities across the Midwest and Mid-Atlantic states. AEP Energy solutions include deregulated power, natural gas, curtailment services, and energy management.

Slisher characterizes his career field as "a relatively quiet industry that in the past has been much more driven by policy rather than markets or technology."

So what has changed?

"Technology is really starting to change and define markets, and it is moving faster than policy-makers can keep up with."

Those disruptive technologies, according to Slisher, have created a high-demand energy marketplace in which high-tech devices produce and exchange data at prolific rates. At the same time, innovations in solar and fuel cells are creating incredible challenges to the nation's energy infrastructure.

"The current operating model does not envision or have a way to deal with those disrupters," says the northern Indiana native. "There is going to be a lot of friction and conflict as we move from a centralized, monopolistic energy policy model to a decentralized self-generation or technology-enabled model."

The convergence of technology and energy may be what fuels Slisher's passion and drive for his chosen career, but he also credits his Rose-Hulman education for his successes. "Engineering establishes a problem-solving mentality that's needed in business today. Rose-Hulman gives you that mental edge," he says.

Slisher lives in Blacklick, Ohio, with his wife and two children. ■

Michael Kratage-Dixon is a marketing manager at Rose-Hulman.

Wilkerson Sets Strategies to Improve Customer Experiences

By Michael Kratage-Dixon

As director of growth strategies for consulting firm Baker Tilly Virchow Krause, LLP, Todd Wilkerson has become comfortable with the unknown, bringing visionary high-tech solutions that enhance his clients' business development.

"One of the chief traits of a successful consultant is being comfortable with ambiguity," says the 1994 electrical engineering graduate.

Over the course of the past 20 years, Wilkerson has become known for establishing strategies that streamline customer relationship management (CRM) and maximize customers' experiences in the fields of technology, life science, financial services, and telecommunications/media sectors. This comes through go-to-market strategy/innovation, sales and marketing effectiveness, and the application of modern technology and data analytics.

"Many companies allow themselves to fall into the innovator's trap of assuming that they know what customers need," shares Wilkerson. However, his experience has shown that gaining a competitive advantage is often based largely on the customer experience. And, this is where his engineering background becomes a distinct advantage.

"Rose-Hulman alumni are inspired to be naturally inquisitive of the world around them, and improve the environments in which they live and interact. You don't lead those improvements without being proactive and innovative in your thinking."

—Todd Wilkerson

"Engineers understand the problem first before building the necessary solution," Wilkerson says.

His consulting career started by working with new high-speed computing technology with Anderson Consulting (now Accenture), and other challenges followed at Inforte, a boutique



consulting organization focused on customer relationship management. He then moved onto Baker Tilly Virchow Krause, one of the nation's largest accounting and advisory firms.

Along the way, Wilkerson has established solutions to help companies use high-tech resources to enhance and study the customer experience, including taking advantage of the vast amounts of data regarding customer purchasing habits. He has worked with small, medium, and large-sized companies.

"Today, there are very few solutions for assimilating this data in a meaningful manner which help organizations to grow and adjust those analyses as the activities and market conditions change," he says.

These are the kind of technology-based problems that Wilkerson was prepared to solve through his Rose-Hulman studies. "Alumni are inspired to be naturally inquisitive of the world around them, and improve the environments in which they live and interact," he says. Later, he adds, "You don't lead those improvements without being proactive and innovative in your thinking."

Wilkerson lives in Chicago with his wife and two children. ■

Michael Kratage-Dixon is a marketing manager at Rose-Hulman.

QUALITY TEACHING



PERSONAL ATTENTION

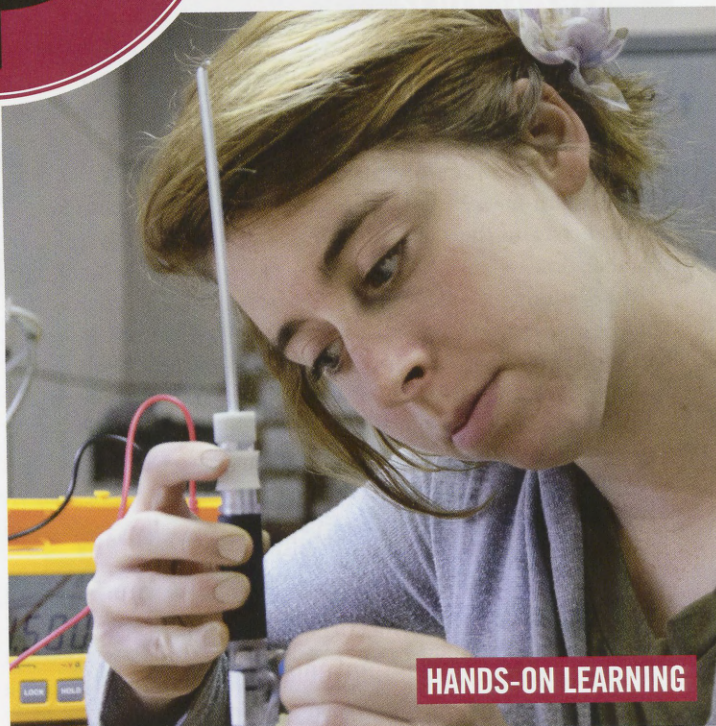


**The High
Cost of
Higher
Education**

TECHNOLOGY



HANDS-ON LEARNING



**Rose-Hulman Spends Millions Annually to Remain
Competitive in Ever-Changing STEM Marketplace**

By Carolyn Duffy Marsan

Forget the oscilloscopes and data acquisition systems of yesteryear.

Rose-Hulman's current equipment wish list is a compendium of expensive, but necessary, items for educating the 21st century scientist, engineer, and mathematician:

- Water jet cutters that slice stainless steel and other materials to make parts for prototypes.
- Five-axis CNC routers that precisely form parts, patterns and molds.
- 3-D printers for rapid prototyping of plastic or metal objects.

"The demand is high for state-of-the-art prototyping equipment," says Phillip Cornwell, PhD, vice president for academic affairs. "Laser cutters, CNC plasma cutters, water jet cutters, and 3-D printers are all things that we've bought in recent years—and we could use more. This equipment enhances our students' design experiences."

and faculty when compared to other peer engineering schools.

"Instead of having a single class with 200 students, we have eight sections, each having 25 students. This increases the cost of a Rose-Hulman education, but is key to providing individual attention and support to our students," Cornwell remarks.

"There's certainly an equipment-cost aspect to providing these sections, but it also drives up the number of laboratories and classrooms that we need to operate."

Furthermore, Rose-Hulman's emphasis on providing students with hands-on experiences means that delaying investments in technology and equipment is not a viable option—if it intends to remain the nation's best undergraduate engineering college.

"The large number of projects and labs that we provide is an integral part of our students' educational experiences. However, keeping these experiences means that we have to provide labs,



"Our labs are taught by faculty members who care deeply about the educational experiences of our students. Without those hands-on lab experiences and projects, it isn't really a Rose-Hulman education."

—Phillip Cornwell, Vice President for Academic Affairs

Providing state-of-the-art equipment and facilities is an ongoing challenge for colleges specializing in science, technology, engineering, and math (STEM) fields. And, keeping up with the pace of technological change in order to continue to deliver a world-class STEM curriculum is a significant element of Rose-Hulman's tuition and fees.

"Keeping cutting-edge technology available in our classrooms and laboratories is one of our most significant financial challenges," states Rob Coons, senior vice president and chief administrative officer. "Our smaller enrollment and specialized primarily undergraduate curriculum doesn't provide us the large student body, large donor base, and, as a result, the more widespread outside support provided our larger, more comprehensive competitors to fund annual capital expenditures."

Also, while Rose-Hulman's smaller class sizes facilitate much greater individualized personal attention and support, they also result in higher per unit costs for classroom space, laboratories,

facilities, and educational opportunities that are continually evolving to meet the challenges of an ever-changing world," Cornwell says.

A Sizeable High-Tech Arsenal

Rose-Hulman has increased its investments in equipment, laboratories, and facilities throughout the last decade, and the institution is in an enviable position in higher education with a sizeable high-tech arsenal. It is presently winning the "STEM Arms Race."

More than a decade ago, Rose-Hulman embarked on an academic initiative to upgrade equipment in its classrooms and laboratories, and to eliminate items deemed obsolete by today's standards. Since then, the college has spent approximately \$800,000 annually on academic equipment, a significant portion of its total \$4.8 million annual capital budget.

Several years ago, the academic departments evaluated all of their laboratory equipment on a scale of "embarrassing"



THE HIGH COST OF HIGHER EDUCATION

to “cutting edge.” “In the majority of cases, we’re now at an ‘excellent rating,’” states Coons. “We still have plenty of room for growth in order to reach cutting-edge status, where we desire to be. Currently, the case could be made to spend twice as much per year to upgrade technology and equipment. However, at this time, we don’t have the financial resources to meet that need.”

Rose-Hulman’s academic equipment budget comes from a combination of donations and tuition dollars.

“Our endowment, at \$190 million, is not comparable to other peer institutions and, therefore, endowment income does not have the significant impact on funding annual equipment purchases that it does in other schools,” Coons adds. In addition to equipment, Rose-Hulman is increasing its support for interactive classrooms and laboratories. Technology-enhanced classrooms can cost upwards of \$300,000 each. Rose-Hulman installed five of these classrooms in Myers Hall in 2012. These classrooms feature computers and high-end multimedia equipment supporting an interactive experience between the professor and students. Cornwell states that there is “tremendous demand” for these technology-enabled classrooms on campus as faculty experiment with hybrid, online, and in-person teaching styles.

