Mastering Multiple Disciplines
A DECADE OF GROWTH IN BAYLOR BIOINFORMATICS
Synergy is a publication of the Baylor University School of Engineering & Computer Science that establishes a communication link to keep alumni and friends aware of the spirit of discovery at the School. Established in 1995 from programs dating to 1974, the School of Engineering & Computer Science has provided a quality education to more than 2,500 graduates in the tradition of excellence, a cornerstone of Baylor’s heritage. Synergy is produced for the School of Engineering & Computer Science by Baylor’s Division of Marketing & Communications.

10 Baylor Research and Innovation Collaborative
ECS is a major player in BRIC and the historic partnership to cultivate more cutting-edge research in Central Texas.

4 Mastering Multiple Disciplines
Innovative Bioinformatics programs for undergraduates and graduates strengthens ECS and opens doors to numerous career paths.

10 Relationships Matter
Alumni Spotlight: Outstanding Grad Rick Tullis shares principles for life and career.

12 Stepping into a Brighter Future
Endowed scholarships such as The J.L. and Laura S. Brittain Scholarship help ECS students achieve dreams.

DEPARTMENTS
2 From the Dean
14 Elsewhere at Baylor
16 Around the Lab, New Faces, Faculty Publications
21 Alumni Updates
OH WHAT EXCITING THESE TIMES ARE for Baylor’s School of Engineering and Computer Science (ECS). As we observe ECS’s 15th birthday, it’s easy to look back with pride at from where we’ve come and to the future with confidence in where we’re headed.

Evidence of increasing attainment comes from the quantity and quality of the students we attract. With Board of Regents’ support and encouragement, ECS enrollment this academic year climbed to nearly 800 students. During the past decade, we doubled the number of ECS faculty and added four new master’s degree programs. Our newest faculty members are introduced later in this issue.

Another notable milestone is the continued growth and maturation of our bioinformatics program, now 10 years in the offering. We continue a tradition of excellence to the global community in service and innovative education. Baylor has served as the headquarters for the Association for Computing Machinery-international Collegiate Programming Contest since 1989, and I salute the outstanding efforts of Dr. Bill Poucher, professor of computer science and ICPC executive director, along with his multitudes of volunteers. Congratulations on another successful competition, sponsored by IBM and hosted by Harbin Engineering University in Harbin, China this past February.

While we are proud of those accomplishments, we continue to seek additional venues for academic and research growth. In this issue of Synergy, you’ll read about a few of them.

A new project promises to launch ECS forward with unparalleled acceleration. Led by Vice Provost for Research Truell Hyde, ECS joined with Baylor, other local higher education institutions, area business and civic leaders, and state and local governments to rejuvenate a long-closed tire-manufacturing facility as the Central Texas Research Park. The park will develop, promote and market science and engineering technologies, university research and advanced technology training and workforce development. The park’s first project will be the Baylor Research and Innovation Collaborative (BRIC) and ECS will be an anchor tenant.

We will attain a new level of influence as we expand our research activities through the interdisciplinary BRIC and by offering our first PhD program. In February, the Board of Regents approved our plans for a PhD in electrical and computer engineering. This program will collaborate with other ECS and Baylor departments and support Baylor’s efforts with BRIC, generate external grant funding and provide faculty access to talented graduate students and industry colleagues. As a result, Baylor University will play an increasingly significant role in the advancement of technological innovation around the globe.

Indeed this is an exciting time to be a part of Baylor and ECS in this journey to prepare tomorrow’s technology innovators and leaders! We have been entrusted to invest our time and talents in our students, faculty, staff, and alumni. The returns are only beginning. We look forward to your involvement, whether through the generation of new ideas, feedback, influence, or resources. It would be my pleasure to hear from you.

Dean Benjamin Kelley

BAYLOR RESEARCH AND INNOVATION COLLABORATIVE
Historic partnership

The facility is expected to provide new jobs and a significant economic boost to Central Texas, much as similar research parks have done in Austin and other cities across the country.

