EIT says goodbye and thank you to its founding Dean, Dr. Mary Good and offers a warm welcome to its new Dean, Dr. Eric Sandgren.
Donaghey College of
Engineering & Information Technology (EIT)
University of Arkansas at Little Rock

Annual Report
for the period
July 1, 2010 – June 30, 2011

DR. MARY L. GOOD
Dean
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Organizational Chart
As of July 1, 2011

Dean of the College
Dr. Eric Sandgren

Administrative Assistant to the Dean: Cathy Shank

Department Chairs
- Computer Science: Dr. Remzi Seker
- Construction Mgmt: Mr. Mike Tramel
- Engineering Technology: Mr. George Tebbetts
- Information Science: Dr. Elizabeth Pierce
- Systems Engineering: Dr. Seshadri Mohan
- Graduate Institute of Technology: Dr. Keith Hudson

Exec. Director of Administration and Finance: Shawna Diaz
- Budget
- PAF’s and Employee Files
- Grant Budget Reviews
- Secretarial Training for Operational Issues
- Immigration Issues
- Staff: Michelle Yonkey

Associate Dean
Dr. Abhijit Bhattacharyya
- Secretaries & Tech Staff (Employment Issues)
- College Assessment Activities
- Accreditation Issues
- Intercollegiate Activities
- International Agreements
- College Curricular Reviews
- Graduate Programs
- Research Enterprise

Assistant Dean for External Affairs: Kelley Bass
- Corporate Relations
- Government Relations
- Grants / Contracts to the College (non-peer reviewed grants and all external contract negotiations)
- Community Outreach, including Economic Development, College Outreach Materials and Website
- Philanthropy and Assistance to University Development Office
- External Advisory Committees and Boards
- Staff: Thomas Wallace (10 hours per week)

Director of Recruitment and Outreach: Vernard Henley
- General Recruiting and Coordination with University Recruiting
- Counselor Outreach
- Data Bases: All Student Contacts, Success Rates...
- Summer Programs
  - Exxon Mobile Bernard Harris Summer Science Camp
  - High School Research Program
  - Engineering Scholars Program
  - College Outreach Materials and Website
- Philanthropy and Assistance to University Development Office
- External Advisory Committees and Boards
- Staff: Thomas Wallace (10 hours per week)

Academic Support Specialist (Graduate Programs): Sheena Brooks
- Grad Student Pre-admissions
- Liaison with Grad School
- Graduate Assistantships
- Graduate Alumni Outreach
- Research Enterprise

Asst. Dean for Undergraduate Programs: Katie Young

- Recruiting for High ACT Scholarship Students (including ASMHS)
- Retention, including Student Housing, Student Ambassadors, First Year "Learning Environment" Activities
- Academic Advising (especially freshmen, transfers and degree check-out)
- Articulation Agreements
- Databases: Contacts, Success Rates, Alumni, etc.
- Student Services Coordinator: Jennifer Moody
LETTER FROM DEAN MARY GOOD

The material in the annual report speaks for itself. EIT has had an outstanding year with increased recognition and visibility both in Central Arkansas and with funding agencies. Student awards from regional and national competitions and programs have increased from last year; faculty research funding has increased, including new NIH and NSF grants; and most importantly we continue to graduate more students who are finding excellent career opportunities in Arkansas. The few who have accepted out-of-state positions have been lured by outstanding offers that reflect the value placed on their education at UALR. Hopefully they will bring their talent home after they have had the opportunity to explore the world outside our state.

Other significant milestones were the addition of two degree options in engineering. The BS degree in Construction Engineering was approved last year and is off to a great start with approximately 30 students in the program. The PhD in Engineering Science and Systems was approved by the Arkansas Department of Higher Education and will be implemented in the Fall of 2011. Students in the Engineering Science and Systems option in Applied Science are eligible to transfer into the program and all new engineering PhD students will be part of the program. It is estimated that the program will have between 25-30 students enrolled in the 2011 Fall semester. These programs, added to our PhD in Integrated Computing and MS degrees in Systems Engineering, Computer Science, and Information Quality, now provide a good cross section for the College in graduate education, and they are poised for significant growth over time.

Our undergraduate programs are prospering, and their curricula have been continually upgraded to provide state-of-the-art education in engineering and information sciences. These programs today represent relevant and quality educational opportunities that are nationally and globally competitive and assure our graduates of a great future. They also provide the workforce platform that Arkansas can build on to create a vibrant state economy.

The other significant issue for the College is the change in leadership that will occur on July 1, 2011. As all of you know, I announced early in the year that I would retire at the end of June 2011. The University administration moved expeditiously to create a campus-wide search committee chaired by the Provost. A well-known search firm was hired, and a significant number of applicants were identified. The search committee reviewed the candidates and did “airport” interviews with several of them, followed by a narrowing of the field to four candidates who were
invited for campus interviews. These candidates were all highly qualified, and the campus as a whole had an opportunity to “weigh in.” After the Committee made its recommendation to the Provost, the Administration announced that Dr. Eric Sandgren, formerly Dean of Engineering at the University of Nevada at Las Vegas, had been hired as the new Dean of EIT as of July 1, 2011. All of you who have had a chance to meet and interact with Dr. Sandgren, will agree that there is no doubt the College is in good hands and that there will be new ideas and innovations which will accelerate the momentum the College has.

My tenure here at UALR and EIT has been a privilege and is highlighted by being able to work with some extraordinary people, both faculty and staff. My best wishes to you all.

I leave you with what makes me pleased and proud of what we have done so far. This note from a former student is what it is all about.

Dr. Good:

I am emailing you because I feel that I owe your college special thanks. I have spent the last four years of my life at the EIT College, learning more than I have in the rest of my life. I believe and thank you for having a great college with great faculty and staff. In today’s world, sometimes we don’t remember to write to people thanking them for influencing one’s life in a positive manner.

2009 Graduating Senior in Systems Engineering

EXECUTIVE SUMMARY AND OVERALL HIGHLIGHTS

NEW EIT BUILDING

The 2010-2011 academic year was the first to be completed in the new EIT Building. Faculty and staff moved into the six-story, 115,000-square-foot, $34.5 million facility in May and June 2010, and classes began in August.

Remarks by Governor Mike Beebe, University of Arkansas System president B. Alan Sugg and U.S. Rep. Vic Snyder highlighted the agenda for the official EIT Building dedication ceremony, held September 10, 2010, and attended by approximately 200 UALR faculty, staff and external guests.

Prior to the ceremony, Dean Mary Good hosted Verizon Wireless regional president Steve Smith for lunch in the dean’s suite and then the pair unveiled a plaque proclaiming the EIT Building’s sixth-floor research area as the Verizon Wireless Research Laboratory. The telecommunications company donated approximately $670,000 worth of Steelcase cubicles, filing cabinets, bookshelves and other furniture that outfit four research labs in the EIT Building as well as the capstone project room and the dean’s and chairs’ offices.
After the formal dedication ceremony in the EIT auditorium, UALR Chancellor Joel Anderson invited the crowd to follow him to the lobby, where he unveiled four plaques honoring people who were instrumental in establishing EIT and supporting the college’s efforts to build its programs and its new building. The four honorees to whom plaques were dedicated:

- Chancellor Charles Hathaway, who was the administrative driving force in the establishment of EIT, forming the exploratory committee, presenting to university and government officials and taking the lead in selling the value EIT would deliver UALR and Arkansas.

- Founding Dean Mary Good, whose vision, experience and reputation in scientific, technology and education circles helped EIT come farther, faster, than anyone could have imagined.

- Bob Johnson, then Speaker of the House in the Arkansas state legislature, who made the establishment of EIT his top priority and whose leadership helped the bill to create EIT pass both houses without a single negative vote.

- Haskell Dickinson, longtime EIT and UALR supporter, whose Trinity Foundation provided a $6 million endowment, the largest single gift in UALR history, to establish the mechanical and electrical options in the systems engineering department and who personally has leant his moral and financial support for years.

Many of the primary features designed into the EIT Building proved to expertly serve their intended purpose throughout the academic year. The Sub Connection café bustled with lunch activity; the student services computer lab was regularly packed with students; the hallway study areas on the classroom floors proved a popular spot for students studying and working together; the capstone room proved a much-needed haven for student teams who needed space and solitude to work on their senior projects; Room 203 was converted into a top-notch conference room facility with a state-of-the-art conference call phone system installed; the auditorium was used by many groups from EIT, across campus and even outside UALR; after some early problems, the acoustics in the auditorium were improved, and thanks to an IMBRE grant, an access grid video conferencing system was added in April to facilitate large, collaborative meetings with stakeholders at other sites.

In keeping with a policy established at the UA System level, there was a mandate to work to ensure the EIT Building would gain LEED certification from the U.S. Green Building Council (USGBC). Therefore, as the building was designed, special attention was paid to securing LEED points from each of the five primary categories: sustainable site, indoor environment quality, energy and atmosphere, materials and resources, and water efficiency.

Of 70 total points available, a project must receive 26 to be LEED-certified, and that was the initial goal for the EIT Building. As the project progressed, the architects, engineers and UALR staff began to believe the building might qualify to be rated LEED “silver,” which requires 33 to 38 points. Then, as the building was nearly completed, the group realized a LEED “gold” rating was indeed possible. And when the USGBC rendered its final ruling on the EIT Building submission, it granted all 40 points that were applied for, a very rare accomplishment, and safely inside the 39-51 point range required to get “gold.”
On May 4, a ceremony to celebrate the LEED Gold rating was held in the EIT lobby, with Chancellor Anderson presiding. Linda Smith, the president of the Arkansas chapter of the USGBC, made remarks and presented framed certificates to Dean Good and Dave Millay, associate vice chancellor for facilities manager. And EIT students Brian Choate and Jessica Jeffries led building tours with many of the factors that helped qualify the building for its LEED rating designated with gold stars.

U.S. NEWS & WORLD REPORT RANKING

EIT’s Systems Engineering program was the top-ranked engineering program at a public university in the South on the U.S. News & World Report list that ranks engineering programs at universities that offer only bachelor’s or master’s degrees in the field. UALR’s program also ranked No. 64 overall.

The U.S. News rankings of undergraduate engineering programs accredited by ABET are based solely on the peer judgments of deans and senior faculty who rated each program they are familiar with on a scale from 1 (marginal) to 5 (distinguished).

NEW CURRICULUM ADDITIONS

Three new programs were added to the EIT curriculum, and the Arkansas Department of Higher Education approved another program:

- **Bachelor of Science in Construction Engineering** – more than 35 students declared their major in this new degree track that was introduced in Fall 2010. The construction engineering program combines courses in construction management with courses in several engineering disciplines to prepare graduates to practice engineering within the construction industry.

- **Ph.D. in Integrated Computing** – more than 30 students enrolled in this new program, which is built on courses, resources and faculty from Computer Science, Information Science and Systems Engineering. The degree is designed to promote strong multidisciplinary collaborations across several computing disciplines whose bodies of knowledge influence and intertwine with each other. Emphasis areas include computer engineering, net integrated computing, computer science, information science and information quality.

- **Graduate Certificate in Technology Innovation** – this program is housed in the Information Science department and is intended for working professionals and post-baccalaureate students who are interested in the development, evaluation and implementation of original ideas for existing businesses and new enterprises. The curriculum is designed to teach a specific set of skills necessary to effectively innovate new products and services.
- **Ph.D. in Engineering Science and Systems** – ADHE approved this program in April, and it will be introduced in August 2011. The Engineering Science and Systems doctoral degree has been offered as one of several options in the Ph.D. program in Applied Science, and now it will be offered as a stand-alone interdisciplinary program. The program will be supported by faculty from all six EIT departments and will be hosted by the Systems Engineering Department. The four tracks in the new ESS program are: Systems Engineering; Electrical and Computer Engineering; Telecommunications and Networking Engineering; and Mechanical and Materials Engineering. The program includes a total of 76 credit hours – 17 hours of program core courses, nine hours of core courses in the chosen track, 12 hours of electives, and 38 hours for dissertation research.

**OUTREACH PROGRAMS**

The EIT outreach programs continued to grow and flourish during 2010-2011. (See full report in Student Services section.) For the second year, UALR was one of 30 universities in the country that hosted 48 rising 6th, 7th and 8th graders on campus for two weeks in the ExxonMobil Bernard Harris Summer Science Camp. Ten high school students also were on campus for the three-week High School Research Program, and 20 high school students completed the two-week Engineering Scholars Program.

Assessment data proves the success of the latter two programs (again, see full report in Student Services section), as a vast majority of participants who have graduated high school are studying science, technology, engineering or math (STEM) in college. Many have chosen to matriculate at UALR.

The value of these programs in building a pipeline of high school graduates interested and prepared to succeed in EIT’s programs is why a priority was placed on raising money to expand them.

Kelley Bass, assistant dean for external affairs, led the effort to raise money for the EIT outreach programs – writing the narrative for two grant applications and making more than 20 face-to-face visits with EIT advisory council members to seek their support. He also hosted former chancellor Charles Hathaway at the ExxonMobil Bernard Harris Summer Science Camp and then made a presentation about the need for funding for the summer programs.

The results of the fund-raising campaign, which will help increase the number of students in these outreach programs:

- Longtime support Haskell Dickinson has agreed in principle to establishing a $250,000 endowment to support the EIT outreach programs in the name of Dr. Hathaway.
- Pledges for $47,500 over three years were secured from advisory council member companies.
- AT&T awarded EIT a $40,000 grant
- Entergy awarded EIT a $30,000 grant and agreed that this money could be added to the growing endowment.
A contingent from AT&T Arkansas – Eddie Drilling, president, and Melinda Faubel and Ronnie Dedman, both of AT&T’s public affairs team – came to EIT on June 28, 2011, to observe the robot competition that was a highlight of the Engineering Scholars Program.

While at EIT, the AT&T team met with outgoing Dean Mary Good and incoming Dean Eric Sandgren, taking time also to present the ceremonial $40,000 check from the AT&T Foundation, money that is helping fund the Engineering Scholars Program and the High School Research Program.

UALR HOSTS INTERNATIONAL CONFERENCE ON INFORMATION QUALITY

UALR hosted more than 125 of the world’s pre-eminent experts on data quality at the 15th annual International Conference on Information Quality (ICIQ) Nov. 12-14, 2010. It marked the first time ICIQ had been held anywhere in the United States other than the Massachusetts Institute of Technology, which hosted the first 13 conferences.

Researchers, academics and industry professionals from around the world – including France, Germany, Italy, Australia, China, Brazil, Argentina, South Africa, Switzerland, India, Ireland, Norway, and Canada – attended ICIQ 2010.

The conference began with a reception Nov. 12 at Acxiom, with general and break-out sessions Nov. 13 at the Engineering and Information Technology Building at UALR and more general and break-out sessions Nov. 14 at the Peabody Hotel.

Cita Furlani, director of the Information Technology Laboratory at the National Institute of Standards and Technology (NIST), delivered the keynote speech at the UALR-hosted session. Furlani oversees a research program designed to promote U.S. innovation and industrial competitiveness by developing and disseminating standards, measurements and testing for interoperability, security, usability, and reliability of information systems. Those include cyber security standards and guidelines for federal agencies and U.S. industries.

Other ICIQ speakers included Rod Ford, founder and chief executive officer of CognitiveDATA Inc., and Rick McConville and Sharif Youssef, product manager and product strategist, respectively, at Acxiom.

STUDENT/FACULTY AWARDS AND HONORS

The 2010-2011 academic year saw an unprecedented performance by EIT students and faculty in winning competitions, securing grants, and capturing other awards and honors:

- **Dr. Lifeng Lai**, assistant professor of systems engineering, received a coveted NSF CAREER Award to fund his research on improving the security and privacy of cellular telephone transmissions. Dr. Lai’s is only the third CAREER Award ever won by a UALR professor. The five-year, $400,000 grant will fund his research in developing an information-based security scheme that takes factors that have been considered detriments to cell phone use – weak signal and high noise level – and using them to improve security.
Thomas Epperson and Stephen Kirchner, juniors in the electronics and computer engineering technology program, won first place in the design contest at the IEEE Region 5 annual conference April 16-17, 2011, in Baton Rouge, La. Epperson and Kirchner competed against 24 teams from universities representing states in Region 5: Louisiana, Texas, Arkansas, Oklahoma, Missouri, Kansas, Colorado, New Mexico, South Dakota, Wyoming and part of Illinois. They won a $500 cash prize and electronic gifts from National Instruments. The design contest teams were given a blind engineering design problem, which they had to design on paper, build, write a report about, and make a presentation to the judges with a project cost estimate. The project involved building an efficient, solar-powered LED garden light with a 3V solar panel and a 1.2V NiCad rechargeable battery to provide a power source at night. The UALR team was the only team to fully complete the project. Second and third place were won by electrical engineering students from Texas and Oklahoma, respectively.

A team of six UALR Construction Management students finished second Feb. 20 in Dallas in a competition sponsored by the Associated Schools of Construction Region V and TEXO, which is represented by the Dallas/Fort Worth Association for Associated General Contractors and Associated Builders and Contractors. The UALR team, which won $750 for its second-place finish, included Mark Gernhart, captain and project manager; Stephanie Shank, who was in charge of project scheduling; Dustin Mize, contract questions; and Chris Meyer, Josh Morris and Ross Lovenstein, estimating. Larry Blackmon, adjunct instructor, served as the team's coach; and Mike Tramel, department chairman, was the sponsor. While UALR finished second to Oklahoma State among the eight teams in the competition, the Trojan team easily won the estimating component, its bid of $98,741,435.70 only $197,594.30 – or 2 percent – off the actual project bid of $98,939,030. Oklahoma State's team was next closest, off by more than $4 million, and the Texas A&M team, last in that aspect of the competition, missed the bid by more than $51.6 million. The University of Oklahoma team finished third in the competition; other universities represented were North Texas, Texas Tech, Louisiana-Monroe and Louisiana Tech.

Jonathan Barket, an Electronics and Computer Engineering Technology major, was named to the “20 in Their 20s” list of notable young professionals by Arkansas Business, the weekly business publication. Jonathan, who is a freelance application developer, was honored in part because he was a teaching fellow with a professor at Harvard who was impressed with Jonathan's presentation there on the programming framework Ruby on Rails.

Dr. Seshadri Mohan, chairman of the Systems Engineering department, was honored by the Institute of Electrical and Electronics Engineers (IEEE) as its Outstanding Engineering Educator for Region 5, which encompasses Arkansas, Texas, Colorado, Kansas, Louisiana, Missouri, Oklahoma and parts of Nebraska, South Dakota and Wyoming. Dr. Mohan was on hand to receive the award at the annual IEEE Region 5 meeting April 16, 2011, in Baton Rouge, Louisiana.

Bruce Stracener, a systems engineering undergraduate student, was accepted into the McNair Scholars Program, a 100 percent federally funded program that provides the recipients an internship that introduces them to techniques utilized in major research. Bruce will conduct research under the mentorship of Dr. Nidhal Bouaynaya and receive stipends that will total $2,800 for his work.
Six more systems engineering seniors passed the Fundamentals of Engineering (FE) Examination in April, continuing the perfect record of success for EIT students who have taken CNMG 4389 Professional Engineering Licensure, an FE exam preparation course taught by Dr. Nick Jovanovic. (The national pass rate is 71 percent.) The successful students are Tim Herr, Erica Jones, Heather Keathley, Robert (Trey) Newcomb, Ben Smith and William Wimpee.

The annual Institution of Engineering and Technology’s Present Around the World (IET PATW) competition was held at EIT in April 2011. Fourteen students from UALR and UAMS participated. First place was won by Fei Song (Piezoelectrically Induced Guided Wave Propagation for Health Monitoring). Capturing second place was Yingle Zhou (A Model for Entity Identity Management in Entity Resolution Systems), and finishing third was Haider Khaleel (An AMC-Based Antenna for Telemedicine Applications. All are EIT doctoral students. Song and Zhou qualified to compete in the regional final in Boston.

Nikhil Gupta, an electronics and computer engineering technology major, won first place in the engineering and technology category of the UALR Undergraduate Research Expo in April 2011, leading a group of students from engineering technology who did well in the competition. Nikhil’s project was “Multipath Mixed Signal Technique to Generate Digitally Tunable Passbands.” Andrew Bedinghaus, a mechanical engineering technology major, finished third for “Efficient Micromixers for Microfluidic Devices.” Afzal Siddiqui and Rohit Sharma, both electronics and computer engineering technology majors, won honorable mention. Afzal won for “Maximum Power Point Controller for Harnessing Solar Energy,” and Rohit won for “Smart Healthcare Using RFID.”

Dr. Sesh Mohan, systems engineering department chair, and Rabindra Ghimire, a doctoral student studying under Dr. Mohan, won the best paper award at the 4th IEEE International Symposium on Advanced Networks and Telecommunications Systems in December 2010 in Mumbai, India. Their paper was “A Multi-Path Routing Scheme for GMPLS-Controlled WDM Networks.”

Dr. Kenji Yoshigoe, associate professor of computer science, was co-principal investigator with Dr. Malathi Srivatsan of Arkansas State University, on a proposal entitled “Stream Computing for Research and Education in Science and Engineering” that was funded by a National Science Foundation grant of $400,000. The funding will provide the researchers with multi-gigabit connections to stream large volumes of data in real time to the high performance computing center at UALR.

Arnab Dey, a senior at Arkansas School for Mathematics, Sciences and the Arts who was mentored by Dr. Jinxiang Xi during the 2010 High School Research Program at UALR, won second place in the 2011 Intel International Science and Engineering Fair in Los Angeles in May 2011. Dey was awarded $1,500 in the Electrical and Mechanical Engineering category for his project, “Novel Oral Drug Inhaler Design to Optimize Drug Deposition in the Lungs.” Previously, Arnab had won first place at the 2011 West Central Science Fair at ASMSA.

James Playford, a junior in Mechanical Engineering Technology, won first place in the ASME poster competition for his presentation on “Thermal Conductivity of Aluminum and Stainless Steel Cellular Foams.” Research on the project was conducted by James Playford, Swaminadham Midturi, Srikanth Pidugu, and Rahul Kanthabhabha Jeha.
The competition was held March 31 through April 2, 2011, at the Student Professional Development Conference at the University of Arkansas at Fayetteville. James also won first place for his oral presentation on the same subject at the 95th Annual Arkansas Academy of Sciences meeting, which was held April 8-9 at the University of Arkansas at Monticello.

- UALR faculty won five of the six awards granted in the NASA EPSCoR RID program in December. And on the sixth award UALR had the co-PI. The winners were:
  - “An Innovative Approach to Arrayed ZnO Nanowires for Advanced NASA Photo Detector Applications” – Jingbiao Cui, UALR, PI; Shui-Qing Yu, UA-Fayetteville, co-PI
  - “Responses of Cyanobacteria to Hypergravity” – Qingfang He, UALR, PI; Yushun Chen, UAPB, co-PI
  - “Toward a Better Understanding of the Nature of Dark Matter” – Marc S. Seigar, UALR, PI; Anton Empl and Abdel Bachri, Southern Arkansas University, co-PIs
  - “Electrocatalysts for Oxygen Reduction: Prospect as Cathodes for Polymer Electrolyte as Membrane Fuel Cells” – Ali U. Shaikh, UALR, PI; Ghosh Anindya, UALR, co-PI; Abul B. Kazi, UAPB, co-PI
  - “A Broadband Flying-Wing Design: Elastic Metamaterial Airfoil” – Michael Reynolds, UA-Fort Smith, PI; Guoliang Huang, UALR, co-PI

- Vernard Henley, EIT’s Director of Recruitment and Outreach, in April was appointed by Governor Mike Beebe to serve on the Arkansas Service Commission, whose mission is to improve communities in Arkansas through service and volunteering.

- Dr. Lifeng Lai, assistant professor of systems engineering, won a Best Paper Award at the prestigious IEEE International Communications Conference held June 6-9 in Kyoto, Japan, for his work entitled, “Decoding the ‘Nature-Encoded’ Messages for Distributed Energy Generation Control in Microgrid.” Of the 2,838 papers submitted for the conference, IEEE accepted only 1,093. Of those accepted, only 11 received a Best Paper Award, putting Dr. Lai’s paper in the top .4 percent of all submitted and the top 1 percent of those accepted.

- Dr. Nidhal Bouaynaya was awarded the Thomsen-Hall Award for her project titled “A Scalable Encrypted Human Body Area Network System.” The purpose of this project is to create virtual intensive care units that will provide real-time patient data using a secure wireless sensor network that would prove invaluable in rural locations and disaster areas. Currently, the medical equipment employed in hospitals uses wired sensors, which makes it nearly impossible to provide intensive care in any other part of the hospital, which is not equipped with the requisite wiring. A wireless Human Body Area Network system presents some challenges in both software and hardware designs. The main challenges are: reliable communication, secure transmission of the patients’ data, and scalability of the network to multiple sensors and patients. These three main issues will be tackled in this project.
EXPANDED INTERNSHIP PROGRAM

A major step forward in growing the EIT internship program was the launch of the EIT jobs board – [www.ualr.edu/eit/jobs](http://www.ualr.edu/eit/jobs) – a joint project of Kelley Bass, EIT assistant dean for external affairs, and Thomas Wallace, information science instructor and EIT webmaster.