Rose-Hulman’s current five-year Strategic Plan seeks to add a state-of-the-art teaching and learning center with collaborative classroom spaces. It also provides for much-needed laboratory space.

“Honestly, we need this new building now. It just needs to be funded,” Cornwell says. “We’re at capacity in some of our lab spaces. More lab facilities would allow us to have more creative scheduling and leave labs open throughout the day for students to use on undergraduate projects.”

“Our endowment, at \$190 million, is not comparable to other peer institutions and, therefore, endowment income does not have the significant impact on funding annual equipment purchases that it does in other schools.”

—Rob Coons
Executive Vice President and
Chief Administrative Officer

pace of technological change. A fact that assists the near 100 percent career placement rate is that recruiters find Rose-Hulman graduates consistently well-prepared for industry work.

Another key driver of educational cost is the rising cost associated with software licensing, maintenance, and support. This increases on average from 5 to 15 percent annually for each software package.

“Our efforts to keep tuition increases at less than 3 percent each year are continuously threatened by both tangible

Funds Needed To Modernize Gear

Rose-Hulman’s academic equipment budget is under constant pressure as the institute strives to keep equipment, classrooms, and laboratories not just current but ahead of the industry standards and the



ROSE-HULMAN’S EQUIPMENT WISH LIST

Here are a few items that academic departments need:

- **\$1.5 million** to remodel/upgrade the Department of Civil Engineering’s ecological systems laboratory.
- **\$500,000** to replace the automatic tester for integrated circuits—the current Teradyne system is at the end of its lifecycle.
- **\$100,000** for a new cybersecurity lab, including intrusion protection systems, servers, and workstations that are isolated from the campus network.
- **\$50,000** to add Fieldbus and wireless network architectures to the Department of Chemical Engineering’s Delta V process automation system. ■

Source: Office of Academic Affairs

equipment as well as software maintenance costs, which have become a significant portion of our budget,” Coons says. “We’re experimenting with more open-source courseware and other sources. However higher quality undergraduate instructional software is usually licensed. It requires increased maintenance and support dollars to provide.”

Rose-Hulman also has a variety of academic programs that are simply more expensive to support. The institute recently completed a new synthetic biology laboratory, with an adjacent collaborative workspace for the International Genetically Engineered Machine (iGEM) team. Providing the iGEM team with laboratory reagents, supplies, and services costs \$12,500 per year. It costs another \$50,000 per year to provide summer stipends, registration fees, and travel expenses for the iGEM team’s six students.

“Molecular and cellular biology are changing so rapidly, and specialized equipment is needed. We’re seeing the costs associated with this equipment skyrocketing,” says Coons.

Meanwhile, several of Rose-Hulman’s long-standing and distinctive labs need upgrades. The Department of Computer Science and Software Engineering’s Software Usability Laboratory, built in 2008 with a \$71,000 grant from Rockwell Collins, has equipment that’s well overdue for replacement. The department is one of the only undergraduate programs in the United States with this type of lab.



HIGH-TECH EDUCATIONAL ENVIRONMENT: Five technology-enhanced classrooms were installed in Myers Hall in 2012—costing nearly \$300,000 each—featuring computers and high-end multimedia equipment supporting an interactive learning environment. (Photo by Shawn Spence)

Similarly, the Integrated Circuit Test and Product Engineering Laboratory has an industry-grade automatic tester that was worth \$500,000 when donated in 2008. Now, the tester is at the end of its lifecycle. Until funds are available to upgrade this equipment, the Department of Electrical and Computer Engineering plans to continue using it to provide students with hands-on opportunities to test packaged analog, digital, and mixed-signal integrated circuits.

Eventually, without upgrading these and many other labs, Rose-Hulman could fall behind and its academic reputation suffer, according to administrators.

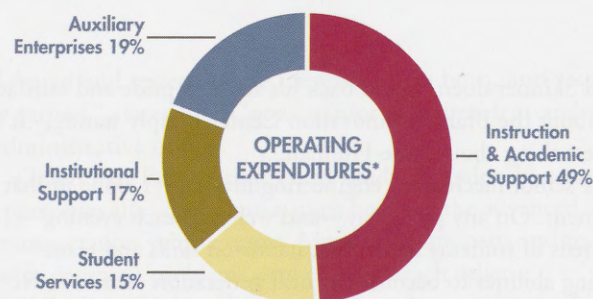
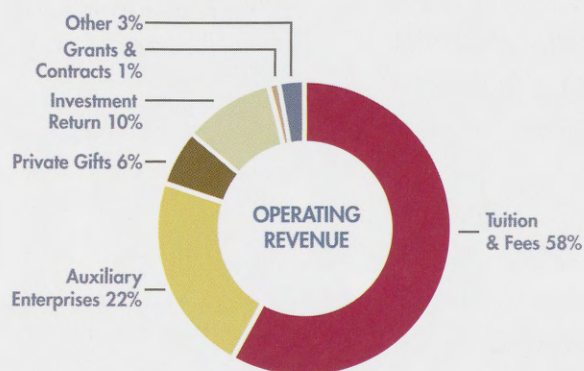
“Dwindling academic equipment support would have a negative impact,” says Coons. “I don’t know how long it would take, but we could eventually lose our No. 1 ranking and national status.”

Antiquated equipment and laboratories are not consistent with our mission. Out-of-date facilities or equipment would change the nature of Rose-Hulman’s unique educational environment, adds Cornwell.

“Our labs are taught by faculty members who care deeply about the educational experiences of our students. It’s part of our culture. It’s who we are,” he states. “Without those hands-on lab experiences and projects, it isn’t really a Rose-Hulman education.” ■

Carolyn Duffy Marsan is an Indiana-based freelance writer who has been a frequent Echoes contributor.

2012-13 FINANCIALS



* Excludes \$9.3 million in depreciation expense recognized on the Siemens software gift received in fiscal year 2011-2012, which is recognized as an “Instruction” expense on the institute’s audited financial statements for fiscal year 2012-2013.



Ethan Skinner doesn't hold back his sense of pride and satisfaction about the Branam Innovation Center, simply stating, "It's the best thing about Rose-Hulman."

The senior mechanical engineering major isn't alone in that sentiment. On any given day—and well into each evening—hundreds of students apply their hands-on skills and team-working abilities to become the next generation of innovative engineers and scientists.

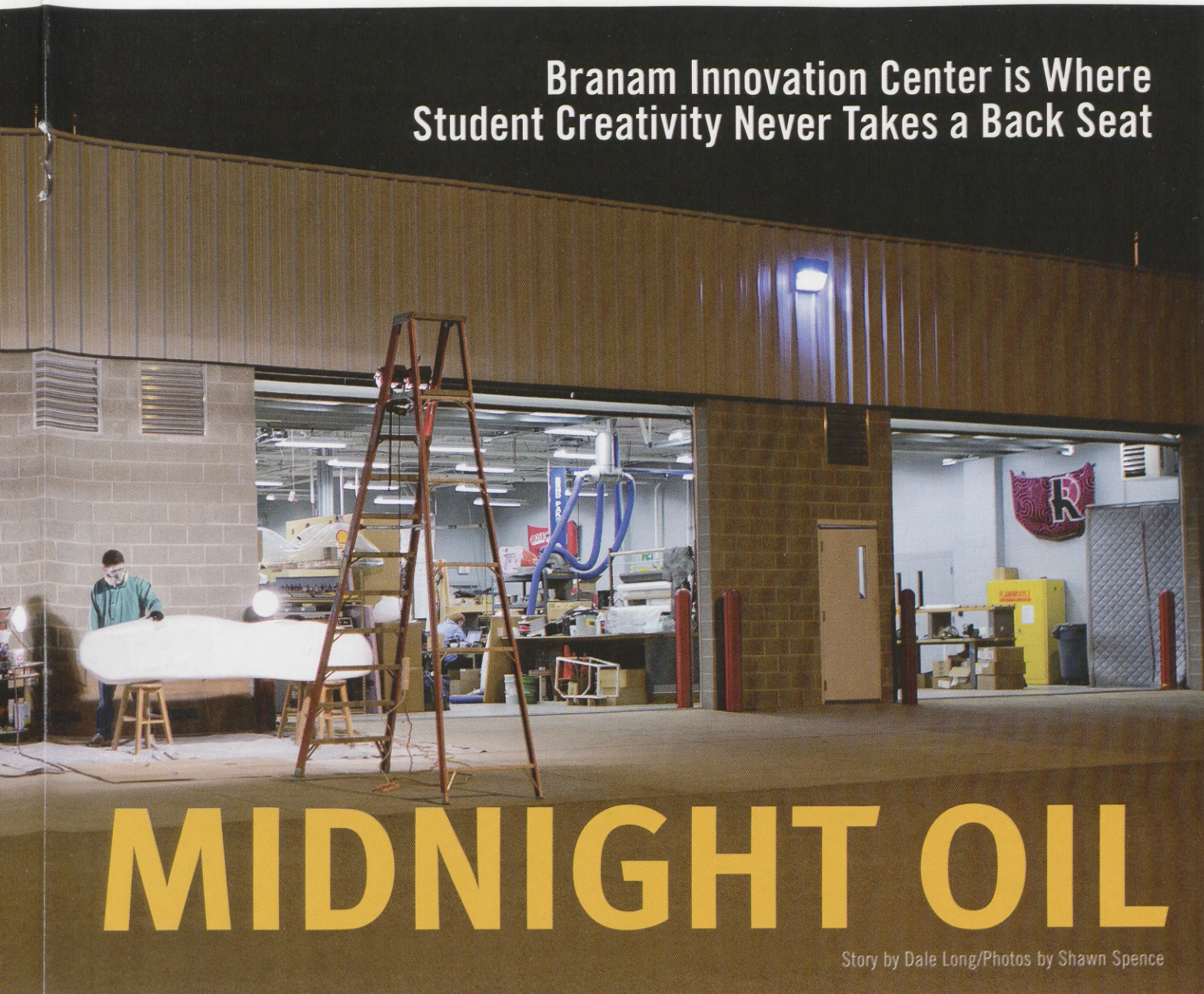
In less than two years, "The BIC" (as it's commonly referenced) has become filled with advanced transportation vehicle competition teams, academic senior capstone design project

teams, other academic projects and club activities, and even a group of local high school students that advanced to this year's FIRST Robotics World Championships.