PARTNERS
The Central Texas Technology and Research Park will develop, promote and market science and engineering technologies, university research and advanced technology training and workforce development. Those collaborating in the project include Baylor University, Texas State Technical College, McLennan Community College, McLennan County, City of Waco, City of Bellmead, Waco-McLennan County Economic Development Corporation, Bellmead Economic Development Corporation, Waco Industrial Foundation, Heart of Texas Council of Governments and the Greater Waco Chamber of Commerce.

“The primary purpose of the BRIC is to enhance regional applied research capability; provide cutting edge workforce training and development; encourage collaboration between higher education, business, industry, governmental entities and communities; and to encourage technology transfer and commercialization of research in order to foster economic development within the region,” Interim Provost Elizabeth Davis says.

For more information, see a collection of stories about BRIC at ecs.baylor.edu/Synergy.
A LITTLE MORE THAN 10 YEARS AGO, A BAYLOR STUDENT APPROACHED DR. GREG SPEEGLE WITH THE NOTION OF A DOUBLE MAJOR IN MOLECULAR BIOLOGY AND COMPUTER SCIENCE.

“THERE WAS NO WAY TO DO IT AT THE TIME,” says Speegle, professor of computer science. “The notion of bioinformatics was just starting, mainly because of the Human Genome Project, and we had never heard of an undergraduate program in the field.”

Bioinformatics is the intersection of computer science, life science, mathematics and statistics. Speegle called on Dr. Chris Kearney, associate professor of biology, to see if there was a way to accommodate the student’s request.

“Right away we realized that neither of us knew enough about the other’s field and what they were doing,” Speegle says. “My last biology class was when I was in the ninth grade.”

“And the only thing I knew about computers was from my own computer,” Kearney adds.

Once they started talking, they began to uncover how much each of their fields had to offer the other. Their discussions became the first step for Baylor’s development of an undergraduate degree in bioinformatics.

“At the time Baylor made the decision to create the program, bioinformatics was really an emerging field,” says Dr. Erich Baker, who joined the Baylor ECS in 2002 as an assistant professor of bioinformatics. “It was mostly seen as a graduate degree program.”

Baylor became the second university in the nation to offer bioinformatics as an undergraduate degree. (The first was Carnegie Mellon University, which now offers an undergraduate degree in computational biology.)

“Because the idea of an undergraduate degree in bioinformatics was so new, we had a lot of discussion about what to include in the program,” Baker says. Professors and advisors from the life sciences, mathematics and computer science were involved in the decision-making.

“What was created is an exhaustive curriculum, with no electives,” Baker says. “It’s essentially a double major in biology and computer science with a minor in chemistry.”

The curriculum they developed is now the standard, nationwide, for other universities that are creating bioinformatics undergraduate programs.

“We’re very proud of the fact that our program gives students the full experience of both majors, and that other institutions recognize that value and use our program as a model,” Baker says.

INITIALLY, THE MISSION of the program was to give students a wide background in a variety of areas: informatics (database design, web interfaces, data warehousing, distributed systems, security and library science); computational science (mathematics, statistics, algorithms, computer science, modeling, imaging and High-Performance Computing); and life science (genetics, physiology, embryology, immunology, developmental biology, medicine, epidemiology, pharmacology, psychiatry, veterinary medicine, ecology, forensics, anthropology and agriculture). Later additions included gene and genome product sequencing and structure analysis.

“Our goal is to produce students competent in those areas,” Baker says. “We want them to know enough computer science to know what is computable, and enough life science to know what needs to be computed.”

The Human Genome Project is the perfect example of the application of the study. When biologists first began investigating genes at a molecular level, there was no viable way to manage the data being collected. By the 1980s, when the project of mapping the entire human genome really got under way, biologists turned to computer scientists to make the project a reality.

“The Human Genome Project knit things together,” Kearney says. “You have all that data to manage, and you need to find a way to go back and access it so problems can be solved more easily. Biologists needed to become tech savvy.”