The site provides EIT students a one-stop shop for securing an internship or full-time job with resume writing tips and regularly updated job listings. Publicity efforts about the job board – accentuated by regular e-mails to student list-serves from Katie Young, assistant dean for undergraduate affairs – drove significant traffic to the site.

The jobs board helps give more students more opportunities to apply for positions. And the result was a larger number of placements with more companies. Among the firms who hired EIT students and graduates for internships and full-time positions:

- Acxiom
- Molex
- LM Wind Power
- Welspun Tubular
- TME Engineering
- Goodrich Corporation
- FIS Global
- USAble Life
- Aerospace Systems, Inc.
- Summit Software
- Almatis
- 3M
- Life and Specialty Ventures
- Comfort Systems USA
- Baptist Health
- Central Arkansas Water
- Dassault Falcon Jet
- Smith Fibercast
- Nabholz Construction Services
- DSG Consulting
- Dillard’s
- Catepillar
- UALR Computing Services

GLOBAL ENGINEERING VENTURES

EIT forged an innovative collaboration during the 2010-2011 academic year with the College of Engineering and Applied Science (EAS) at the University of Colorado at Colorado Springs, a relationship that has many applied research and co-development opportunities. Under a formal agreement, the universities developed a framework to collaborate on cutting-edge engineering research and co-development with the goal of global economic impact. The collaboration has been branded the Global Engineering Ventures (GeV).

The GeV is dedicated to addressing engineering challenges with the added potential to create local jobs and new companies. The GeV collaboration has the endorsement of the Arkansas Economic Development Commission (AEDC), which will have a representative on GeV’s Council of Stakeholders. Additional philanthropic support for GeV is being sought at both campuses through their university system foundations.

The GeV collaboration increases both universities’ research and co-development capabilities with a business-oriented, fast-track approach. The two engineering colleges are focusing initially on five research priority target areas that address the need for advanced technology
solutions in the fields of national security, assistive technologies, nanotechnology, data visualization, and advanced educational delivery systems.

The CoView DataLabs, a collaborative project in data visualization, was begun near the end of the academic year. This project was developed to further link the two engineering colleges’ research faculties through a proposed real-time online framework for accelerated collaboration. Proposals are also in development for sponsored research and funded GeV co-development projects during the upcoming academic year — all focused on future opportunities for commercialization and job creation in both states.

LM WIND POWER PROJECT

A team of three Mechanical Engineering Technology students — Brad Woodward, Andrew Bedinghaus and Jeremy Little — undertook a major senior design project for LM Wind Power, the Denmark-based wind blade manufacturer that has a large production facility at the Little Rock Port. Dr. Midturi was the team’s sponsor and mentor.

The project involved conceptualizing, designing and implementing an alternative way to seal the edge of the wind blade to create a vacuum seal that will allow resin to be dispersed across the blade. LM’s method has involved using very expensive “tacky tape” that can’t be reused and ruins the plastic sheeting that covers the blade.

The UALR team developed a magnetic approach, placing strip magnets atop the plastic to create the vacuum seal. The magnet strategy held the seal and created the vacuum, also providing LM a strategy that allows reuse of all materials. The company authorized spending of up to $10,000 to create the alternate method, and the UALR team spent far less than that in devising its solution.

JETS COMPETITION AT UALR

UALR again was the only site in Arkansas for the Junior Engineering Technical Society’s (JETS) Tests of Engineering Aptitude, Mathematics and Science (TEAMS) Competition. Fifteen (15) teams from eight schools participated February 22, 2011. This event was held during National Engineer’s Week. The JETS national organization recognized UALR for a “Host Best Practice”: showing a video and PowerPoint presentation as students arrive and find their tables.
This year, the JETS winners from the UALR competition also fared well in the national rankings:

For the JETS TEAMS Competition 11th/12th grade level:

- **Division 1** – 67th place: eSTEM High School (Dr. Andrea Sadler)
- **Division 2** – There were 88 teams in this division
  - 21st place: ASMSA Team A (Mr. Shane Thompson)
  - 43rd place: ASMSA Team B (Mr. Shane Thompson)
- **Division 3** – 76th place: Arkadelphia High School Team B (Mr. Bud McMillion) – There were 132 teams in this division
  - 85th place: Arkadelphia High School Team A (Mr. Bud McMillion)
  - 120th place: J.A. Fair High School Team A (Ms. Nancy Klais)
  - 127th place: J.A. Fair High School Team B (Ms. Nancy Klais)
- **Division 4** – 66th place: Catholic High School (Mr. Paul Lincicome) – There were 86 teams in this division
- **Division 7** – 126th place: West Memphis High School (Ms. Asha Foster) – There were 133 teams in this division
- **Division 11** – 20th place: Central High School (Mr. Kent Moore) – There were 136 teams in this division

Here are the national rankings for the schools participating in the JETS TEAMS Competition 9th/10th grade level:

- **Division 1** – 16th place: eSTEM High School (Dr. Andrea Sadler) – There were 43 teams in this division
- **Division 3** – 20th place: Arkadelphia High School (Mr. Bud McMillion) – There were 50 teams in this division
- **Division 4** – 31st place: Catholic High School (Mr. Paul Lincicome) – There were 33 teams in this division
- **Division 11** – 14th place: Central High School (Mr. Kent Moore) – There were 36 teams in this division
ASSOCIATE DEAN

EIT welcomed Dr. Abhijit Bhattacharyya, professor of applied science, as associate dean beginning in January 2011. Dr. Bhattacharyya took over for Dr. Russel Bruhn, who had served as associate dean since 2005. Dr. Bruhn decided to return to his role as professor and researcher in the Information Science Department.

NATIONAL ADVISORY COUNCIL

Four of the nine members of EIT’s National Advisory Council were able to get to Little Rock on January 27-28 despite snow-and-ice conditions across much of the northeast section of the country.

Ruth Greenstein, Wayne Johnson, Roger Liska and Jim Womble joined EIT department chairs and dean’s staff for a group dinner at Capers Restaurant the evening of January 27.

The following morning the advisory council members heard presentations on many aspects of EIT’s curriculum, including the new Ph.D. in Integrated Computing and the new B.S. degree in Construction Engineering. They then were given updates on the activities in each of the college departments – with special emphasis placed on EIT’s recruiting challenges and outreach efforts from Katie Young and Vernard Henley.

The meeting concluded with insightful and engaging conversation between EIT faculty and staff and the advisory council members, who offered their thoughts on ways the college can continue to build momentum and grow.

EIT Total: Grant Applications/Awards

| a. | Number of proposals submitted | 151 |
| b. | Total dollar amount requested in proposals | $33,647,195 |
| c. | Number of awards (proposals funded) | 73 |
| d. | Total dollars awarded | $9,453,525 |

EIT Total: Public Service

Note: Public Service is defined as the application of a faculty member’s discipline-based knowledge and skills to the problems of people and groups in society.

| a. | Lectures and presentations, discipline-based, to non-discipline related audiences | 53 |
| b. | Essays or articles in popular or semi-popular publications (in contrast to professional journals) | 0 |
| c. | Consultantships (paid) | 19 |
| d. | Consultantships (non-paid) | 34 |
| f. | Other | 395 |
EIT Total: Research/Creative Activities

Note: This section includes only completed items that have been published or presented since the last annual report.

a. Books 4
b. Books (new editions) 0
c. Research articles in professional journals 133
d. Research notes in professional journals 9
e. Formal presentations at professional meetings 139
f. Discussants at professional meetings 2
g. Art exhibits 31
h. Theatrical/musical productions 0
i. Other 95

EIT Personnel Changes

<table>
<thead>
<tr>
<th>Change Type</th>
<th>Name</th>
<th>Department</th>
<th>Most Recent Title / Rank</th>
<th>Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retired</td>
<td>Mary L. Good</td>
<td>Dean's Office</td>
<td>Dean Emeritus</td>
<td>PhD</td>
</tr>
<tr>
<td>New Hire (effective 7-1-11)</td>
<td>Eric Sandgren</td>
<td>Dean's Office</td>
<td>Dean</td>
<td>PhD</td>
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<tr>
<td>New Hire (effective 7-1-11)</td>
<td>Sheena Brooks</td>
<td>Dean's Office</td>
<td>Academic Support Specialist (Graduate Programs)</td>
<td>BA</td>
</tr>
<tr>
<td>Promotion and Tenured</td>
<td>Alexandru S. Biris</td>
<td>Applied Science</td>
<td>Associate Professor</td>
<td>PhD</td>
</tr>
<tr>
<td>Promotion and Tenured</td>
<td>Tansel Karabacak</td>
<td>Applied Science</td>
<td>Associate Professor</td>
<td>PhD</td>
</tr>
<tr>
<td>Promotion and Tenured</td>
<td>Cang Ye</td>
<td>Applied Science</td>
<td>Associate Professor</td>
<td>PhD</td>
</tr>
<tr>
<td>Separation</td>
<td>Sarai Rodgers</td>
<td>Computer Science</td>
<td>Administrative Assistant</td>
<td>N/A</td>
</tr>
<tr>
<td>New Hire</td>
<td>D. Kay Clark</td>
<td>Computer Science</td>
<td>Administrative Assistant</td>
<td>N/A</td>
</tr>
<tr>
<td>Promotion</td>
<td>J. Mike Tramel</td>
<td>Construction Management</td>
<td>Professor and Chair</td>
<td>MS</td>
</tr>
<tr>
<td>Return to Faculty</td>
<td>Mamdouh Bakr</td>
<td>Engineering Technology</td>
<td>Department Chair to Professor</td>
<td>PhD</td>
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## EIT Personnel Changes (continued)

<table>
<thead>
<tr>
<th>Change Type</th>
<th>Name</th>
<th>Department</th>
<th>Most Recent Title / Rank</th>
<th>Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotion (effective 7-1-11)</td>
<td>George Tebbetts</td>
<td>Engineering Technology</td>
<td>Department Chair</td>
<td>MS</td>
</tr>
<tr>
<td>New Hire</td>
<td>Youhua Chen</td>
<td>GIT / NASA EPSCoR Research (Gary Anderson)</td>
<td>Research Associate/Post Doc</td>
<td>PhD</td>
</tr>
<tr>
<td>New Hire</td>
<td>James Joyce</td>
<td>GIT made hire for Systems Engineering (Kenji Yoshigoe)</td>
<td>Research Associate/HPC Administrator</td>
<td>BS</td>
</tr>
<tr>
<td>Separation</td>
<td>David Clark</td>
<td>GIT / Strive/ Stokes</td>
<td>Research Assistant</td>
<td>MS</td>
</tr>
<tr>
<td>New Hire</td>
<td>Okba Al-Qadhi</td>
<td>GIT / Earthquake Center (Haydar Al-Shukri)</td>
<td>Research Associate/Post Doc</td>
<td>PhD</td>
</tr>
<tr>
<td>Separation</td>
<td>Tsai-Chi Li</td>
<td>GIT / Biology (Hong-Li Wang)</td>
<td>Temporary Post Doc</td>
<td>PhD</td>
</tr>
<tr>
<td>Separation</td>
<td>Becky Hart</td>
<td>GIT / Educational Outreach</td>
<td>Research Associate</td>
<td>MS</td>
</tr>
<tr>
<td>Early Retirement</td>
<td>Pat Sipes</td>
<td>GIT</td>
<td>Administrative Specialist III</td>
<td>N/A</td>
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<tr>
<td>Early Retirement</td>
<td>Diane Haynes</td>
<td>GIT</td>
<td>Research Assistant</td>
<td>BS</td>
</tr>
<tr>
<td>Early Retirement</td>
<td>Billy Sipes *</td>
<td>GIT</td>
<td>Research Assistant</td>
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</tr>
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<td>Disability</td>
<td>Ken Kalb</td>
<td>GIT</td>
<td>Instrumentation Technician</td>
<td>N/A</td>
</tr>
<tr>
<td>Separation</td>
<td>Chitrankan Singh</td>
<td>GIT / Systems Engineering (Sesh Mohan)</td>
<td>Research Associate/Post Doc</td>
<td>PhD</td>
</tr>
<tr>
<td>Separation</td>
<td>Fuyou Fu</td>
<td>GIT / Biology (Hong-Li Wang)</td>
<td>Research Associate/Post Doc</td>
<td>PhD</td>
</tr>
<tr>
<td>Transfer</td>
<td>Howard Burris</td>
<td>GIT (from Construction Management)</td>
<td>Research Associate</td>
<td>AS</td>
</tr>
<tr>
<td>Promotion &amp; Return to faculty</td>
<td>Russel Bruhn</td>
<td>Information Science</td>
<td>Professor / Stepped down from Assoc. Dean's position.</td>
<td>PhD</td>
</tr>
<tr>
<td>Promotion</td>
<td>Serhan Dagtas</td>
<td>Information Science</td>
<td>Professor</td>
<td>PhD</td>
</tr>
<tr>
<td>Promotion</td>
<td>Ningning Wu</td>
<td>Information Science</td>
<td>Professor</td>
<td>PhD</td>
</tr>
<tr>
<td>Promotion</td>
<td>Guoliang Huang</td>
<td>Systems Engineering</td>
<td>Associate Professor</td>
<td>PhD</td>
</tr>
</tbody>
</table>
RECRUITMENT

The recruitment process for Fall 2011 began by defining the target student population as students with an ACT composite score of 24 or above with an interest in STEM programs. The prospect pool was collected via referrals from current students, purchased lists, follow-up from outreach activities, and “interest cards” distributed during EIT outreach events, school visits, and college fairs.

The team visited college recruitment fairs throughout Arkansas during September, October, and November 2010, making special efforts to recruit students who excelled in calculus or pre-calculus. Contact information for our targeted population was purchased from ACT after building queries to return only academically prepared students, defined as 26 of higher composite ACT score, a 24 or higher on the ACT Math section, four years of high school math, a 3.0 high school GPA with an interest in STEM fields within Arkansas and Bowie County, Texas (whose students qualify for in-state tuition). It is significant to note that this query produced only 290 qualified prospects, an indication of the limited number of qualified recruits for EIT.

Each qualified student then received a letter, email, or a phone call offering the chance to visit and supplying information about programs and scholarships. Students with ACT scores of 24 or higher, and students with very high GPAs, were invited to attend a recruiting event with their parents to learn more about EIT’s programs and scholarship opportunities.

Recruiting Events

The recruiting team hosted high school seniors who matched the targeted educational achievement parameters and their parents at two recruiting events – October 30-31 and November 12-13, 2010.

Both events featured a dinner for parents to meet alumni, faculty, industry representatives who employ EIT graduates, and Student Services staff at the Little Rock Club, an upscale restaurant offering a picturesque view of Little Rock atop the 30th floor of the Regions Bank Building.

Prospective students met their assigned student ambassador at the University Commons and got an opportunity to experience what it means to be an EIT student by dining with ambassadors and spending the night in South Hall.

On Saturday morning, parents and prospective students assembled to receive an overview of the college, which featured ambassadors providing their own unique perspective on the
specifics of their undergraduate majors. Small groups were afforded tours of the Virtual Reality Center and the EIT Building, while scholarship appointments with Katie Young, Vernard Henley, and Jennifer Moody were conducted.

Twenty-seven prospective students attended the two recruitment events. Ninety-three percent of the students elected to attend EIT.

![Sneak Preview Weekends – 2010](image)

**RETENTION**

**Fall 2010: EIT Scholar Class of 2014**

The EIT Scholar Class of 2014, which consisted of 45 students, received a number of enrichment opportunities designed to increase community and enhance persistence.

- Expanded orientation via the PEAW 1124 Leadership Seminar: Topics addressed in the one-credit hour class include time management, budgeting, communication, group work, and project management.

- Service/Study time: Scholars were required to perform 10 hours of community service per week. Most students opted to fulfill this requirement by spending study time in the EIT Student Services lab. Non-profit service, professional development, and time spent with tutors satisfied this requirement as well.

- Living Community: Scholars were required to live in the Commons South Apartments or with their parents for their freshman year with upperclassmen serving as mentors and tutors. Three of the four floors were entirely populated by EIT Scholars.

- Learning Community: Freshmen had shared schedules in which many students had the majority of their classes together.

- Intrusive Advising: Students identified as “at-risk” were called in for individual counseling. Such students were required to submit accountability statements after the first semester as well as their plan for correction.
The EIT Scholar class of 2014 had an overall retention rate of 82 percent, and 31 of the 44 matriculated students – or 70 percent – successfully completed at least 24 credit hours during the Fall 2010 and Spring 2011 semesters with the required 3.25 GPA, thus qualifying them to continue on scholarship. It is expected that five students who failed to qualify to renew their scholarships will return to EIT programs and self-pay. Four students declared a major outside of EIT but remain at UALR.

Data indicates that of the students who did not meet scholarship renewal requirements, high school GPA was a better predictor of success than ACT score. In addition, academic difficulty was displayed as early as the fall semester. Of the eight students who are not returning to UALR, two had their scholarships canceled after the Fall 2010 semester for failure to earn a 2.00 GPA. Seven more were on probation for failing to meet the 3.25/12 hour standard. These students were notified via mail over the holidays and instructed to schedule individual counseling sessions to discuss strategies for improvement.

Professors confirmed that many of these students had weak class attendance as well. An online faculty referral system was implemented in Fall 2008 to identify at-risk students earlier in the semester when intervention is most effective, but faculty use of the online systems has been inconsistent.

**Fall 2011: EIT Scholar Class of 2015**

Changes have been implemented to the scholarship renewal requirements for the Fall 2011 entering freshmen cohort (Class of 2015) which should positively affect renewal rates, in turn increasing retention rates. Requirements have been aligned to more closely match the ADHE scholarship renewal requirements in an effort to streamline the process. Spring cumulative GPA has been reduced to 3.00 (consistent with the tipping point we have observed with EIT scholars). Earned hours have been increased from 24 per fall/spring to 30 per fall/spring academic year, resulting in greater progression to degree. As with the ADHE policy, students will be allowed self-pay to earn additional credits during one summer term should they fall short of hours or GPA during the regular academic year.

As of May 2011, the EIT Scholar Class of 2015 consists of 41 students from across the state, with the largest number coming from LISA Academy. The average composite ACT score for this group is 27.8, and the average GPA is 3.50.
EIT Scholar “Taking Care of Business”

EIT hosted orientation for 28 of the 41 Fall 2011 Scholars Class of 2015 on May 6, 2011. Parents were permitted, but were encouraged to allow the students to participate independently to foster autonomy. The goals for the day-long orientation included:

1. An introduction to college philosophy, terminology, and strategy;
2. Review of scholarship requirements;
3. BOSS tutorial (including UALR email);
4. Identification/declaration of major;
5. Advising (including concurrent credit/AP credit/IB credit evaluation);
6. Registration;
7. Housing assignments/roommate selection.

Students concluded the orientation with a copy of their Fall 2011 schedule, their student ID, their signed housing lease in hand, and the security of having already met their future roommates. They knew to confirm their registration in July and were prepared to begin college in August.

Supplemental Instruction/Tutoring

Supplemental instruction (SI) was continued through the 2010-11 academic year in traditionally difficult courses such as physics and calculus. Continued low participation in SI combined with increased demand for traditional tutoring led to a hybrid program for the Spring 2011 semester. Students submitted tutor requests through a web form and were matched to EIT ambassadors with mastery of the requested subject. Thirty-two students were paired with tutors (free of charge) in subjects including: Trigonometry, Calculus I, II, and III, Physics, Chemistry, Programming (C/C++, Assembly, HTML, Java), Networking, Database, Fluid Mechanics, Mechanics of Materials, and Dynamic System Modeling.
Outreach Activities for Middle School and High School Students

**ExxonMobil Bernard Harris Summer Science Camp**

UALR was one of 30 universities nationwide selected to receive a grant to host the ExxonMobil Bernard Harris Summer Science Camp, which brought 46 rising 6th through 8th grade students from across the state to campus for a two-week residential academic program.

The program, which attracted more than 120 applicants, is free and was designed by The Harris Foundation, whose mission is “taking an active role in shaping education in students entering middle school grades.” Forty-six students (23 boys and 23 girls) from 19 counties and 36 schools in 25 school districts across Arkansas were selected to participate in the camp from July 11-23. Forty-five students completed the academically rigorous program.

Almost twenty-two percent participants received free or reduced lunch at their respective schools. Every day, students attended classes in biology, chemistry, mathematics, engineering design, technology, and English.

*Middle school students in the ExxonMobil Bernard Harris Summer Science Camp verify their coordinates with their instructor, Carl Frank, using GPS units donated by Trimble to locate water samples taken at various locations across campus.*
The list below provides the number of students from each school and school district:

- **Beebe School District (Beebe)**
  - Beebe Middle School – 1

- **Benton School District (Benton)**
  - Benton Middle School – 1

- **Blevins School District (Blevins)**
  - Blevins Elementary School – 1

- **Diocese of Little Rock**
  - Christ the King Catholic School - 1

- **East End School district (Bigelow)**
  - Bigelow Middle School – 1

- **eSTEM Charter School District (Little Rock)**
  - eSTEM Elementary School - 1
  - eSTEM Middle School – 2

- **Fayetteville School District (Fayetteville)**
  - Holcomb Elementary School – 1
  - Holt Middle School – 1

- **Forrest City School District (Forrest City)**
  - Forrest City Junior High School – 1

- **Greenwood School District**
  - East Hills Middle School - 2

- **Huntsville School District (Elkins)**
  - St. Paul Elementary School – 1

- **Lakeside School District (Hot Springs)**
  - Lakeside Middle School – 1

- **LISA Academy (Little Rock)**
  - LISA Academy Middle School – 2

- **Little Rock School District (Little Rock)**
  - Forest Heights Middle School - 1
  - Horace Mann Middle School – 4
  - Pulaski Heights Middle School – 5

- **Lonoke School District (Scott, Lonoke)**
  - Lonoke Middle School – 2

- **Magnet Cove School District (Rockport)**
  - Magnet Cove Elementary School – 1

- **McGehee School District (McGehee)**
  - McGehee Elementary School – 1

- **Midland School District (Floral)**
  - Midland Elementary School – 1

- **Ouachita School District (Mount Ida)**
  - Ode Maddox Elementary School - 1

- **Pulaski Academy (Little Rock)**
  - Pulaski Academy Elementary School – 1

- **Pulaski County Special School District**
  - (Jacksonville, Little Rock, Sherwood, North Little Rock)
    - Bayou Meto Elementary School – 1
    - Chenal Elementary School – 1
    - Clinton Elementary School - 1
    - Joe T. Robinson Elementary School – 1
    - Pine Forest Elementary School - 1
    - Sylvan Hills Middle School - 1

- **Rogers School District (Rogers)**
  - Kirksey Middle School – 1
  - Lingle Middle School - 1

- **Springdale School District (Springdale)**
  - Westwood Elementary School – 1

- **Stuttgart School District (Stuttgart)**
  - Meekins Middle School – 1

- **Watson Chapel School District (Pine Bluff)**
  - Coleman Intermediate School – 2

Harris, the first African-American to walk in space, is founder and president of The Harris Foundation and is on the board of directors for the National Math and Science Initiative dedicated to improving science and math performance among American students.
High School Research Program

The High School Research Program (HSRP) is a three-week residential summer program designed to provide high school students with an opportunity to perform STEM-related research alongside faculty in a college setting. UALR faculty members serve as mentors for the students and provide unique individual learning opportunities that encourage scientific inquiry and promote the importance of conducting research. In addition, the residential program provides students with an opportunity to live on campus and acquire skills necessary to ensure successful matriculation.

Students were selected based on their academic merit, teachers’ recommendations, and their expressed, written desire to participate in the program. In an effort to provide more STEM-related project work, EIT partnered with the College of Science and Mathematics (CSAM) to create a larger pool of projects which resulted in an increased applicant pool. Ten of the 31 who applied to the program were accepted (32 percent acceptance rate). All of the accepted students (five male and five female) enrolled in and completed the program.

Ninety percent of the accepted students had a high school GPA of 3.5 or higher. Fifty-two percent of the applicants had a high school GPA of 3.5 or higher.

Distribution of the composite ACT scores for the enrolled students (7) who supplied such scores:

<table>
<thead>
<tr>
<th>Composite Score Range</th>
<th>Below 22</th>
<th>22 - 24</th>
<th>25 – 27</th>
<th>28 – 30</th>
<th>Above 30</th>
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<tbody>
<tr>
<td>% of Enrolled Students</td>
<td>14%</td>
<td>0%</td>
<td>14%</td>
<td>44%</td>
<td>28%</td>
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</tbody>
</table>

Applicants for the High School Research Program came from the shaded counties:
A list of student-mentor assignments is shown below.