The building is home to national championship-winning human-powered vehicles, combat robots, concrete canoes, sustainable hybrid vehicles, high-flying aircraft, chemical reaction-based cars, and swift drag-strip racers.

"It's truly a happening place, especially in the late winter/early spring as teams prepare for regional and national competitions," says Dean of Innovation and Engagement Bill Kline, PhD, who supervises the building. "There is no syllabus or course outline

Branam Innovation Center is Where Student Creativity Never Takes a Back Seat



MIDNIGHT OIL

Story by Dale Long/Photos by Shawn Spence

for the projects. We provide students the opportunity to be creative and innovative.”

The 16,200-square-foot building, located on the northeast corner of campus, was inspired by former President Matt Branam to be a dynamic and energetic place with flexible workspace to facilitate inter-team collaboration. The building allows students to hang out, test ideas, push the limits of engineering, and lead competitive engineering contests around the world.

“Matt imagined a big space where students could work late into the night perfecting team projects. This is where theory turns into practice, where conflicting ideas get

debated and tested, where friendships are born, and respect is earned,” states Rob Coons, senior vice president and chief administrative officer.

Grand Prix Engineering Team Leader Brandon Hasenour appreciates the collaborative spirit between the advanced transportation vehicle teams. Members share parts and tools, help solve common problems, and cheer on each other.

“Like Rose-Hulman’s campus atmosphere, we’re one big happy family here. If one team wins, we’re all winners,” says the senior mechanical and electrical engineering double major. “If a freshman comes in and wants to join a team, we’re appreciative

THE BRANAM INNOVATION CENTER



of the extra hands and ideas. They can jump right in. There's always something to do around here."

Grand Prix teammate Craig Altmann adds, "I don't feel the same if I'm not here doing something every day." He estimates spending 30 to 40 hours each week in the building during the peak of the racing season.

Sarah Kemme, president of civil engineering's new steel bridge team, says she "spends way too much time" in the building. But she quickly adds, "I love the energy and excitement in this place. I have made friends here that I wouldn't have made anywhere else on campus."

Before the Branam Innovation Center was added to the campus landscape, competition teams were scattered throughout campus and other off-site, institute-owned facilities. Now, every project is in one central location and they all benefit from having a massive tool and part supply, and access to state-of-the-art equipment, machine shop, welding room, paint booth, and a conference room. The building has also become a great showpiece to impress corporate partners, equipment donors, and potential students.

"You see visitors come in and their eyes light up and they immediately say 'Wow,'" says Associate Professor of Mechanical Engineering Zach Chambers (ME, 1994), PhD, director of Rose-Hulman's advanced transportation program. "It is an impressive place, especially when students from most of the teams are working hard to finish a project. That's when the place takes on a life of its very own."

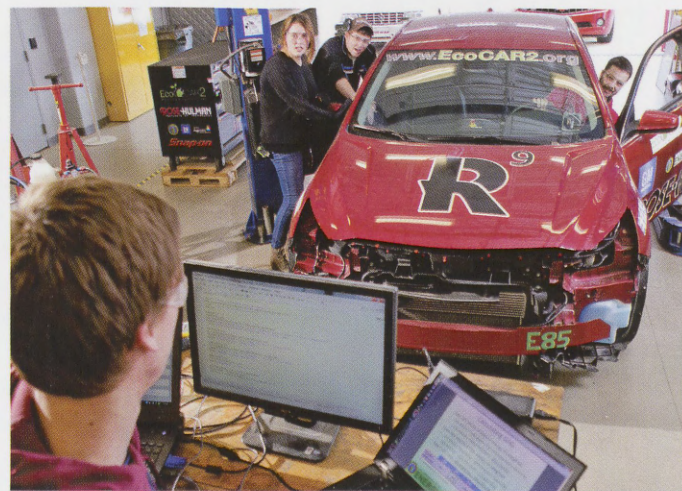
And, as intended, the Branam Innovation Center enhances the educational experience for students.

"Our formula sprint car provides a real-world application for what I've learned in the classroom," Hasenour states. "Course material on DC/AC electrical circuits helped us select the appropriate electrical wire sizes for this year's vehicle."

Skinner, leader of the fuel-efficient vehicles team, adds, "I've always love tinkering. Our project offers a great way to get your

hands into engineering and using the skills I have learned in college." ■

Dale Long is executive editor of Echoes and director of media relations.



WHAT'S INSIDE THE BRANAM INNOVATION CENTER

- 16,200 Square Feet of Flexible Work Space that Facilitates Inter-Team Collaboration
- Machine Shop, Welding Room, and Paint Booth
- Global Wireless Education Capability

Named in honor of Matt Branam, Rose-Hulman's 14th president and 1979 alumnus, who died in 2012

"This unique building and program are testaments to the importance that Rose-Hulman places in hands-on learning, collaboration, and teamwork."

—Bill Kline, PhD, Dean of Innovation and Engagement



WHERE INNOVATION LIVES: Members of the Human Powered Vehicle Team put the finishing touches on their award-winning project, sharing space with other student project teams in the spacious Branam Innovation Center.



MAKING A DIFFERENCE: Engineers Without Borders members Paige Rinker (left) and Haaken Hagen-Atwell (below) work on projects in the Dominican Republic villages of Batey Cinco Casas and Batey Santa Rosa

Leaving Behind a Better World

Five-Year Engineers Without Borders Project Impacts Dominican Republic Villages, Student Volunteers

Story by Dale Long/Photos by John Gardner

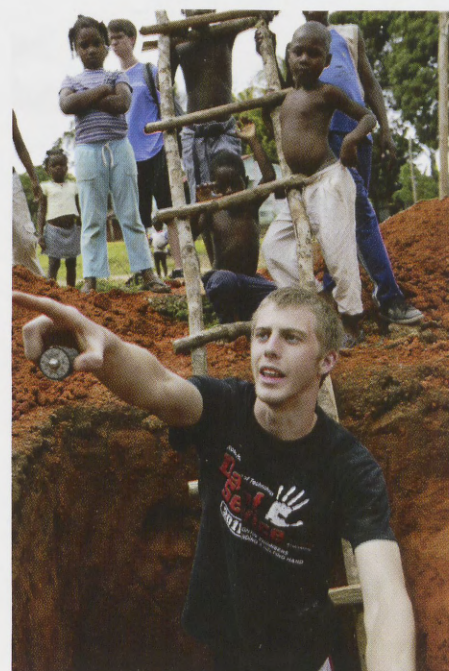
From the initial blueprint that transformed a discarded sugar cane plantation building into a medical clinic, to the boots-on-the-ground work that improved water quality and sanitary health conditions, Rose-Hulman students have impacted lives in two Dominican Republic villages for years to come.

And, along the way, the students' lives have been transformed, as well. These experiences are part of the institute's expanding strategic global education initiatives.

For five years, members of Rose-Hulman's Engineers Without Borders (EWB) student chapter worked with professional

engineers from central Indiana to improve the quality of living conditions for residents of Batey Cinco Casas and Batey Santa Rosa, rural villages in the Dominican Republic.

First, a roof was constructed over an unused building in Batey Cinco Casas to be used for a medical clinic, operated by the non-governmental Batey Relief Alliance to provide free or low-cost health care to Dominicans and Haitian descendants. Next, a septic system was created to further improve health conditions for patients, doctors, and administrators.



After conquering the rains of Hurricane Irene in 2011, EWB members began working on water quality and installing several latrines to improve health conditions for the nearby Batey Santa Rosa community.

Today, a facility has been added alongside the original Batey Cinco Casas medical building, which has added x-ray equipment, running water, and a recordkeeping room. Nine new latrines have been placed alongside the students' work areas in Batey Santa Rosa.

"Global innovation has become a passion of mine through my work in EWB, and I see it as part of the grand challenges of our future," says senior Ryan Oliver, who made several working trips to the Dominican Republic during the summer and academic quarter breaks. He adds, "Having an impact on other people's lives and helping them help themselves is very important to me. EWB at Rose-Hulman has supported my goals, expanded my understanding of the world, and been beneficial to the communities we served."

Founded in 2004, Rose-Hulman's EWB chapter originally constructed a chicken brooder house and community center that improved the quality of life for the community of Obodan, Ghana. Now, students plan to return to Ghana to install latrines in Gomoa Gyaman, a village with approximately 2,500 residents. An initial assessment trip was conducted in the fall of 2013, and work may commence this summer.