In turn, Speegle says, the computer science field needed to learn more about biology.

“We needed to learn some biology, so we could understand how to get the information they were interested in,” he says. “And that’s how bioinformatics bridges that gap. Suddenly we have people who can do both.”

And, people who can do both, Baker says, are in high demand. After “What is bioinformatics?” the question Baker most often hears is from prospective students and their parents, “Can I get a job with this major?”

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And, people who can do both, Baker says, are in high demand. After “What is bioinformatics?” the question Baker most often hears is from prospective students and their parents, “Can I get a job with this major?”

“ ‘That isn’t a problem in this field,’ he says. “Our students are highly recruited, not only in industry but to advanced degrees.”

Of the students leaving Baylor with an undergraduate degree in bioinformatics, nearly 75 percent complete a graduate degree (mainly in bioinformatics) and 60 percent go beyond to PhDs or medical degrees.
Suddenly we have people who can do both. And people who can do both are in high demand.

Adam Ecklund, director of Baylor ECS Student Initiatives, works to make recruiting a high priority.

“The more people learn about this degree field and how it can be applied, the more attractive it becomes,” Ecklund says. “We have many high-ability students who are passionate about biology or life science, but also have an interest in computer science, and vice versa. When they learn about this major, and find out everything they can do with this degree, they love it. Sometimes the major finds you.”

His message to incoming students is that they don’t have to wait until they are at a graduate level to learn bioinformatics.

“Baylor has an incredible, well-established bioinformatics programs - one of the best programs in the country - and it is for undergrads,” he says. “Once a prospective student gets a chance to interact with our faculty and see how passionate they are, and they see how well people do with this major, they know they are making the right choice.”

Many of the 93 graduates and 35 current bioinformatics students in this growing program agree with Ecklund. A few of their stories are included here.

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_Abbreviation: ECS - Engineering and Computer Science_
The field, she admits, isn’t for everyone. There remains a need for people on both sides of the equation. King sees herself as an essential bridge between the two worlds.

“You have to enjoy it, because sometimes it is tricky,” she says. “It feels like you’re using different parts of your brain. Science can be vague and computer science isn’t. What I learned at Baylor was how to put them together.”

**ROBERT CARROLL ’09** With a major that consists of nearly a double major in biology and computer science, with a minor in chemistry, and leaves little or no room for electives outside the discipline, it’s easy to fall under the impression that bioinformatics undergraduate students at Baylor have time for nothing but studying. But that assumption, Robert Carroll notes, is far from reality.

The Granbury, Texas, native graduated from Baylor in 2009 despite the rigorous curriculum of bioinformatics, he found time to get what he calls the “entire Baylor experience.”

“I was very involved in campus activities,” Carroll says. “I was in the Golden Wave Marching Band and the Courtside Players band, and traveled with both of them. And I was active in Kappa Kappa Psi (an academic national band fraternity). There are so many things happening all the time at Baylor, my undergrad experience wouldn’t have been the same without doing outside things.”

With a heavy course load, Carroll says the key is organization. “Even with studying, you can stay involved on campus. You just have to make a schedule and figure out time management. I wasn’t so great at this as a freshman, but I learned,” he says. “Now I can’t imagine college without doing all of it. Class was fun, but there is so much more at Baylor. Staying in contact with his professors is another way Carroll managed to fit fun into studying. “The professors there are always happy to help,” he says. “They really want you to learn and be prepared for the next steps.”

For Carroll, that next step was to continue his education. He is taking graduate classes in bioinformatics at Vanderbilt University in Nashville, Tenn., and is on track to become a PhD candidate.

“There is a bridge between what I experienced at Baylor and what is going on at Vanderbilt,” Carroll says. “The professors are always happy to help. The professors are always happy to help. They really want you to learn and be prepared for the next step.”

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**SUNNY CHOPRA, BAYLOR JUNIOR** Sunayana “Sunny” Chopra considers finding Baylor’s bioinformatics program “a gift from God.”

