Construction update

Two major campus construction projects - the Alumni Center for Athletics and Recreation and the addition to Olin Hall - have progressed to interior work. Crews have moved from steel trusses and foundations to the more detailed work such as power outlets and interior walls.

Keeping tabs on the project is Rose-Hulman's detail man, Wayne Spary, director of the Department of Facilities.

Both projects are on schedule, according to Spary. February is the target date for completing the Olin Hall addition. The athletic/recreation center is set to open its doors next August.

Spary provided the information for this article during an interview/tour of the facilities.

Olin Hall classrooms take shape

Workers enclosed the addition to Olin Hall during the fall as eight new classrooms took shape. Work had progressed to installation of optical and electrical lines in the classrooms. Hallways were discernible along with archway entrances to the building. Crews installed an upgraded power system for the building during late November.

When complete, the Olin addition will include eight state-of-the-art classrooms, a lobby, a student alcove, an outside courtyard and restrooms. Each classroom will seat 40 students with two students at a table. The rooms will be networked so students can use their laptop computers during class. Also, each classroom will contain a podium with a fixed laptop for faculty use. A computer projection system will enhance the delivery of the computerized instruction.

The Olin addition will maintain the red-brick look of the existing building. The addition links on the northwest side of the original structure. The design is one that provides a gateway to the academic area on campus.

The addition will add 18,500 square feet of academic space.

Athletic/recreation center update

Workers should have the new Alumni Center for Athletics and Recreation enclosed by the end of December. Structural steel work was finished in early fall and crews began enclosing the building at that time.

Progress to this point includes:

- concrete poured for the 25-yard, 8-lane swimming pool;
- the floor base poured for the multi-purpose area;
- water lines for showers in the locker rooms;
• all of the roof on;
• utility feed lines for electricity, gas and water.

A tour of the structure showed how natural lighting graces all aspects of the building through large windows and skylights. The only place where natural light will not be able to shine is in the building’s locker rooms.

The target date for completion is August of 1997. That does not include site work, but the building will be open for use at that time.

When the 158,000 square-foot building is complete, it will include the pool, a 1,700-seat competition gym, a 70,000-square-foot fieldhouse, an exercise/wrestling room, a fitness/weightlifting center, a sports medicine facility, concession stands, and two racquetball courts, and administrative offices.

The competition gym will include an absorbent wood floor modeled in the parquet style of the Boston Garden.

The multiuse fieldhouse will include a 200-meter track, a high-jump pit, a pole vault area, and four basketball court-sized areas. Three of those courts can accommodate basketball and volleyball, and the fourth can also handle tennis and badminton as well as basketball.

Flexibility is a key part of the building’s design. It will be possible to allow men and women’s basketball to practice at the same time the track team is preparing for an upcoming meet. Also, it will alleviate some of the congestion that now occurs with the intramural program because of limited facilities.

-by Bryan Taylor
The Personal Touch

Bill Sisson retiring after 28 years of service to Rose-Hulman

Corporate recruiting has never been for the faint of heart at Rose-Hulman. Our history includes the tension of the interview process, the probing questions, and the gunshots. It also includes Bill Sisson.

After 28 years of service to Rose-Hulman, Sisson plans to retire in January. He has served the school as registrar, director of placement, and director of annual giving. Twenty-five years of his Rose-Hulman tenure were spent helping Rose-Hulman students secure careers upon graduation.

A big part of Sisson’s work involved building relationships with corporate recruiters, including warning them about those pesky gunshots. In earlier days, interviews were conducted throughout campus. Many times recruiters worked in the "B" section of Moench Hall, directly above the school rifle range. "It was fun watching new recruiters come flying out of there when the guns went off," Sisson recalled.

Of course, Sisson’s work went way beyond firearms explanations. He cultivated corporate contacts, brought faculty and staff into that process, and encouraged students to be aggressive in their job searches. Through it all, he carried a personal touch.

He exemplified that style in the hiring of secretary Sonnie Hill 19 years ago. Sisson hired her, but she quit after one week.

"I was confused and felt I was not qualified to do the job," Hill recalled. "Bill came to my home to talk about what the problems might be. How often does a `former boss come to your home to talk to you after you quit on him? We talked for a couple of hours, discussing the job and just talking in general. As he was getting ready to leave, he asked if I would come back and try it again. I did and I worked for Bill for 17 years."

Alumnus Dan Price (â75, C.E.) provides a view of Sisson from "both sides of the table - the industry perspective and the student perspective."

"Probably through time Bill was the consistent point of contact industry looked to at Rose-Hulman," said Price, director of Tissue/Towel Product Supply-North America for Procter & Gamble. "He also was a great cheerleader for Rose-Hulman, and he would kick students in the tail to help motivate them in the job search. He could bring a tough-love process to dealing with students."
Recognition of Sisson’s success came in 1976 when he received the President’s Outstanding Service Award. The memorable part of the recognition was a standing ovation from the graduating class. The gratitude of alumni continued in 1991 when they named him an Honorary Alumnus of Rose-Hulman.

When asked to cite the highlights of his career, Sisson noted working with students was always at the top of his job satisfaction list. He pointed out "it was not just Bill Sisson; it was a Rose-Hulman family effort that we never let go of a student until that student was placed."

Sisson also felt his office had an impact on the personal appearance factor at Rose-Hulman, at least during interview season. "Our office was probably responsible for more shined shoes and short hair than the ROTC program."

The biggest challenges Sisson faced were the students "who didn’t seem as concerned about their job searches as much as we were."

Sisson also had to contend with changes in industry. Trends in the marketplace affected how he and his office approached placement. Boom times in the 70s and 80s brought multiple jobs offers. In the late 80s and early 90s, corporate downsizing and budget-cutting meant fewer recruiters coming to campus.

Whatever the economic trend, Rose-Hulman reached nearly 100 percent placement annually. The reflection of Sisson’s link to alumni was recognized two years ago when Rose-Hulman began its "Vision to be the Best" fund-raising campaign. Because of his strong alumni ties, he was put in charge of the annual giving from alumni.

When Sisson packs up his office to spend more time with his wife and grandchildren, there is one item that will not fit in the box - the friendships generated during three decades of service to Rose-Hulman.