"These EWB experiences are very important for our students. While they get to see and interact with other people, they also gain an appreciation for how their engineering and scientific problem-solving skills can help others," says EWB co-advisor John Gardner, PhD, associate professor of Spanish. "Our students need to realize they have skills that can help others in so many ways."

EWB Founder Bernard Amadei, PhD, a professor of civil engineering at the University of Colorado, commended the student chapter's efforts during a campus visit early this spring. "These students are learning valuable lessons that they will cherish throughout their careers. They will learn that no task is too small or too difficult to overcome."



REWARDING EXPERIENCES: Marcel Snijder has been active on campus and the world (below) as a leader of the Engineers Without Borders group.

A STUDENT'S PERSPECTIVE: Indiana Dreams Bring Success for California's Snijder

Engineers Without Borders (EWB) student chapter member Marcel Snijder grew up in the shadow of Harvey Mudd College, attending Claremont High School in California. He learned about Rose-Hulman from its No. 1 status in *U.S. News & World Report's* annual college guide rankings.



"I visited here and Rose-Hulman made a big impression on me," Snijder says.

Ultimately, Snijder chose Rose-Hulman because of advantages over other California options.

"Rose-Hulman had so many positives: free parking, free printing, and free equipment," Snijder says. "Rose-Hulman wasn't that much more expensive than the California schools when you take into account the cost of living."

Another plus for Rose-Hulman was the fact that Snijder has been able to earn his

undergraduate degree within four years. "At the California public colleges, I'd have an extra year because I couldn't get in my classes," he adds.

At Rose-Hulman, Snijder is a member of the conference championship track team, went on three EWB-sponsored international trips, is a member of the Triangle Fraternity, and has his own show on the campus radio station. A graduating mechanical engineering student, Snijder has accepted a job with Schlumberger in San Antonio, Texas, as a product engineer for drill bits.

"Rose-Hulman was worth it for me because of the personal attention I got in the classroom," Snijder said, adding

that his sister went to the University of California-Berkeley and had a math class with more students than his Rose-Hulman graduating class.

"Here, the ratio is 20 students for every faculty member. All the professors know your first name. They hand out their home phone numbers and invite you over for lunch. They are so personable." ■

—Carolyn Duffy Marsan



HELPING HANDS: Jung Fang gets help from Dominican children while marking lumber for a project.

Chapter Leader Marcel Snijder states simply that, “my work with Engineers Without Borders has been the most personally enriching experience of my life. Any glimpse into the lives of other people is impactful, but what made our Dominican Republic experience a lasting impact is the relationships we developed with the very people we were there to help.”

The senior adds, “Seeing that our clients wanted our projects to succeed just as much as we did and were willing to work alongside us all day long, without pay, made it all worth it.” (See more about Snijder on page 21.)

EWB Chapter Engineering Manager Sanders Park, a sophomore, states “the sense of accomplishment at the conclusion of our trip was overwhelming and the gratitude expressed by the community was sublime. As a result of this trip, I am not only a better student, but a better person because of my grander global and cultural awareness and real-world experience utilizing my Spanish and construction skills.” ■

Dale Long is executive editor of Echoes and Rose-Hulman’s director of news services. John Gardner is associate professor of Spanish in the Department of Humanities and Social Sciences. He has escorted Engineers Without Borders’ members on many of their trips to the Dominican Republic.

JAPAN TRIP BRINGS MORE GLOBAL EXPERIENCES

Students joined faculty members learning about Japanese culture during a visit to Rose-Hulman’s educational partners in Japan. The trip was organized by Scott Clark, PhD, professor of anthropology and an expert on Japanese culture and cross-cultural consulting.

Fourteen students exchanged ideas with students and professors from Japan’s Ishikawa Prefectural University and Kanazawa Institute of Technology, and visited several cultural locations in Tokyo.

“These were incredibly eye-opening experiences that allowed me to learn things I never could have while still in a classroom,” says Kevin Dwyer, a senior mechanical engineering major who made his second educational trip to Japan. “Communicating with students from another culture presents challenges that you can prepare for, but nothing compares to actually doing it.”

Dwyer later adds, “Putting our new skills to the test offered a trial by fire, something

that let us learn even more. As someone who wants to travel and work internationally, these skills are something I hope to keep putting to the test. While I may not end up in Japan, or even in eastern Asia, I know that the skills I’ve learned will translate to other countries and cultures. The patience and curiosity that I was able to cultivate on the trip will be useful skills in my life and career.” ■

LEARNING CULTURE: Chelsea Rossick completes one of many projects during this year’s spring break trip.



HANDS-ON PROJECTS: Engineers Without Borders chapter members Ian Ludden and Ally Phillips work with local worker Henry Guzman in repairing the septic system at the Batey Relief Alliance Medical Clinic this spring.

RETURN ON INVESTMENT AMONG NATION'S BEST

A Rose-Hulman education is a worthy investment, ranking seventh nationally, with a 20-year net return of \$736,200, according to PayScale, Inc.'s 2014 College Return on Investment (ROI) Report.

PayScale examined the return on investment at 911 colleges and universities, comparing costs to median alumni earnings over the first 20 years after graduation.

Rose-Hulman also ranked among the nation's best in PayScale's 2013-14 College Salary Report. That survey evaluated \$65,100 starting and \$111,000 mid-career salaries for Rose-Hulman graduates.

Engineering schools made up nine of the top 10 colleges in the 2014 PayScale ROI survey. ■



STUDENTS SPANNING THE GLOBE

Students (from left) Angelica Rodriguez, Luwen Zhang, and Nick Allen joined professor Cary Laxer in visiting Microsoft Research Asia and SAP during a spring break trip to China. This is part of Rose-Hulman's expanding global education programs.

Scholarships Available for Alumni Seeking to Study IP at IU Law School

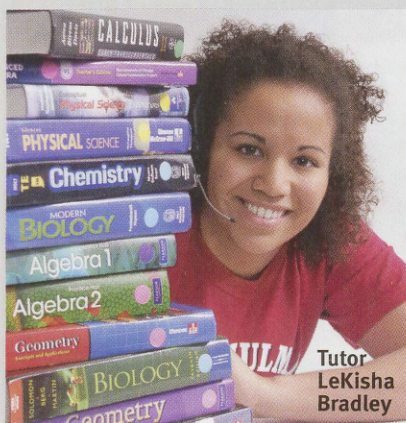
A new intellectual property law scholars program, through the Indiana University Maurer School of Law, offers great legal opportunities for alumni.

At least two Rose-Hulman graduates admitted to the IU Law School will receive

a scholarship amounting to 50 percent of annual tuition, along with access to a formal mentoring program and a research assistant position in the Center for Intellectual Property Research. The scholarship will reduce the cost of law school tuition over

three years by approximately \$45,000 to \$75,000.

Rose-Hulman will nominate current students or alumni for the program, beginning this fall. Contact Dean of Faculty Richard Stamper at stamper1@rose-hulman.edu. ■

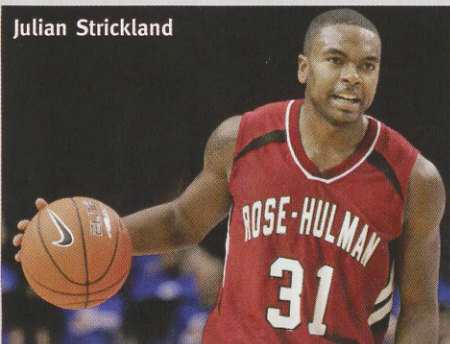


HOMEWORK HOTLINE HITS MILESTONE

The Homework Hotline has surpassed 500,000 math and science tutoring sessions—through calls, online chats, and e-mail sessions—since the free service opened on campus in 1991. Approximately 140 tutors are on staff, and more than 30 are available five nights each week throughout the school year.

ATHLETICS WINS HCAC COMMISSIONER'S CUP

With championships in football, men's basketball, and track and field, the athletic program captured the Heartland Collegiate Athletic Conference's Commissioner's Cup—representing all-around success for the 2013-14 sports season. The men's basketball team advanced to the NCAA Division III tournament for the third straight year; Julian Strickland was the HCAC's Player of the Year; Orion Martin joined Ellie Hong in earning All-American swimming honors; and the men's track team won its seventh straight HCAC title. Keep track of our sports teams at www.rose-hulman.edu/athletics.



COMPANIES FLOCK TO RECRUIT STUDENTS

A record number of companies and representatives—many of them alumni—came to campus this school year to recruit students for career and preparatory opportunities. A total of 429 companies attended one or more of this school year's three career fairs (photo). "Rose-Hulman produces well-rounded, highly technical, and proficient graduates who can apply the theoretical concepts with practical problem-solving," says Paul Jenkins (EE, 1983), a technical director for the National Security Agency.



INTENSE ACTION: High school teams from Harrison, Ohio (Team 4521), Sussex, Wisconsin (Team 537), and Centerburg, Ohio (Team 3010) work together to get their robots to score points in this year's Aerial Assist game.

Robots, Sportsmanship Rule at FIRST Robotics' Crossroads Regional

Story by Dale Long/Photos by Chris Minnick

While emotions ran from the thrill of victory to the agony of defeat, sportsmanship was the real champion at this year's FIRST Robotics' Crossroads Regional, a three-day event bringing 45 high-school teams from nine states to campus.

The robot from Kansas' Paola High School had a mechanical breakdown after winning a grueling first match in the competition's double-elimination championship round.