Chopra entered Baylor as a biology pre-med major, but she says that Dr. Erich Baker asked her if she liked computer science.

“He told me to just take the first semester to see how it came out,” she says. “I did, and I did well, and I continue to do well. He was right. Bioinformatics is perfect for me.”

Her plans still include medical school, yet Chopra believes that the bioinformatics program is a firm foundation for her future medical studies.

“My heart has been set on medicine from the start,” says Chopra, who volunteers at Hillcrest Baptist Medical Center in Waco. “I like the idea of solving puzzles, and that’s what medicine is to me; that’s what I like about bioinformatics. It is exactly like solving a puzzle.”

Chopra explained that taking introduction courses in chemistry, biology, and computer science gave her the basics; however, her first bioinformatics course pulled together all the pieces.

“Of course, you get great information in the intro classes, but you really don’t get the whole picture until your first bioinformatics course,” she said. “That’s when it all fit together for me. In the other courses, you get all the pieces. With bioinformatics, you learn how to put them together to get the solution. That’s what I love, and that’s what I want to do.”

**JEREMY JAY ’06** After graduating from Baylor in 2006 with a bioinformatics major and chemistry minor, Jeremy Jay went to the University of Tennessee to complete his master’s degree and is now a PhD candidate in computational biology. One day, he sees himself back in a college classroom as an instructor, but not before he sees what life is like outside the academic world.

“I want to work in the industry for a while,” Jay says. “Ideally, I’d like to work for a non-profit company, maybe doing research. Eventually I’d like to teach bioinformatics at a university, but I think it's important to be able to bring real-world experience into the classroom.”

Jay got a taste of real-world experience as an undergraduate. The hands-on research he did at Baylor set him apart from his peers at Tennessee, where he also works at Oak Ridge National Laboratory. He is looking forward to an internship he will have at Jackson Laboratories in Maine during summer 2010.

“The resources here are great, and my Baylor education allows me to know how to use them,” Jay says. “I feel like we were introduced [at Baylor] to real-world tasks and got real experience while doing our group research projects and internships.”

While Jay isn’t ready to get back to the classroom immediately, he does have advice for those interested in pursuing bioinformatics majors.

“Do your own research projects. Do an internship. Get as much experience as you can,” he says. “You will make yourself more marketable. You can do anything.”

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Alumni Spotlight

Relationships Matter

by Meaghan Ortolf

For Rick Tullis, PE, life is a journey of relationships — with God, family, friends and colleagues — and he sees every interaction make his life a triumph of those relationships.

Tullis’ journey includes a relationship with Baylor where he earned a bachelor of science in mechanical engineering in spring 1993. Tullis, named a Herbert H. Reynolds Outstanding Young Alumni during Baylor’s 2009 Homecoming activities, said the strenuous academics, small class sizes, and multi-disciplinary approach in the engineering department well-prepared him for his career.

One of the first places that tougher-than-average education proved its firm foundation was a 6-month graduate engineering training program that he went through as part of his employment with The Trane Company. The extremely competitive class consisted of 40 graduate engineers from big-name engineering schools across the country. Tullis notes he “fared very well” in the course and that he came to appreciate how well Baylor had prepared him.

Perhaps equally important to the academics, Tullis’ student career extended beyond the invisible walls of his major and allowed him to enjoy many of the traditions that make Baylor unique. He credits Baylor’s smaller size for his ability to explore other aspects of college life during his undergraduate years. As a member of Sigma Alpha Epsilon fraternity and the Baptist Student Union, he formed relationships outside of his major field of study, participated in such activities as All University Sing, and served as co-chairman of the Greek Council for Christ. “Not only did the ‘Baylor experience’ help me grow into a more well-rounded person,” Tullis says, “but it was through Greek Council for Christ that I met my wife!”

He believes that one distinct advantage of Baylor’s engineering program is its interdisciplinary approach. Engineering students work with engineers in different major fields of study as well as with students outside of the engineering department. This approach gives students a look at how business is done in the real-world.