-by Bryan Taylor
Something different

Echoes regularly reports on the academic achievement of students, but in this issue we prove they are people with multifaceted interests. Dale Long writes about three students with special interests that take them outside the labs and classrooms.

Ironman challenge all in a day�s work

Student Todd Smaka likes to swim, run, and even ride a bicycle.

But how about swimming 2.4 miles, then cycling 112 miles before finishing with a 26.2-mile marathon?

It�s all in a day�s work for Smaka, who placed 402nd out of 1,288 finishers in the Ironman Triathlon World Championship in Hawaii on Oct. 27. The 22-year-old senior, who is studying for bachelor�s degrees in mechanical engineering AND electrical engineering, completed the endurance test in 10 hours, 24 minutes and 22 seconds. (Competitors had 17 hours to complete the course.) He placed fourth among 11 Indiana triathletes and ranked 34th (out of 59) in the 18- to 24-year-old age group.

This was Smaka�s first triathlon at this distance.

Captain of Rose-Hulman�s 1995-96 varsity swimming team, Smaka excelled in the opening event, being the 202nd swimmer out of the water. He also was strong in the marathon, with a time of 3 hours and 33 minutes. He completed the cycling leg in five hours and 51 minutes.

"I knew that cycling would be my weakest event. I didn�t own a racing bicycle until July of 1995," Smaka noted. "I�m satisfied with the results. All of the hard work was worth it."

Those extensive workouts included 50 miles of running, 180 miles of cycling and 8,000 yards of swimming each week for the past three months. He was also on a strict diet and had four classes at Rose-Hulman.

Smaka, from Bristol, Ind., qualified for the Ironman Triathlon by finishing ninth out of 180 contestants in the 18-24 year old age group at the Chicago Triathlon (1-mile swim; 25-mile bicycle race; and 6.2-mile run) in July. He placed eighth overall at the Terre Haute Triathlon, 10th in the Warsaw (Ind.) Triathlon, and competed in the Muncie Triathlon.

"The triathlon is a sport that offers the best combination of the events in which I excel. It�s also a great way to stay in shape and release the academic stress at Rose-Hulman,"
said Smaka, former vice president of the college’s Blue Key Honorary. "As my cycling improves, I’ll become a better triathlete. My goal is to do well at the U.S. Nationals in August, 1997."

Let’s buy a vowel and call him a big wh__l! After tackling calculus as part of engineering courses at Rose-Hulman, you’d think Brad Smith would have no trouble solving a puzzle on the popular "Wheel of Fortune" television game show.

Well, Smith says, it’s harder than you might think. Smith, 19, fulfilled one of his childhood dreams by being a contestant on the Oct. 31 "Wheel of Fortune" show.

So, how did the Cicero, Ind., native do?

Good enough to solve two puzzles; appear on the Nov. 1 "champions" show; bring home $23,216 in cash and prizes; swap jokes with "Wheel of Fortune" personalities Pat Sajak and Vanna White; and sign autographs, like a movie star, for audience members.

"Wheel of Fortune" is the nation’s most popular syndicated television game show, with a projected 100 million viewers worldwide.

All of those eyes watched Smith solve the second puzzle on Oct. 31 (Smarty ?; Bell Bottom ?; Ants In Your ?), where he earned $2,000 for providing the key word (Pants); and the third puzzle (Eye Of The Tiger Woods), advancing to the Bonus Round and a chance to win a 1997 Cavalier convertible.

It’s a scene - and opportunity - that Smith had dreamed about since last spring, when he was one of 30,000 central Indiana residents who applied for an Indianapolis tryout for the show.

He faltered on WHISK BROOM after Vanna only revealed three of the 10 letters in the phrase: W_IS_/R___.

"I had never heard the word before. Even if I had, it was an impossible puzzle to solve," said Smith, reflecting later about his misfortunes. "Why couldn’t it have been one of the easy puzzles that I’ve solved at home?"

Smith says things are much more relaxed lying on the couch, solving puzzles, than sweating in front of television lights.

For instance, the wheel itself is much heavier and took greater effort to spin. Also, there’s a lot of activity behind the cameras, making concentration on the puzzle more difficult. Then, there’s the pressure to succeed.

"I felt calm and relaxed going into the show, much better than I do before a final exam at Rose-Hulman . . . I was so concerned about things that didn’t have anything to do with puzzles - mentioning I was a student at Rose-Hulman, member of the Phi Gamma Delta
fraternity and from Cicero, Ind. And, of course, I didn’t want to disappoint my mother," Brad said of Sue Smith, who originally registered her son for the Indianapolis tryout. "My mother is such a big fan of the show. I was living her dream.

Sue Smith was also the first person to greet her son at the Indianapolis airport following the show’s taping in mid-September. The welcome mat was graced with a series of congratulatory balloons and two presents: Two whisk brooms.

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Fighting fire with fire in the Rockies

Erik Hayes admits he may not fit the characteristics of the typical firefighter for the U.S. Forestry Service.

After all, the senior mechanical engineering major stands 5 feet, 6 inches tall and weighs slightly more than the backpack he carries to battle forest fires in western Montana.

But Hayes fights fire with fire - a desire for one of the U.S. government’s most demanding and important jobs: Protecting the country’s beautiful wildlife areas in the Rocky Mountains.

"It’s invigorating and the best job in the world," the Stevensville, Mont., native says. "There’s a great sense of accomplishment after successfully battling a fire. It’s hard work, but I know I’m making a difference."

That’s why Hayes has worked between 80 and 100 hours each week, seven days per week, during the past three summers as a forestry technician for the forestry service’s Bitterroot (Mont.) Range Station.

"It’s no day at the beach, but there’s no job like it anywhere," Hayes said. "The summer of 1996 may have been the worst season for forest fires in U.S. history, with Hayes being called upon to help extinguish blazes on all but six days between May 25 to August 22 in a 100-mile region near his hometown. He also spent a week in Utah battling a 60,000-acre fire.

"Only five of the fires fought in my region were caused by humans (smoldering campfires or discarded cigarettes)," Hayes states. "The conditions were just right for a productive forest fire season. First, the region had a wet spring season, producing a thick area of brush and grasses. That was followed by a dry summer and several lightning storms. Finally, the winds were especially strong this summer." On call 24 hours each day, Hayes joined an 11-person firefighting team that hiked (or was dropped from helicopter) into the wilderness, carrying a 50-pound backpack, 15-pound fire pack, a shovel and Pulaski, a pick/axe device that firefighters use to clear an 18-inch fire breakwall around a fire.