<table>
<thead>
<tr>
<th>Student</th>
<th>Faculty Mentor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sarah Chen</td>
<td>Dr. Elizabeth Pierce</td>
</tr>
<tr>
<td>Alec Crow</td>
<td>Dr. Kenji Yoshigoe</td>
</tr>
<tr>
<td>Arnab Dey</td>
<td>Dr. Jingxiang Xi</td>
</tr>
<tr>
<td>Taylor Duvall</td>
<td>Dr. Jingxiang Xi</td>
</tr>
<tr>
<td>Whitney Gao</td>
<td>Dr. Fusheng Tang</td>
</tr>
<tr>
<td>Xavier Jones</td>
<td>Dr. Guoliang Huang</td>
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<tr>
<td>Calvin MacKenzie</td>
<td>Dr. Steve Minsker</td>
</tr>
<tr>
<td>Deborah Rookey</td>
<td>Dr. Gary Anderson</td>
</tr>
<tr>
<td>Jevin Tzeng</td>
<td>Dr. Mariofanna Milanova</td>
</tr>
<tr>
<td>Margaret Woods</td>
<td>Dr. Elizabeth Pierce</td>
</tr>
</tbody>
</table>

Since 2006, 64 students have attended the program and 41 of them have graduated from high school. All but two of the graduating seniors who attended the program (95 percent) have been tracked. Ninety percent of the contacted students enrolled in a four-year college or university after graduation from high school.

An overwhelming majority (87 percent) of the students have elected to enter STEM fields of study, with computer science and engineering being the two dominant fields. Twenty-eight percent of the students attending the program have entered UALR (EIT or CSAM).

**Engineering Scholars Program**

The Engineering Scholars Program (ESP) is a two-week residential summer program designed to increase the number of students entering engineering programs in Arkansas universities through exposure to hands-on engineering projects, plant trips, and interaction with industry engineers. In addition, the ESP includes counseling and advising sessions to assist students in preparing for college. The exposure to engineering and counseling and advising sessions help high school students make informed choices on appropriate course work during their high school years for pursuing future careers in engineering.

Students were selected based on their academic merit, teacher’s recommendations, and expressed, written desire to participate in the program. Twenty-two of the 39 students who applied to the program were accepted (56 percent acceptance rate). Twenty-two students (11 male and 11 female) enrolled in the program. Twenty students successfully completed the program (91 percent completion rate).

All of the accepted students had a high school GPA of 3.0 or greater. Ninety-five percent of the accepted students had a high school GPA of 3.3 or greater.
The map below illustrates the areas of the state from which the program attracted applicants and participants.

Arkansas Locality Map – 2010 Engineering Scholars Program

- Applicants
- Accepted Students
- Participants

Note: Map does not include participant from Puerto Rico

BEST Robotics

EIT served as a hub for the BEST Robotics Competition on November 6, 2010 at the gymnasium at Little Rock Central High School. Sixteen teams registered for the event. Twelve teams competed at the event in which students had to design and build a robot that could be controlled to accomplish various specified tasks. Teams competed on a specially built playing surface that contained various objects that were required to be carried or transported from one area to another within three minutes. Students were judged by EIT faculty and students on their engineering design notebook, sportsmanship and spirit, robot performance, and team exhibit and interviews.

Boosting Engineering Science and Technology (BEST) is a non-profit, volunteer-based organization whose mission is to inspire students to pursue careers in engineering, science, and technology through participation in a sports-like, science and engineering-based robotics competition.

Schools competing at the Little Rock hub were Arkansas School for Mathematics, Sciences & the Arts, Bauxite High School, Benton High School, Central High School (Little Rock), eSTEM High School, Hamburg High School, Ouachita River Schools – Oden Campus, Poyen High School, Pulaski Heights Middle School, Stuttgart High School, Two Rivers High School, and Watson Chapel High School.
Classroom Visits

School accountability concerns are virtually making this type of recruitment effort obsolete. Many teachers are reluctant and face increased scrutiny should they elect to utilize classroom instructional time to provide colleges an opportunity to speak to and recruit their students. EIT visited 127 students at three Arkansas middle schools and high schools. All of the students were contacted through existing outreach activities that provided a conduit to meet with the students or through special student assemblies and programs (e.g., career day) that were organized in conjunction with the school’s existing curriculum.

With accountability issues being a major concern for most school districts, classroom visits without any specific ties to the school’s curriculum will become difficult to schedule. However, those same accountability issues can be used to develop outreach events that can lead to increased access to prospective students. EIT uses a variety of outreach programs and events that provide unique opportunities to gain access to students and their teachers.

Lab Tours

More than 350 students visited EIT and took part in tours of the college’s labs. The content of the tours varied according to the amount of time teachers allocated. Students were also afforded tours of the campus and opportunities to meet faculty and discuss academic goals.

JETS TEAMS Competition

UALR was the only site in Arkansas for the Junior Engineering Technical Society’s (JETS) Tests of Engineering Aptitude, Mathematics and Science (TEAMS) Competition. Fifteen (15) teams from eight schools participated February 22, 2011. This event was held during National Engineer’s Week.

Teachers identified students who would comprise their schools’ teams. One hundred nine students brought textbooks, manuals, and calculators to UALR to solve actual engineering problems that were part of the two-part, three-hour test.

After registration, teachers were provided with coaching materials and sample problems that are aligned with their curriculum. The format of the competition is amenable to educators since schools compete only against schools of similar size (as determined by senior class size) and student team composition (teams comprised of 9th and 10th graders; teams comprised of 11th and 12th graders). Students work in teams of up to eight and collaborate to derive their answers. The top scoring teams from across the nation compete for national honors.
Participating schools in the 2011 JETS TEAMS Competition included:

- Arkansas School for Mathematics, Sciences & the Arts
- Arkadelphia High School
- Catholic High School
- eSTEM Charter High School
- J. A. Fair High School
- Little Rock Central High School
- Marvell High School
- West Memphis High School

State results from the 2011 JETS TEAMS Competition are shown below (all teams shown are competed in the 11th and 12th grade level unless otherwise noted).

- Division 1 – eSTEM Charter High School
- Division 2 – Arkansas School for Mathematics, Sciences & the Arts
- Division 3 – Arkadelphia High School
- Division 4 – Catholic High School
- Division 7 – West Memphis High School
- Division 11 – Little Rock Central High School

National Honors (only teams placing in the 75th percentile are shown):

- 11th/12th Grade Level
  - Division 2 – Arkansas School for Mathematics, Sciences & the Arts – 21st place
  - Division 11 – Little Rock Central High School – 20th place

**NSBE Arkansas Alumni Partnership**

EIT’s partnership with the Arkansas Alumni Chapter of the National Society of Black Engineers (NSBE) was strengthened through a series of successful events hosted at UALR. More than 45 high school students attended two half-day sessions designed to generate interest in engineering.

On February 19, 2011, an “Introduction to Engineering” seminar was held. More than 35 high school students and parents attended the half-day session to learn about engineering, view corporate and university information booths, and hear presentations about how to prepare for a career in engineering.

On April 30, 2011, the “Technical Seminar” was held. More than 20 high school students and parents listened to presentations about resume writing, interviewing skills, and the application process. The seminar also included a tour of the Virtual Reality Center. Participating students took part in an engineering team contest to conclude the seminar.
Regional Science and Engineering Fair Awards

To encourage and recognize Arkansas high school students’ efforts to pursue scientific research in the fields of systems engineering, computer science and information science, EIT created two awards to be given at each of the Intel International Science and Engineering Fair (ISEF) affiliated regional science and engineering fairs in the state of Arkansas.

The Excellence in the Computing and Information Sciences Award provided a $100 savings bond to the student whose project best utilized computer science or information science applications to improve the quality of life for humans or animals. Similarly, the Excellence in Engineering Award provided a $100 savings bond to the student whose project best used engineering concepts to improve the quality of life for humans or animals.

Faculty and staff served as judges at each of the regional science fairs and the awards were formally presented at each fair’s awards ceremony. Awardees for the 2011 EIT Regional Science and Engineering Fair Awards:

- **Northwest Arkansas Regional Science & Engineering Fair**
  - Cole Rickard - Chaffin Junior High School

- **Southeast Arkansas Regional Science Fair**
  - Natalie Byars - Star City High School
  - Christy Munson - Ridgeway Christian School

- **Northeast Arkansas Regional Science Fair**
  - Evan Henry - Annie Camp Junior High School
  - Alexandria Seals - Blytheville High School

- **West Central Science Fair**
  - Stephen Hu – ASMSA *
  - Arnab Dey – ASMSA *

- **Central Arkansas Regional Science Fair**
  - Joseph Berleant - Little Rock Central High School

*ASMSA: Arkansas School for Mathematics, Sciences & the Arts

Pre-College Diversity Engineering Program

The Pre-College Diversity Engineering Program (PCDEP) was founded in 2007 primarily to increase the number of historically underrepresented students in grades 6 through 12 who are prepared to pursue engineering degrees. In addition, the PCDEP is an economical alternative to the SECME program.

Initiated by EIT, the Pre-College Diversity Engineering Program is implemented at several schools, primarily in the Little Rock School District, through the formation of engineering clubs. The engineering clubs are sponsored by teachers who hold monthly meetings to encourage and promote engineering. Each club conducts activities and exercises tailored to the needs of the student members.

Students are encouraged to motivate their students to participate in engineering-related extracurricular activities as well as participate in the two mandatory events – Engineering Essay Contest and Engineering Olympics – sponsored by PCDEP.
There are more than 80 students registered in the Pre-College Diversity Engineering Program at the following schools:

- J.A. Fair High School
- Little Rock Central High School
- Horace Mann Middle School
- Pulaski Heights Middle School

**Engineering Essay Contest**

The Engineering Essay Contest promotes the development of reading, writing, comprehension and research skills of PCDEP participants. Registered PCDEP students write an essay about an engineering-related subject selected from a broad range of general topics. Students compete in four distinct competition levels that are determined by grade level.

First through third place winners receive $150, $100, and $50 savings bonds, respectively. Results for the Engineering Essay Contest:

- **Level I (6th and 7th Grades):**
  - 1st Place – Elisabeth Graf, Pulaski Heights Middle School, “Nanotechnology and Entropy”
  - 2nd Place – Michelle Smith, Pulaski Heights Middle School, “The Secret Ingredient”

- **Level II (8th Grade):**
  - 1st Place – Shonti Wilson, Horace Mann Middle School, “Genetically Altered Foods”

- **Level III (9th and 10th Grades):**
  - No Winners

- **Level IV (11th and 12th Grades):**
  - 1st Place – Austin Klais, J.A. Fair High School, “Engineering’s Impact on the Efficiency of Cars”
  - 2nd Place - Taylor Goodwin, J.A. Fair High School, “Engineering Applications within Sports”

**Engineering Olympics**

The Engineering Olympics, the second mandatory event, is designed to introduce students to engineering through competitive team events and exercises. Participating schools receive all materials necessary to compete in the Engineering Olympics at no charge. Schools electing to participate in the Engineering Olympics that are not members of the PCDEP are required to pay a nominal entry fee. Each Engineering Olympics team consists of no more than 10 students, and each student is required to participate in at least one event. The Junior Division Olympiad is for middle school students. High school students compete in the Senior Division Olympiad.

The Junior Division Olympiad was held February 26, 2011, and more than 60 students participated. Due to schools having to make up snow days, participation was reduced in the Junior Division Olympiad and only 10 high school students competed in the Senior Division Olympiad on March 12, 2011. Due to the large amount of interest in this event, PCDEP schools were permitted to have multiple teams.
In the Engineering Olympics, teams receive points for first through sixth place in each of the three events. Both Olympiads included a Critical Thinking Problems event in which teams of up to three students try to solve all of the problems correctly in the shortest amount of time.

The other two events in the Junior Division Olympiad were the CO$_2$ Dragster Competition and the Barge Competition. In the CO$_2$ Dragster Competition, students were required to build a balsa wood dragster within specifications and calculate the dragster’s speed in miles per hour. During the barge competition, students were required to construct a barge made of aluminum foil that would hold the most pennies and calculate the volume of their barge.

In the Senior Olympiad, the other two events were the Toothpick Bridge Contest and the Quick Stop Racer Competition. The Toothpick Bridge Competition required teams to design and build the lightest weight toothpick bridge from given design specifications that has the best design efficiency without deflecting more than ¼-inch while loads are being applied. In the Quick-Stock Racer Competition, teams were required to calibrate the braking system of a wooden car such that given a stopping distance the car will stop without exceeding the stopping distance.

The results from the Engineering Olympics:

**Junior Division Engineering Olympics**
- CO$_2$ Dragster Competition
  - Gold medal – Bethel Middle School
  - Silver medal – Mabelvale Middle School
  - Bronze medal – Bryant Middle School
- Critical Thinking Problems
  - Gold medal – Pulaski Heights Middle School (Team 1)
  - Silver medal – Horace Mann School
  - Bronze medal – Bethel Middle School
- Barge Competition
  - Gold medal – Pulaski Heights Middle School (Team 1)
  - Silver medal – Bryant Middle School
  - Bronze medal – Bethel Middle School
- Overall winner:
  - Bethel Middle School

**Senior Division Engineering Olympics**
- Toothpick Bridge Competition
  - Gold medal – Little Rock Central High School
- Critical Thinking Problems
  - (No winner)
- Quick-Stop Racer Competition
  - Gold medal – Little Rock Central High School
- Overall winner:
  - Little Rock Central High School

As students make last minute adjustments during the CO$_2$ Dragster Competition, EIT Ambassador Anthony Keener checks connections. Students had to convert their dragster’s speed from feet per second to miles per hour within 4 minutes to receive a qualifying time during this event in the 2011 Engineering Olympics.
Department of
Applied Science
University of Arkansas at Little Rock

Annual Report
for the period
July 1, 2010 – June 30, 2011

DR. HAYDAR AL-SHUKRI
Chairman
Summary of Highlights

Student enrollment in the Applied Science Program for the Fall 2010 semester was 134 PhD and 16 MS students. The enrollment for the Spring 2011 semester was 122 PhD and 13 MS students. The reduction in the enrollment was due to 28 students transferring from the Applied Science PhD Program to the new Integrated Computing PhD program by the start of the Spring 2011 semester. During the academic year, six students were awarded their doctorate degree and three students were awarded their MS degree. For this academic year, 33 new students enrolled in the Applied Science program.

The department was awarded $2,995,149 of externally funded grants. Also, the department requested $9,322,464.80 by submitting 16 proposals for external funding.

The department faculty had a successful accomplishment expressed by the publication of 55 journal articles and 21 papers or abstracts for conference participation.

The department moved its main office from ETAS 575A to the ETAS 300 suite in July 2010. Applied Science approved a new policy for departmental awards for its graduate students.

The department approved and started offering a new non-thesis MS degree.

Student Achievements

Achievements

Six students were awarded the doctorate of philosophy degree:

- Mr. Hom Kandel graduated in December 2010. Dissertation title: “Fabrication and Characterization of PrBa2 (Cu1-xMx) 3O7 (M=Al, Ga, Zn, Ni, Co, Fe; x=0.2) Epitaxial Thin Films.” Dr. Tar-pin Chen, major professor.


Mr. Srinivasan Vairavan graduated in May 2011. Dissertation title: “An Objective Assessment of Fetal Neurological Maturation Based on the Co-Variation of Brain and Heart-Rate Patterns.” Dr. Keith Hudson, major professor.

Three students were awarded master’s degree:


Awards

Two PhD students (Mr. Srinivasan Vairavan and Viney Saini) and one master’s student (Ms. Hacer Varol) received the M.K. Testerman award for excellence in research.

Mr. Jun Geng, a PhD student, received the department award for the Most Outstanding First Year Graduate Student.

Ms. Meena Mahmood and Mr. Allan Thomas, both PhD students, received the Presentation/Publication Award.

Faculty Achievements

The faculty of the Applied Science department conducted about 80 collaborative activities with other universities, state and local governments, and the private sector.

Dr. Haydar Al-Shukri

Continued the appointment of the department chair and the Director of Arkansas Earthquake Center.

Continued his collaboration with Iraqi universities. Collaborative agreements were signed between UALR and the University of Duhok and Kurdistan University of Science and Technology.

Continued work on NASA/EPSCoR, Space Grant, and DeepSix projects.
- Developed three-year projects to install and operate seven state-of-the-art seismic stations in Arkansas.
- Submitted two research grants to monitor induced seismicity (oil industry) and for earthquake risk assessment in Arkansas (USGS).
- Recruited 46 sponsored graduate students and expects the addition of 10 to 15 more.
- Continued monitoring induced seismicity related to oil shale operation near Enola, AR.
- Recruited three PhD students to the geophysics group.
- Gave numerous invited talks and news media interviews related to seismic activity in the state.
- Worked with the Guatemalan government through the National Guard to help the assessment process of natural disasters in that country.
- Conducted two international trips to help rebuild the Iraqi research infrastructure in the field of seismology and earth science.
- Traveled one week to France to initiate collaboration and student recruitment.
- Traveled to Jordan for one week to facilitate students’ admission to our graduate program.

Dr. Gary Anderson

- Supervised six graduate students and one undergraduate student.
- Published three journal articles.
- Refereed numerous conference articles for various organizations.
- Attended the IEEE Sensors Conference in Waikoloa, Hawaii.
- Served as a member of numerous department, college, and university committees.
- Served as the publications chair for the IEEE SMC 2011 Conference.
- Was section editor (Instrumentation) for IEEE Aerospace & Electronics Systems Magazine.
- Continued research on a three-year NASA EPSCoR grant, “Mobile Surveying for Atmospheric and Near-Surface Biosignature Gases.”

Dr. Abhijit Bhattacharyya

- His research group in Smart Materials and MEMS capped another successful year of collaboration with Los Alamos National Laboratory in New Mexico.
- His graduate student, Mike Wolverton, continues his doctoral research as a resident researcher in Los Alamos National Laboratory, funded by a Department of Energy fellowship.
- His group continues to be very productive in publishing journal papers, and he continues to be an active reviewer for several journals.
- Served the engineering community on behalf of the American Society of Mechanical Engineers as an ABET evaluator.
Dr. Abhijit Bhattacharyya (continued)

- Appointed Associate Dean for the College of Engineering and Information Technology, beginning January 2011.
- Successfully participated as part of a team for NSF-EPSCOR funding.
- Was a member of numerous department, college, and universities committees.

Dr. Alexandru S. Biris

- Continued serving the Director and Chief Scientist of the UALR Nanotechnology Center (funded by the state of Arkansas to serve as an independent R&D and service center for nanosciences).
- Main research interests focus on nanoscience and nanotechnology such as the development of novel nanomaterials with a wide variety of applications, ranging from energy to medicine. Research advances include the development of an electrodynamic screen for dust mitigation (in collaboration with NASA); nano-based antennas and sensors for military and civilian applications; anti-counterfeit security taggants; coatings for anti-icing applications; polymeric scaffolds and coatings for bone regeneration; nanomaterials for applications in agriculture; and the development of more effective cancer treatments through nanotechnology.
- Managing editor and member of the editorial board for the Particulate Science and Technology Journal.
- Co-founder and CTO of a private company, Orlumat LLC, that commercializes the technology developed by Dr. Biris at UALR/Nanotechnology Center in the area of tissue engineering.
- Co-founder and CTO of a private company, Proyectus International LLC, that commercializes the anti-counterfeit security taggant technology as developed by Dr. Biris and colleagues.
- Co-founder and CTO of nanolMG LLC, a company created to commercialize anti-counterfeiting technology.
- Developed novel methods to grow carbon nanotubes based on the radio-frequency excitation of metal nanocatalysts for the growth of high-quality carbon nanotubes with controllable morphologies and properties.
- Developed carbon nanotube inks that were applied to any substrate and formed into transparent electrodes biased to AC voltages. The result was the development of a transparent electrodynamic screen that can be placed on top of any surface and keep it free of dust deposition.
- Studied the growth of high-stability and electrically conductive nanostructural composite materials doped with carbon nanotubes.
- Developed an anti-counterfeit technology based on novel, highly customizable, nanostructure security sensors that allow for three levels of security identification and detection (optical, magnetic and spectroscopic).
- Developed new antennas constructed from nontraditional materials together with traditional antenna materials to form a type of antenna that has a wide range of uses.
Dr. Alexandru S. Biris (continued)

- Developed novel methods to target cancerous tumors and to kill the cancerous cells by designing special nanoparticles (seven nm in diameter) composed of Cobalt cores and covered with two to three graphitic layers and delivering them inside cancerous cells. These nanostructures have been successfully used to kill more than 98 percent of all the cancerous cells in a matter of minutes when excited with electromagnetic radiation.

- Another major research direction is antibody-directed delivery of such nanoparticles to tumors. Demonstrated that carbon nanotubes move through the lymphatic system, which is also used by the cancerous cells to spread into the body. Therefore it should be possible to individually target and destroy each cancerous cell. By using Raman Spectroscopy, for the first time showed that single cancerous cells can be detected while moving in the blood and lymph circulation after they are tagged with carbon nanotubes.

- Developed a new and complex coating that can be applied to the surface of medical/dental implants that is bio-compatible, could be bio-degradable, and presents a very high bio-compatibility and surface adherence for cells adjacent to the implant surface. Part of an ongoing tissue engineering research effort to produce 3D scaffolds that grow bone tissue.

- Produced 10 patent applications (from a total of 29).

- Expanded the Affiliate Scientist program to 48 science and education collaborators.

- Hosted 16 French students for a summer long internship. The students worked in various laboratories of different UALR professors.

- Received funding from the Department of Defense to develop coatings for anti-icing applications.

- Served as co-PI on a NASA-funded project to develop an electrodynamic screen for dust mitigation.

- Advised 13 PhD and eight undergraduate students along with two post-doctoral fellows and led three research assistant professors.

- Continues serving as co-founder and honorary president of the Romanian Nanomedicine Institute.

- Serves as advisor to the Amrita Engineering College in India.

- Served as a reviewer for the National Institute of Health & National Cancer Institute SBIR/STTR Program.

- His group’s research was presented at conferences such as MRS, ACS, IEEE, Nanotech Conference and Expo, and published in prestigious journals such as Carbon, Chemical Physics Letters, Chemistry of Materials, Advanced Biomaterials, etc.

- Chosen as spokesperson for the “I Create Little Rock” campaign funded by the city government and Chamber of Commerce.

- Chosen as a member of the 2010 Arkansas Business list of “40 under 40,” which honors men and women under the age of 40 who are helping to shape the future through their business and community involvement.
Dr. Qingfang He

- Supervised five graduate students and one undergraduate student.
- Had one journal article published and one submitted.
- Is preparing four articles for submission.
- Submitted annual report to NSF for CAREER grant.
- Attended three conferences, including one international conference in China.
- Presented an oral presentation at the 34th Annual Photosynthesis Conference.
- Submitted nine meeting abstracts including posters and oral presentations.
- Recruited two new graduate students.

Dr. Tansel Karabacak

- Studying nanostructured metal hydrides for hydrogen storage applications.
- Supervised six graduate students.
- Had four articles accepted for publication and one submitted for publication. Studying nanostructured metal hydrides for hydrogen storage applications. Investigating fabrication and properties of nanostructured electrodes for energy conversion and storage applications such as photovoltaics, fuel cells, and batteries.
- Attended two international conferences, and presented/co-authored 10 oral presentations and posters.
- Published nine journal and two conference papers.
- Submitted eight grant proposals (six as PI and two as co-PI) to federal agencies (NSF, Qatar-NPRP, DARPA, and DOE). Total dollar amounts of these proposals was about $3.8M, of which $3.5M was UALR's portion and about $2.2M was Dr. Karabacak's portion. Dr. Karabacak secured a NASA-EPSCoR grant of the amount $750,000. In addition, he has been serving in one DOE grant, and also in two ASGC/NASA grants. Was involved in several collaborative projects with faculty at UALR, Arkansas State University, Rensselaer Polytechnic University, Penn State, University of Delaware, University of Nevada at Reno, Rochester Institute of Technology, University of New Hampshire, Los Alamos National Laboratories, Argonne National Laboratories, Technology University of Eindhoven (Netherlands), Sabanci University (Turkey), Nevsehir University (Turkey), and Leibniz Institute for Surface Modification (Germany).
- Prepared the course material for the “Engineering Materials” undergraduate course taught in Fall 2010.
- Served as an organizing committee member and chair for the Glancing Angle Deposition Session in Thin Film Division of AVS 57th International Symposium. Established contacts with one company and eight program managers from federal funding agencies.
- Refereed several journal articles for various professional journals.
Dr. Mariya Khodakovskaya

- Supervised four PhD students and two undergraduate students.
- Received RID Grant Award from Arkansas Space Grant Consortium.
- Served as PI for NSF-EPSCoR “Kathleen Thomsen Hall” grant and Collaborative Research Grant from Arkansas Space Grant Consortium.
- Published three papers and submitted three papers for publication.
- Submitted one patent application.
- Developed new course, “Biochemistry of Biological Molecules.”
- Served as an organizing committee member and got award from FDA for organization of 4th International BioNanoTox Research Conference.
- Served as member of nine dissertation committees for graduate students of UALR and ASU.
- Established many collaborative projects with faculty of UALR, industry, state and national organizations.
- Was invited to make three lectures/talks for academic institutions of Arkansas.
- Participated in student exchange program between CESI University (France) and UALR by supervising projects for two French students during Summer 2010.