“It is exciting now to see Baylor putting technology students and business/entrepreneur students together to tackle projects around the globe,” Tullis says. “Today’s Baylor students have awesome opportunities available to them.”

After graduation Tullis went to work for The Trane Company, where he became the control product manager for North America, and then eventually left the corporate world to work in small business at Waco System Inc., where he served as the manager of engineered services. The next career step meant taking an entrepreneurial risk to begin a dream. In 2005, Tullis partnered with three men — Texas A&M engineering graduate Stefan Lefflow and Baylor Hankamer School of Business graduates Brian Aynesworth and Will Fair — to start Capstone Mechanical, and also a proud sponsor of Baylor athletic events, said the time and effort given by Tullis and Capstone. “He remains an active supporter of Baylor ECS Dean Ben Kelley appreciates the time and effort given by Tullis and Capstone. “He remains an active supporter of our engineering program through the professional partnership of his company, Capstone Mechanical, and also a proud sponsor of Baylor athletic events,” Kelley said. “Examples of their active partnership include internship positions, meeting with students about careers in the heating and air conditioning industry, and providing technical and material resources for projects within our School.”

Tullis’ interaction with Baylor is an effort to help Baylor ECS continue to grow and move forward. He particularly wants to help ECS achieve future expansion goals so that more students can continue to find relationships and experiences similar to those he had at Baylor.

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MITCHELL MEBAANE has been tinkering with computer programming—for fun—since he was 8 years old. He excitedly recalls out-smarting the robots in an assembly language coding assignment and revels in the satisfaction of solving a particularly challenging problem when participating in the Association for Computing Machinery-International Collegiate Programming Contest.

No, Mitchell Mebane isn’t your average student. A computer science major with a minor in German, Mitchell is leaping into all Baylor has to offer. From challenging computer science classes to the chance to study abroad with Baylor in Germany—his first trip outside of Texas—Mitchell has discovered innumerable opportunities. Moreover, Baylor has been the source of rich friendships with like-minded students, insightful relationships with professors who guide him toward success…and new hope.

Although five generations of Mitchell’s family had called Baylor their alma mater, attending the prestigious university sounded like a long shot to Mitchell. In a family of nine children that has grappled with serious illness on multiple occasions, the tools to provide for Mitchell’s future.

“Baylor was sort of this unattainable goal at first,” Mitchell muses. “The scholarships they gave have changed my life. They brought me to Baylor and helped me to move forward with my dreams.”

Mitchell Mebane definitely aims for the stars. He knows that the right algorithm can get there. He is full of passion and dreams to help others fulfill their ambitions. While he finished high school with a plan to make a difference and a desire to become a technology consultant, but because he enjoys applying his knowledge and making computer programs functional.

“Baylor was sort of this unattainable goal at first,” Mitchell recalls. “But over several months before I enrolled in college, I kept getting scholarships from Baylor and I thought, ‘God is trying to tell me something.’”

Indeed, it was scholarships, such as The J.L. and Laura S. Brittain Scholarship among others in the School of Engineering and Computer Science, that were the stepping-stones to Mitchell’s future.

“Without scholarships, I wouldn’t have been able to attend Baylor,” he says. “They’re one of the major reasons I’ve been able to take the next step in life.”

And that’s only the beginning. Scholarships also opened the door for Mitchell to move into Baylor’s North Village as part of the ECS Living-Learning Center instead of commuting to campus each day. “Having roommates instead of being on my own is incredibly beneficial,” Mitchell explains. “They are people I can interact with who have either taken the same classes I have or are in the same classes now. I’m not having to figure out everything on my own like I did when I lived at home.”

Diving into the complexities of computer science with others on the same journey has strengthened Mitchell’s understanding of his field and also has prompted him to think about people rather than just computers.

Now, Mitchell daily takes excellence by the reins and seeks to weld his interest in computers with his drive to help others. A senior planning to graduate in May, he is passionate about his role in the computer science world—not only because Baylor ECS is preparing him for a job writing code, designing software or being a consultant, but because he enjoys applying his knowledge and making computer programs functional.