Most fires take up to three days of constant surveillance before bringing under control.

"Firefighting requires quick action, executing a good game plan and lots of good luck," the Montana native said.
Hayes hopes to improve those odds by utilizing his engineering skills to design a two-headed Pulaski, which could increase productivity in clearing the breakwall - the vital link in fighting a forest fire.

"Hopefully, I can combine my engineering and firefighting expertise to design a better Pulaski or other firefighting equipment.

"Maybe it will happen this year. If not, I may have to go back next summer for more on-the-job experience," said Hayes, who plans to attend graduate school after graduating from Rose-Hulman next May.

At Rose-Hulman, Hayes has been a resident assistant at Baur-Sames-Bogart (BSB) Hall for two years.
Helping cultivate lives

Rodney Dick has become a farmhand. You won't see him planting seeds or driving a tractor, but he does help cultivate lives in Doddridge County, W.Va.

The 1988 chemical engineering graduate serves as executive director of Nazareth Farm in Centerpoint, W.Va. Nazareth Farm is a Catholic-supported organization devoted to home rehabilitation for the less fortunate in that part of West Virginia.

"We do home rehabilitation and renovation for the less fortunate and elderly," Dick explained.

"We help a lot of elderly who can't do things for themselves any more. We're basically enabling them to continue to live in their homes."

The area Nazareth Farm serves is a rural county located in the foothills of the Appalachian Mountains. The county population stands at 7,000. Its biggest city has 600 people.

Nazareth Farm helps about 30 families a year with new roofs, painting, dry walling, plumbing, floor repair, door replacement, and window replacement. It does not construct new housing.

Dick oversees a staff of eight to 10 full-time volunteers. As a team they oversee the majority of the work carried out by 600 volunteers who visit throughout the year. They come in youth groups and college-age groups for a week at a time to help Nazareth Farm.

"Being part of that formation of young people is one of the great rewards of the work," Dick said. "It encourages them to be involved in their own communities, and they learn they don't have to go 100 miles to be of service."

The other major reward Dick receives is found in the people he gets to work with. "They are extremely appreciative of what we do."

Dick gave up a job with Pfizer to work at Nazareth Farm. He took a major-league salary cut to work at Nazareth, but he does receive a stipend. He points out that Rose-Hulman "won't want to use me as a data point" when it comes to calculating average salaries of its graduates.

"Serving at a place like Nazareth Farm is something I've always felt strongly about," Dick said. "I always had everything I needed, and I never went without. I felt it was a
good time to step back and give back what I've been given."

While he no longer devotes his time to the finer points of process engineering, he believes his engineering and project coordination skills acquired in industry are an asset to his current position.

Dick juggles project assignments and scheduling of the volunteer groups that come through the farm. One of the bigger projects on his docket this past year was the construction of a new dormitory for the visiting volunteers. He helped plan it and oversee its construction.

Although drawn to his work in the Appalachian foothills, Dick will leave next year. Nazareth Farm rotates its staff. Although not sure of his future, Dick is pondering a return to engineering or teaching science in secondary schools. Whatever path he takes, it surely will be one that helps cultivate lives.

-by Bryan Taylor
Honor alumni

Receiving the Alumni Association's Honor Alumnus Award at Homecoming this year were, from left, Steve Wodicka, a 1968 biological engineering major; Brad Newman, a 1984 electrical engineering graduate; and Joel Waldbieser, a 1960 civil engineering alumnus. The Honorary Alumnus Award for staff and faculty was presented to Charles Howard, dean of admissions; and to Jim Eifert, vice president of academic affairs and dean of faculty.
Rose-Hulman alumni have the opportunity to keep in touch with their alma mater via the world wide web.

You can access the main Rose-Hulman home page at http://www.rose-hulman.edu.

Once at the main page, you have a menu of options that allows you to cruise various components of the Institute's site.

Alumni do have their own page under the button titled Alumni Affairs.

Under Alumni Affairs, alumni can obtain the latest information about alumni events, homecoming news, reunion dinners, and alumni association news.

Also, they can update their addresses for the alumni directory, submit information to be included in the Class Notes section of Echoes, and even read the latest issues of Echoes in the electronic form.

Another area of interest for alumni is the News & Sports section. Alumni can click into that area to read the latest news release about campus happenings and to obtain up-to-the-minute sports results.
$6.8 million grant funds research center

A new $6.8 million Center for Technological Research with Industry at Rose-Hulman will expand programs to boost economic development and create a national model for project-based education.

Federal funding for the Center and related auxiliaries is included in the new budget for the U.S. Department of Energy and the Army Corps of Engineers. Rose-Hulman officials and Indiana 7th District Congressman John Myers announced plans for the building which will be located east of Moench Hall near the Rotz Lab.

Construction, which will begin in July, will take about a year to complete.

The two-story, 40,000-square-foot building will include space for Rose-Hulman's new Technological and Entrepreneurial Development program. The program is increasing career opportunities for students while providing new technical and scientific services to make Indiana businesses more competitive.

Hulbert said the Center will become a reality because of the congressman's efforts. "Congressman Myers shared our vision of the economic and educational benefits that will result from this Center," Hulbert noted. "Because of John Myers' leadership in Congress, funding is now available to create programs and facilities that will benefit faculty, students and businesses for decades," Hulbert stated.

Myers said the funding will allow Rose-Hulman to expand efforts to work with regional industry and government sponsors to increase the nation's competitiveness.

"The Center will increase Rose-Hulman's role as a leader in undergraduate engineering and science education," said Myers, who retired in December after representing the 7th Congressional District for 30 years.

The Center will not only provide new educational experiences for students and faculty, it will also boost economic development, Hulbert noted.

"The Center is a win-win situation for faculty and students as well as the economy. The activities that occur in the Center will create new jobs, products and services," he said.

Construction of the Center comes at an important time to help Rose-Hulman launch the Technology and Entrepreneurial Development Program (TED), Hulbert stated.

"TED started nine months ago with the goal to be a national model for industry-supported, project-based engineering, mathematics and science education.