Dr. Andrew Wright

- Working with Agrobotics to develop an automated precision fertilizing system with a mobile robot.
- Developing proposal to be submitted to NSF Control Systems Division, “New Paradigm for Fault Tolerant Feedback Control.”
- Developing proposal with Dr. Guoliang Huang (very early stages) on Fault Tolerant Bridge Monitoring.
- Investigating bioreactor design with Dr. Qingfang He to submit proposal to DOE or NSF.
- Preparing three journal articles for submission.
- Completed design of CASSY mobile robot platform for ASCI 7312.
- Designed graphical user interface software to communicate with CASSY robot platform.
- Developed Matlab simulation of CASSY mobile robot platform.
- Completed control program for CASSY mobile robot platform.
- Completed Layered Mode Selection Logic paradigm.
- Supervised three graduate students.
Faculty Achievements (continued)

Dr. Cang Ye

- Served as chair, Object Recognition and Detection Session, IEEE Internal Conference on Mechatronics and Automation, Xi’an, China.
- Received Toshio Fukuda Best Paper Award in Mechatronics at 2010 IEEE International Conference on mechatronics and automation.
- Featured as “Today’s Exclusive” on the NSF’s online publication, Science360, for NSF project.
- Interviewed with Allan Russell at Insight Radio about the “Smart” Cane project.
- Served as an NSF panelist and reviewed proposals.
- Serves as PI of a NASA EPSCoR RID Supplement Award ($8,000) and an ASGC Award ($12,000).
- Serves as a co-PI of a NASA EPSCoR Research Award ($675,000), a senior personnel of the NSF EPSCoR RII Track 2 Award ($3,370,951).
- Published four peer-reviewed papers; submitted two additional papers, one of which has been accepted.
- Supervised two graduate students and one undergraduate student.

Curriculum

The following curriculum activities were conducted during the 2010-2011 academic year:

- One new graduate course was approved: ASCI 7328 Tissue Culture and Genetic Engineering.
- ASCI 7306 Real-Time Embedded Systems was approved as a Candidacy Examination Preparation Course.
- The Candidacy Examination areas were updated by including regular courses and adding the Discipline Specific Applications option to ALL emphases areas. Some regular candidacy preparation courses were appropriately moved to different candidacy subject areas.
- The non-thesis option for the Applied Science MS program was approved. Three alternatives were approved for this non-thesis option. These alternatives are intended to cater to students who: 1) are in the ASCI PhD program and want to acquire the ASCI MS degree since they satisfy a majority of the cognate requirements; 2) want to complete some of the requirements of the ASCI PhD program as a precursor to applying for admission to the PhD program; 3) want to complete a predominantly course-based MS degree.
Grant Applications/Awards

*Please provide the numbers indicated. (The ORSP monthly report is a convenient source of information.)*

a. Number of proposals submitted 16

b. Total dollar amount requested in proposals $9,322,464.80

c. Number of Awards (proposals funded) 5

d. Total dollars awarded $2,995,149.00

Public Service

*Please provide the numbers indicated. Public Service is defined as the application of a faculty member’s discipline-based knowledge and skills to the problems of people and groups in society.*

a. Lectures and presentations, discipline-based, to non-discipline related audiences 37

b. Essays or articles in popular or semi-popular publications (in contrast to professional journals) 0

c. Consultantships (paid) 0

d. Consultantships (non-paid) 0

e. Other (please add other categories of public service as needed): 47

Contact with Possible Funding Agencies 47

Research/Creative Activities

a. Books 1

b. Books (new editions) 0

c. Research articles in professional journals 55

d. Research notes in professional journals 0

e. Formal presentations at professional meeting 21

f. Discussants at professional meeting 3

g. Art exhibits 0

h. Theatre productions/musical productions 0

i. Other (Manuals/Book Chapters) 5
Information Technology

Faculty information, including research interests and personal web links, were updated on the Applied Science website along with program admission requirement information for potential students. Also, the Graduate Student Handbook was made available on the homepage in a PDF version for current and potential students to review.

Recruitment and Retention

The Department of Applied Science had successful and retention efforts during the past academic year. Thirty-three new students (3 MS and 30 PhD) were enrolled in the program. Also, the program was successful in recruiting international students who are fully supported by their governments or international funding agencies to continue their graduate education in the United States. Trips were conducted to France, Syria, Romania, Turkey, and other countries to recruit such students. Forty-two Iraqi students (fully supported by the Iraqi Ministry of Higher Education) are on campus, and we anticipate the addition of up to five more students by the fall.

Personnel Changes

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<th>Name</th>
<th>Department</th>
<th>Most Recent Title / Rank</th>
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<td>Alexandru S. Biris</td>
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<td>Assistant Professor</td>
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<td>Cang Ye</td>
<td>Applied Science</td>
<td>Assistant Professor</td>
<td>PhD</td>
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Annual Report
for the period
July 1, 2010 – June 30, 2011

DR. REMZI SEKER
Chairman
Summary of Highlights

The 2010-2011 academic year was very productive for Computer Science. The faculty was involved in approximately 20 externally funded projects that cover a broad spectrum of collaboration; some were federal, some were international, while some were at the state level. This distribution of funded projects shows the department is on the right track for fulfilling its mission of serving the local community’s needs while remaining competitive nationally and globally.

The Computer Science department has made a conscious decision to define its niches and build strength in those niches. The faculty decided that information assurance, application of computer science to healthcare, and mobile computing would be our niches. The department has been strengthening its know-how in these areas. As such, the department has prepared a mobile computing class to be offered in Fall 2011. Team MachineHeads – EIT graduate students Engin Mendi and Serpil Tokdemir from Turkey and Albert Moropoulouos of Little Rock, plus UCA undergraduate Ecehan Bayrak of Little Rock, ranked sixth nationwide in Microsoft’s Imagine Cup competition. The project was in the field of application of computer science to healthcare.

The new college-wide PhD program in Integrated Computing was launched in Fall 2010 with Dr. Yoshigoe as its coordinator. This new PhD program is a true UALR exemplar for building successful interdepartmental programs that address and serve the emerging needs of our students and stakeholders in a highly collaborative and sustainable manner. In the light of the success of the new PhD program, the CS Department’s Graduate Committee has worked on strengthening the standards for its MS degree. The committee has worked closely with the Associate Dean of the College, the Graduate School, and the Office of International Programs.

Dr. Bush was hired in Fall 2010 to strengthen the GAME option in the BS program and the CS applications in healthcare area. Dr. Xie and Dr. Yu were also hired in Fall 2010 to strengthen the Information Assurance, Mobile Computing, and Healthcare Applications areas. All three faculty have participated in a project with the UAMS Psychiatric Research Institute in their first year.

The department moved to the new EIT Building in May 2010 and has quickly settled into its new home. The department had been physically apart from the rest of the departments in the college, and moving to the new building has ended that disconnect. Being together with other departments in the college has increased the amount of collaboration between CS faculty and faculty from other departments.
Student Achievements

In general, our students continue to do well. The program continues to be popular among Arkansas students. Our MS program, especially our strength in Information Assurance (IA) and the IA minor, attracts students. Department-level awards were presented to the following students:
1. Service Award: Keenan Gillespie
2. Undergraduate Research Award: Matthew Epperson
3. Outstanding Junior Award: Wes Copeland
4. Outstanding MSc Student Award: Emre Ermisoglu

Our students also received the following EIT awards:
5. Outstanding PhD Student Award: Jiang Bian
6. Outstanding Senior Award: Summer Hall

Faculty Achievements

1. Six Computer Science faculty members [Drs. Bayrak (1), Chiang (1), Milanova (2), Seker (5), Tang (1), and Yoshigoe (4)] have been either PIs, Co-PIs or active senior investigators and participants on several National Science Foundation (NSF) and Department of Defense (DoD) grants.
2. Dr. Milanova continues to be active on a DHS and NIH INBRE grant.
3. A combined total of 32 journal and conference publications and book chapters by the department's faculty including several collaborative publications.
4. The department now puts significant weight on the venues of publication. Well respected journals and conferences are targeted.
5. All of our faculty have been active on international and multi-university grants and collaborations.
6. Dr. Seker continues to serve as Associate Editor for Computers & Electrical Engineering.
7. Dr. Seker serves on ACM Computing Curriculum Committee for CS2013.
8. Faculty has served on the program committees of 17 major conferences in the field.

Curriculum

1. CPSC faculty members have reviewed and updated the CPSC MS Program.
2. CPSC, IFSC, and SYEN have successfully started and managed the PhD program in Integrated Computing, which began in Fall 2010.
3. Surveys for graduating seniors and employers have been developed, and data collection is in progress. The survey outcomes will be used to provide extra guidance for strengthening our curriculum.
4. Close ties with employers have been formed and active student mentoring geared toward steps after graduation is in effect.
Grant Applications/Awards

*Please provide the numbers indicated. (The ORSP monthly report is a convenient source of information.)*

a. Number of proposals submitted 13

b. Total dollar amount requested in proposals $2,243,521.00

c. Number of Awards (proposals funded) 9

d. Total dollars awarded $860,361.00

Public Service

*Please provide the numbers indicated. Public Service is defined as the application of a faculty member’s discipline-based knowledge and skills to the problems of people and groups in society.*

a. Lectures and presentations, discipline-based, to non-discipline related audiences 3
   *Note: 3 made to high school students/teachers; local professional society and associations (ISACA, Arkansas Bar Association, etc.)*

b. Essays or articles in popular or semi-popular publications (in contrast to professional journals) 0

c. Consultantships (paid) n/a

d. Consultantships (non-paid) n/a

e. Other (please add other categories of public service as needed):

Research/Creative Activities

*Include only items which have been published or presented since the last annual report. Works in progress should be included in the annual report of the year actually published (a, b, c, or d) or completed (e, f, g, h, or i).*

a. Books 5 book chapters

b. Books (new editions)

c. Research articles in professional journals 8

d. Research notes in professional journals

e. Formal presentations at professional meeting 18

f. Discussants at professional meeting 21

g. Art exhibits

h. Theatre productions/musical productions

i. Other 4
Information Technology

All departmental labs moved to new EIT Building in Summer 2010

Recruitment and Retention

Collectively our faculty members have participated in five recruitment events (individually or as part of the EIT effort) and have visited three schools or colleges.

Personnel Changes

Please list instructional and research personnel (non-classified), by name, and provide information as indicated. (Omit lecturers and adjunct faculty unless one of these titles is used for full-time employees).

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<td>Administrative Assistant</td>
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<td>Joined</td>
<td>D. Kay Clark</td>
<td>CPSC</td>
<td>Administrative Assistant</td>
<td>NA</td>
</tr>
</tbody>
</table>

Other personnel changes.
Use this section for personnel changes not covered above which you feel should be included in the annual report.

None
Department of Construction Management
University of Arkansas at Little Rock

Annual Report for the period July 1, 2010 – June 30, 2011

MICHAEL TRAMEL
Chairman
Summary of Highlights

Student enrollment in Construction Management Department’s again declined with 153 declared majors enrolled. The addition of the new Construction Engineering program to the department added an additional 32 new majors, bringing the total number of students to 185. The addition of the engineering students allowed the department to continue to be one of the largest departments on campus. The new student enrollment was the lowest in several years with only 47 new students entering – 26 in Fall 2010 and 21 in Spring 2011. Adding to the reduction in the student population is that 57 students graduated in the past year – 30 in Fall 2010 and 27 in Spring 2011. The continued downturn in the national economy has caused unemployment rates in the construction industry that are higher than the national average. The lack of employment opportunities discourages students from pursuing a professional degree in construction management, so they tend to seek other career fields.

The Construction Management Advisory Council is still one of the most active and supportive in EIT. The chair, Bill Hannah, CEO of Nabholz Construction, has decided to turn the leadership position over to Clay Gordon, who is a graduate from the Construction Management program and a Nabholz vice-president. Bill Hannah’s leadership has been instrumental in shaping the standing of the Construction Management program, and Clay Gordon will continue to help build the reputation of the program as well.

This year the Arkansas Contractors License Board donated $40,000 for their scholarship, an additional $21,000 for the new Howard Williams Endowed Scholarship, and $5,000 for the Department’s gift account. The Construction Management Department currently has 24 scholarship funds with 21 funds endowed.

For the fourth year in row the Construction Management Department was the first academic unit on campus to achieve 100 percent participation in the Campus Campaign.

The Associated Builders and Contractors of Arkansas requested for the third year that the Construction Management Department faculty be the judges for the 2011 ABC Excellence in Construction Awards. Faculty members reviewed more than 30 company project portfolios and graded each one based on their division criteria.
Construction Management Program

The program submitted the one-year report for re-accreditation, and it was accepted as submitted. The report outlined how the one weakness dealing with collecting data from alumni and industry was being corrected. An initial survey was conducted to identify alumni’s email addresses and to determine if the survey instrument provided the required data. The data collected provided enough information for a more comprehensive survey instrument and alumni population. Jim Carr is responsible for the survey and has established a web-based survey instrument and is in the process of obtaining the necessary data required for maintaining accreditation.

The summer class enrollment is also down from last year with a total of only 76 students enrolled in eight classes. This was the first summer that CNMG 2218 Building Information Modeling and CNMG 3302 Engineering Economy were offered and the first time CNMG 4342 Construction Safety was cancelled due to lack of enrollment.

The University Plaza Construction Management Methods Laboratory is in the process of being cleaned up and organized now that construction activities have been completed. The laboratory areas are being finalized, and the new methods courses are scheduled to be taught in the Plaza in Fall 2011. Mark Squires has done an excellent job in preparing the Plaza for the new methods labs.

The Construction Management Department had 20 students on three teams that competed in the annual TEXO/ASC Region V student construction competition. The Commercial Team coached by Mike Tramel did not place for the first time in three years. The UALR heavy-civil team took second place again and only missed first place because they were 15 seconds below the scheduled presentation time. Their project estimate difference was only $197,000 off the actual project bid of $98,939,030. The other teams’ bids ranged from $4,000,000 to $51,000,000 from the actual bid. UALR has a long history of having the teams with the closest estimate to actual cost. The team, coached by instructor Larry Blackmon, consisted of captain Mark Gernhart (project management), Stephanie Shank (scheduling), Dustin Mize (contract questions), Chris Meyer, Josh Morris and Ross Lovenstein (estimating).

The competition problem was sponsored by the McCarthy Texas Civil Division and consisted of an expansion of a wharf for the Houston Port Authority. The project included concrete piers that had to be placed underwater and a concrete deck placed on top of the piers. The project had to be scheduled and completed in 600 days. The project required 17 cranes, with most of them placed on barges to allow construction to be completed in the required timeframe. The team was locked in a hotel room from 6 a.m. to 10 p.m. Sunday and did not have any outside contact for the 16-hour period that they worked on the problem. McCarthy would send them information by phone on subcontracting prices and changes and then would inspect the team to check for compliance. Food was furnished by McCarthy, and the six students spent the entire time in the small hotel room.

The other competition teams were from Oklahoma State University (first place), University of Oklahoma (third place), Texas A&M University, Texas Tech University, University of North Texas, University of Louisiana Monroe, and Louisiana Tech University.

This was the first time that TEXO/ASC Region V had an international design build student competition with a team returning from the Dublin Institute of Technology and a team from
UALR. The UALR team consisted of six Chinese students from the Xi’an University of Architecture and Technology and was coached by Haiyan Xie and Wei Shi. ASC Region V made a rule change to allow exchange students to compete in the division. The Dublin team had observed the competition last year and had a better understanding of what to expect. This was the first time that UALR had competed in the design-build division much less the international design-build division. The UALR team’s presentation used building information modeling and the judges commented on the lack of a standard cardboard model.

Dr. Nick Jovanovic and two students attended the National Student Steel Bridge Competition at Texas A&M University. The students acted as competition volunteers, and Dr. Jovanovic went to observe the competition in preparation for competing once he gets new ASCE student organization approved.

Dr. Amin Akhnoukh sponsored a team at the ASC Region II Student Competition for LEED to see if this was a competition that we would be interested in doing in the future once we establish a LEED course.

The Department governance and promotion and tenure documents were finalized by the faculty and submitted to the dean in compliance with the approval process.

Construction Engineering Program

Fall 2011 was the first semester for the new Construction Engineering program, and it is off to an excellent start with 32 declared majors. Dr. Jovanovic was appointed as the unpaid program coordinator and is the sole advisor for the majors at this time. He attended training with ABET in preparation for accrediting the new program once the first graduate has completed the program. ABET will not make an accreditation visit until it can examine transcripts from the first graduates. Dr. Jovanovic was selected as an observer for an ABET accreditation visit to Cleveland State University, Department of Civil Engineering. This allowed him to experience the internal process of how a Civil Engineering visiting team evaluates a program. He is scheduled to attend a one-week training seminar for assessment in August 2011, and this along with the ABET training he has completed will help him in preparing the assessment and evaluation plan so it can be implemented and improvements made to close the loop. It should also help him in writing the self-study, which must be completed by June 2013 to coincide with the projected graduation of the first students from the program.

Dr. Jovanovic researched the other construction engineering programs’ curricula to ensure UALR’s curriculum will comply with ABET requirements. He also met with more than 10 engineering firms in Arkansas to ensure the curriculum will prepare graduates for employment. The result of the meetings and research resulted in the preparation and approval of 47 curriculum changes that were approved by the Construction Management Department faculty. A large number of the changes had been scheduled after the accreditation visit for construction management. The revisions not only updated the curriculum but also incorporated new courses identified by the assessment plan. The overall result also reduced the number of credit hours for both programs.

Funds were requested for the new construction engineering program in next year’s budget along with salary adjustments for the two full-time engineering faculty members.
Student Achievements

- The 2011 Excellence Awards for Academic Scholarship were given to:
  - Andrew Brown
  - David Dalporto
  - Mark Gernhart
  - Jacob Powell

- UALR took second place in the ASC/TEXO Region V Heavy Civil Division student competition. Team members were:
  - Mark Gernhart
  - Dustin Mize
  - Ross Lovenstein
  - Stephanie Shank
  - Josh Morris
  - Josh Meyer

- UALR’s first ASC/TEXO Region V International Design Build Division student team was comprised of:
  - Chris McKenney
  - Roshita Jordan
  - Duo Zhao
  - Fan Zhang
  - Mini Zeng
  - Yiqing Deng
  - Jeyang Xie
  - Yuan Hao

- Sigma Lambda Chi International Construction Honor Society inducted 13 new candidates and one honorary faculty on April 29:
  - Andrew Allison
  - Nathan Anthony
  - Steven D. Bray
  - Roland Csege
  - Kevin Allen Fink
  - Paul Hastings Jones
  - Eunice Muhammad
  - Aaron Matthew Stevens
  - Eric Sullivan
  - Landon Ricky Voigt
  - Ron David Wilkerson
  - Austin Williams
  - William Keith Wimpee
  - Nickolas Jovanovic – Honorary

- Sigma Lambda Chi International Construction Honor Society 13 new candidates on November 12:
  - Robert Bradford
  - Andrew Brown
  - Hilda Cox
  - David Dalporto
  - Justin Davis
  - David DeFreitas
  - Christie Freeman
  - John Garrison
  - Anthony Graham
  - Chris McKenney
  - Jacob Powell
  - Tim Shnaekel
  - Bruce Stracener
- Brandon Baxter: Undergraduate research in the development of high-performance lightweight concrete mixes (Dr. Amin Akhnoukh funded research)
- Allen Harris: Undergraduate research in the effects of curing temperature on concrete (Dr. Amin Akhnoukh funded research)
- Christie Freeman: Undergraduate research in the detection of reinforcement bars in concrete (Dr. Amin Akhnoukh funded research)
- Roshita Jordan: Undergraduate research in the development of lightweight concrete using environmental friendly materials (Dr. Amin Akhnoukh funded research)
- Randy Murray: Undergraduate research in the development of green high-strength concrete mix (Dr. Amin Akhnoukh funded research)

Faculty Achievements

Akhnoukh, A.
- Passed the Principles and Practices of Engineering Examination with a specialization in structures and will soon be a licensed Professional Engineer (PE) in Arkansas
- Participated in the faculty/staff exchange program with the University of Graz in Austria. Dr. Akhnoukh presented his research to his counterparst in Austria. In a further step to encourage the collaboration with the University of Graz, Dr. Akhnoukh received the Graz faculty visiting UALR and visited with them in his concrete lab.

Carr, J.
- Elected Director for the Associated Schools of Construction Region V.
- Taught a two-month course at the Xi’an (China) University of Architecture and Technology. The students in the course were a group of 31 government officials. The course was to prepare the students for a one-semester course at the Public Policy Institute at Duke University.
- Served on an ACCE accreditation team reviewing East Carolina University.

Jovanovic, N.
- Appointed program coordinator for the new Construction Engineering program, which had 32 students in the first semester.
- Chosen by the American Society of Civil Engineers to be an ABET Program Evaluator for programs in construction engineering, architectural engineering, and civil engineering and was an observer during an accreditation visit to Cleveland State University, Department of Civil Engineering.
- Students in CNMG 4389 continue to have a 100 percent pass rate for the Fundamentals of Engineering Examination (FE).
Tramel, J.

- 2011 Faculty Excellence Award for Public Service for the College of Engineering and Information Technology.
- Taught safety courses for undergraduate and graduate students at the Xi’an University of Architecture and Technology in Xi’an China.

Xie, H.

- Awarded the Northrop Young Researcher Award by the Graduate Institute of Technology, George W. Donaghey College of Engineering and Information Technology

Curriculum

Program Changes

1. New eight-semester plan for Construction Management degree
2. New eight-semester plan for Construction Engineering degree

Course Suspensions

1. CNMG 1301 The Construction Industry – replaced by CNMG 1201 and the EIT FYC course
2. CNMG 2310 Materials and Methods I – replaced by CNMG 2313/2113
3. CNMG 2312 Materials and Methods II – replaced by CNMG 2314/2114
4. CNMG 2195 Service Learning – replaced by CNMG 2113
5. CNMG 4195 Professional Service Development – replaced CNMG 2114
6. CNMG 4447 Soil Mechanics – replaced by CNMG 3347

New Courses

1. CNMG 1313 Construction Engineering Materials (CHEM 1402; MATH 1451)
2. CNMG 2113 Construction Methods I [CNMG 2313]
3. CNMG 2114 Construction Methods II [CNMG 2314]
4. CNMG 3321 Steel Construction (CNMG 3333)
5. CNMG 3374 Hydraulic Engineering (CNMG 3370) [CNMG 3378]
6. CNMG 4310 Construction Financial Management (ACCT 2310; CNMG 3339)
7. CNMG 4145 Professional Constructor Certification [CNMG 4245]
8. CNMG 4361 Green Construction (junior standing or above)
9. CNMG 2370 Engineering Statics
10. CNMG 2374 Thermal and Fluid Engineering
11. CNMG 3371 Engineering Dynamics
12. CNMG 3376 Engineering Structural Mechanics
Change Credit Hours
1. CNMG 1205 Drawings and Specifications – changed credit hours, and description
2. CNMG 4211 Estimating – changed credit hours, and prerequisites
3. CNMG 4245 Construction Management - changed credit hours, and prerequisites

Change Title (and other changes)
1. CNMG 1101 Construction Engineering Colloquium – changed title, type, and description
2. CNMG 4100/4200/4300 Independent Study in Construction – changed title, description, and prerequisites
3. CNMG 4391 Cooperative Education in Construction – changed title, description, and prerequisites

Change Description (and other changes)
1. CNMG 1201 The Construction Industry – changed type and description
2. CNMG 2314 Service Systems of Buildings – changed description and prerequisites
3. CNMG 3347 Soils and Foundations – changed description and prerequisites
4. CNMG 3195 Community Service Projects – changed description and prerequisites
5. CNMG 4322 Building Structure Design – changed description and prerequisites
6. CNMG 4389 Professional Engineering Licensure – changed description and type
7. CNMG 4395 Professional Development – changed description and prerequisites
8. CNMG 4199/4299/4399 Special Topics in Construction – changed description
9. CNMG 4218 Advanced BIM (title changed to “Construction Modeling and Design, and CNMG 2314 added as a prerequisite)

Change Prerequisites Only
1. CNMG 2313 Construction Materials – changed prerequisites
2. CNMG 2218 Building Information Systems – changed prerequisites
3. CNMG 2323 Construction Administration – changed prerequisites
4. CNMG 3327 Field Operations – changed prerequisites
5. CNMG 3333 Statics and Strength of Materials – changed prerequisites
6. CNMG 3339 Bid Process – changed prerequisites
7. CNMG 4329 Construction Planning and Estimating – changed prerequisites
8. CNMG 4334 Construction Contracts and Law – changed prerequisites
9. CNMG 4342 Construction Safety – changed prerequisites
10. CNMG 4376 Mechanics of Materials – changed prerequisites
11. CNMG 4379 Heat Transfer – changed prerequisites
12. CNMG 4385 Construction Engineering Design Experience – changed prerequisites
Grant Applications/Awards

*Please provide the numbers indicated. (The ORSP monthly report is a convenient source of information.)*

a. Number of proposals submitted 25

b. Total dollar amount requested in proposals $516,350

c. Number of Awards (proposals funded) 15

d. Total dollars awarded $37,650

- Arkansas Contractors Licensing Board Award funded $5,000
- Carr, J., NAHB funded $3,000
- Tramel, J., LEA funded $7,900
- Tramel, J., AGC funded $2,000
- Tramel, J., ASC/TEXO Award funded $750

Public Service

*Please provide the numbers indicated. Public Service is defined as the application of a faculty member’s discipline-based knowledge and skills to the problems of people and groups in society.*

a. Lectures and presentations, discipline-based, to non-discipline related audiences 1

b. Essays or articles in popular or semi-popular publications (in contrast to professional journals) 0

c. Consultantships (paid) 10

d. Consultantships (non-paid) 0

e. Other (please add other categories of public service as needed):

- Professional, University and Community Service 84
- Professional Development 21
- Professional Associations, Memberships, Certifications, and Registrations 100
Research/Creative Activities

Include only items which have been published or presented since the last annual report. Works in progress should be included in the annual report of the year actually published (a, b, c, or d) or completed (e, f, g, h, or i).

a. Books 1
b. Books (new editions) 0
c. Research articles in professional journals 15
d. Research notes in professional journals 0
e. Formal presentations at professional meeting 15
f. Discussants at professional meeting 0
g. Art exhibits 0
h. Theatre productions/musical productions 0
i. Other 23

Information Technology

The Construction Management Department continues to update and utilize technology in nearly every course in the curriculum and was the first department in EIT to offer on-line courses. CNMG 4361 Green Construction was introduced in Fall 2010. Additionally, a new online course dealing with construction green delivery systems just received funding, and a new course in building codes is being developed for Fall 2011. The new online take-off for estimating has been incorporated into CNMG 3339 Bid Process and has been instrumental in the student competitions.