“Without scholarships, I wouldn’t have been able to attend Baylor,” he says. “They’re one of the major reasons I’ve been able to take the next step in life.”

Inside the classroom and out, Baylor has broadened Mitchell’s horizons. Immersed in an intellectual atmosphere and surrounded by loving people, he has gained invaluable mentors who have helped him reach his potential and develop his own career goals. Remembering how he was sold on computer science during the intro class his freshman year, Mitchell is enthusiastic about the opportunity to help other students—especially freshmen—find the missing puzzle pieces that will lead to their career.

“I’d like to share some of the wonderful things I’ve learned about computer science and nurture new students to help them find that maybe they are as enthusiastic about the subject as I am,” says Mitchell. “It’s not just a major that helps you get a job, but it’s interesting and fun. While I enjoy more complex computer science, it’s the first year that really shapes how people view the subject.”

That’s just one way this Baylor student hopes to give back. Scholarships have been key to Mitchell’s Baylor experience…and to building his desire to follow in the footsteps of his benefactors.

“The Baylor spirit nurtured my scholarship donors so that they wanted to help young people travel the same path they did,” Mitchell muses. “The scholarships they gave have changed my life. They brought me to Baylor and helped me to move forward with my dreams. Hopefully I’ll be able to turn around and help somebody else in the future.”

Mitchell Mebane definitely aims for the stars. He knows that with the right algorithm he can get there. He is full of passion and dreams to help others fulfill their ambitions. While he finished high school with a plan to make a difference and a desire to become a Baylor Bear, Mitchell needed scholarships as the stepping-stones to reach his goal. Now, thanks to selfless donors with a zeal to see engineering and computer science students excel, Mitchell had a foundation to walk on.

You, too, can lay a foundation for students like Mitchell. To learn how you can support existing scholarships—the stepping-stones for generations of students—or how to establish one of your own, contact Kevin Ludlum, executive director of development, at (254) 710-6754, or see “Give to Baylor” at www.baylor.edu to make a gift online.
Baylor Study Finds Phosphorus Level That Leads to Declines in Stream Water Quality

Robert Darden, associate professor of journalism at Baylor, leads the project. Sixteen songs are available as a free download on iTunes U, a dedicated area within the iTunes U Store. Among the songs are such black gospel treasures as Ain’t That Right!, Great Get’in Up Morning, Old Ship of Zion and This Train Is Bound for Glory. Darden’s search has turned up 78s, 45s, LPs and music in various taped formats used in the United States and abroad. Those involved in the project also are compiling taped interviews, informal photos, music programs, newspaper clippings and sheet music.

Charles M. Royce, chairman of the board of TICL Capital Corp. in Greenwich, Conn., and Harold (BBB ’51) and Dottie Riley of Austin are among the financial contributors for the preservation efforts for “the Golden Age of Gospel Music.”


Baylor Announces Largest Gift in University’s History

In March, Baylor University announced receipt of what will be the largest gift in the university’s history, an estate provision estimated to be valued in the range of $200 million to benefit medical research in the College of Arts and Sciences, the School of Social Work and other university programs.

The anonymous gift is being made by a Baylor graduate whose family has a history of providing gifts to the university supporting programs that are both innovative and have high potential to significantly advance the field of knowledge and experience in diseases, disorders, care, treatment and other issues associated with aging.

As a provision of the donor’s estate, a foundation will be established at the time of the donor’s death. The foundation will support several university efforts in continuing the donor’s consistent and generous support.

The gift is the second-largest gift made to a Texas college or university and ranks among the top 20 private gifts made to a Texas college or university and ranks among the top 20 private gifts made to higher education in the United States according to the most recent compilation of data reported by the Chronicle of Higher Education.

iTunes U features Baylor’s Black Gospel Music Restoration Project

A popular download among Baylor’s content available on iTunes U is the University Libraries’ Black Gospel Music Restoration Project, a digital record and catalog of the most at-risk music from the black gospel music tradition from the 1940s to the 1980s.