"The program will also increase the opportunities for our graduates to begin their careers in Indiana," he explained. TED was created with a $4 million grant from the Lilly Endowment Inc., of Indianapolis.
The new building will also provide space for a variety of technical and scientific activities, programs and services to assist business and industry.

The facility’s design features modular, work bays adaptable to a variety of technical and scientific activities. It will include labs where prototypes of new products or processes can be developed and tested.

The need for the Center was a recommendation of the Commission on the Future of Rose-Hulman.

"This Center is vital to Rose-Hulman’s goal to meet the needs of our students and society in the 21st century," Hulbert emphasized.

-by David Piker
Once again, the rites of autumn included a successful Rose-Hulman Homecoming: students from all classes teamed up to build a successful bonfire; the golf outing provided a good time for some reminiscing; families used campus for a Homecoming picnic; the civil's concrete canoes came out of mothballs for a race that proved good engineering, but less-than-perfect navigation; and hundreds packed the fieldhouse for the pep rally.
Rose-Hulman ranks second in U.S. News & World Report's "best colleges" issue

Rose-Hulman's reputation among education officials continues to improve.

College and university officials from across the nation ranked Rose-Hulman as the second-best college of its kind in the country.

The latest indication of Rose-Hulman's increasing national stature was published in the 10th annual "America's Best Colleges" issue of U.S. News & World Report magazine.

Rose-Hulman was ranked second among engineering colleges that do not offer the doctoral degree. The ranking was determined from results of the magazine's reputational survey of national engineering education officials.

"The results of the survey are yet another example that Rose-Hulman is achieving its goal to become the best," President Samuel Hulbert said.

"Everyone associated with Rose-Hulman should be proud that the nation's educational community has such a high regard for the institute," he stated.

This is the seventh consecutive year Rose-Hulman has been ranked by the magazine as one of the nation's best engineering colleges. The rankings were published in the magazine's Sept. 16 issue.

The national recognition in U.S. News came just weeks after Rose-Hulman was ranked by Money magazine as the seventh-best buy in engineering and science education. Money also listed Rose-Hulman as one of the nation's top 150 best buys in overall value.

There was a change this year in U.S. News ranking of engineering colleges. For the first time, the magazine's survey asked for a reputation ranking of engineering schools without a Ph.D. program separately from institutions that offer the doctorate degree.

Cooper Union, located in New York City, was the only college ranked higher than Rose-Hulman in the non-Ph.D. category.

The survey required education officials to place schools in quartiles based upon reputation. Each school placed in the top quartile received four points. A school listed in the second quartile received three points; two points were given for being in the third quartile; and one point for a reputational ranking in the last quartile.

Cooper Union earned an average score of 3.6. Rose-Hulman followed closely with an average score of 3.5. Other schools listed among the top five with their average score were Harvey Mudd College, 3.4; and Cal Poly-San Luis Obispo, 3.3. Bucknell University, the Naval and Air Force academies, and Rochester Institute of Technology...
were tied with scores of 3.2.

Other institutions ranked below the top five included Swarthmore College, Baylor University, the U.S. Military Academy, and Villanova University.

To determine the rankings, U.S. News tallied the results of 2,700 surveys from college presidents, deans and admissions directors. The reputational rankings were then combined with educational data that measured each college's academic quality, student selectivity, faculty resources, financial resources, graduation rate and alumni satisfaction.
Improved retention pushes enrollment to all-time high: 1,570

Bolstered by a 90 percent retention rate of last year's freshmen and another quality freshman class this year, enrollment at Rose-Hulman Institute of Technology is at an all-time high, with 1,570 students.

That's a 2.4 percent increase (37 students) over last year's previous record of 1,533 students.

The enrollment increase was attributed to the following areas:

- 90.8 percent of last year's freshman students returned for their sophomore year - the second-best retention rate for that class in Rose-Hulman history and higher than the national retention average for engineering/science enrollments. Three- and four-year retention rates were at near-record levels for returning juniors (75.9%) and seniors (73%).
- The recruitment of 386 students for this year's freshman class. The group had a 1350 median score on the Scholastic Aptitude Test, 339 points higher than the national average. Sixteen students had perfect 800 scores on the mathematics portion of the test, while 18 students were perfect on the verbal portion.
- The introduction of coeducation in 1995-96 and requiring all freshmen to purchase laptop computers helped improve students' feelings about the academic quality, campus life and student activities.

"Coeducation and laptop computers were important ingredients (in improving retention). Students feel that we're a quality institution that cares about them as individuals," said Jess Lucas, vice president of student affairs.

Enrollment in undergraduate programs increased to 1,436 students (from 1,408 in 1995-96), with mechanical engineering heading the list with 427 students. Other popular majors include chemical engineering (267) and electrical engineering (231). The number of computer science students is at an all-time high (137) - up 27 students from '95-96.

A total of 163 women are attending undergraduate courses in the second year of coeducation at the college.

Rose-Hulman received 3,142 applications for admission to the 1996 freshman class. Freshmen came from 39 states and three countries.
Freshman satisfaction reaches record high

A survey of freshmen shows that more of them than ever before are very pleased with their decision to attend Rose-Hulman.

Each year, the students affairs office polls freshmen for responses about all aspects of student life.

This year’s poll results showed that 87 percent of freshmen were extremely pleased or pleased with their decision to attend Rose-Hulman. A survey record, 49 percent, said they were extremely pleased with their college choice.

Freshmen indicated the most positive aspects of Rose-Hulman were: friendly and qualified faculty and staff, personalized attention, and an outstanding academic environment. The most common negative aspect cited by new students was the academic workload and resulting stress.
Myers takes position as marketing engineer for new Technology and Entrepreneurial Development Program (TED)

Jeff Myers (EE, 87) knows Rose-Hulman is a valuable resource to business and industry, and he knows how important it is for students to get career-related experience before they graduate.

Now he's developing plans to involve more businesses in a new Rose-Hulman program that will provide more technical services to companies, develop a national model for project-based education, and create additional career experiences for students.

Myers is the new marketing engineer for Rose-Hulman's Technology and Entrepreneurial Development Program (TED). He joins the Rose-Hulman staff from a position as account manager and industrial sales engineer for PSI Energy, Inc. in Plainfield, Ind.

TED was initiated eight months ago to increase industry-sponsored project activities occurring in academic departments and in the institute's industry assistance centers. Faculty and student teams will work in a new Center for Technological Research with Industry on process/product development (see related story page one). These activities will increase internship, co-op and permanent employment opportunities for students.