In a gracious move, Indianapolis' top-ranked Kil-A-Bytes team gave Paola students extra time to make necessary repairs before the second finals match. Still, the robot was unable to compete, losing to the three-team Indiana alliance—setting up a deciding winner-take-all match.

With last-second repairs made, Paola combined with Penn High School (Mishawaka, Indiana) and Saint Charles Preparatory School (Columbus, Ohio) to win the championship and qualify for the World Finals.

A hometown rookie team from the Vigo County School Corporation helped the winning alliance during a first-round match and also qualified for the finals. The team was mentored by 10 Rose-Hulman students and used facilities in the institute's Branam Innovation Center.

FIRST brings the excitement of a sporting event to science and technology through a robotics competition. This year's game, Aerial Assist, was played by two competing alliances of three robots working together to pick up, pass, and throw exercise balls into target areas to

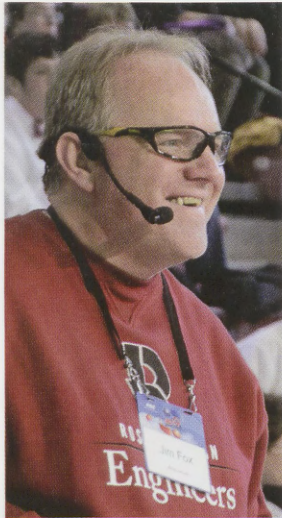
score as many points as possible during a two-minute and 30-second match.

This year's Crossroads Regional attracted standing-room-only crowds to the Sports and Recreation Center.

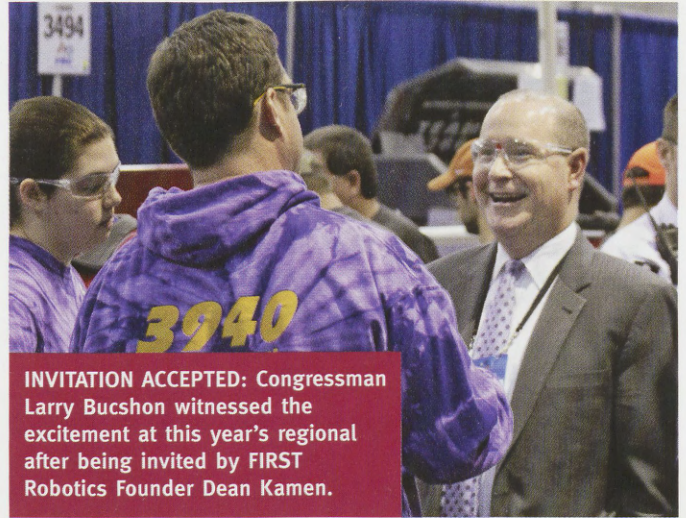
"The energy level was high throughout the weekend," says Master of Ceremonies Jim Fox (EE, 1995).

NASA robotics engineer Kris Verdeyen (EE, 2000) joined Fox in returning to campus from Texas. He served as the event's announcer. Other alumni served as event volunteers and team mentors (*see photo on page 28*), while faculty, staff, and students were event coordinators, judges, and volunteers. Crossroads Regional Chair Carlotta Berry, associate professor of electrical and computer engineering, earned the Volunteer of the Year Award. ■

FIRST ROBOTICS REGIONAL

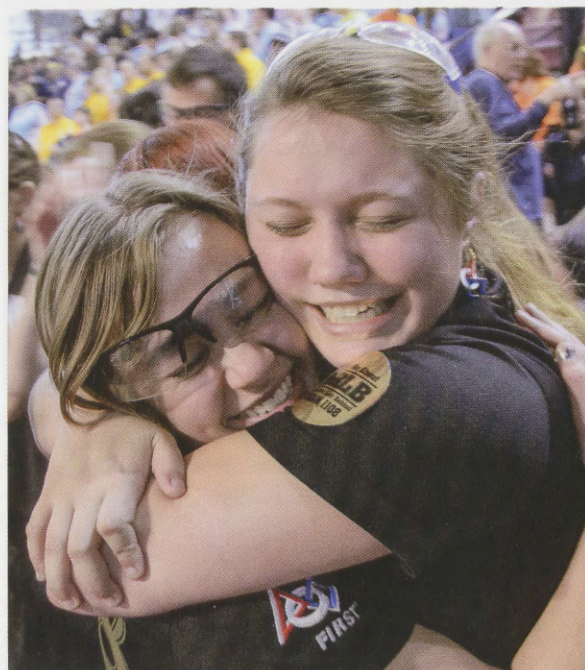
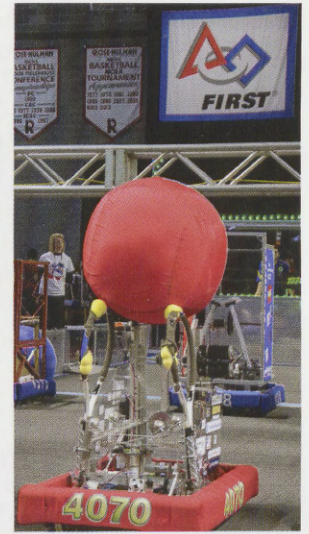


ALUMNI VOLUNTEERS: Jim Fox (EE, 1995), left, was master of ceremonies while Kris Verdeyen (EE, 2000) was announcer.



INVITATION ACCEPTED: Congressman Larry Bucshon witnessed the excitement at this year's regional after being invited by FIRST Robotics Founder Dean Kamen.

POPULAR COMPETITION: Crowds packed into Hulbert Arena (below) to watch matches, featuring a robot from Shelbyville, Indiana's Team 4070 (right).



THRILL OF VICTORY: Members of Paola (Kansas) High School's Team 1108 express their happiness after winning the championship round.

Mohan Stays On Top of Advancing Software Trends

Story by Dale Long/Photo by Shawn Spence

Staying ahead of the learning curve in data processing and analytics becomes harder as the volume and variety of data increases every day.

With both academic and real-world experience, Rose-Hulman Associate Professor of Software Engineering Sriram Mohan, PhD, is helping prepare today's software engineering students to meet the big technological challenges of the future.

Mohan spent a sabbatical this academic year as a senior consultant for Texas-based Avalon Consulting's Big Data Solution practice, leading its research and implementation of NoSQL databases and Apache Hadoop, an open-source software framework for storage and large-scale processing of data. He has helped architect and develop analytics solutions for numerous Avalon clients.

"If you're excited and passionate about something, the students will usually follow."

—Sriram Mohan, Associate Professor of Software Engineering

Mohan will bring lessons learned from these experiences back to Rose-Hulman, with an Introduction to Hadoop course on the class schedule for this fall and a Principles of Modern Databases course set for next spring.

In six years at Rose-Hulman, Mohan has helped revolutionize the software engineering curriculum four times to meet present and future technological challenges.

"I rarely teach the same course the same way," he says.

The quality of senior capstone design projects has improved incrementally as well—along with providing real-world experiences. Now, the junior-year projects course that prepares students for their capstone experience is operated like a software company, with five student teams working in subgroups on related mini-projects to support the client's goals.

This real-world project exposure helps develop graduates that make immediate impacts to their new employers. In fact, Kevin Ridsen (CS, 2012) was Mohan's supervisor at Avalon Consulting, and Andy Kruth (SE/CS, 2011) is another team leader. Both alumni are viewed as rising stars in the company.



SRIRAM MOHAN, PhD

Associate Professor of Software Engineering

Areas of Specialization: Database Systems, Database Security, Human Computer Interaction and Software Quality Assurance

Research Activities: Database Security, Distributed Database Systems and Software Engineering Pedagogy

Industrial Consulting Experience: Completed a sabbatical as senior consultant for Texas-based Avalon Consulting's Big Data Solution practice. He also consulted with Tata Consultancy Services on data privacy and compliance with European Union privacy laws.

Courses Taught: Intro to Database Systems, Software Quality Assurance, Advanced Database Systems, Software Engineering Senior Capstone Projects, Software Requirements Engineering, Version Control Paradigms, Introduction to Data Mining and Modern Database Paradigms

"We need to use something in class that's real. Our senior design course works," says Mohan. "Students need a solid foundation on the base concepts in software engineering. That base allows them to learn new things quickly and stay ahead of the changing technological landscape." ■

Dale Long is Rose-Hulman's director of media relations and Echoes' executive editor.

Bailey Challenge

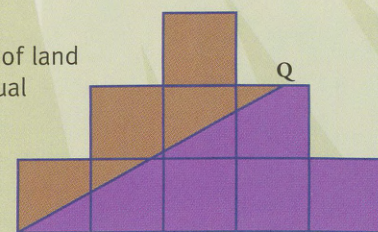
By Professor Emeritus Herb Bailey, PhD

THE WINTER PROBLEMS may have been a bit more difficult, but several alumni and friends were up to the challenges. Let's see how you do this time.

SPRING PROBLEM 1

A farmer owns a plot of land consisting of nine equal squares, as shown.

The outer border is fenced and he plans to build a straight fence from point P



at the lower left to a point Q on the border. Find the location of Q so that lower part (lilac) and the upper part (umber) have the same area.