One of the major contributors of records was Bob Marovich, a Chicago collector. The majority of the Black Gospel Music Restoration Project songs come from his collection of gospel 45s.

For more information about Baylor’s Black Gospel Music Restoration Project, visit baylor.edu/lib/gospel.

Allison Indoor Practice Facility Earns LEED Silver Rating

Baylor’s Jay and Jenny Allison Indoor Football Practice Facility has become the nation’s first true football field house to be awarded a Leadership in Energy and Environmental Design (LEED) Silver rating by the U.S. Green Building Council (USGBC) in its New Construction rating system.

The Allison facility is Baylor’s second New Construction LEED Certified building, and Baylor now has three LEED-Certified facilities within the last year.

In June 2009, Baylor’s George W. Truett Theological Seminary, built in 2002, earned LEED Silver certification in the USGBC’s Existing Buildings rating system.

Last October, Baylor’s Alwin O. and Dorothy Higheis Athletics Complex, which includes the Simpson Athletics and Academic Center, became the university’s first New Building LEED Certified structure. The newly certified Allison Indoor Facility, which includes a 100-yard synthetic playing surface, is adjacent to Baylor’s two outdoor natural grass practice fields at the Higheis Athletics Complex.

The facility bears the name of Baylor alumni Jay and Jenny Allison, who provided the lead gift. Jay Allison, a former university regent, is president and CEO of Comstock Resources, based in Frisco, Texas. He named the Ernst and Young’s 2009 Entrepreneur of the Year in the Chemicals and Mining category. Allison is president and CEO of Comstock Resources.

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Young-Rae Cho
Assistant Professor, Computer Science

Dr. Young-Rae Cho comes to Baylor’s Department of Computer Science after earning his PhD in Computer Science Engineering at State University of New York in 2009. Before that, Cho received his Master of Computer Science degree from the University of Illinois. Cho’s research interests include bioinformatics and computer biology (functional genomics, computational systems biology, and network biology) and data mining and data management (pattern mining, classification, clustering, and data integration).

Cho has several patents, including a concept and formula to identify bridging nodes in scale-free networks which was patented in December 2007. Aiding Zhang, Murali Ramamohan and Wenchang Heng, he is also the patent for clustering algorithms.

He has served as a reviewer for several journals, on conference program committees (IBM and ICSI), and as a conference volunteer. He also has published journal papers in IEEE Transactions on Information Technology in Biomedicine, International Journal of Computational Biology, International Journal of Data Mining and Bioinformatics, and others.

His teaching load will include, over several semesters, Principal of Data Mining, Computational Biology, Introduction to Data Mining, Genomics and Bioinformatics, Introduction to Computational Biology, and graduate student mentoring.


Bradley, W. L., presented a two-day seminar on “Integrating Faith and Learning in Engineering,” School of Engineering at Petra Christian University, Sarabia, Indonesia, June 2009.

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John Miller
Lecturer, Electrical and Computer Engineering

Mr. John Miller comes to Baylor's Department of Electrical and Computer Engineering after earning his Bachelor and Master of Science in Electrical and Computer Engineering from Baylor in August 2009.

From spring 2008 through summer 2009, Mr. Miller worked as a graduate assistant to Dr. Ian Gravagne, associate professor of Electrical and Computer Engineering. Miller's responsibilities included setting up and operating a 20W hydrogen fuel cell unit, designing and assembling a maximum power-point tracking switching power coupler for classroom demonstrations, and designing a system to collect data from an alternative energy museum display and to report it on a webpage.

His research interests are dynamic equations on time scales, engineering laboratory skill development, small scale energy systems, and appropriate technology.