Myers is busy creating a marketing strategy for TED and contacting clients who are potential TED project sponsors.

"TED can help a variety of companies from major corporations to new, emerging high-tech companies or entrepreneurs wanting to develop their idea into a prototype," Myers said.

"The TED program is a national model for project-based engineering and science education," he noted. "It's exciting to be involved in such an innovative, new program."

For information about how the TED program can help your business, contact Myers at 812-877-8007 or e-mail to Jeff.Myers@Rose-Hulman.Edu.
New members elected to Board of Managers

Three new members have been elected to the Rose-Hulman Board of Managers. They include new alumni representative Tom Dinkel (ME, 72); Robert Compton, general partner of CID Equity Partners, Indianapolis; and Holly Gerace, of Coral Gables, Fla., a noted community and volunteer leader.

Dinkel, president of Sycamore Engineering Inc. in Terre Haute, was elected to a four-year term following a nationwide vote of Rose-Hulman graduates. He will join Jack Foltz (CH, 57), vice president and general counsel, Sun Co., as alumni representatives to the board.

Dinkel has received the Rose-Hulman Honor Alumnus Award for outstanding service to the college’s alumni association. In 1991, he served as president of the Rose-Hulman Alumni Association. Dinkel is the volunteer co-chair of the alumni portion of the $100 million Rose-Hulman Vision to be the Best development campaign.

Compton is an executive with CID Equity Partners which is a venture capital firm with $215 million under management that is invested exclusively in rapidly growing Midwest companies. He serves on the board of directors of 7 companies including Sofamore Danek Group (NYSE) and Enterprise Systems, Inc. (NASDAQ).

He is also director of the Ewing Marion Kauffman Foundation which is devoted to youth development and the acceleration of entrepreneurship in America.

Compton received the Chauncey Rose Medal from Rose-Hulman in 1994. The medal is presented annually to the business leader who is the college’s Oscar C. Schmidt Memorial Lecturer.

Gerace served on the Commission on the Future of Rose-Hulman. The commission’s yearlong efforts resulted in recommendations that led to the creation of a strategic plan for Rose-Hulman. She served on the commission’s Task Force on Graduate Studies, Research and Continuing Education.

Gerace’s involvement in the higher-education profession includes serving on the library staffs at the Yale University Law School and at George Washington University.

She is a community and volunteer leader who has served on numerous educational and civic boards in Coral Gables. Gerace has been a volunteer leader for the Board of Education, Dade County School System, Parent Teachers Association, and Girl Scouts. Gerace is currently a member of the board of directors of the Miami Civic Music Association.
Global education symposium focuses on 21st century

They came from halfway around the world to Rose-Hulman to discuss the future of engineering education. Even though their focus was on the 21st century, the symposium they attended was historic.

It was historic because it may have been the first time that a Japanese college has sent so many faculty overseas to a single event for the purpose of improving education.

Forty-two engineering professors or administrators from Kanazawa Institute of Technology (KIT) visited Rose-Hulman for three days to discuss ways to meet the 21st century needs of engineering and science students.

Faculty discussed how to prepare students for the global workplace, innovative curricula, new uses of technology, and creative techniques in science education.

"The symposium was a very significant event," Rose-Hulman President Samuel Hulbert said. "It will lead to new educational ideas based on international collaboration."

"The group represented nearly 20 percent of KIT's faculty," Hulbert noted. "Their commitment of human and financial resources to attend the symposium illustrates the importance KIT places on this collaboration."

"It was an honor for Rose-Hulman to be selected by KIT as the American college where it sent so many faculty to learn about innovations in engineering and science education," Hulbert emphasized.

Rose-Hulman has had a faculty and student exchange with KIT for several years. KIT, a private coeducational institution, is ranked as one of Japan's best colleges. All degrees awarded by KIT are in engineering.

KIT president Ken-ichi Ishikawa, who was among those attending the symposium, said the discussions with Rose-Hulman faculty were vital because KIT is in the midst of curricular reform.

"We would like to introduce what we learned at the symposium into our curriculum," Ishikawa said.

"This is the first time for KIT to participate in such an event. We are certain that we can achieve our future goals because we have learned a great deal from Rose-Hulman during the symposium," Ishikawa said.

The exchange of educational ideas has benefited both institutions, says Hulbert. "We're learning a lot together," he noted. "Our faculty and students returning from KIT bring back new ideas. I'm confident that Rose-Hulman is having a significant impact on curriculum development at KIT," he said.
KIT faculty are especially interested in three areas where Rose-Hulman has earned a national reputation for innovation, according to Scott Clark, director of international programs and global studies at Rose-Hulman.

"Our engineering design programs, integrated first-year curriculum and various teaching methodologies were the main topics of discussion," said Clark, who along with a committee of faculty and staff organized the symposium.

Hulbert believes that Rose-Hulman and KIT are among the world's leading institutions in recognizing the need for educational change and innovation.

KIT has instituted a Factory for Dreams and Ideas which is used for the development of student projects and developed innovative curricula such as an extensive Japanese technical language program.

In addition to presentations by Rose-Hulman faculty and hands-on activities using the latest educational technology, the symposium also featured a presentation by Winfred Phillips, president of the American Society of Engineering Education. Phillips also serves as president of the Accreditation Board for Engineering and Technology which approves all engineering degree programs at U.S. colleges and universities.

The symposium was the third involving the two colleges. KIT hosted the first two meetings. The fourth symposium will take place next summer or fall at KIT.

-by David Piker
Hulbert receives life achievement award

Rose-Hulman President Samuel F. Hulbert was honored recently by the Indiana Health Industry Forum for his leadership role in education, and for his contributions to the biomedical engineering field. Hulbert received the Forum’s first Lifetime Achievement Award.

He received the honor at the Forum’s World of Difference Awards ceremony in Indianapolis.

The Forum honored Hulbert for his leadership as president of Rose-Hulman, and for his internationally recognized work in the design and evaluation of orthopedic and dental prostheses.

Joining Hulbert as World of Difference Award winners were a team of Eli Lilly and Co. scientists who discovered the world’s best-known antidepressant, Prozac. Also honored was Dr. Barry Eppley, developer of an implantable bone device that eliminates the need for follow-up surgery; and Dr. Robert Matheny, one of a handful of surgeons who developed new coronary bypass surgery which offers hope for patients not eligible for traditional open heart surgery or angioplasty.