SPRING PROBLEM 2

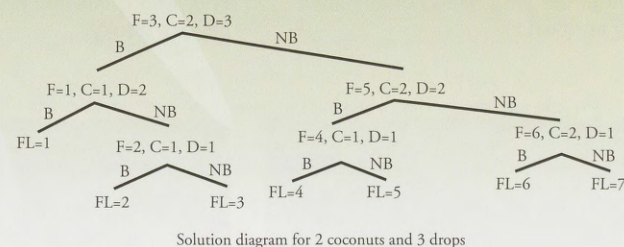
While waiting to buy letters (sold individually) to put on his mailbox, a customer noted that those ahead of him bought the letters for the following box numbers and paid the associated prices: One for \$2, two for \$3, and eleven for \$5. For example, the letters O, N, and E each have a price and the sum of these three prices is \$2. How much did she pay for the six letters of her mailbox number twelve?

SPRING SUPER BONUS

A number is palindromic if it is the same number when its digits are reversed, 14341 for example. The odometer in Sally's car displays only 5 digits and does not display tenths of miles. When she started her trip, the last three digits formed a palindromic number. One mile later, the last four digits formed a palindromic number. After another mile, the last five formed a palindromic number. Find all possible initial odometer readings that satisfy these conditions. Hint: Be careful with your carries.

SOLUTION TO WINTER BONUS B: Suppose we start with two coconuts and are allowed "k" drops. The highest floor possible for the first drop is from floor "k". If it breaks, then we need the k - 1 additional drops in order to determine the lowest possible floor to cause a break. If the first drop does not break, then we can go up an additional k - 1 floor for the second drop. If the second drop breaks, then we can use the remaining k - 2 drops to determine the lowest possible floor for the break. Keep reducing the step up by one floor until there is only one floor above. At this last drop the floor height is $k + (k - 1) + (k - 2) + \dots + 1 = (k)(k + 1)/2$. We now apply this result to the bonus problem. After the coconut breaks when dropped from the top floor (say floor "T"), then we must determine the additional number of drops needed in order to check the remaining T - 1 floors. Thus $(k)(k + 1)/2 \geq T - 1$. If T = 100 and $(k)(k + 1)/2 \geq 99$. The smallest "k" is 14.

The solution for k = 3 is shown in the diagram, where F = drop floor, C = the number of coconuts remaining, D = the drops remaining, B indicates that the coconut breaks, NB indicates the coconut does not break, and FL is the lowest break floor for the given path.



Solution diagram for 2 coconuts and 3 drops

Send your solutions to Herb.Bailey@rose-hulman.edu or to Herb Bailey, Department of Mathematics, Rose-Hulman Institute of Technology, 5500 Wabash Ave., Terre Haute, IN 47803. Alumni should include your class year.

Congratulations to the following solvers of the winter problems:

ALUMNI: T. Jones, 1949; P. Gottfried, 1949; C. Hirschfield, 1954; B. Hall, 1955; A. Sutton, 1956; H. Brown, 1957; J. Dhooge, 1960; R. Archer, 1961; J. Ray, 1961; J. Tindall, 1961; A. Creek, 1964; B. Anderson, 1965; S. James, 1965; B. Kevorkian, 1966; J. Lafuze, 1967; A. McLaughlin, 1967; K. Metz, 1969; J. Albertine, 1969; J. Born, 1970; S. Jordan, 1970; W. Pelz, 1971; R. Engelman, 1973; S. Simms, 1974; D. Wheaton, 1974; M. Bailey, 1976; B. Hunt, 1976; J. Schroeder, 1976; P. VandeMotte, 1977; T. Greer, 1978; R. Preim, 1979; R. Joyner, 1980; R. Roll, 1981; R. Spung, 1981; K. Borgman, 1982; S. Guinther, 1984; J. Clark, 1984; M. Adams, 1985; D. Price, 1986; D. Johnson, 1987; M. Lancaster, 1987; T. Doerr, 1988; E. Cegielski, 1990; B. Burger, 1991; R. Hochstetler, 1991; D. Jordan, 1991; P. Kimmerle, 1991; S. Nolan, 1991; C. Schlimm, 1991; J. Zamora, 1991; R. Antonini, 1993; C. Rettig, 1994; M. Ley, 1997; K. Bartow, 1998; M. Pilcher, 1998; P. Swickard, 1998; E. Lara, 1999; J. Rose, 2001; B. Pecora, 2002; K. Hassler, 2006; A. Haste, 2006; J. Przybylinski, 2006; D. Straub, 2010; A. Vogt, 2010; and J. Jacobs, 2013

FRIENDS: T. Cutaia, M. Dietz, S. Foltz, J. Hasselbring, S. Lam, J. Ley, J. Marks, L. Puetz, J. Robertson, B. Schacht, and E. Wern



REGIONAL VOLUNTEERS: Alumni assisting in this year's FIRST Robotics Crossroads Regional on campus were (from left) Mark Hiatt (ME, 1992), Claire (Larew) Stuckey (ME, 2010), Bill McKenna (CS/MA, 2002), Kris Verdeyen (EE, 2000), Jim Fox (EE, 1995) and Tony New (EE, 1991).



FUELING THE FUTURE: Bob Pease (CHE, 1980), Vice President in Shell's Global Business Excellence Division, welcomed students that participated in the 2014 Shell Eco-marathon this spring in Houston.



LONGTIME ACQUAINTANCES: John Albertine (PH, 1969), left, retired optical systems consultant, talks with Michael Moloney, PhD, who completed his 46th year on the physics faculty.



ALCOA TOUR: Ed Hemmersbach (ME, 1987), left, vice president of manufacturing for Alcoa Global Packaging, gave Rose-Hulman officials a tour of the company's southern Indiana operations.

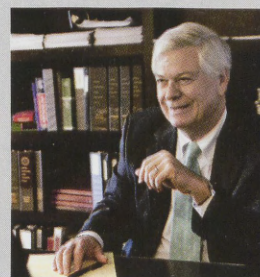


INNOVATIVE IDEAS: Mike Thoeny (EE, 1989), managing director of electronic controls-North America for Delphi Electronics and Safety, discussed "Automotive Electronics—New Paths to Innovation" during a campus session this spring.

TAKE NOTE

COLES SWITCHES INDY LAW FIRMS

Respected intellectual property attorney James A. Coles Sr. (EE, 1969) has joined the Indianapolis-based Densborn Blachly LLP



law firm. He will continue to focus on intellectual property (IP) transactions, help resolve technology disputes, and provide executive-level advice on IP issues.

Coles, a Rose-Hulman trustee, has represented local, national, and international businesses in intellectual property and technology issues for 38 years.

DUO TAKES OVER WDD SOFTWARE

Jason Bourg (CS, 2002) and Tyler Smith (CS, 2002) have joined with colleague Matt James to acquire ownership in WDD Software. The Indianapolis-based custom software development and consulting firm builds smart, secure, and scalable software.



The trio has a new vision for the company, creating innovative software solutions and driving the highest results, based on their clients' goals.



SIMMONDS NAMED 'RISING STAR'

Scott Simmonds (ME, 1991) was recognized as a "rising star" in intellectual property and business/corporate law in this year's Indiana Super Lawyers 2014 (March issue).



A partner in Barnes & Thornburg LLP's Indianapolis office, Simmonds focuses his practice on preparing and prosecuting patent application through the U.S. Patent and Trademark Office and counseling clients on the protection of intellectual property.

1969

John T. Anderson (ME) is keeping busy in retirement, coordinating the Servants At Work church mission group building ramps and stairs for physically handicapped in Putnam County, Indiana. He spent 35 years as an engineer for Ford Motor Company.

1975

Mark A. McCandless (ME) retired from Lockheed Martin after 34 years in a variety of management positions. He was program manager of SMAAART large composite LH2 tank development.

1979

Randy R. Mosele (CE) is the new site manager for Ivy Tech Community College's Parke County Learning Center in Rockville, Indiana. He has had executive management positions with several global manufacturing companies, owned a logistics company serving the commercial explosives industry, and was a decorated armored cavalry officer in Operation Desert Storm.

1984

David C. Yates (EE) was inducted into Terre Haute South High School's 2014 Hall of Distinction. He is an electrical engineer with 28 United States patents for medical device and research development, product design, and field engineering. David resides in West Chester, Ohio.

1989

Paul Palmer (ME) is a marketing professor and lecturer at Indiana University's Kelley School of Business. He had executive marketing positions at Hasbro Toys, American Greetings, and Procter & Gamble.

ALUMNI NEWSMAKERS



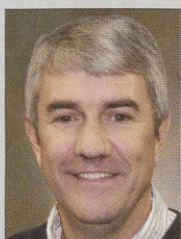
UMPLEBY NEWEST ROSE-HULMAN TRUSTEE

Caterpillar executive **James Umpleby** (ME, 1980) is the newest member of the Rose-Hulman Board of Trustees. He has been president of Caterpillar's Energy & Power Systems Group since January 1, 2013; a Caterpillar vice president from 2010-2012; president of Caterpillar's Solar Turbines Inc. from 2010-2013; vice president of Solar Turbines from 2007-2010; and a Solar Turbines employee since 1980. He received the Alumni Association's Career Achievement Award in 2000. ■



HANNUM EARNS SAGAMORE OF THE WABASH

Indiana Governor Mike Pence has named **David Hannum** (ME, 1981) a Sagamore of the Wabash, one of the state's most esteemed honors. It is a personal tribute rendered for distinguished service to Indiana. Hannum, chairman/CEO of Garmong Construction, led the Fire and Building Safety Commission from 2006 to 2013. He chaired the investigation into the tragic Indiana State Fair stage collapse and helped Indianapolis prepare to safely host the 2012 Super Bowl. ■



WINZENREAD LEADING PRIORITY CONSULT

Gary Winzenread (EE, 1986) has been named CEO of Priority Consult, a workflow solutions provider to spine and oncology centers throughout the United States. He is a healthcare executive with 25 years of leadership experience in high-growth, technology-enabled companies. Winzenread's expertise spans several industries, including healthcare, technology, banking, insurance, finance, and manufacturing. ■



FLOOD GETS AMERICAN CONCRETE INSTITUTE YOUNG MEMBER AWARD

Walter H. Flood IV (CE, 2003) earned the American Concrete Institute's (ACI) Young Member Award for professional achievement and advocating continuing education of the concrete industry through innovation. He is an assistant engineer/project manager with Flood Testing Labs, a family business based in Chicago. Flood is chairman of ACI's national student activities committee and will co-chair the Pervious Live event at the 2015 World of Concrete. ■



CINDRIC FEATURED IN NCAA'S '40 IN 40'

The National Collegiate Athletic Association honored **Tim Cindric** (ME, 1990) as one of the 40 most influential former Division III student-athletes. He was featured in the NCAA's year-long 40-year anniversary "40 in 40" celebration. Cindric was an honorable mention All-American basketball player who is now president of Team Penske Racing. He was inducted into Rose-Hulman's Athletic Hall of Fame in 2001. ■

WE WANT YOUR NEWS

Send news and photographs to alumniaffairs@rose-hulman.edu.