Dr. Blacklock added new electronic testing equipment to the soils laboratory. Dr. Jovanovic ordered new equipment for a structural analysis teaching laboratory that will allow students to measure tensile and compressive loads in beams as well as structural deflections and compare them to theoretical predictions. Dr. Akhnoukh has also added new equipment to the high-strength laboratory through his funded research that benefits students doing undergraduate research.

Recruitment and Retention

The Construction Management program is going to have to refocus its recruiting activities to work to attract more students. Scholarship funds may need to be used to attract more entering freshman. Mike Tramel met with several community college advisors to inform them about the program and about transfer credits that can be used for the program. Mike Tramel and Dr. Jovanovic attended the UALR undeclared majors event, the UALR recruiting event, and the EIT recruiting event.
Dr. Jovanovic has started a campaign to inform professional engineers about the new Construction Engineering program. He has developed an advertisement poster that was sent to the undeclared students and has posted it in various locations. One of the problems he faces is the lack of scholarship funds for the new program. All the existing scholarships are only for construction management students. He is planning to approach engineering firms and ask for scholarship funds for the construction engineering students.

Personnel Changes

Please list instructional and research personnel (non-classified), by name, and provide information as indicated. (Omit lecturers and adjunct faculty unless one of these titles is used for full-time employees).

<table>
<thead>
<tr>
<th>Change Type</th>
<th>Name</th>
<th>Department</th>
<th>Most Recent Title / Rank</th>
<th>Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotion</td>
<td>James Tramel</td>
<td>Construction Management</td>
<td>Professor</td>
<td>M.S.</td>
</tr>
</tbody>
</table>

Other personnel changes. Use this section for personnel changes not covered above which you feel should be included in the annual report.

Larry Blackmon was added to the Department as a Laboratory Technician/Part Time Instructor who will teach one class a semester along with his staff duties.
Department of Engineering Technology
University of Arkansas at Little Rock

Annual Report
for the period
July 1, 2010 – June 30, 2011

DR. MAMDOUH BAKR
Chairman
Summary of Highlights
The department of engineering technology (ET) enjoyed a successful academic year with rising student enrollment, expansion, development and update of lab facilities, and more successful graduates. The department was also successful in developing a reliable composite method for course and program assessment that holds promise for a quantitatively based continuous improvement process. In addition, the department offered for the first time two webcast courses on an experimental basis to determine the impact of this approach on enrollment and student success.

Many more ET students, in collaboration with faculty, became engaged in undergraduate research and research presentations, and were recognized for their outstanding performance. Many of them successfully competed with students from regional peer institutions, a testament to the rigor and quality of their education. In addition, graduating seniors showed a high degree of skill and achievement in their capstone projects and the presentations that described them. Some of the senior projects were performed with local companies, where student performance and achievement were widely recognized by practicing engineers and managers.

It is also noteworthy that Dr. Hirak Patangia’s persistent efforts to develop a laboratory-based photovoltaic solar energy program are paying off, as he received a $200,000, three-year grant to develop such a curriculum for educating young engineers about solar power applications. This will allow ET to be the first department on campus that will offer green energy courses.

The department outreach activities included supporting the AEDC Industrial Retention Work Group, and working with AEDC on plans for the provision of technical support to an Arkansas-based supplier network for the aerospace industry.

Student Achievements

Scholarship Achievement
The department grants competitive, merit scholarships from funds received from industry and foundations to recognize and reward outstanding students enrolled in Engineering Technology programs. The annual amount varies depending on the return on investment and on current donations.
Following are the scholarship awards recipients for Fall 2010. Each of the winners received a cash award of $750:

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Major</th>
<th>Class</th>
<th>GPA</th>
<th>Scholarship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Henry Okoh</td>
<td>ECET</td>
<td>Sr.</td>
<td>3.61</td>
<td>Wilhelm</td>
</tr>
<tr>
<td>Tasha Sims</td>
<td>ETME</td>
<td>Jr.</td>
<td>3.84</td>
<td>Timex</td>
</tr>
<tr>
<td>John Bumpers</td>
<td>ECET</td>
<td>Pb.</td>
<td>4.00</td>
<td>Dietz</td>
</tr>
<tr>
<td>Andrew Bedinghaus</td>
<td>ETME</td>
<td>Sr.</td>
<td>3.58</td>
<td>Wilhelm</td>
</tr>
<tr>
<td>Christopher Elkins</td>
<td>ECET</td>
<td>Jr.</td>
<td>3.06</td>
<td>Timex</td>
</tr>
<tr>
<td>Kristle Hill</td>
<td>ECET</td>
<td>Sr.</td>
<td>3.16</td>
<td>Timex</td>
</tr>
</tbody>
</table>

In addition, the following students were recognized for academic achievement during the EIT college annual awards ceremony held in May 2011. Awardees were given special plaques to recognize their achievement:

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Major</th>
<th>GPA</th>
<th>Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jonathan R. Levesque</td>
<td>ECET</td>
<td>4.00</td>
<td>Outstanding Freshman</td>
</tr>
<tr>
<td>Jared A. Smith</td>
<td>ECET</td>
<td>3.91</td>
<td>Outstanding Sophomore</td>
</tr>
<tr>
<td>Thomas A. Epperson</td>
<td>ECET</td>
<td>3.89</td>
<td>Outstanding Junior</td>
</tr>
<tr>
<td>Sri Nikhil Gupta Gourisetti</td>
<td>ECET</td>
<td>3.88</td>
<td>Outstanding Senior</td>
</tr>
<tr>
<td>Henry Meyers</td>
<td>ETME</td>
<td>3.60</td>
<td>Outstanding Freshman</td>
</tr>
<tr>
<td>Christopher Terry</td>
<td>ETME</td>
<td>3.90</td>
<td>Outstanding Sophomore</td>
</tr>
<tr>
<td>Daniel Shelman</td>
<td>ETME</td>
<td>3.81</td>
<td>Outstanding Junior</td>
</tr>
<tr>
<td>Andrew Bedinghaus</td>
<td>ETME</td>
<td>3.58</td>
<td>Outstanding Senior</td>
</tr>
</tbody>
</table>

Larry Morrison received the Outstanding Electronics and Computers Senior Project award for his project, “A Retro Industrial Type Clock.” The purpose of the project was to design, construct and demonstrate a multifunction industrial clock, which can be synchronized with the NIST atomic clock.

Philip P. Schmidt received the outstanding Mechanical Senior project award for his project, “Analysis and Development of an Industrial Retention Model for Arkansas.” The project was developed in collaboration with the AEDC - Industrial Retention Work Group, which was charged with the development of a plan to help existing industries in the state cope with various factors such as downturn in the economy and changes in prospects due to changes in technology and in the marketplace. The goal of the project was to formalize a model approach, using the available data, to help industries in distress using the state’s and educational institutions’ resources.

Bob Rands received the department service award for his active participation and efforts in the student IEEE chapter activities and for his efforts in managing the Student Robotic Competition project.
Research Achievement

At UALR’s annual Undergraduate Research Expo poster competition in April, Nikhil Gupta, a senior in the Electronics and Computers Engineering Technology Program, won the first place award in the Engineering & Technology category for his research presentation, “Multipath Mixed-Signal Technique to Generate Digitally Tunable Passbands.” Mentor was Dr. Hirak Patangia.

Andrew Bedinghaus, a senior in Mechanical Engineering Technology, won third place in the Engineering & Technology category for his research presentation, “Efficient Micromixers for Microfluidic Devices.” Mentor was Dr. Srikanth Pidugu.

Mohammad Afzal Siddiqui, a senior in the Electronics and Computers Engineering Technology Program, won honorable mention in the Engineering & Technology category for his research presentation, “Novel Maximum Power Point (MPPT) Controller for Harnessing Solar Energy.” Mentor was Dr. Hirak Patangia. The research goal was to develop an optimum operating mode for photovoltaic solar collectors.

Rohit Sharma and Anurag Saha, both seniors in the Electronics and Computers Engineering Technology Program, won honorable mention in the Engineering & Technology category for their research presentation, “Smart Healthcare Using RFID.” Mentor was Dr. Sesh Mohan.

Academic and Professional Presentations

James Playford, a junior in Mechanical Engineering Technology, won first place in the ASME poster competition, for his presentation on “Thermal Conductivity of Aluminum and Stainless Steel Cellular Foams.” Research was conducted by James Playford, Swaminadham Midturi, Srikanth Pidugu, and Rahul Kanthabhabha Jeha. The competition was held March 31 through April 2 at the Student Professional Development Conference at the University of Arkansas at Fayetteville.

James Playford also won first place for his oral presentation on “Thermal Conductivity of Aluminum and Stainless Steel Cellular Foams” at the 95th Annual Arkansas Academy of Sciences meeting, which was held April 8-9 at the University of Arkansas at Monticello. Research was conducted by James Playford, Swaminadham Midturi, Srikanth Pidugu, and Rahul Kanthabhabha Jeha.

Student Achievement in Regional College Competition

Thomas Epperson and Stephen Kirchner, Electronics and Computer Engineering Technology majors, representing the student chapter of the IEEE at UALR, won first place in the design competition April 16-17 at the IEEE Region 5 annual conference in Baton Rouge, La. IEEE Region 5 includes Louisiana, Arkansas, Texas, Oklahoma, Missouri, Kansas, Colorado, New Mexico, South Dakota, Wyoming and part of Illinois. The competition project required knowledge of power electronics and low-power digital design. For finishing in first place, the students received $500 and electronic gifts from National Instruments Corp.
Senior Projects

Research and discovery is included in the engineering technology curricula through the capstone course requirement. Commonly called senior projects, these include academic research, research chosen by student teams, and research to solve problems for local and regional companies.

Some successful senior projects presented at the end of the spring semester benefited local companies. These included “Vacuum Mold Sealing” by Andrew Bedinghaus, Jeremy Little and Brad Woodward for LM Wind Power and “Fixture to Simplify Mid-Cabin Curtain Production” by Jon Tyler and Cassie Tipton, for a local aircraft completion center. (Further information is provided under Student Achievement.)

Faculty Achievements

Professor David Luneau

Beside his focus on teaching and continuous course improvement, Prof. Luneau continued his research work in the area of “Remote Camera Sensing” with primary focus on the design and development of small wireless cameras to monitor nest activities for some of the endangered bird species. In this respect he collaborates with other researchers from Arkansas and around the country, who benefit from the advancement in camera and communication technology in their research. He and his collaborators have published their findings in suitable periodicals. These include the following: Luneau, M.D. Jr., Noel, Brandon L. “A wireless video camera for viewing tree cavities,” Journal of Field Ornithology, 81(2):176–185, 2010. In addition, he maintains his professional service activity as the Technical Director for the Solar Splash solar boat competition sponsored by the ASME. It is noteworthy that the miniature cameras enclosures designed by Prof. Luneau were produced on the rapid prototype machine in the CAD labs at UALR.

Dr. Steve Menhart

Dr. Menhart has been actively engaged in the development and implementation of course and curriculum assessment in the department in addition to being the department representative on the college assessment committee. He authored and presented a paper entitled “Embedding Assessment Into The End of Course Evaluation Form” at the 2010 ASEE Golf Southwest Annual Conference in Lake Charles La., in March 2010. He has been an advocate of maintaining a closed-loop assessment process, where results of the assessment are directly used for continuous improvement. He also has undertaken a major revision of the ECET 4304: Industrial Controls course to bring it up to date with new developments in the programmable microcontrollers. This also required a major revision of the associated lab work. (Further details are given under Curriculum).

Dr. Swaminadham Midturi

Dr. Midturi contributed in multiple ways in the areas of teaching, research and outreach activities, both to the department and EIT. In addition to facing the need to adjust the teaching method to suit the level of preparation of the entering mechanical engineering technology students in ETME 2317: Manufacturing Processes, he also managed to teach a multilevel graduate/undergraduate course in vibration to the mechanical majors in the college. He also participated in teaching and mentoring students in the senior project courses, in the Mechanical Engineering Technology program.
Dr. Swaminadham Midturi (continued)

Dr. Midturi’s research in the area of material properties and applications has won him and his students a number of awards, publications and conference presentations:

“Thermal Conductivity of Aluminum and Stainless Steel Cellular Foams” by S. Midturi, S. B. Pidugu, J. Playford, Rahul KJ, and S. Stanage won first place in the poster presentation by James Playford at the 2011 ASME Regional Student Professional Development Conference held at the University of Arkansas in Fayetteville March 29-30.

“Thermal Conductivity of Aluminum and Stainless Steel Cellular Foams,” a presentation by James Playford, won first place in the Undergraduate Research in the Physical Sciences Category at the 95th Arkansas Academy of Sciences Conference held April 8-9 at the University of Arkansas at Monticello. Drs. Midturi and Pidugu were mentors on the project.


“Synergistic Modeling Study of Metallic Foams” was a poster presentation by Sam Stanage at the 19th Annual Arkansas Space Grant Symposium at Petit Jean Mountain April 20. Co-Authors S. Midturi and Jim Steuber.

The abstract was accepted for “Thermal Characterization of Open Celled Aluminum and Stainless Steel Foams”, by S. Midturi, S. B. Pidugu, James D. Playford, and K.J. Rahul for the ASME International Conference to be held Oct. 20 in Denver.

Dr. Midturi’s outreach activities include work with LM Wind Power on the mold sealing project, work with the Arkansas Economic Development Commission (AEDC) on providing technical assistance to the aerospace supplier base in Arkansas, and a presentation on “Partnership Opportunities Between UALR and Cloyes Gear & Products: Industrial Research Collaboration” to the President and CEO, and the Engineers of Cloyes Gear & Products Co., at Subiaco on Dec. 10.

Dr. Hirak Patangia

Dr. Patangia coordinates the Electronics and Computers program, advises students, and stays in touch with them. He is also the advisor of IEEE student organization, which maintains a fairly active agenda. In addition to his teaching load, he mentors and manages a major share of the undergraduate research in the department.

He is an experienced educator who adopts the Project Based Learning (PBL) approach, and weaves this approach in his lectures and student assignments. He relies on regular feedback from students and adjusts his teaching methods to achieve the greatest impact. This is extremely helpful because of the variance in students’ background and level of preparation. He also emphasizes the development of students’ communication skills. Among the projects he undertook in 2011 was the complete update and revision of the department-published textbook used in ECET 1302, a freshman-level course intended to inform students about the engineering technology major. (Description of the course change is covered in the Curriculum section.)
Dr. Hirak Patangia (Continued)

His current research activities including sponsored research:

1. Ballast design for CFL lamp for standalone solar application
2. Use of solar energy in highway deicing
3. Vibration Energy Harvester (SURF Grant - ADHE - $3900)
4. Solar powered cooler for portable application (SURF Grant - ADHE - $3900)
5. Batteryless PV application with super capacitor for Structural Health Monitoring (SHM)
6. Single sideband (SSB) generation using SPWM signaling
7. Development of an efficient photovoltaic test bed for green energy education (AEDC - Energy Office - $60,126)
8. Development of Novel Learning Materials for Green Energy Education Centered around photovoltaic Test Station (NSF $200,000, three years)

His recent publications and conference presentations include:


In addition, Dr. Patangia has a strong interest in encouraging and sponsoring undergraduate student research. His students are regular participants in the UALR Annual Undergraduate Research Expo, and many have been recognized with awards. In the 2011 competition, he mentored the top award winner. The list of undergraduate student research is included in the “Student Achievement” section.

Dr. Srikanth B. Pidugu

Dr. Pidugu is the 2011 winner of the Excellence in Teaching Award in the EIT college. His annual activities reflect commitment to teaching and student success. He maintains a highly interactive learning environment and stimulates open communication with students in his classes. One of the regular users of the Blackboard educational system software, which he utilizes to interact with his students outside the classroom while encouraging student interaction and teamwork in the classroom.

In addition, he is pioneering the adoption of webcasting as a means of teaching engineering technology courses to urban working students. This blended approach to teaching engineering courses requires a special effort to revise the course structure to allow off-campus students remote access to the virtual classroom, at the same time arranging for critical elements of the course (such as lab work and exams) to be consolidated where students are only required to attend a much reduced schedule on-campus. This has the potential of increasing enrollment and student performance.
Dr. Srikanth B. Pidugu (Continued)

His research work, including sponsored research:

1. Modeling of Mixing and Micro Channels (SURF - ADHE - $3,900)
2. Modeling of Bubble Micromixers (SURF - ADHE - $4,000)
3. Thermal Conductivity of Foam Materials
4. Application of FLUENT Computational Fluid Dynamics Software

He has also encouraged and mentored undergraduate student research. This research is listed in the “Student Achievement” section.

His recent publications and conference presentations include:

- Pidugu, S. B., Abdel-Salam, T., & Bayraktar, T. “Flowfield Analysis in T-Junction Microchannel with Bubble Formations,” Proceedings of 8th International Conference on Nanochannels, Microchannels, and Minichannels, Montreal, Canada, August 1-5, 2010

In addition, Dr. Pidugu maintains an active role in student professional development as faculty adviser to the ASME and ASHRAE student chapters.

Prof. George Tebbetts

Prof. Tebbetts is the coordinator of the mechanical engineering technology program (MET). He manages the program, scheduling classes, recruiting part-time faculty, assigning courses, and advising students in addition to teaching a number of courses. He has also been involved in expanding and modernizing the CAD labs. He maintains up-to-date training in CAD software, and has helped students and faculty in designing and producing parts for their own projects and research, using the rapid prototyping machine, housed in the CAD lab.

Prof. Tebbetts is an excellent teacher, who is rigorous but flexible in accommodating students, and in motivating them to succeed. In addition, he serves or chairs a number of department, college and university committees, having direct impact on student success and welfare.

Prof. Pete Tschumi

In addition to carrying a full teaching load, Prof. Tschumi advises the Bachelor of Applied Technology (BAT) - Industrial Computing Majors, and chairs the department committee responsible for managing scholarship funds. He has also been active in student recruiting and in working with two-year colleges to identify suitable majors and advise interested students. In addition, he provided leadership in helping the department and the university develop and review revised governance documents, which are required to be in agreement with the Senate and the university-approved policy.
Prof. Pete Tschumi (continued)

He is also active in faculty governance, and participates in a number of department, college and university committees. He provided studies and research to support the revision of the university admission policy, which seems to be bearing fruit. In addition, he shepherded a two-year effort to develop and receive the approval for an "Ethics in Engineering" course in May 2010. The course is available for adoption by other EIT departments to satisfy the requirements of the accrediting organizations.

Dr. Wenle Zhang

Dr. Zhang focuses primarily on teaching and lab development. He is a regular user of the Blackboard educational system software. He also is offering ECET2305: Circuit Analysis II using webcasting to allow off-campus students to attend lectures remotely, and to use a reduced schedule to attend the course on-campus. Results has so far been encouraging.

His research focus is in Artificial Intelligence and Neural Networks. His current publications and conference papers include:


Dr. Mo Bakr, Department Chair

This academic year has been productive for the department of Engineering Technology (please see summary on the first page). The department receives regular inquiries about the ET programs, mostly from two-year college students. Streamlining the response regarding the various inquiries and questions, including the status of transfer courses, has helped prospective students understand the department’s programs and requirements and in turn helped recruitment. In addition, establishing communication with two-year college program directors has helped provide a mutual understanding of the desired level of preparation for two-year college graduates. Continuous efforts in this area hold promise in recruiting students and expanding programs.

The previously implemented end-of-course indirect assessment was combined with course retention data and objective assessments from students’ performance to provide a profile used to diagnose deficiencies and develop corrective measures. The purpose is to improve student success while maintaining program quality. This was discussed with the chancellor and the provost, with respect to the university efforts to improve student retention and graduation rates.

Dr. Bakr’s personal achievements, beside course development and improvement, included appointment to the “sustainability committee” and serving on the Student Projects and Rewards subcommittee. Also, he was appointed to AEDC’s Industry Retention Work Group, which required attending meetings and hearings to determine the most productive method to implement an industry retention model in Arkansas.
Research activities centered around senior projects and included:

1. "Mold Sealing Application." The project was jointly undertaken and funded by LM Wind Power, which manufactures wind turbine blades. The purpose of the project was to improve and simplify the mold sealing process in preparation for resin casting.

2. "Fixture Design to Improve the Productivity of Mid-Cabin Curtain Production" The project was jointly undertaken with a local business aircraft finishing company. The project was considered to be a labor and cost saving measure and was aimed at producing mid cabin curtains for a line of aircrafts produced by the company.

3. "Mini Baja Race Car Project" The project involved evaluation of the previous race performance, identifying systems and components on the vehicle that did not perform well enough in the past, perform the necessary technical and stress analysis, redesign and reconstruct these systems and components, and test the vehicle on a simulated race track to evaluate the design improvements.

4. "Design, Construction and Testing of a Four-Point Vehicle Low-Lift System." A team of three seniors in mechanical engineering technology conceived the need, analyzed the market demand and conceptually designed a system consisting of four electric-powered scissor-type jacks that are remotely controlled from a portable central platform. The project involved the design, development, construction and testing of a prototype.

Curriculum

The textbook for ECET 1302 and SYEN 1304, “Introduction to Electronics and Electrical Systems: a PBL Approach” (PBL: Project Based Learning), and its accompanying lab book were revised and published for Computer and Electronics students. Class material that was developed through NSF funding has been updated with new examples and expanded material to accommodate students’ feedback. The assignments have been upgraded to make the course more practice-oriented. A calculus application is emphasized where appropriate.

ECET 4304: Industrial Controls, a required course, is microcontroller-based, which previously used the Freescale 9S12 microcontroller. The course has been revised to be based on several Microchip PIC microcontrollers. The change reflects the prevalence of PICs and also student interest in the new course content. The course uses new hardware and software. In addition to all new lecture materials, a set of new lab experiments was developed and tested.