The Indiana Health Industry Forum is a non-profit, public-private partnership created to act as an economic development catalyst for Indiana’s health-related businesses.
Mathematics professor writes new textbook

Mathematics Professor Jack Kinney has created a new textbook titled Probability: An Introduction with Statistical Applications. The 510-page book has been published by John Wiley and Sons.

Kinney is one of the nation’s leading experts on probability theory, and statistical methods.
Encyclopedia to include Rose-Hulman research

A research article on relay protection, co-authored by a Rose-Hulman professor and four students, will be included in a 24-volume edition of the Encyclopedia of Electrical and Electronics Engineering.

The authors included Professor Niusha Rostamkolai and 1994 graduates James Codling, Joe Joice, Jon Richards and Matthew Tullis.
Alumnus' estate provides $5 million for scholarships

Rose-Hulman has received a $5 million gift from the estate of alumnus Carl Carlson and his wife, Mildred, to provide new scholarships for its students.

The donation from the Cresskill, N.J., couple is the largest donation for scholarships the college has received. The gift will create the Carl and Mildred Carlson endowed scholarship fund.

As many as 50 Carlson scholarships may be awarded annually. The first Carlson scholarships were awarded in October.

The manufacturing laboratory in the Department of Mechanical Engineering will be named in honor of the Carlsons, according to Rose-Hulman President Samuel Hulbert.

The gift was received following the recent death of Carlson’s wife. Carl Carlson died in 1986.

Carlson graduated with honors from Rose-Hulman in 1947. He earned a degree in mechanical engineering. Two years after graduation, Carlson formed Versa Products Co., Paramus, N.J., which is a leading international manufacturer of pneumatic and low pressure hydraulic directional control valves. He retired in 1980 as chairman of the board and president of the company.

"This generous gift will be a tremendous help to generations of academically talented students," Hulbert said. "The Carlsons were visionaries who realized the importance of providing future financial assistance to help students achieve their educational and career goals," he noted.

Carlson first studied at Rose-Hulman as part of the United States Army Specialized Training Program. After being discharged from the military in 1946, he returned to campus and completed requirements to earn a bachelor of science degree.

"The gift is another indication of the Carlsons’ lifelong commitment to education, according to Richard Sharkey, a longtime friend and legal counsel to the Carlsons.

"Carl was ever cognizant of the career opportunities his education presented, and often mentioned his gratitude to Rose-Hulman in that regard," Sharkey stated. "This gift was obviously given in recognition of that appreciation," said Sharkey, who is associated with the Sharkey & Campisi law firm in Roseland, N.J.

"Carl was an innovator and an outstanding engineer," said Karl Larsson, who is Carl Carlson’s brother-in-law. Larsson is president of Versa, and worked with Carlson to create the company.

Versa products are used in industrial process and high technology applications. In
addition to its New Jersey headquarters, the company has a plant in Holland that serves the European and Middle East markets.

"The anti-extrusion valve Carl designed 45 years ago is still an industry leader and the company’s major product," Larsson noted. "It’s unusual for an industrial product to last that long."
Winter 1996

Facing the high cost and price of higher education

An inflationary spiral threatens the operation of public and private colleges

A spiral is under way that threatens the operation of higher education as we know it.

The price (tuition) and costs (expenditures per student) of higher education are out of control. The inflationary spiral affects both private and public universities. Although major differences exist between the tuitions of private and public universities, the costs are quite comparable.

In the last 14 years the Consumer Price Index has increased 80 percent. The average price of a new car went up 54 percent. Medical care costs, which everyone knows are out-of-control, rose 182 percent. During that same period of time, college tuition rose 253 percent.

In 1980, the average annual expenditure per student was approximately 25 percent of the median household income. By 1993 it grew to 45 percent. If current trends continue, during the next decade, the cost of one year of college education will surpass the average household income.

If one extrapolates the rate of increase of college costs and that of the cost of the average home, within a decade four years of college costs will be greater than the cost of the average home in America.

The per-student costs of education cannot continue to increase year after year at more than twice the rate of inflation. Over the past decade, major changes have occurred in business and industry. Re-engineering, downsizing, rightsizing, and de-layering have occurred as a result of economic pressure.

During the past decade, employment at the 1000 largest companies (the unfortunate 1000) decreased by over 4 million. At the same time, the dynamic-growing 150,000 companies increased their workforces by over 20 million. These vivid changes were the result of economic competition.

Major changes are occurring within the health care industry. Who would have thought a decade ago that less than 25 percent of the medical doctors in America would be in private practice? Mergers and acquisitions run rampant within the healthcare industry. Economics drives these changes.

If higher education doesn't bring its costs under control, we are going to see dramatic changes in the structure of higher education.

I admit to being prejudiced, but I believe Rose-Hulman is a very cost-effective place. I am proud:
that our housekeeping and custodial staffs clean twice the national square-foot/person average;
that our physical facilities and grounds are beautifully maintained by only five members of our staff;
only two people run our $20 million Financial Aid program;
of the high utilization of our classrooms and laboratories where several hours a day it is impossible to find a spare classroom;
that our campus is used year round to the point where it is difficult to accept any more summer programs;
of the quality of the instruction at Rose-Hulman where our faculty teaching loads would be considered excessive by most of higher education;
we have no graduate students teaching courses;
the median class size is below 25 students; and
that not only has the President overextended himself, but so has most everyone else on the Rose-Hulman campus.

I believe Rose-Hulman is an exceptionally cost-effective institution. However, we cannot continue to increase our costs at twice the rate of inflation indefinitely and neither can the major research universities, the comprehensive regional universities, private liberal arts colleges or the community colleges.

There are over 450 corporate colleges in America. One of those colleges, Motorola University, has over 100,000 customers. It is only a matter of time before colleges and universities will be giving credit for educational experiences at corporate universities. Corporate colleges will soon be giving certificates of competency for employment, and certainly within a decade they will be conferring degrees. What will happen when colleges and universities no longer have a monopoly on conferring degrees? There are more than 75 colleges or universities which presently issue degrees via distance learning. The virtual university will soon be here where you can receive a degree via the Internet.