Class Notes

1993

Bin Wu (EE, MA) has been appointed non-executive/non-independent director for Biosensors International Group. He previously served as director of investment management of CITIC Private Equity Funds Management Company.

1999

Jeremy C. Price (CPE) is a new software developer at Rackspace, an open cloud company. He formerly worked at Southwest Research Institute and Microsoft.

2002

Derek W. Freihaut (ECON/MA) has been promoted

to principal with Pinnacle Actuarial Resources. He is based at Pinnacle's Bloomington, Indiana, office, and has been a consulting actuary with the firm since 2006.

2003

Heidi E. (Brackmann) Davidson (CHE) has been named senior project manager at MeadWestvaco in Charleston, South Carolina. She has worked at MeadWestvaco since 2011.

Jeremy M. Kashman (CE) is engineer for the City of Carmel, Indiana. He had been a project and business development manager at Rieth-Riley Construction Company,

and also worked for American Structurepoint, Inc.

2009

Nathan W. Long (ME) is now an engineer at Zimmer in Warsaw, Indiana, after working for Beckman Coulter and Allison Transmission.

2010

Patrick C. Hudson (BSME, 2010; MSME, 2012) is a controls engineer for Cummins Emissions Solutions' Urea Doser Controls Department.

2011

Michael Z. Jones (SE/CS/MA) is now a software engineer for Interactive Intelligence and

co-founder of Aerosta, which develops revolutionary devices for personal data storage.

2011

Seth Hendrickson (EE) is using a specially designed system to study Indiana University basketball game data for readers of the www.insidethe-hall.com blog to gain a better understanding of the game.

2013

Durushka Ahmed (CHE) is a production engineer at Tate & Lyle. ■

Rosebuds

1999

Grant Carpenter (ME) and his wife, Julie, welcomed their second child, Audrey, on December 9, 2013. She joins her big brother, Oliver, who was born on February 8, 2010. The couple resides in Indianapolis and Grant is an engineer for Honda Manufacturing of Indiana.



2000

David Fisher (ME) and his wife, Kristy, welcomed a son, Bowen, to the family on January 26, 2014.

2002

Travis Moore (ME) and **Rebecca (Myers) Moore** (CHE) welcomed their third child, Caitlin Joy, on January 11, 2014.

Jason Caron (ME) and wife, Kristin, welcomed twins, Harper and Peter, on March 17, 2014. The family resides in La Plata, Maryland.



2003

Bryce Gast (CE) and his wife, Kelly, welcomed their first daughter,

Indy Grace, on February 5, 2014. The family resides in Goshen, Indiana. Bryce is a project engineer for Donohue & Associates, Inc. in Fort Wayne.

2005

Rebecca (Hubbard) Crecelius (CPE) and husband, Rush, welcomed their first child, Evan, on December 25, 2013.



Jonathon Fruchte (BSME, 2005; MSEM, 2006) and wife, Megan, welcomed their second child,

Josephine, on October 14, 2013. Big brother, Gabriel, was born on June 6, 2011.

2006

Megan (Whitaker) Fruchte (BE) and husband, Jonathon, welcomed their second child, Josephine, on October 14, 2013.



Kyle Hassler (ME) and wife, Megan, had their first child, William, on January 22, 2014, in Indianapolis.



2009

Daniel Coons (EE) and **Lisa (Jacobs) Coons** (CHE) welcomed their second child,

Ezekiel, on May 9, 2013, in Bloomington, Indiana.

2010

Kyle Harbison (BE) and wife, Lauren, welcomed a daughter, Lucy, on December 17, 2013. Kyle is a development engineer at Biomet and earned a master's degree in orthopedic regulatory and clinical affairs in 2012 from Grace College. ■

Marriages

1981

Daryl Eggers (CHE) was married to David Getz on November 9, 2013, in San Jose, California. Daryl is a chemistry professor at San Jose State University.

2010



Peter Maginot (CHE) and **Megan Velten** (CHE) were married on March 15, 2014, at Rose-Hulman's White Chapel. The couple resides in Beeville, Texas.

2011

Dawes Culp (EE) and **Rebecca Anderson** (ME) were married on August 24, 2013. They were married by Kaethe Pfeiffer (EE, 2014). The couple resides in Naperville, Illinois, and Dawes works for Navistar.

Cyril Rybicki (BSEE, 2011; MSECE, 2013) and Alexis Bledsoe were married on September 14, 2013, at Rose-Hulman's White Chapel. The couple resides in Camby, Indiana. Cyril is employed at Technology Service Corporation in Bloomington, Indiana.

2013

Alexis Bledsoe (CHEM) and Cyril Rybicki were married on September 14, 2013, at Rose-Hulman's White Chapel. The couple resides in Camby, Indiana. Alexis is employed at Nice Pak Products in Mooresville, Indiana. ■

Obituaries

1943

Thomas J. Weir (ME), 91, died on February 16, 2014, in Carmel, Indiana. He spent his career in the automotive engineering field and had over 30 patents.

William A. Yoder (ME) died on February 9, 2014. He retired from Wayco Contracting.

1944



Robert G. Larkin (ME), 91, passed away on March 11, 2014, in Plainfield, Indiana. He made significant contributions in the design of many gas turbine engines during his 35-year career with Detroit Diesel Allison/Allison Gas Turbine, retiring as a design supervisor. He was a Theta Xi fraternity member. Survivors include his son, Tom Larkin (MA/ME, 1974).

1947

Herbert Katz (EE), 91, died on December 19, 2013, in Plantation, Florida. He was a systems design engineer and manager of General Electric's jet engine division.

1949

Emil Quattroni (ME), 90, died on March 12, 2014, in Titusville, New Jersey. He was a retired mechanical engineer from Roebling Steel Company.

1955

Abraham "Jack" Hajjar (MSCHE), 82, died on January 23, 2014, in Glenville, New York. He retired after a 35-year career as a chemical engineer with General Electric's silicones division.

William E. Supp (ME), 80, died on February 7, 2014, in Xenia, Ohio. He retired as an engineer at Wright Patterson Air Force Base.

1956

Edward V. Burget, Jr. (ME) passed away March 25, 2014.



Jack R. Taylor (CE), 77, died on January 30, 2014, in Norman, Oklahoma. He retired as president of Star Building Systems, a technological pioneer in the metal building industry. His 37-year career with the company started as an assistant chief engineer and included district, United States, and international sales management.

1957

James L. Griffith (EE), 77, died on January 2, 2014, in Worthington, Ohio. He retired from Industrial Nucleonics and had two United States patents.

1961

William A. Carter, Jr. (CHE), 74, died on February 17, 2014, in Munster, Indiana. He led the Class of 1961's 50th reunion and helped the class achieve the top annual fund alumni giving rate. Bill worked in research and pollution control during most of his 37 years at Inland Steel.

1962

L. Robert Carter (CE), 74, died on December 6, 2013 in Indianapolis. He was a lead auditor for TÜV Rheinland North America, conducting environmental compliance and quality systems audits of manufacturing facilities throughout the world.

1969

Stephen A. Ricks (ME), 66, died on February 22, 2014, in Portland, Oregon.

1975

James L. Craney (ME), 64, died on January 22, 2014, in Bemen, Illinois. He was a member of the White House Communications Agency.

1990

Jeffrey M. Singer (AO), 44, died on February 15, 2014, in Fishers, Indiana, after an extended illness. He was an optical/lighting engineer for Honeywell Corporation and held 14 patents. ■

ALUMNI NEWS



'Rose on the Road,' New Clubs Extend Alumni Relationships

More alumni are becoming engaged through "Rose on the Road," new alumni clubs, and networking activities across the country—and, for the first time, the world.

President Jim Conwell and other administrators received feedback from alumni during "Rose on the Road" events in Washington, D.C. (top photo), Boston, and Phoenix.

Gregg Lowe (EE, 1984) and his wife, Diana, hosted an alumni reception in Austin, Texas, (right photo) during the Board of Trustees' winter meeting.

First International Club: Rose-Hulman has opened its first international alumni club in Biel, Switzerland. Margaret Kelly (BE, 2010) is the coordinator.