Grant Applications/Awards

*Please provide the numbers indicated. (The ORSP monthly report is a convenient source of information.)*

| a. Number of proposals submitted | 9 |
| b. Total dollar amount requested in proposals | $529,987 |
| c. Number of Awards (proposals funded) | 5 |
| d. Total dollars awarded | $238,008.00 |
Public Service

Please provide the numbers indicated. Public Service is defined as the application of a faculty member’s discipline-based knowledge and skills to the problems of people and groups in society.

a. Lectures and presentations, discipline-based, to non-discipline related audiences  2
b. Essays or articles in popular or semi-popular publications (in contrast to professional journals)  0
c. Consultantships (paid)  1
d. Consultantships (non-paid)  2
e. Other (please add other categories of public service as needed):
   Computer network service for church  1
   Judge Science/Engineering Competition  1
   College Program Evaluation  1
   Mentor High School Students  1

Research/Creative Activities

Include only items which have been published or presented since the last annual report. Works in progress should be included in the annual report of the year actually published (a, b, c, or d) or completed (e, f, g, h, or i).

a. Books
b. Books (new editions)

c. Research articles in professional journals  1
d. Research notes in professional journals

e. Formal presentations at professional meeting  11
f. Discussants at professional meeting

g. Art exhibits

h. Theatre productions/musical productions

i. Other
Recruitment and Retention

The department participates in campus recruiting events including open houses for visiting high school and middle school students. This commonly involves planning demonstrations and making presentations to help the audience understand the nature of engineering education and the opportunities available in the field. In addition, the department faculty and chair participate in recruiting events at high schools and two-year colleges. They make a presentation covering the department programs and answer questions. The chair and program coordinators also maintain contacts with program directors at two-year colleges to apprise them of curriculum and entry requirements.

The department considers retention an important performance indicator. Retention data is collected each semester and made available to department faculty. In addition, course and program assessment composite measures include the course retention ratio, which is an important element in the consideration of course improvement.

Personnel Changes

Please list instructional and research personnel (non-classified), by name, and provide information as indicated. (Omit lecturers and adjunct faculty unless one of these titles is used for full-time employees).

<table>
<thead>
<tr>
<th>Change Type</th>
<th>Name</th>
<th>Department</th>
<th>Most Recent Title / Rank</th>
<th>Highest Degree</th>
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<tbody>
<tr>
<td>None</td>
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Other personnel changes.

Use this section for personnel changes not covered above which you feel should be included in the annual report.
Department of Information Science
University of Arkansas at Little Rock

Annual Report
for the period
July 1, 2010 – June 30, 2011

Dr. Elizabeth Pierce
Chairman
DEPARTMENT OF INFORMATION SCIENCE
UALR PROVOST’S ANNUAL REPORT
JULY 1, 2010 – JUNE 30, 2011

Summary of Highlights
The Information Science Department at UALR is home to five programs: the Information Science B.S. Program, Information Technology Minor, Information Quality Graduate Program, Bioinformatics Graduate Program, and our newest program, the Graduate Certificate in Technology Innovation. In addition to their daily operations, the five programs accomplished the following milestones during 2010-2011:

Information Science Program:
The Bachelor of Science in Information Science (IFSC) combines the techniques and concepts of computer science with those of information management to produce graduates who are qualified for professional positions in the information technology field. Students learned the basic concepts and techniques for designing better information products, creating more efficient and effective information systems, evaluating the quality and security of data stores, and anticipating new forms and technologies for information. Graduates find positions as database administrators, network specialists, programmer/systems analysts, and web developers.

Teaching: This year we overhauled our undergraduate curriculum, eliminating redundant, obsolete, or low-value courses so our students could have more instruction in web/mobile technologies and have greater flexibility in choosing upper-level major electives. We are reviewing several more ideas for further improving our students’ learning experiences. We continue to streamline and refine our assessment processes in anticipation of our next interim ABET accreditation report, which is due this summer.

Scholarship: Our tenure and tenure-track faculty were extremely productive this year. Nearly everyone (82 percent) participated on grants in addition to producing more than three dozen articles for journals and conferences, participating in professional meetings, and contributing book chapters. Our faculty mentored graduate students in the Information Quality Graduate Program, the Bioinformatics Graduate Program, and the Integrated Computing/Applied Science Doctoral Programs.

Service and Other Activities: In addition to supporting the department, our faculty lent their time and expertise to the Information Science discipline by reviewing numerous papers, serving as program committee members and on editorial boards, and assuming leadership positions
in professional societies. This year several members of our department were recognized for their teaching (Catherine Lowry and Thomas Wallace), leadership (John Talburt) and research activities (Rolf Wigand and Xiaowei Xu). Efforts are under way to improve our recruiting and retention through the use of social media (e.g., Facebook), more faculty-student interactions, and better academic-career advising.

**IT Minor:**

The Information Technology Minor is designed for students in majors that do not offer an intensive computing component. IT Minor students learn essential technical, business and communication skills for solving real-life problems and for working productively in a team environment. The IT Minor consists of three six-credit courses.

- ITEC 3610 Introduction to Information Technology and Applications – Introduces students to the IT industry and knowledge-based tools.
- ITEC 3650 Guided Applications in Information Technology and Industry Processes – Focuses on broad application of IT such as spreadsheets, database management, programming, and internet applications.
- ITEC 4610 Project Development and Portfolio Defense – Provides students with a practical, field-based capstone experience.

In fall 2010, 13 students completed the IT Minor program. In their final semester, these students successfully completed website projects for these clients: reBounce, a start-up company that refurbishes tennis balls; the Arkansas Collegiate Drug Education Committee, which has as its mission educating college-age students about the dangers of alcohol and drugs; Unityware, a software development company focusing on medical software that allows secure and on-time record sharing among healthcare entities; and Mesolight, LLC, a start-up company developing novel, luminescent, nano-particle products and technologies for applications in medical diagnostics, molecular biology, drug delivery and optoelectronics.

In spring 2011, 15 students in the IT Minor program participated in a competition to design a database and website for the Arkansas Home Builders Association. Both of these sections of the IT Minor included working professionals who wanted to enhance their computer skills.

The summer Cyber Teacher Certificate designed for Little Rock School District teachers in grades K-12 was offered in the summer of 2010. 14 teachers from the Little Rock School District completed the six-week, 12-credit hour IT course that prepares “teacher leaders” to instruct colleagues and students in technology.

**Information Quality Program:**

The Information Quality (IQ) Program prepares students to pursue careers including Information Quality Manager, Chief Data Officer, Information Quality Analyst, Information Quality Consultant, and Information Quality System Developer. It also enables students to pursue doctoral-level graduate studies in preparation for information quality research and instructional roles. The focus of the IQ curriculum is on the concepts, principles, tools, models, and techniques that are essential for information quality definition, measurement, analysis, and improvement. The program has made significant progress in all three of its areas of focus: academic programs, research and professional service.
Academic Programs: The UALR Information Quality graduate program started in fall 2006 with 25 students enrolled in the Master of Science in Information Quality (MSIQ). An Information Quality track was added to the Applied Science Ph.D. program in 2008. In spring 2011, more than 60 candidates were enrolled in the IQ graduate program. To date the MSIQ program has graduated 41 students and 3 from the Ph.D. program.

The IQ program is unique in that it can simultaneously support both distance and on-campus students through a blended classroom experience that integrates the live classroom with a virtual (webinar) interactive classroom. The program has 15 distance education students including students in Brazil, Finland, and South Africa. In 2010-11, four distance students graduated from the MSIQ program. These students resided in Dallas, Tx.; Bakersfield, Ca.; Atlanta, Ga.; and Brazilia, Brazil. All four students traveled to the UALR campus to defend their master’s projects.

Research and Professional Service: The IQ graduate program continues to gain recognition. The International Conference on Information Quality was held at MIT for 13 consecutive years, before UALR was selected to host the 2010 ICIQ event November 12-14. Dr. Elizabeth Pierce serves on the editorial board of the ACM Journal of Data and Information Quality, and Dr. John Talburt (Graduate Coordinator for the IQ Program) is serving as a Technical Advisor to the Board of Directors of the International Association of Data and Information Quality (IAIDQ). Dr. Talburt and Dr. Pierce are members of IAIDQ working group on Information Quality Certification, and Dr. Pierce and her students have published reports on joint IAIDQ-UALR Industry surveys on Data Governance and IQ and another on Salaries for IQ Roles in industry. The program’s website (http://ualr.edu/eit/iq) has been re-designed to include information on all of the IQ graduate programs.

Research support for the UALR IQ Graduate Program is provided through the UALR Center for Advanced Research in Entity Resolution and Information Quality (ERIQ). ERIQ has completed two years of a research contract with the U.S. Air Force Research Laboratory at Wright Patterson Air Force Base in Dayton, Ohio. In partnership with Qbase, Inc., the $1.44 million project is focused on developing “Information Quality Tools for Persistent Surveillance Data Sets.” In summer 2010, five graduate students and four faculty members participated in a 10-week research collaboration at Tec^Edge outside the base in Dayton. At Tec^Edge, the UALR team interacted with more than 100 other Tec^Edge participants from other universities, government contracting companies, and AFRL research staff. During the second year of participation, four UALR graduate students remained at Tec^Edge, leading projects over the entire academic year. The AFRL project has provided support for 24 students in the UALR IQ Graduate Program. The faculty investigators for this project include Dr. Serhan Dagtas, Dr. Edi Tudoreanu, and Dr. John Talburt from the UALR Information Science Department and Dr. Mariofanna Milanova from the UALR Computer Science Department.

The ERIQ Laboratory is also in the third year of a research contract with the University of Arkansas for Medical Sciences to improve information quality research studies as part of the Clinical and Translation Science Awards program funded by the National Institutes for Health. The project support two graduate research assistants and two faculty researchers, Dr. Dan Berleant and Dr. John Talburt from the UALR Information Science Department. During the past year, Dr. Talburt presented two information quality training courses to UAMS research coordinators.
Information Quality (continued)

The ERIQ Research Center has just completed a research project to develop an open-source entity resolution software application to support longitudinal studies in education. The Arkansas Department of Education has extended its funding for ERIQ research for another three years to include a proof-of-concept for the Trusted Broker Information Exchange System. The grant includes support for three graduate research assistants. Dr. John Talburt is the principal investigator.

The ERIQ Research Center recently became an affiliate partner in the Center for Identity at the University of Texas at Austin (http://identity.utexas.edu/). ERIQ was previously a member of the Center for Applied Identity Management Research, which has since merged with the UT Center for Identity. Dr. John Talburt is a member of both the Research and Education Committees of the Center for Identity.

Bioinformatics Program:

Researchers in bioinformatics investigate, develop, and apply computational tools and approaches for analyzing, and thus expanding, the use of biological, medical, behavioral, and health data. The UALR Bioinformatics Program, hosted in the Information Science Department, supports an undergraduate minor, a masters degree, and a Ph.D. degree, the latter two in collaboration with the University of Arkansas for Medical Sciences (UAMS). By the end of summer 2011, the Bioinformatics Program will have graduated 23 MS and six Ph.D. students, with several more MS and Ph.D. graduates expected shortly thereafter. Of these graduates, 78 percent have remained in Arkansas, and all have found jobs or continued in the Ph.D. program. The program receives approximately 30 applications a year, and many Ph.D. students now have externally supported graduate assistantships at UALR, UAMS, and the National Center for Toxicological Research (NCTR).

Major developments this year include:

- An expansion of the MS and Ph.D. programs to include a medical and health informatics track.
- Completion of the first year of an NIH-funded outreach program with Jackson State University (Mississippi), a minority-serving institution.
- A successful eighth annual conference of the MidSouth Computational Biology and Bioinformatics Society (MCBIOS, founded by Dr. Jennings in 2002) in College Station, Texas.
- The establishment of an Affiliates and Chapters Committee of the Association of Biomolecular Resource Facilities society by Dr. Jennings and the induction of MCBIOS as its first affiliate (Dr. Jennings’ goal was to form this committee to provide the infrastructure for spawning a number of bioinformatics collaborations).
- Two bioinformatics graduate students receiving “outstanding presentation awards” from the Southeast IDeA Regional Meeting (IDeA is the National Institutes of Health [NIH] program that funds the Arkansas IDeA Networks for Biomedical Research Excellence [INBRE] grant which provides support for the MidSouth Bioinformatics Center [MBC] and the bioinformatics graduate program).
Karl Walker, the student receiving the “outstanding bioinformatics MS student award,” also received the EIT College award as the “outstanding MS graduate.”

The installation of a $30,000 Access Grid in the new EIT Auditorium funded by the AR INBRE bioinformatics core; it will be used to broadcast bioinformatics seminars at UALR throughout the state (and other locations).

The installation of $15,000 in thin clients for use by bioinformatics graduate students and in the MidSouth Bioinformatics Center.

This year, the MidSouth Bioinformatics Center supported more than 90 users (a 50 percent increase over last year), and that number soon should grow to more than 100. These facilities permit researchers, faculty members, and students to use state-of-the-art software and computing platforms and allow national and international users to use locally developed, bioinformatics software over the web. In addition, faculty and students associated with the NIH INBRE grant produced 15 journal articles, four local presentations, 28 regional presentations, and 39 national or international presentations. During 2010-2011, the MidSouth Bioinformatics Center hosted a number of workshops, symposia, and outreach activities that were attended by many students, faculty and researchers. These events include:

(A) Workshops

- Lamp Boot Camp (Aug. 2010)
- Intro to Cloud Computing (Oct. 2010)
- HTML Forms Workshop (Sept. 2011)
- Linux File Handling Workshop (Sept. Spring 2011)
- Jackson State University Bioinformatics Training at JSU (Oct. 2010)
- UALR Bioinformatics Club Live Group Workshop (Oct. 2010)
- Perl Module Authoring Workshop (Spring 2011)
- Bioperl Workshop (Spring 2011)
- UALR Bioinformatics Club Live Group Workshop (Dec. 2010)
- UALR Bioinformatics Club Live Group Workshop (Jan. 2011)
- Intro to LAMP (Feb. 2011)
- MBC Project Management Workshop (Feb. 2011)
- UALR Bioinformatics Club Live Group Workshop (Feb. 2011)
- UALR Bioinformatics Club Live Group Workshop (March 2011)
- UALR Bioinformatics Club Live Group Workshop (April 2011)
- Visualization with Processing Workshop (Spring 2011)
- Perl Programming Workshop (Spring 2011)
- R Graphics Workshop (Spring 2011)
- R Analysis Workshop (Spring 2011)
- R Programming Workshop (Spring 2011)
Bioinformatics Program (continued)

- Perl Module Authoring Workshop (Spring 2011)
- Bioperl Workshop (Spring 2011)
- HTML Forms Workshop (Spring 2011)
- Linux File Handling Workshop (Spring 2011)
- Scripting Workshop (Spring 2011)
- NCBI eUtils Workshop (Spring 2011)
- Central High Science Fair Mentoring (Spring 2010 and Spring 2011)

(B) Sponsored attendance

- Oklahoma Supercomputing Symposium
- INBRE Undergraduate Research Symposium
- SE Regional INBRE Conference
- Eighth Annual MidSouth Computational Biology and Bioinformatics Society Conference

(C) Perl User Group meetings

(D) Bioinformatics Graduate Student Orientation

Through a combination of financial support by the INBRE and the dedicated support of many faculty and students, the bioinformatics graduate program and the outreach activities of the MidSouth Bioinformatics Center have grown significantly, both qualitatively and quantitatively.

Technology Innovation Program:

The Graduate Certificate in Technology Innovation began operation in the Fall 2010 after getting all the required classes approved for inclusion in the graduate catalog. The certificate is offered jointly by the Donaghey College of Engineering and Information Technology and the College of Business, and is intended for post-baccalaureate students and working professionals who are interested in the development, evaluation and implementation of innovative ideas for existing businesses and new enterprises. The program consists of 18 graduate credits, including a course on innovation, two on entrepreneurship and two electives. The 18-hour requirement allows U.S. students to be eligible for financial aid and also allows foreign students to apply for a student visa (I-20) to attend the program.

This year the program had its first graduate, Ndubuisi Egwuatu, an MBA student at UALR. In addition, the first course under the TINV umbrella, TINV 5301 Strategies for Innovation, was offered in Spring 2011. TINV 5301 had nine people enrolled, mostly part-time students who work full-time. The students’ backgrounds are broad, and include engineering, information science, information quality and liberal arts. At least two students were in the process of starting companies based on class projects, one an internet-based business and the other a video production business aimed at senior citizens. Other students began work on innovations related to their current employment in the areas of information quality and high-speed data communication.
Plans for 2011-2012: Now that the program is under way, we need to get the word out to current UALR graduate students and people who work full time in local industry. To this end, the certificate program has been advertised on the radio on KUAR during morning and afternoon shows. It has also been advertised on the UALR News and the UALR message board. Brochures that describe the program to interested students were recently printed, and these will be used in a recruitment effort to local industry this summer. Recruitment efforts also include an effort to reach out to students in non-IT/engineering and business majors.

Student Achievements

The following students were recognized for their achievements in 2010-2011.

Information Science

- May 2011: The faculty nominated Claudia Bowlin and Steven Leimberg as their choices for outstanding Sophomores in Information Science. Daniel Pullen was nominated as the faculty’s choice for outstanding Junior.
- May 2011: The following students graduated from the Information Science Program in 2011 with a GPA of 3.5 or higher: Chris Means, Jonathan Ulrich, Karan Topiwala, Amber Farmer, James Haley, John Jeffers, Surya Cheek, and Ethan Brown.
- May 2011: The Department also would like to recognize its student ambassadors – Susanne Crouch, Ethan Brown, Shanoa Miller, and Emilee Hughes – for their work in providing recruiting and retention support to our Student Services group.

Information Quality

- May 2011: The following students were recognized for their academic excellence in the UALR MS Information Quality Program for 2011: Cecilia Bartley, Nishav Mainali, Kamilia Messaoudi, Soukaina Messaoudi, Linfang Yang, Hailin Tang, Robert McGough, and Eric Nielsen.
- May 2011: Dinah Mande and Nishav Mainali received the Information Quality Graduate Program’s 2011 Outstanding MS Award.
- May 2011: Ahmed Abu-Halimeh received the Information Quality Graduate Program’s 2011 Service Award.
- May 2011: Yinle Zhou received the Information Quality Graduate Program’s 2011 Research Award.
- May 2011: Isaac Osesina received the Information Quality Graduate Program’s 2011 Outstanding PhD Award.

Bioinformatics

- August 2010: Charity Washam received a Student Travel Award from the UAMS Breast Cancer Program.
- September 2010: Charity Washam received the UAMS Winthrop P. Rockefeller Cancer Institute Predoctoral Fellowship in Breast Cancer.
- September 2010: Charity Washam received the New Investigator Award as well as a Student Travel Award from the Cancer and Bone Society.
Student Achievements (continued)

- November 2010: Aleksandra A. Markovets earned third place in the student poster competition at the 5th Annual BioNanoTox Conference held in Little Rock.
- April 2011: Charity Washam earned third place in the student poster competition at UALR.
- April 2011: Charity Washam earned the Graduate School Achievement Award from the UAMS graduate school.
- April 2011: The Office of Campus Life at UALR awarded Kiran Kumar the Harambee Outstanding Graduate Student Award for maintaining a 4.0 GPA.
- April 2011: Shweta Chavan received a MCBIOS 2011 Student Travel Award in the “Computational” category for her abstract, one of six winning entries.
- May 2011: Karl Walker received both the EIT College Outstanding Masters Student Award as well as the UALR/UAMS Bioinformatics Graduate Program’s 2011 Outstanding Bioinformatics Masters Student Award.
- May 2011: Horacio Gomez-Acevedo received the UALR/UAMS Bioinformatics Graduate Program’s 2011 Academic Excellence Award.
- May 2011: Michael A. Bauer received the MidSouth Bioinformatics Center’s 2011 Outstanding Service Award.
- May 2011: Aleksandra A. Markovets received the MidSouth Bioinformatics Center’s 2011 Outstanding Technical Leadership Award.

Faculty Achievements

The following faculty earned these distinctions during 2010-2011.

- Catherine Lowry received the Academy of Teaching and Learning Excellence Teaching Fellow Award. She was also inducted into the honor society of Phi Kappa Phi.
- Thomas Wallace received the 2011 Student Government Association Student’s Faculty Member of the Year award. He also became an Academy for Teaching and Learning Excellence Distinguished Teaching Fellow in 2011, one of 17 people campus-wide to hold this honor.
- Dr. Steve Jennings received $770 education travel award to attend the NextGen Sequencing Workshop, a satellite meeting of the ABRF Annual Conference in Sacramento, Calif.
- Dr. John Talburt received the Leadership Award from the MIT Information Quality Industry Symposium, July 16, 2010. He was also recognized for service for his role as an organizer and steering committee chair, Smart Information Track, at the Arkansas Research Alliance Workshop on Smart Infrastructure, November 2, 2010.
- Dr. Rolf Wigand received the College of Business Outstanding Research Award.
- Dr. Xiaowei Xu received the ORISE Faculty Award from the Oak Ridge Institute for Science and Engineering for his participation in the National Center for Toxicological Research.
Curriculum

The B.S. in Information Science was revised this year. Two existing courses (IFSC 1202 Intro to Object Oriented Technology and IFSC 1310 Internet Technologies) were updated to better address the role of the web and mobile device technologies in application development. Several courses were suspended from the curriculum because their content could be streamlined and consolidated into other courses. Suspended courses include IFSC 1201 Enterprise Information Science I, IFSC 3310 Information System Software II, IFSC 4210 Computer Ethics, and IFSC 4310 Quantitative Analysis. The removal of these courses made room for new content that enhance our educational offerings in the areas of web and social media. The new courses include:

- **IFSC 3300 Internet Applications (Required for Major):** Prerequisite: IFSC 1310 or equivalent, or consent of instructor. A hands-on course focusing on the technologies and concepts for creating dynamic and interactive web sites with a special emphasis on client-side technologies. Topics cover techniques such as how to build efficient and dynamic interactive user interfaces, how to interface with data using standardized, portable formats, how to store/validate data and how to make data more accessible to other applications. Three lecture hours. Three credit hours.

- **IFSC 4301 Information, Computing and the Future (New Elective):** Topics on information and computing and their interactions with society. Emphasizes the history and present status of information and computing technologies and their implications for possible future changes in the profession, the field, and society. Includes discussion of change as a factor in personal career preparation, goals, and activities. Topics may vary based on student interest and current events. Three lecture hours. Three credit hours.

- **IFSC 4360/5360 Social Computing (New Elective):** Prerequisite: IFSC 1310 and IFSC 2300, or equivalent, or consent of instructor. A hands-on course focusing on concepts of the social and information networks, web as graph, models (such as Power law distribution, scale-free models, preferential attachment models, etc.) that simulate behavioral characteristics of these graphs, basic graph theoretical concepts, characteristics of social media and Web 2.0 or the social web (such as blogs, microblogging, social friendship networks, social bookmarking, social news, social media sharing, wikis, etc.), understanding and developing API and mash-ups, issues and challenges in data crawling and web analytics, network data visualization, exposure to information extraction and retrieval concepts aiming at the highly dynamic and noisy nature of social media, harnessing the collective and web intelligence, and basic concepts of cloud computing. Three lecture hours. Three credit hours.

At the graduate level, the Information Quality Program added a new INFQ elective to its curriculum.

- **INFQ 7348 Entity Resolution and IQ:** Prerequisite: INFQ 7342 or consent of instructor. An examination of the theory and practice of entity resolution (ER), and the relationship between ER and information quality. Topics include the primary activities of ER, the major ER system architectures, methods and techniques for determining reference equivalence, major theoretical models for ER, entity-based data integration, ER case studies, and hands-on ER exercises with commercial and open-source ER tools.
Grant Applications/Awards (See Appendix 1 for Details)

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Number of proposals submitted</td>
<td>8</td>
</tr>
<tr>
<td>b. Total dollar amount requested in proposals</td>
<td>$3,476,585</td>
</tr>
<tr>
<td>c. Number of awards (proposals funded)</td>
<td>4</td>
</tr>
<tr>
<td>d. Total dollars awarded</td>
<td>$947,960</td>
</tr>
</tbody>
</table>

Note: Because it can take a year or more before a decision is made on a grant, the number and dollar amount of new grants awarded for 2010-2011 includes grants that were submitted in 2009-2010. In addition, we had several existing grants (i.e., awarded in previous years) that received continued funding in 2010-2011. These amounts are listed separately in the appendix.

Research/Creative Activities (See Appendix 2 for Details)

Note: This section includes only completed items that have been published or presented since the last annual report.