Miller has several publications, including Stability of Simultaneously Triangulizable Switched Systems on Time Scales (with Gravagne) and Design of a Phantom Load Controller for Entertainment Centers (with C. Matcek and Gravagne), both in Proceedings of the 2009 ASEE Gulf-Southwest Annual Conference. At Baylor, his course schedule for two semesters has covered Introduction to Engineering, Engineering Analysis, Electrical Circuit Theory, Digital Logic Design Lab, Electronics Design Lab, and Automatic Control Systems Lab.
Baylor University grad sharpens skills bymodding a car to run on iPhone app

Baylor graduate Hunter Smith (BS ’08) is part of a team of engineers from Austin-based National Instruments that made headlines recently for designing a system that uses an iPhone app to pilot a late ’80s Buick. The app controls steering, the gas pedal, and brakes — everything needed to drive a car. Their work has been covered by mainstream outlets like CNN and BBC Radio as well as tech-focused sites like CNET, Gizmodo, Wired UK and CrunchGear.

Why design a car to be controlled via iPhone? The engineers, who collectively go by the name of Waterloo Labs, enjoy testing the limits of their abilities while having fun with do-it-yourself-type projects.

baylotexas/baylorproud

ALUMNI UPDATES

1980
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Benjamin Thompson (BSEE) earned his MS (2002) and PhD (2004) degrees in electrical engineering at the University of Washington in Seattle, WA. Dr. Thompson is on the research faculty at the Applied Research Laboratory at Pennsylvania State University where he is a research associate and department head for tactical processing and control technology in the underwater weapons office. Email: bth009@psu.edu

2006
Amy Bowen (BSICE) has been a field test engineer at the National Renewable Energy Laboratory for small turbine independent testing at the National Wind Technology Center since September 2007. She is involved in education, power performance, and safety and function testing for small wind turbines. Amy also is involved in software development for small turbine testing, blade testing, and the Siemens 2.3-MW project. Email: solarmoose@gmail.com

2009
Shawn Adair (BSME) works as a Mechanical Engineer for CDC in Atlanta.

1986
David Weiss (BA, CSI) continues his career with the Navy. His home is in Passaic, NJ. Email: seiscookhammonds@gmail.com

2007
David Keith Fisher (BSI) passed away as the result of a car accident in August 2009.

1991
Ravishankar Venkatatarwar (MS, CSI) works for Stapp Shores, Inc. and lives in Houston, TX. Email: rvenkat@stappshores.com

2009
Shawn Adair (BSME) works as a Mechanical Engineer for ADS/Transicoil, a custom engineered manufacturer of motors, resolvers, actuators, and LOR products for applications in aerospace, military, industrial and medical markets among other applications. He lives in King of Prussia, PA. Email: EricMichaelMinor@gmail.com

1994
Shaneesha McCoy Hochstuck (BA, CSI) and her husband, Aaran (BA, CSI-1995), were featured in an article in the Colorado Springs COG Business Jounal for their successful company, TechWise. Email: shackipec@techwise.com

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2009
Shawn Adair (BSME) works as a Mechanical Engineer for ADS/Transicoil, a custom engineered manufacturer of motors, resolvers, actuators, and LOR products for applications in aerospace, military, industrial and medical markets among other applications. He lives in King of Prussia, PA. Email: EricMichaelMinor@gmail.com

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ON A COLD DAY...

Baylor professor of computer science/ACM-ICPC executive director Bill Poucher (seen above, center - *All for Baylor, Dr. Poucher!* ) and a Baylor entourage of volunteers traveled to the 2010 ICPC event in Harbin, China, where the temperatures can be a bit nippy (say, -20° in February) at all times. Beyond the contest, students and volunteers participated in sightseeing, including festivals showcasing sculptures of ice and snow. View pictures and video of the events at [icpc.baylor.edu](http://icpc.baylor.edu).

On the other hand, it is accurate to say Waco, Texas, rarely sees 32°F for extended periods, yet the Baylor campus welcomed a few snow flurries in December 2009 and February 2010. The snow from one day in February managed to hang around for a few fun-filled hours. Check the archives of the Baylor Proud blog at [baylor.edu/baylorprou](http://baylor.edu/baylorprou) for additional campus scenes.