Other new clubs have been formed in central Illinois/Decatur/Springfield, led by Andrew Jordan (ME, 2012); Lafayette, Indiana, led by Kim Smith (ME, 2005); and Pittsburgh, led by Kristen Greer (AB, 2010) and Michael Volitich (BE, 2010). ■



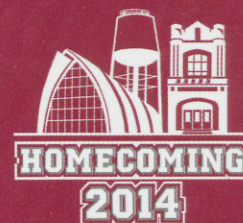
Keep track of upcoming alumni events at rosetem.rose-hulman.edu/events.

ALUMNI CALENDAR

Check latest events at rosetem.rose-hulman.edu/events

SPECIAL ALUMNI EVENTS

Summer Scholarship Golf Scramble, Carmel, Indiana | **June 5**
 FBI Cyber Crime Presentation, Software Engineers Professionals, Carmel, Indiana | **June 11**
 Indianapolis Indians Baseball, Victory Field | **July 4**
 Young Alumni Council Meeting, Columbus, Ohio | **July 19**
 Columbus Crew Soccer Game Alumni Event, Columbus, Ohio | **July 19**
 Alumni Advisory Board Meeting, Dayton, Ohio | **August 8**
 Seattle Alumni Club Event | **August 16**
 Chauncey Day Celebrations (national) | **September 11**
 Fall Career Fair | **October 1**
 Early Bird Homecoming Alumni Reception | **October 2**



OCTOBER 3

Alumni Golf Outing | Hulman Links/Country Club, 8:15 a.m.
Heritage Society Luncheon | Hulman Student Union, Noon
25th Anniversary of Swimming/Diving | Sports and Recreation Center, 7:30 p.m.
Pep Rally/Bonfire | Sports and Recreation Center, 8:30 p.m.
G.O.L.D. Party (Hosted by Class of 2009) | Copper Bar, Downtown, After Bonfire

OCTOBER 4

5K Fun Run/Walk | Sports and Recreation Center, 8 a.m.
Alumni Awards Breakfast | Hulman Student Union, 8:30 a.m.
Alumni Association Annual Meeting | Student Union, 10:30 a.m.
Academic Department Open Houses | 11 a.m.-1 p.m.
Tent City | Cook Stadium Parking Lot, Noon
Football Game | vs. Anderson University, 2 p.m.
Rose-Hulman Ventures Open House | South Campus, 4-6 p.m.
50-Plus Golden Gala Events | Hulman Student Union
 ■ Reception, 6 p.m.
 ■ Dinner, 6:30 p.m.

OCTOBER 5

Reflection Time | White Chapel, 9 a.m. to Noon
RoseWood Couples Brunch | St. Mary-of-the-Woods, 10:45 a.m. to 1:15 p.m.

CLASS REUNIONS | Chairpersons

OCTOBER 3

1954 | Hulman Student Union, 6 p.m. | *Erv Ulbrich/Bob Miller*
1959 | Hulman Student Union, 6 p.m. | *Jack Fenoglio*
1964 | Hulman Student Union, 6 p.m. | *Mike Johnson*
1969 | Stables Restaurant, 6 p.m. | *John Newlin*
1974 | Old Bank Grille Restaurant, 6 p.m. | *Bill Olah*
2009 | The Copper Bar, Downtown, 9 p.m. | *Nate Richter*

OCTOBER 4

1979 | The Ohio Building, 6 p.m. | *Greg Holler*
1984 | The Ohio Building, 6 p.m. | *Marcelo Copat*
1989 | Hulman Student Union, 6 p.m. | *John Becker*
1994 | Stables Restaurant, 6 p.m. | *Chis Hahn/Jay Moorman*
1999 | The Ohio Building, 6 p.m. | *Alyssa Lobo*
2004 | The Ohio Building, 6 p.m. | *Mike Martin/Chris Meyer*

www.rose-hulman.edu/homecoming2014

LAST CALL FOR GOLF SCRAMBLE TEAMS

The annual Alumni Golf Scramble is June 5 at Prairie View Golf Course in Carmel, Indiana. This event raises valuable scholarship funds to support Wabash Valley and Indianapolis area students. (Since 2007, more than \$175,000 has been awarded to students through this outing.)



Golfers can register at rosetem.rose-hulman.edu/events.



Your Rose-Hulman Memories Don't End with Commencement

As Rose-Hulman sends another class of scientists, engineers, and mathematicians out to take on the challenges of an ever-changing society, we want them—and alumni young and old—to know that graduation does not mean you're saying good-bye to this special place.

You're Forever Rose

“ My best friends are still the friends I made in college. We share memories and overcame challenges—things that bind us together. ‘Forever Rose’ means never having to lose the spirit and feeling of being on a special journey that started with a decision to attend Rose-Hulman.”

—Rob Hochstetler, EE, 1991



“ It was impossible to foresee the impact Rose-Hulman would have on my future. Looking back, as an alumnus, it's still hard to believe that my Rose-Hulman experience continues to have a positive influence on my professional career, more than 30 years later!”

—Jeff Trang, EE, 1983

Your time at Rose-Hulman was just the beginning of a lifelong connection, and there are so many ways that you can nurture that relationship. One of the best ways is through a gift to **The Fund for Rose-Hulman**. Your giving not only supports the Rose-Hulman family today, but it ensures that those connections will be strong for many years to come.

ROSE-HULMAN HAS:

38

alumni clubs in 38 cities, including one in Switzerland!

4,428

alumni are registered with the alumni community, RoseSTEM

169

class agents

ROSE-HULMAN ALUMNI ARE:

Supporting

The Fund for Rose-Hulman

Attending

alumni happy hour events

Participating

in 'Rose on the Road' events

Hiring

alumni and students

1,181 Donors are Needed to Reach Our 35% Alumni Participation Goal by June 30

Make your gift today! Call Institutional Advancement at 812-877-8217 or visit www.rose-hulman.edu/give to make your gift before the end of our fiscal year—June 30.

5500 Wabash Avenue
Terre Haute, IN 47803
812-877-8217
DevelopmentOffice@rose-hulman.edu

ROSE-HULMAN
INSTITUTE OF TECHNOLOGY

Thank you for investing in the lives of
students who impact the world. Your gift
helps Rose-Hulman prepare its students
for lives of purpose and success.
Please make your gift by June 30.

ROSE-HULMAN
INSTITUTE OF TECHNOLOGY
Develop student
experience initiatives
Enhance academic programs
Bolster
campus
technology
Support
faculty excellence
Increase
student
scholarships
Hire
renowned
faculty

NO POSTAGE
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IN THE
UNITED STATES

BUSINESS REPLY MAIL

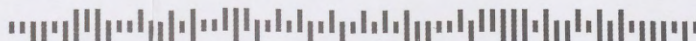
FIRST-CLASS MAIL

PERMIT NO. 562

TERRE HAUTE IN

POSTAGE WILL BE PAID BY ADDRESSEE

ROSE-HULMAN INSTITUTE OF TECHNOLOGY
OFFICE OF INSTITUTIONAL ADVANCEMENT
5500 WABASH AVENUE
TERRE HAUTE, IN 47803-9958



Your gift to The Fund for Rose-Hulman supports the institute's mission to provide its students with the world's best undergraduate science, engineering, and mathematics education.

I/we want to advance Rose-Hulman's impact on the lives of its exceptional students and renowned faculty with a \$ _____ gift for one or more of these key initiatives:

- ☐ Rose-Hulman's Greatest Needs
- ☐ Other _____
- ☐ Student Scholarships

Making your gift by June 30 will ensure Rose-Hulman successfully achieves its alumni participation goal of 35 percent.

ANNUAL GIVING CIRCLES

Recognizing annual gifts from July 1 to June 30

Herman Moench Circle	\$25,000
Hulman Circle	\$10,000
Founders Circle	\$5,000
Trustees Circle	\$2,500
Presidents Circle	\$1,000
Deans Circle	\$500
Rose and White Circle	\$250
Century Circle	\$100

PRESIDENT'S G.O.L.D. CIRCLE

Recognizing cumulative young alumni giving

Gold	\$5,000
Silver	\$2,500
Bronze	\$1,000

Name _____ Class Year _____

Address _____

City _____ State _____ Zip _____

Telephone _____ (H) _____ (C)

Email _____

- ☐ Rose-Hulman is included in my/our estate plans.
- ☐ Please send me information regarding making a planned gift to Rose-Hulman.

Giving Options

☐ A check made payable to Rose-Hulman is enclosed.

☐ Credit Card: ☐ V ☐ MC ☐ D ☐ AE

Expiration: _____ (Month) / _____ (Year) _____ (CVV)

☐ Give online at www.rose-hulman.edu/give

Corporate Match Information

My employer, _____, will match my/our gift.

My spouse's employer, _____, will match my/our gift.

Echoes

ROSE-HULMAN INSTITUTE OF TECHNOLOGY

5500 Wabash Avenue
Terre Haute, IN 47803

Address Service Requested



Stay connected

Stay connected with Rose-Hulman through our website (www.rose-hulman.edu).

You can also keep informed by becoming a fan of Rose-Hulman's Facebook page or following us on Twitter (@rosehulman or #rhithpride).



PARTING SHOT

Taking An Interest In Technology

Even in remote villages of the Dominican Republic, youth of all ages are fascinated by technology. Children were intrigued to view video being taken by senior electrical engineering and mathematics major Ryan Oliver, a leader of Rose-Hulman's Engineers Without Borders student chapter. Learn more about how the chapter has transformed two villages on pages 20-22. (Photo by Spanish Professor John Gardner)