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Books</td>
<td>1</td>
</tr>
<tr>
<td>b. Books (new editions)</td>
<td>0</td>
</tr>
<tr>
<td>c. Research articles in professional journals</td>
<td>5</td>
</tr>
<tr>
<td>d. Research notes in professional journals</td>
<td>0</td>
</tr>
<tr>
<td>e. Formal presentations at professional meetings</td>
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</tr>
<tr>
<td>f. Discussants at professional meetings</td>
<td>2</td>
</tr>
<tr>
<td>g. Art exhibits</td>
<td>0</td>
</tr>
<tr>
<td>h. Theatrical/musical productions</td>
<td>0</td>
</tr>
<tr>
<td>i. Other: Research Published in Refereed Proceedings</td>
<td>37</td>
</tr>
<tr>
<td>Other: Abstracts</td>
<td>1</td>
</tr>
<tr>
<td>Other: Book Chapters</td>
<td>5</td>
</tr>
<tr>
<td>Other: Poster Presentations</td>
<td>7</td>
</tr>
</tbody>
</table>
Public Service (See Appendix 3 for Details)

Note: Public Service is defined as the application of a faculty member’s discipline-based knowledge and skills to the problems of people and groups in society.

a. Lectures and presentations, discipline-based, to non-discipline related audiences 1
b. Essays or articles in popular or semi-popular publications (in contrast to professional journals) 0
c. Consultantships (paid) 3
d. Consultantships (non-paid) 5
f. Other: Participation in Professional/Learned Societies, College or University Committees 62

Information Technology

This was the first year that faculty and students used the new virtual machine platform to host their data and software computing needs. Rather than relying on independent workstations, students use thin clients (a low-end computer terminal consisting of a monitor, mouse, keyboard, and just enough CPU capabilities to boot up). The real computing power and storage is provided by a set of central servers housed on the first floor of the EIT building. When students need to access software or a file for class, they access the thin client, enter the desired class profile, and the requested virtual desktop with software and data is transferred via the network from the server to the thin client. While the basic architecture for the system is sound, faculty and students have experienced problems this past year due to capacity and stability issues. We are hopeful that an overhaul of the system this summer will be successful in improving the user’s experience.

Within the department, several members of the faculty received new equipment this year. It is our goal to get new equipment to a third of the faculty each year so that our hardware inventory stays sufficiently current. The following is a list of our faculty equipment expenditures this year paid from our department’s operating budget.

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP Elitebook Desktop for Dr. Berleant</td>
<td>$2,041.43</td>
</tr>
<tr>
<td>HP z800, Widescreen LED LCD Monitor for Dr. Tudoreanu</td>
<td>$5,080.68</td>
</tr>
<tr>
<td>HP Elitebook mobile workstation for Dr. Dagtas</td>
<td>$1,798.34</td>
</tr>
<tr>
<td>Apple iPads for Mr. Menth, Dr. Agarwal, and Mr. Wallace</td>
<td>$2,467.15</td>
</tr>
<tr>
<td>Sharper Technology Crystal Eyewear for Virtual Reality Center</td>
<td>$937.75</td>
</tr>
<tr>
<td>HP Z400 PC for Dr. Wigand and Dr. Agarwal Research</td>
<td>$1,499.55</td>
</tr>
<tr>
<td>iMac 27-inch, Quad-Core for Dr. Xu</td>
<td>$2,622.00</td>
</tr>
</tbody>
</table>
Recruitment and Retention

Recruiting and retention efforts are an ongoing priority for the department. While our graduate and undergraduate numbers have remained fairly stable, it is our desire to substantially increase our enrollments, particularly at the undergraduate level, over the next several years. To this end we have increased our monitoring of undergraduate student advising, streamlined and strengthened our curriculum, and have witnessed good job placement of our graduates during 2010-2011. We are working on developing a Facebook presence, improving our marketing literature, and initiating several outreach programs such as participating in the EIT Summer High School Research Program, seeking out new industry partnerships for our capstone projects, and supporting a Social Media Club for students. We are hopeful these efforts will yield increases in both our recruiting and retention rates.

Personnel Changes

This past year Information Science personnel included 11 full-time faculty (including the chair), 2 instructors, 2 technical specialists, 3 administrative secretaries, and 2 ERIQ Laboratory grant-funded positions. Our faculty ranks increased by one with the addition of Dr. Russel Bruhn, formerly EIT Associate Dean, who resumed his faculty position in the department. In addition, three of our faculty received promotions this year.

<table>
<thead>
<tr>
<th>Change Type</th>
<th>Name</th>
<th>Department</th>
<th>Most Recent Title / Rank</th>
<th>Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotion</td>
<td>Russel Bruhn</td>
<td>Information Science</td>
<td>Professor</td>
<td>PhD</td>
</tr>
<tr>
<td>Promotion</td>
<td>Serhan Dagtas</td>
<td>Information Science</td>
<td>Professor</td>
<td>PhD</td>
</tr>
<tr>
<td>Promotion</td>
<td>Ningning Wu</td>
<td>Information Science</td>
<td>Professor</td>
<td>PhD</td>
</tr>
</tbody>
</table>
Department of
Systems Engineering
University of Arkansas at Little Rock

Annual Report
for the period
July 1, 2010 – June 30, 2011

Dr. Seshadri Mohan
Chairman
Summary of Highlights

During the 2010-2011 academic year, the Systems Engineering Department continued its growth as student and faculty accomplishments grew to new heights.

- The crowning achievement is that U.S. News and World Report has ranked the Systems Engineering program as the No. 1 program at a public university in the South that offers only bachelor’s and master’s degrees. The magazine ranked the program No. 64 overall. This is the first year UALR’s program has made the prestigious list.
- Dr. Lifeng Lai received the prestigious CAREER Award from the National Science Foundation for the project “Building Secure Wireless Communication Systems via Physical Layer Resources.”
- Dr. Nidhal Bouaynaya, in collaboration with faculty at two other universities, secured a grant awarded jointly by NIH and NSF for the project “Dynamic Control of the Melanoma Gene Regulatory Network.”
- Dr. Guoliang Huang received the Early-Concept Grants for Exploratory Research (EAGER) Award from NSF for his proposal on energy harvesting. Dr. Huang also received awards from NASA and AFOSR. He was promoted to associate professor.
- In collaboration with Dr. Hirak Patangia, from Engineering Technology, Dr. Xian Liu received funding from NSF to develop learning materials for green energy education.
- Dr. Jinxiang Xi received funding from NIH for his project on controlled lung delivery of nano and micrometer aerosol.
- Dr. Jung Kim received awards from LG and Samsung for the projects, “solar cell development” and “structural health monitoring,” respectively.
- Heather Keathley was named EIT Outstanding Graduating Senior.
- The ASSET I project, conducted over the last four years with funding from the National Science Foundation’s EPSCOR program, helped build substantial new laboratory infrastructure in wireless networking and telecommunications and also continued to support post doctoral researchers and graduate students.
- Five undergraduate students, each working with a faculty mentor, received ADHE SURF or ASTA/NSF EPSCOR awards.
Summary of Highlights (continued)

- Faculty publications and new proposal activities grew substantially.
- The Master of Science in Systems Engineering program began to grow.
- Systems Engineering graduates are continuing to successfully meet the needs of industries in Central Arkansas.

Approved by the Arkansas Department of Higher Education (ADHE), a new doctoral program in Engineering Science and Systems will be launched in Fall 2011, a year in advance of what we reported in 2009 Annual Report. The new Ph.D. program offers students one of four specialization tracks in engineering that are well sought after by the industry: 1) Systems Engineering, 2) Computer and Networking Engineering, 3) Telecommunications and Networking Engineering, and 4) Mechanical and Materials Engineering.

In the 2009 Annual Report, we reported that an ABET team visited the department in fall 2009, reviewed documents prepared by the faculty members, and interviewed the faculty members, students, university administrators, and Advisory Council members. The department took adequate actions to address the issues noted in the audit statement and provided a report to ABET regarding the actions taken. We can now report that the ABET Engineering Accreditation Commission (EAC) has reaccredited the systems engineering program for another six-year period through 2016.

Dr. Lai’s CAREER award deserves some elaboration. NSF says the Faculty Early Career Development (CAREER) Program, “offers the National Science Foundation’s most prestigious awards in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research within the context of the mission of their organizations.” Considering the fact that only 17 to 21 percent of the applicants receive CAREER awards and only two other UALR faculty members have ever received this award, Dr. Lai’s accomplishment is outstanding.

ASSET I project continued for a fourth year as a no-cost extension with Dr. Mohan as the campus’ principal lead on a team that includes Dr. Hussain Al-Rizzo, Dr. Radu Babiceanu, Dr. Guoliang Huang, all from Systems Engineering; and Dr. Remzi Seker and Dr. Kenji Yoshigoe, both from Computer Science. The team included two Ph.D. students, Daniel Rucker and Subramanian Vimalathithan, and two post-doctoral researchers, Dr. Yasir AbdI-Mehdi Taleb and Dr. Chitaranjan Singh. Publications and proposal submissions grew substantially.

Systems Engineering was involved in significant outreach efforts. Dr. Jinxiang Xi mentored Arnab Dey, an ASMSA student, during the three-week High School Research Program, conducted as part of EIT’s outreach efforts. Dey won second place at the 2011 International Science and Engineering Fair held May 8-13 in Los Angeles. He also received the first place award from the American Intellectual Property Law Association, and the second place award from the U.S. Patent and Trademark Office Society.

Dr. Zhang provided technical leadership and mentoring of students who participated in the BEST ROBOTICS competition hosted by EIT with Vernard Henley providing organizational leadership.
Twelve high schools participated in the competition. UALR served as one of the hubs of the BEST ROBOTICS program during 2010, and Dr. Zhang helped establish the program here in 2009.

Twenty-two high school students participated in the Engineering Scholars Program, receiving training in several disciplines of engineering. Faculty members who actively participated in the program included, besides Dr. Mohan, Dr. Babiceanu, Dr. Huang, Dr. Lai, Dr. Bouaynaya, and Dr. Xi from Systems Engineering, and Dr. Patangia from Engineering Technology. Several undergraduate and graduate students organized and supervised the various laboratory sessions. This program, a two-week residential program, received an average rating of 4.26 out of 5 from the student participants.

Systems Engineering capstone students carried out several creative projects in their Capstone I and Capstone II design courses. These projects were coordinated by Dr. Nisanci with technical mentoring by Dr. Al-Rizzo, Dr. Huang, Dr. Lai, Dr. Xi, and Dr. Zhang.

Systems Engineering undergraduate students conducted research under the direction of Systems Engineering faculty members. Specifically, Dr. Babiceanu, Dr. Bouaynaya, Dr. Huang, and Dr. Lai secured SURF awards from ADHE and/or from ASTA/NSF EPSCOR (as part of Arkansas NSF EPSCOR ASSET Project) for mentoring Systems Engineering students.

Dr. Jinxiang Xi (Systems Engineering) and Dr. Srikant Pidugu (ET), mentored students in organizing ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) student branch meetings. Dr. Chan served as the advisor for the INCOSE student organization. Dr. Chan also led an effort to establish a Tau Beta Pi Honor Society at UALR in August.

As goals for the coming year, the department will:

- Ensure the new Engineering Science and Systems doctoral program is successfully launched this fall;
- Ensure the processes communicated to ABET in our response to ABET DRAFT STATEMENT is pursued each semester without fail;
- Ensure the continued growth of all the four options at the undergraduate level;
- Ensure the departmental teaching infrastructure (laboratories and equipment) are adequately maintained and upgraded as needed to allow faculty to offer state-of-the-art education in engineering;
- Aggressively pursue recruitment of students to all the programs, including students to the master’s and doctoral programs by advertising the program through all available means;
- Building on the success of NSF EPSCOR projects, ensure the successful establishment of a Center for Optical and Wireless Information Networking (COWIN), efforts that are under way;
- Ensure a significant increase in the number of proposals submitted to support funded research and to support graduate students;
- Ensure the departmental website, which serves as the Department’s window to the external world, is kept updated.
Student Achievements

The following Systems Engineering students were awarded a SURF award by ADHE or an Arkansas NSF EPSCoR fellowship for a research experience for undergraduates by ASTA.

- Noor Jabur (Mentor: Dr. Lifeng Lai)
- Bruce Stracener (Mentor: Dr. Nidhal Bouaynaya)
- Billie N. Dickinson (Mentor: Dr. Radu Babiceanu)
- Mario Davis (Mentor: Dr. Nidhal Bouaynaya)
- Eric Sullivan (Mentor: Dr. Guoliang Huang)
- Robert Newcomb, Systems Engineering student, joined Charles Shank, Engineering Technology student, two win two of the four scholarships awarded by the ASHRAE society of Arkansas.
- Bruce Stracener has been accepted into the McNair Scholars Program, which is 100% federally funded. Bruce will conduct research under the mentorship of Dr. Bouaynaya.

The following Systems Engineering students were recognized for their outstanding accomplishments at the EIT Awards Ceremony on May 6, 2011.

- EIT College Award for Outstanding Senior: Heather Keathley

Department Awards

- Master of Science in Systems Engineering
  - Manjusha Vadakke Veetil
  - Oleksandr Babenko

- Bachelor of Science in Systems Engineering
  **Seniors**
  - Christina Marie Dunlap
  - Noor Mohamad Jabur
  **Juniors**
  - Robert Miller
  - Jena de Dieu Mutangana
  - Jimmy Shayka
  - Janviere Umuhiza
  - Jesus Luongo Lizana
  **Sophomore**
  - Festus Hagekimana
  - Egide Murisa
  **Freshmen**
  - Marcus Hefner
  - Caitlin Buchanan
The following students successfully passed the Fundamentals of Engineering (FE) exam held in April 2011:

- Timothy Herr
- Erica Jones
- Heather Keathley
- Robert Newcomb
- Benjamin Smith
- William Wimpee.

The following students exhibited posters and presented their research at the Undergraduate Research Expo.

- Raied Caromi and Ayman Abbosh; Mentors: Dr. Yupo Chan and Dr. John C. Van Hove
- Jun Geng; Mentor: Dr. Lifeng Lai
- Rabindra Ghimire; Mentor: Dr. Seshadri Mohan
- Haider Khaleel; Mentor: Dr. Hussain Al-Rizzo
- JongWon Kim; Mentor: Dr. Jinxiang Xi
- Aaron Koch; Mentor: Dr. Nidhal Bouaynaya
- Yasir Rahmatallah; Mentors: Dr. Seshadri Mohan and Dr. Nidhal Bouaynaya
- Daniel Rucker, Haider Khaleel, Mike Wolverton, Sunny Raheem, Yhiea Ai-Naiemy
  Mentor: Dr. Hussain Al-Rizzo
- Lava Saleem; Mentor: Dr. Seshadri Mohan
- Manjusha Vadakke Veetil; Mentor: Dr. Seshadri Mohan
- Rui Zhu; Mentor: Dr. Guoliang Huang
- Jerzy Zielinski; Mentor: Dr. Nidhal Bouaynaya
- Bruce Stracener; Mentor: Dr. Nidhal Bouaynaya
- Rania Saleem; Mentor: Dr. Lifeng Lai
- Rohit Sharma and Anurag Saha; Mentor: Dr. Seshadri Mohan

Jun Geng and Rabindra Ghimire won second and third place, respectively, in the graduate level. Also, Rohit Sharma, Anurag Saha, Bruce Stracener, and Rui Zhu received honorable mentions.

Two Systems Engineering students won the Institution of Engineering and Technology’s Present Around The World (PATW) competition organized by Dr. Kamran Iqbal from Systems Engineering. Fei Song, mentored by Dr. Guoling Huang, won first place. He will receive a fully paid trip to Boston to participate in the regional finals and a chance to participate in the global finals in London. He also received a cash award of $300. His topic of presentation was “Piezoelectrically Induced Guided Wave Propagation for Health Monitoring of Aircraft Honeycomb Composite Structures.” Haider Khaleel, mentored by Dr. Hussain Al-Rizzo, won third place. He received a cash award of $100. His topic was “An AMC Based Antenna for Telemedicine Applications.” Rabindra Ghimire, a doctoral student, and his doctoral dissertation advisor Dr. Seshadri Mohan, co-authored a paper titled “A Multi-Path Routing Scheme for GMPLS-Controlled WDM Networks” and presented the paper at the 4th IEEE International Symposium on Advanced Networks and Telecommunications Systems (ANTS), in Mumbai, India, on December 18, 2010. The paper was awarded the 2010 ANTS Best Paper Award.
Faculty Achievements

- The National Science Foundation (NSF) has funded a five-year, $400,000 CAREER grant for Dr. Lifeng Lai, assistant professor of Systems Engineering, to carry out research to turn communication channel impediments into strengths to enhance privacy and security.

- Dr. Bouaynaya received a National Institutes of Health (NIH) Grant Award of $1.2 million, jointly with faculty from two other universities, for the project “Minimal-Perturbation Dynamic Control of the Melanoma Gene Regulatory Network” for 2010-2014.

- Dr. Huang received the Early-concept Grants for Exploratory Research (EAGER) Award from NSF, as well as awards from NASA and AFOSR.

- Dr. Xian Liu, jointly with Dr. Patangia, received funding from NSF to develop learning materials for green energy education.

- Dr. Xi received funding from NIH for his project on controlled lung delivery of nano and micrometer aerosol.

- Dr. Kim received awards from LG and Samsung for the projects “solar cell development” and “structural health monitoring,” respectively.

- A book authored by Dr. Rama N. Reddy (Systems Engineering) and Carol A. Ziegler “C Programming for Scientists and Engineers with Applications,” was adopted by a number of universities in the United States, including University of Maine, University of North Dakota, Wright State University, University of Texas at San Antonio, Southern Polytechnic State University in Georgia, Gannon University, as well as UALR. It has now been published in India for sale in six other neighboring countries.


- Dr. Bouaynaya, Dr. Babiceanu, Dr. Huang, and Dr. Lai successfully secured awards from ADHE and/or ASTA (as part of Arkansas NSF EPSCOR ASSET Project) to mentor undergraduate research.

- The paper, “Agile Enterprise Architecture for Cyber Transportation Logistics on Cloud Computing,” with Dr. Chan and Dr. Babiceanu as coauthors, received the best paper award at the Conference on Logistic and SCM Systems (ICLS 2011), March 7-9, 2011, Kaohsiung, Taiwan.

- Dr. Lai’s paper titled “Decoding the ‘Nature Encoded’ Messages for Distributed Energy Generation Control in Microgrid,” was awarded the Best Paper Award at the recently concluded IEEE International Conference on Communications. This conference is one of the premiere IEEE conferences in Communications. Of the 2,838 papers submitted for the conference, IEEE accepted only 1,093. Of those accepted, only 11 received a Best Paper Award, putting Dr. Lai’s paper in the top 0.4 percent of all submitted and the top 1% of those accepted.


- Dr. Kamran Iqbal delivered an invited talk to 50 executives from Electric Cooperatives of Arkansas on “Intelligent control systems in the power industry” at the 56th AECC Engineering Workshop.
Dr. Mohan was honored as 2010 IEEE Outstanding Engineering Educator for Region 5 by the Institute of Electrical and Electronics Engineers (IEEE) at the annual IEEE Region 5 meeting on April 16 in Baton Rouge, Louisiana. Region 5 encompasses Arkansas, Texas, Colorado, Kansas, Louisiana, Missouri, Oklahoma and parts of Nebraska, South Dakota, and Wyoming.

Curriculum

The following two courses were added to the Systems Engineering core courses:

- SYEN 3320 Systems Engineering Design and Analysis
- SYEN 2120 Computational engineering laboratory

Grant Applications/Awards

- Number of proposals submitted: 54
- Total dollar amount requested in proposals: $11,208,913.00
- Number of Awards (proposals funded): 20
- Total dollars awarded: $1,726,929

Public Service

- Lectures and presentations, discipline-based, to non-discipline related audiences: 0
- Essays or articles in popular or semi-popular publications (in contrast to professional journals): 0
- Consultantships (paid): 3
- Consultantships (non-paid)
- Other (please add other categories of public service as needed): 7
  * This number includes Science Fair, BEST Robotics, Engineering Scholars Program.

  - Presentation to Local Organizations: 1
  - National (e.g., NSF) Panels: 2
  - Track/Session/Panel Chair: 18
  - Technical Program Committees/Program Advisor: 25
  - Co-Op/Student Exchange Program Advisor: 2
  - Reviewer for BKCASE, GRCASE to help consortium effort to advance systems engineering: 2
Research/Creative Activities

Include only items which have been published or presented since the last annual report. Works in progress should be included in the annual report of the year actually published (a, b, c, or d) or completed (e, f, g, h, or i).

a. Books 1
b. Books (new editions) 0
c. Research articles in professional journals 41
d. Research notes in professional journals 0
e. Formal presentations at professional meeting 59
f. Discussants at professional meeting 0
g. Art exhibits 0
h. Theatre productions/musical productions 0
i. Other (7 chapter contributions to books) 7

Information Technology

New software acquired for optical networking through NSF ASSET I fund.

Recruitment and Retention

- Participated in all college weekend activities;
- Served as science fair judges;
- Supervised undergraduate research;
- Mentored/authored SURF proposals;
- Encouraged pursuit of co-op and internships;
- Improved freshman year engineering experience course that improved retention;
- Mentored students;
- Conducted the Engineering Scholars Program, a two-week residential program, for high school students.
- Participated in the High School Summer Research Program, a three-week residential program.
- Visited pre-engineering programs at schools and discussed initiating memoranda of understanding.
Personnel Changes

Please list instructional and research personnel (non-classified), by name, and provide information as indicated. (Omit lecturers and adjunct faculty unless one of these titles is used for full-time employees).

<table>
<thead>
<tr>
<th>Change Type</th>
<th>Name</th>
<th>Department</th>
<th>Most Recent Title / Rank</th>
<th>Highest Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotion from Assistant to Associate Professor</td>
<td>Guoliang Huang</td>
<td>Systems Engineering</td>
<td>Associate Professor</td>
<td>Ph.D.</td>
</tr>
</tbody>
</table>

Other personnel changes.

Use this section for personnel changes not covered above which you feel should be included in the annual report.
Department of
Graduate Institute of
Technology
University of Arkansas at Little Rock

Annual Report
for the period
July 1, 2010 – June 30, 2011

Dr. Keith Hudson
Chairman
GRADUATE INSTITUTE OF TECHNOLOGY
UALR PROVOST’S ANNUAL REPORT
JULY 1, 2010 – JUNE 30, 2011

Summary of Highlights

Research, Grants, and Contracts: GIT has continued to fulfill its role in assisting faculty with their proposal preparation and working closely with CSAM, EIT, Nanotechnology, and ORSP. Each grant or contract proposal from Science or Engineering at UALR passes through the Institute for facilities usage review and review of GA/RA requests. Dr. Hudson can assist the proposal writer with suggested changes to increase their selection chances based on our exposure to science and engineering area funding agencies and our experience working with them in the past. We also work to ensure that we are abreast of current funding trends in these areas at the funding agencies. GIT continues to provide accounting assistance to certain grants and contracts, usually from Applied Science and GIT faculty members. Kristi Wright, Unit Coordinator, graduated from the UALR CRA training course during the Spring 2011 semester.

Grants Administration and Sponsorship: The Graduate Institute has continued in administering and sponsoring several statewide programs as well as certain inter-college activities. Positioned as a separate organization, GIT provides a stable and interdisciplinary base for these programs. These include:

- **NASA Space Grant and EPSCoR Programs** – in its 20th year of activities in Arkansas, NASA Space Grant continues to fund aerospace related activities at 16 Arkansas campuses. It also has established ties with several industries in the state involved in aerospace activities. The Institute also administers four NASA EPSCoR Research Grants for Arkansas.

- **Earthquake Center** – The Arkansas Earthquake Center is a major service and research unit within GIT. Bringing faculty together from both colleges and working in several areas of the state, the Earthquake Center likely receives more media coverage than any other single unit in science and engineering. Its service to the community and state has received statewide and regional attention, and it continues to prove indispensable in the event of a major earthquake or seismic event.

- **STRIVE Program** – GIT sponsors the STRIVE Program for educators to gain hands-on experience in real science and engineering activities, both in industrial settings and in some academic research labs. This grassroots activity provides good exposure for UALR to the community.

- **NSF-EPSCoR** - UALR Asset I teams are concluding their work on a no-cost extension through June 30, 2011. This brought together faculty to be part of a team on an award
Summary of Highlights (Continued)

from ASTA and NSF including BioProduction and NanoSensor Projects. The three-year project was budgeted to bring $3,392,505 to the UALR campus. We have purchased a number of new instruments and conducted research leading to articles in a number of publications. The UALR Asset II teams began work and were funded beginning October 1, 2010. The P3 team has moved forward installing new equipment. GIT is again managing this budget. GIT will serve the other two teams, GREEN and VICTOR, as needed throughout the five-year award.