If technology can provide on demand an unprecedented array of educational resources to individuals at their homes or places of employment, and if those receiving the material can communicate with other learners and instructors who might be anywhere in the world, what is the impetus for continuing to have campuses as we know them?

Given the history of higher education and the human race, it is highly unlikely that costs will be brought under control until economic pressure forces change. I believe that changes in health care give some indication of what is going to happen to higher education. Once the change starts, it is going to happen very quickly.

It is imperative that Rose-Hulman Institute of Technology play a lead role in the changes that are going to occur in higher education. It is not only in our enlightened self-interest, but it is also in the best interest of the student.

Not all the changes that have occurred in health care benefit the patient. It is highly
unlikely that all the changes that are going to occur in higher education will benefit the student.

As Rose-Hulman plays a leadership role, the interest of the student will remain paramount within the restructuring.
An education environment that puts people first

Your child or neighbor is a whiz at science and math in high school and has great SATs. Many top schools such as MIT, Cal Tech, and Rose-Hulman have accepted the student. He or she asks "Where should I go?" A good answer might be: "Visit the campuses and go to the school where you will fit in best. But first review some of the college guides for a general overview of the campuses on your list."

Bookstores are awash in a myriad of college guides purporting to rank colleges across the country. Those guides also provide tips on the college selection process. Rose-Hulman's academic reputation and high quality have landed it in all of the selective guides. You probably have heard about U.S. News & World Report's America's Best Colleges and Money magazine's Best Buys issue (see page 4). A unique, lesser-known guide among the pack is the Princeton Review. This publication reports what students think about the ambiance of their school. The Princeton Review is compiled from editor interviews with the students themselves.

As I thumb through the Princeton Review, I take pride and reassurance in what our students think about Rose-Hulman. The satisfaction our students have with Rose-Hulman stands out even more when compared to responses received from other colleges. I want to share some of the thoughts voiced about Rose-Hulman:

Concerning the campus

We "step out on to a campus that is very nice, a lot like home. I can go out in the woods or go fishing in the pond."

STUDENT BODY

Even though the students are hard working engineers, one insists "we are not a bunch of zit-popping, paste-eating, mouth-breathing, pencil-neck geeks who sit around discussing this week's episode of Star Trek."

FACULTY and STAFF

At Rose-Hulman, students have nothing but nice things to say about their instructors, e.g. "Although this college is very intense the amount of time given to students by the lecturers is first-class. Professors are always willing to help. The faculty and staff are friendly and really care about their work." The "extraordinary polite" and "dedicated" administration is well loved and it is reported that they "definitely have their fingers on the pulse of the student body." The education they receive is universally loved. "It's like getting a drink of water from a fire hose."

OVERALL

"It's hard to imagine a happier group of engineers."
Students at similar schools are not as satisfied with their experiences. I will share a few of the comments, but "the names will be withheld to protect the innocent." At one East Coast school, one of the most common complaints is the quality of in-class instruction. Explains one student, "classes are taught at a level to challenge Nobel prize winners so it's easy to get disillusioned and lost." That college's students give a 63 (out of 100) rating to the professors accessibility compared to a 92 rating for Rose-Hulman.

A western school receives a 62 rating in interest shown by professors compared to a 91 at Rose-Hulman. At that school the faculty are usually accessible outside the classroom, but receive poor grades for their teaching skills.

College selections cannot be made solely on the basis of a ratings book, but it reassures me to see certain themes surface at Rose-Hulman:

- Our students find Rose-Hulman challenging, but supportive;
- Rose-Hulman is a college where professors are viewed as teachers always willing to help;
- Hard work exists hand-in-hand in an educational environment that puts people first.

My bias is expected, but in all honesty I do not believe there is any other place where today's top students would be happier than at Rose-Hulman.
The Bailey Challenge

Challenge receives record number of solutions

Is Mr. Mathematics going soft? You submitted a record number of solutions to the problems, almost four times the normal yield. There were many interesting comments on the moat problem. Some of the older solvers thought that the knight should save the princess, rather than the other way around. The recent grads knew better. Professor Al Schmidt, calling on his World War II travels, thought the moat size was a bit small. Some thought the knight, even in full armor, could jump across the moat, particularly with Princess Di awaiting.

Your main tools for the problems of this issue are your imagination and the beam balance shown in the figure. You are to isolate a look-alike counterfeit coin among true coins by a series of weighings (balancings). The three problems are outlined in the following table. In problems 2 and 3 you also need to determine whether the bad coin is heavy or light.

<table>
<thead>
<tr>
<th>Problem number</th>
<th>Total number of coins</th>
<th>Information about the counterfeit</th>
<th>Number of weighings permitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>heavy</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>heavy or light</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td>heavy or light</td>
<td>3</td>
</tr>
</tbody>
</table>

Problem 1 is the appetizer. Problem 2 is the main course. Problem 3 is a classic and was suggested by Joe Valentine, class of 41. It should be tried only if you have plenty of time and imagination or have seen the solution.

Joe is funding The Valentine Memorial Prize of a $25 gift certificate for the solution of Problem 3 that is the most understandable (to me). The certificate is redeemable at the Rose-Hulman bookstore, and I will do the shopping and mailing to the winner (if desired).

To reduce youth boredom during the holidays, I am including two youth problems.
Youth Problem 1:

See Problem 1 above

Youth Problem 2:

The numbers 1,2,3,4,5,6,7 are all to be used in that order so that your expression equals 100. You may use +, -, times and grouping with ( ). For example the expression 1+2+(3*4)=5*(6-7) equals ten. The symbol * means times. Mom or dad will explain these problems but won’t give any hints.

Solutions of the problems in the previous issue were submitted by the following alumni and students:


Other solvers included:
Jim Durlacher, Neil Flatter; Rebecca Graves, R.J. Lopez, Harold A. Rosene, Jr., Steve Richardson, and Scott Mancroni.

Send solutions for the Bailey Challenge to:

Bailey Challenge
c/o Herb Bailey, Box 185
Rose-Hulman Institute of Technology
5500 Wabash Avenue
Terre Haute, IN 47803

or e-mail them to Echoes editor Bryan Taylor at bryan.taylor@rose-hulman.edu.

-by Herb Bailey
Professor Emeritus of Mathematics
Student humor at the turn of the century

Part one of this series on student humor brought some questions that surface from time to time. I thought this would be a good time to address a few of them. One person asked whether students really did the artwork that was reproduced. Even in the pre-computer clipart era, editors had a stock of black and white images that could be inserted. But the ones used in my last column and those found below have either the identification of Rose students somewhere in the border or are obviously very campus-centered.

The doggerel and attempts at satire also may be suspect. The student editors may not have felt constrained by copyright laws from reprinting humor found in other publications. In fact, the editors mention reading student publications from other schools. The material I have used is, again, either signed, initialed, or so local in humor that there should be no doubt as to "originality." Then as now, Rose students have always been a bright lot, some with a heavy dash of creative thought. A review of some of their humorous attempts continues.

Bright eyed and bushy faced

President Mees had a very distinctive appearance. His most notable feature was his large, bushy, perhaps even extreme, mustache. The president's discovery of a barber and razor blade must have been the talk of the campus. Yearbooks after 1910 show a clean shaven president with a neat mustache.

Ask why he's flunking

In a column titled "Comic Opera Capsules" can be found this bit of satire (students have always complained of not enough time to enjoy life):

(Tune of "Just My Style.")

If you ask me why I'm flunking,
I will ask you if you know
How to pass in all your lessons
If all the gaits you go?
There's a quiz in Analytics,
There's a dance at Duenweg's, too;
Society will flunk me,
But what the ---- can I do?

Even students have a heart

On a lighter vein, when Professor Neil Williams (physics) became a father at 38, the
editors of the Modulus gave him a sympathetic caricature.

His reputation preceded him

Professor John White of chemistry had a reputation as a taskmaster, much the same as Professor Johonnot (cited elsewhere on this page). Student-drawn caricatures summarize the student experience with both gentlemen. They are rather timeless in nature.

Facing off with faculty

Faculty are always under the close attention of students. The profs worked the students hard six days a week. And they turned out nearly to a man to watch all athletic events, plays, and musicals. More so than today, they invited them into their homes for tea and cakes. The rewards were many, no doubt, and one could hope that satirical art was well received. Above we find President Mees, Malverd Howe (civil), Thomas Gray (physics), John White (chemistry), and John Peddle (mechanical).

A grinder, gentler work load

Professor Edwin Johonnott (cited in the commandments below) was known for the heavy workload he imposed on students and himself. An artist provided a fitting illustration to the professor’s nose-to-the-grindstone attitude.

Thou shalt not and then some

President Mees was small in stature but quite commanding in intellect. A summons to his office was something to dread (SEE Commandments IX & X). The 1909 Modulus provided the following widely felt summary of "Doc’s" philosophy of student life:

The Ten Commandments

I am Carl Leo Mees, Ph.D., thy president, who has let thee in for $110 per annum, and I am a strict president and jealous of my commandments.

- I. Thou shalt have no other master but me.
- II. Thou shalt not make unto thee any graven images unless Arry says so.
- III. Thou shalt not connect the name of the Faculty, collectively or individually, with any opprobrious epithets.
- IV. Remember the two-hour preparation for each recitation and keep it holy. Thou shalt not do anything else therein, thou, nor thy room-mate, nor any of the rough necks that visit thee.
- V. Honor thy preceptor, that the days may be long in the Institute.
- VI. Thou shalt not kill time.
- VII. Thou shalt not use tobacco on the premises.
- VIII. Thou shalt not steal Lab. time from Jojo nor brass from Arry.
- IX. Thou shalt not bear false witness when I question thee concerning thy misdeeds.
- X. Thou shalt not covet to do as thou pleasest, for I know thee better than thou dost thyself. (Arry was Harry Dickinson, in charge of the foundry, and Jojo was...
Edwin Johonnott, professor of physics.)

-by John Robson Librarian and Archivist
Employers will soon be able to review resumes of Rose-Hulman students by simply accessing the Internet.

Rose-Hulman is expanding its career services World Wide Web page by adding a new online Internet application system that could become a national model.

Rose-Hulman will become one of the few colleges or universities that will provide student resumes online. Users will also be able to conduct detailed or general searches based on part-time or permanent employment needs. Career services staff will be able to retrieve data quicker to evaluate a student’s career planning activities, and to analyze employment trends.

The new Internet-based, client-server application is called Casmon (Career Services Management Online). It was created by Aureate Development Inc., a new Terre Haute-based software company founded by alumni Scott Loughmiller (96) and Jeff Ready (96), and Ehren Maedge.

The Casmon-supported, career services Web page will be fully operational in January, says Bill Lindstaedt, Rose-Hulman Director of Career Services and Employer Relations.

"Casmon will enable student resumes to be automatically formatted into code and downloaded for use on the Web page," he explained.

Lindstaedt hopes to quickly expand the system this spring to include services that will benefit alumni wanting to make a job change.

Employers will be able to conduct database searches that will identify potential job candidates by their technical skills, career interest, major, class, or the geographic area where the student would like to work.

The employer could conduct a search to identify chemical engineering majors who have had two summer career-related jobs and are interested in working in the Chicago area," Lindstaedt said.

Users can prioritize qualities or skills they need and make their search even more specific, according to Lindstaedt.

"Maybe a student’s knowledge of hypertext code is more important than what year they are in school, or the student’s hometown may be a key factor if the company is looking for summer employees," Lindstaedt noted.

"Once students are identified, the employer can communicate instantly with them by sending an e-mail message without leaving the Casmon system."

Lindstaedt said about 200 resumes of seniors are already available for online access. Additional resumes from other students will be added during the next few months.
The Casmon system puts Rose-Hulman at the forefront of using the Internet in career services, says Ehren Maedge, marketing director for Aureate. "Casmon is one of the first large-scale systems to serve this kind of educational need. Rose-Hulman is the first institution to use it."

Lindstaedt says Casmon will also provide the career services staff with quicker access to information about a student’s progress in career planning, interviewing and job search success. It will make it easier for the staff to access data about company interview trends, and participation in special career services programs such as the annual Career Fair.

The system also makes it easier for students to access World Wide Web pages featuring employment opportunities.

The Career Services Web page can be accessed via http://www.Rose-Hulman.Edu and then connecting to the student services link on the Web page directory. A demonstration of the Casmon system is available online at http://www.aureate.com/es.

-by David Piker