MAJOR EQUIPMENT SUPPORT: GIT provides support by acting as consultants for issues involving research to individual labs and academic departments and to the necessary task of maintaining a host of major equipment for science and engineering training and research. Some of the major units include: AFM, NMR, PNMR, AA Spec, ESR, FTIR, UV-VIS-NIR, SEM, LC-MS, GC-MS, TGA/SDTA, Structural Test Equipment, Autoclave, Freeze Dryer, CO\textsubscript{2} Incubators, Confocal Microscope, TE2000 Microscope, I-90 Microscope and Accessories, SPIE Sputter Coder, Growth Chambers, Centrifuges, RT-PCR, Scintillation Counter, the DNA Facility, and the MEMS lab. These instruments require constant maintenance and a high level of skill to run. Drs. Ali and Post of the Institute’s research staff work with these and other instruments, keeping them calibrated, maintained, and operating at top efficiency. GIT also works closely with individual labs in order to reduce cost for these labs, and when special circumstances arise (i.e., repair/loan instrument/equipment, disperse/repurpose reclaim materials/supplies, consult and assist with procedures- especially unique and novel procedures). In this manner, GIT enhances the research capabilities of individual and common labs at a greatly reduced cost.

The GIT maintenance account serves as a primary source of funding for the cryogenic gases necessary to keep the NMR running as well as the primary source of funding when instruments are in need of maintenance and repair. Increasing expenses in the research support area will potentially prevent GIT from continuing to provide the same level of support for the current instrument inventory without an increase in our maintenance budget. We are fortunate to have some funds in the Major Equipment Repair Fund. In addition to maintaining and repairing the major instruments, Drs. Ali and Post have trained and certified students and faculty to be the users on these instruments while reinforcing safe laboratory practices. The Institute also works closely with the Environmental Health and Safety Committee to ensure safe working environments inside laboratories and their surrounding areas (i.e. chemicals, lasers, radioactive materials, compressed/liquefied gases, etc.). Finally, as another aspect of services provided by GIT, Dr. Post designs and develops custom, low-cost, high-quality instruments and systems for individual research groups. He is also training graduate and undergraduate students to be able to do the same in order to increase their productivity and skills. He is also involving interested students in the troubleshooting and repair of major instrumentation for their benefit in the future workplace.

COMPUTER FACILITIES: GIT supports several computational capabilities in addition to our work with the high-speed internet. GIT provides:

- **Advanced UNIX Lab** - The 64-bit dual-core (Intel) machines continue to be used by student and faculty researchers within GIT and from Chemistry, Physics, Computer Science, Applied Science and the Nanotechnology Center. We have recently doubled
the memory in these machines from 4GB to 8GB, and we have installed NVIDIA Quadro 2000 graphics cards in them for visualization and for exploring using graphics processors (192 cores per card) for speeding up some of our scientific applications. These computers can operate as a cluster, with both MPICH2 and Open MPI environments. While these machines normally run Linux for long-running compute jobs, they can be booted into Windows for training purposes or when a research application requires it. We will use this lab for developing and teaching a course for students involved with the Earthquake Center.

- **Shared Memory Computing** - For applications that require massive memory within a single machine, GIT maintains several machines for high-speed numeric computing or “number crunching.” Our eight-core Opteron workstation (8 x 2.4GHz cpu, memory recently upgraded from 32GB to 64GB) continues to be heavily used by students and faculty from Chemistry, Physics and Applied Science. The 64-bit lab machines mentioned above will continue to be used as compute nodes as their speed and memory increase. While both EIT and CSAM make use of these resources, the science users (Chemistry and Physics) are especially enhanced in their computational research by having these machines present on campus. This summer, GIT and Computer Science expect to add a new multiprocessor machine with 192 cpu cores, 768GB of RAM and 32TB of storage.

- **Distributed Memory Computing** - For applications that lend themselves to having tasks and data split among a number of machines, the 64-node (8 x 2.66GHz cpu and 16GB RAM per node) cluster built by GIT and Computer Science continues to be used by several departments for scientific and engineering applications for teaching and research. We have upgraded the cluster distribution from Rocks 4.3 to Rocks 5.4, upgraded the Infiniband cards in all nodes from SDR (single data rate) to DDR (double data rate), and have increased raw capacity in our parallel storage from 16TB to 40TB. We expect to add quite a bit of archival storage this summer. We continue to add users and applications to the cluster. UALR, UAMS and UA-Fayetteville (and possibly researchers in West Virginia, our CI-TRAIN partner state) will be collaborating on projects, taking advantage of resources on all three campuses. We also continue to get more faculty and students involved with TeraGrid.

- **Access Grid Studio** - GIT works with the Systems Engineering Department to run and maintain the Access Grid, an advanced telecommunications tool for virtual meetings. UALR is one of only a small number of universities with this advanced capability.

- **Virtual Reality Center** - The Virtual Reality Center finished its sixth year on line. GIT is heavily involved with EIT and Systems Engineering to make this advanced concept lab a major success. The SGI 3400 super-mini computer also provides some support for other applications in science and engineering.

The Institute maintains a staff of technical specialists who support and focus on science and engineering advanced computing activities. Albert Everett, Jason Kratz, and Rubben Johnson work closely with Computing Services as well as the various CSAM and EIT programs that use their talents. UNIX/Linux (Albert Everett), Windows NT and 2000 (Jason Kratz and Rubben Johnson) and Apple Macintosh support are all available. GIT may offer selected short courses again with these staff members in place. Also, GIT supports video and general networking, especially in the ETAS Building. They also maintain the functionality of the various teaching, research and student computer labs, including the IS Labs, Engineering Teaching Labs, and the Advanced UNIX lab.
Summary of Highlights (Continued)

Ken Kalb took medical retirement after many years of employment with UALR and GIT. GIT will not replace his position; rather, the dollars were converted to the Electronics Technician slot allowing GIT to bring back that position to the Shops unit. Additionally, Jason Kratz’s position was permanently moved from the EIT Dean’s office budget to GIT, basically swapping for Diane Haynes’ GIT position.

RENOVATION OF FACILITIES: GIT has become active in the area of renovations of facilities to other uses, particularly certain ETAS spaces to either office or engineering laboratory activities. In this role, staffers work in coordination with the Construction Management Program and Facilities Management to meet the needs of EIT, CSAM, and Nanotechnology departments and programs. Projects have included:

- Research Lab space conversion (changing the use and activities supported)
- Furniture redistribution, as items have come available
- Office and meeting room construction projects

In January 2010 Bill Sipes took early retirement, leaving only Ray Wallace to continue working the renovations jobs. Sipes’ position cannot be filled until October 2011.

TECHNICAL SUPPORT, MACHINE AND ELECTRONICS SHOPS: The GIT Machine and Electronics Shops and staff offer design assistance, educational experiences, fabrication services, and equipment repairs. Ben Gilbert oversees all shop operations, provides design help for researchers, and assists both Engineering Technology and Systems Engineering by teaching one course per semester. Steve Wells, in the Fabrication Shop, provides his fabrication expertise to meet the diverse needs of the many researchers on campus. The Educational Shop is managed by Armand Tomany. He provides instruction for students in not only basic shop operations, but also CNC (computer numerical control) machining. Howard Burris, Electronics Shop Technician, was repositioned into GIT from Construction Management in October 2010. The majority of the shop facility is available for use by students, faculty, and staff that can prove their proficiency in operating the equipment safely. In the past year, the shop completed more than 45 documented projects and provided facilities for six shop classes, educating approximately 75 students.

GRADUATE ASSISTANSHIPS ASSISTANCE: Another area of traditional GIT support has been the awarding of Graduate Assistantships. GIT now maintains a pool of 51 university-supported GAships; 23 from GIT funds, 19 from EIT, and 9 from a combination of Graduate School and other university or grant salary funding. Most supported students have teaching or lab assistant duties. Some are still being assigned as RAs to assist new faculty in lab start-ups or to meet contractual obligations in grant matching. Departments using these resources include Applied Science, Bioinformatics, Systems Engineering, Chemistry, Computer Science, Physics, Engineering Technology, Information Science, Biology, and GIT. In addition to the GIT and EIT GAs, GIT finance personnel manage the appointments and tuition postings for all grant posted Ph.D. Graduate Assistants for faculties in EIT, CSAM and GIT.

POST-DOCTORAL ASSISTANCE: This year, GIT provided $45,000 in match to grants to help pay salaries of Post-Doctoral Researchers in Applied Science, Systems Engineering, Biology, and Physics. The $40,000 post-doc pool is awarded through FY2013.
**RECRUITMENT ASSISTANCE:** GIT provides advertisement, search, and hire assistance to faculties and departments in EIT, CSAM and the Nanotechnology Center when they need to hire non-classified professional staff (i.e. Research Associate/Post Doc); and similar support for recruitment of a visiting faculty or scholar (i.e. visiting assistant professor or visiting graduate student from abroad).

(Recruitment steps: Obtain approval to hire for the position from the unit’s Dean, obtain a position number, advertisement approval, advertisement placement, applicant log, acknowledgement letter, affirmative action form (file and approval needed before interviews are conducted for a non-classified position), assist with travel if needed, offer letter approval, ORSP visual compliance check, Immigration lawyer/UALR International office action if required, search disposition form, documents to HRD, new hire packet to the new employee and brief meeting if possible, complete and submit paf/epaf.)

**HAZARDOUS WASTE DISPOSAL:** GIT now works with Facilities Management and the Safety Office to handle this disposal, supplying technical assistance and in making sure wastes get to the disposal collection areas.

**RADIATION SAFETY OFFICE:** We are still waiting on the results of our new license submission. We were told this may take as long as two years. We have not heard anything on this for over a year now, but were told NOT to request information about it. We have not had any inspections during this time period. We have had our annual meeting. We also conducted an auxiliary training session for custodial and other personnel who may as part of their duties be around radiation sources of waste. This went well. Our new facility continues to work well for storage of the various sources we retain and our radiation waste facility has improved the working conditions for our radiation directly to the waste room. Dr. Nawab Ali continues to be an integral part of the RSO program.

**Student Achievements**

As part of our mission, we operate as a support unit for the science/math/technology academic programs and students. We are not an academic unit and do not have students of our own.

**Faculty Achievements**

- Director Keith Hudson holds memberships in six professional associations, served as a reviewer of three journals, and had one article published and one article accepted for publication. He serves on 11 PhD and 1 MS student committees, serves as faculty advisor for the Amateur Radio Club, and co-faculty advisor for the SATELLITE Equinox 3 club at UALR. He met with personnel from NSF, NASA, and private companies about possible funding opportunities for UALR. He is UALR’s Radiation Safety Officer, the Arkansas EPSCoR Committee Chairman, and EPSCoR Coalition Board Member (Arkansas representative, 2009-2011). He is a Federal Aviation Administration private pilot and is a member of the Civil Air Patrol/U.S. Air Force Auxiliary. He is a Major with the CAP’s 42nd Squadron, where he serves as the Aerospace Education Officer and the Arkansas Wing - External Aerospace Education Officer. He also received three awards from CAP during 2010.
Faculty Achievements (Continued)

- Assistant Director Doug Wilson continues to bring significant support to UALR for his areas of expertise including fetal monitoring work with UAMS (NIH-sponsored) and also signal processing and other electronics-based work. He is the vice-chairman of the Research Advisory Council for the Arkansas Highway and Transportation Department. He had one article published and one article accepted for publication during 2010. He also traveled to Tubingen, Germany, for the Fetal Magnetocardiography Workshop, Autumn School 2010, and MEG Conferences 2010, where he gave one formal presentation and was involved in discussions at all three meetings. He graduated one Ph.D. student this year who has already been employed in industry in New York.

- Dr. Nawab Ali is GIT’s biotechnology expert; he helps maintain the biotechnology equipment, manage the core facility, and assist faculty and students with biotechnology-related research. He serves as the Assistant Radiation Safety Officer for the campus and is a member of the Radiation Safety Committee. He is also involved in university committees such as the Institutional Review Board, Environmental Health and Safety Committee, Institutional Biosafety Committee, and the Bioinformatics student evaluations committee. He is actively involved in research, mentoring seven Ph.D. students this year, and seven independent study undergraduate students this year. He also works with high school students in outreach activities. He collaborates well with other scientists, actively writes grants, and published five papers. He attended national meetings, reviewed grants and papers, gave invited seminars, and served as President of the local chapter of Sigma Xi.

- Dr. Hanan Mahdi has continued to serve as the Co-PI on the NASA Research and Deep Six funded projects, as well as the regular archiving of Arkansas seismic observatory stations data. Dr. Mahdi also continued serving on the Arkansas Pre-Disaster Mitigation Advisory Council and the Arkansas Governor’s Earthquake Advisory Council. She served on three Ph.D. student committees during the year and had one graduate. Seven Ph.D. students have worked on independent study projects under her supervision in the past year as well. Her new title of Research Associate Professor took effect July 1, 2010.

- Dr. Nancy Marley continued as PI on two DOE funds and Co-PI on two additional DOE funds. She published one peer reviewed journal article, four symposium articles, and made 13 presentations at professional meetings. She is a member of the American Chemical Society, American Geophysical Union, and the American Meteorological society. Dr. Marley also served as a proposal and panel reviewer as well as a reviewer of journal articles during the year.

- Dr. Julian Post, the newest member of GIT’s faculty, repaired, trained, and consulted on the major chemical instrumentation a record number of times in 2010. In addition, he had one provisional patent awarded, NASA/ASGC funded him as a PI on a one-year grant, and he continued to serve as the faculty advisor for the SATELLITE Equinox 3 student group.
Curriculum

GIT is not an academic unit and does not have students of its own.

Grant Applications/Awards

a. Number of proposals submitted          26
b. Total dollar amount requested in proposals $6,349,374.00
c. Number of Awards (proposals funded)     15
d. Total dollars awarded                   $2,647,468.00

Public Service

a. Lectures and presentations, discipline-based, to non-discipline related audiences 9
b. Essays or articles in popular or semi-popular publications (in contrast to professional journals) 0
c. Consultantships (paid)                  2
d. Consultantships (non-paid)              27
e. Other (please add other categories of public service as needed): 20

Hudson: EPSCoR, ASGC, NASA EPSCoR TAC, EPSCoR Coalition, AR AEC Boards 5
Wilson: AR State Highway and Transportation Department Advisory Council 1
Mahdi: AR Governor’s Earthquake Advisory Council; AR Pre-Disaster Mitigation Advisory Council; Science Fair Judge 3
Ali: Association of Scientists of Indian Origin in America, Council Member; AR Academy of Science, State Science Fair Judge 10
Post: Science Fair Judge 1
Research/Creative Activities

- a. Books: 0
- b. Books (new editions): 0
- c. Research articles in professional journals: 8
- d. Research notes in professional journals: 9
- e. Formal presentations at professional meeting: 10
- f. Discussants at professional meeting: 5
- g. Art exhibits: 0
- h. Theatre productions/musical productions: 0
- i. Other: 1

Information Technology

We assist CSAM and EIT, but none of our own.

Recruitment and Retention

We assist CSAM and EIT, but none of our own.

Personnel Changes

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<tr>
<th>Change Type</th>
<th>Name</th>
<th>Department</th>
<th>Most Recent Title / Rank</th>
<th>Highest Degree</th>
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<tr>
<td>New Hire</td>
<td>Youhua Chen</td>
<td>GIT / NASA EPSCoR Research (Gary Anderson)</td>
<td>Research Associate/Post Doc</td>
<td>Ph.D.</td>
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<td>New Hire</td>
<td>James Joyce</td>
<td>GIT made hire for Systems Engineering (Kenji Yoshigoe)</td>
<td>Research Associate/HPC Administrator</td>
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<td>David Clark</td>
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<td>Research Assistant</td>
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<td>Okba Al-Qadhi</td>
<td>GIT / Earthquake Center (Haydar Al-Shukri)</td>
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<td>Tsai-Chi Li</td>
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<td>Becky Hart</td>
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<td>Pat Sipes</td>
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<td>Diane Haynes *</td>
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<td>Transfer</td>
<td>Howard Burris</td>
<td>Construction Mgmt to GIT</td>
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</tbody>
</table>

* Actual retirement January 2011
Appendix I

College Advisory Councils
National Advisory Council

Ruth Greenstein
  Vice President, Finance and Administration, General Counsel
  Institute for Defense Analyses

Dr. Per-Kristian Halvorsen
  Chief Technology Innovation Officer
  Intuit, Inc.

Wayne C. Johnson
  Independent Consultant
  Former VP of Worldwide University Relations for HP

Roger Liska
  Department Chair & Professor, Construction Science and Management
  Clemson University

Dr. Bob Lucky
  Chair / Technological Advisory Board / Federal Communications Commission
  Board of Trustees / ANSER Corporation for national defense in Washington, D.C.
  Member / Laboratory Operations Board / Secretary of Energy
  Former Head of Research for Telcordia Technologies

Dr. Graham R. Mitchell
  Professor of Practice
  Rauch Business Center
  Lehigh University

Patrick Pelch
  Senior Engineer
  Anuvu Incorporated / Fuel Cell Powered Vehicles

Dr. Maxine Savitz
  Former Deputy Assistant Secretary for Conservation, U.S. Dept. of Energy and Program Manager for Research Applied to National Needs / National Science Foundation
  Consultant / The Washington Advisory Group

Jim Womble
  Former Senior Executive at Acxiom Corporation, a $1.4 billion Arkansas-based database management company.
# EIT Computer Science Advisory Council

**Chair** John Burgess/Mainstream Technologies

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<th>Company Name</th>
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### Construction Management Advisory Council

**Chair:** Clay Gordon, Nabholz Construction

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### Information Science Advisory Council

**Chair Mary Hunt, FIS**

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## Systems Engineering Advisory Council
**Bruce Rew, Southwest Power Pool**

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<td>Cantrell, Todd</td>
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<td>Acxiom</td>
<td>Kolluru, Srinivas</td>
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<td>Arkansas Industrial Computing</td>
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<td>Brown, Dee</td>
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<td>Cromwell Architects Eng.</td>
<td>Seay, Rob</td>
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<td>Curtis Stout AV</td>
<td>Crook, David</td>
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<td>Goodrich</td>
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<td>Jay Stanley &amp; Associates</td>
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<td>Ragsdale, Randy</td>
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<td>Little Rock Air Force Base</td>
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<td>Space Photonics</td>
<td>Chalfant, Chuck</td>
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<td>Staley, Inc.</td>
<td>Stormoe, Jason</td>
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<td>Habibi, Hamid</td>
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<td>Hadley, Erika</td>
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<td>Grant, Bill</td>
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<td>Windstream</td>
<td>Roberts, Jim</td>
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</table>
Appendix II

Department of Computer Science

Detailed Information

July 1, 2010 - June 30, 2011
Deans, please provide the following information for your college or school as an appendix to your annual report:

a. **Describe college/school procedures for implementing assessment, including the college-level review process.**

   Our plans are reported to the college PAAG team, which reviews the documents accordingly.

b. **List activities undertaken to encourage good assessment practice within your college/school.**

   Planned assessment instruments, evaluation and data collection processes are in place in the department. Dr. Chiang was recruited as the ABET Assessment Data collection and coordination person for Computer Science, which addresses one of the weaknesses in our interim ABET Interim Report in June 2009. Dr. Chiang closely works with Drs. Seker and Tang on the assessment process.

c. **Identify the strongest assessment program in your college/school.**

   Construction Management, Engineering Technology and Computer Science have strong assessment and evaluation plans

d. **Identify the programs that need the most help with assessment and your plans to assist them.**

e. **Account for spending of assessment funds. Include any additional college/school funds allocated for assessment.**

   We were provided adequate funds for planning and participating in assessment-related activities.

   Our assessment report can be found at


   Computer Science - APPENDIX 0 Detailed Information for July 1, 2010 - June 30, 2011
JOURNAL ARTICLES AND BOOK CHAPTERS


ACTIVE GRANTS

(PI and Co-PI involvement only. Those with senior personnel level involvement not listed)

2. Polymorphic Encryption for Secure Communication, NSA-DoD, 2007-2008, $1,000,000 – funded. Grant Number: H98230-07-C-0403
3. NIH, Arkansas IDeA Network of Biomedical Research Excellence (INBRE) award from NIH, Grant 301-435-0888, University of Arkansas at Little Rock, 03/2005-02/2010.
6. SRA Information Quality tools for Persistent Surveillance Data Sets Grant
7. Airforce Summer Internship Grant
8. NSF RII “Collaborative Research: Cyberinfrastructure for Transformational Scientific Discovery in Arkansas and West Virginia (CI-Train),” 2009 –2012
13. Methods and algorithms for efficient archiving and protection of the authentic image contents of documents Grant
Appendix III

Department of
Construction Management/
Construction Engineering

Detailed Information
### Grant Applications/Awards

#### Akhnoukh, A. Funded Proposals:

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>Funding Agency</th>
<th>Duration</th>
<th>Funded Amount</th>
<th>Months of effort/year</th>
<th>Your Role (PI,CPI,C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforcement Bars Detector</td>
<td>Arkansas Space Grant Consortium</td>
<td>12 month</td>
<td>$2,500</td>
<td>1 month</td>
<td>PI</td>
</tr>
<tr>
<td>Development of Light Weight Concrete Using Environmental Friendly Materials</td>
<td>Arkansas Space Grant Consortium</td>
<td>12 month</td>
<td>$2,500</td>
<td>1 month</td>
<td>PI</td>
</tr>
<tr>
<td>Development of Green High Strength Concrete Mixes</td>
<td>Arkansas Space Grant Consortium</td>
<td>6 month</td>
<td>$6,500</td>
<td>2 months</td>
<td>PI</td>
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<tr>
<td>Investigating the need for construction engineering programs</td>
<td>Arkansas Department of Higher Education</td>
<td>12 month</td>
<td>$4,000</td>
<td>1 month</td>
<td>PI</td>
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<tr>
<td>Establishing UALR High Performance Concrete Laboratory</td>
<td>Master Builders Silica Fume Association</td>
<td>24 month</td>
<td>$500</td>
<td>1 month</td>
<td>PI</td>
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<tr>
<td>Establishing UALR High Performance Concrete Lab</td>
<td>Chryso Chemicals, Holcim Cement, Silica Fume Association</td>
<td>24 month</td>
<td>$500</td>
<td>6 month</td>
<td>PI</td>
</tr>
<tr>
<td>Egyptian Scholars and Researchers Annual Meeting</td>
<td>Egyptian Cultural and Educational Bureau</td>
<td>1 month</td>
<td>$1,000</td>
<td>1 month</td>
<td>C</td>
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</tbody>
</table>

#### Xie, H. Funded Proposals

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>Funding Agency</th>
<th>Duration</th>
<th>Funded Amount</th>
<th>Months of effort/year</th>
<th>Your Role (PI,CPI,C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementing Sustainability Concepts in Building Information Modeling Course</td>
<td>UALR Sustainability Committee Grant Competition</td>
<td>3 months</td>
<td>$500</td>
<td>3 months</td>
<td>PI</td>
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<tr>
<td>Post-Construction Use of Building Information Models for the Mechanical, Electrical, and Plumbing</td>
<td>UALR Sustainability Committee Grant</td>
<td>1 month</td>
<td>$494.99</td>
<td>1 month</td>
<td>PI</td>
</tr>
<tr>
<td>Use of RFID in Steel Structures</td>
<td>Kathleen T. Hall Charitable Grant</td>
<td>May 2010 - Present</td>
<td>$500</td>
<td>May 2010 - Present</td>
<td>PI</td>
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</tbody>
</table>
Submitted Proposals

Akhnoukh, A. submitted proposals:
- “Non-Destructive Testing of Bridge Decks Poured on Stay-In-Place Metal Forms” submitted to the Arkansas Highway and Transportation Department (AHTD), $160,000, (PI)
- “Self-Cured Concrete Properties” submitted to the Arkansas Highway and Transportation Department (AHTD), $160,000 (Co PI)
- “Investigating the Need for Construction Engineering Program” submitted to the Arkansas Department of Higher Education (ADHE), $4,000 (PI)
- “The Development of Green Concrete using Rice Ash as a Supplementary Cementitious Material” submitted to the Arkansas Department of Higher Education (ADHE), $4,000 (PI)
- “Development of Light Weight Concrete using Environmental Friendly Materials” submitted to the Arkansas Space Grant Consortium (ASGC), $2,500 (PI)
- “Development of Green High Strength Concrete Mixes” submitted to the Arkansas Space Grant Consortium (ASGC), $6,500 (PI)
- “Reinforcement Bars Detector” submitted to the Arkansas Space Grant Consortium (ASGC), $2,500 (PI)
- “Establishing a Scientific Collaboration with Egyptian Universities” submitted to the Middle East Studies Program at the University of Arkansas at Little Rock, $3,000 (PI)

Carr, J., Submitted Proposal
- A proposal to the National Housing Endowment for funds ($100,000) to support the construction of a “Green Built” home. The proposal was not funded.

Xie, H. Submitted Proposals
- Strategies of Building Information Modeling Training in the Electrical Contracting Firms, Electric International Fund, $36,000 (PI).

Public Service

Lectures and presentations, discipline-based, to non-discipline related audiences
- Squires, M., Children International, college preparation mentor
Consultantships (paid)

Carr, J.
- Taught a one-day class, “Building a Home,” for the National Association of Home Builders to Arkansas and Oklahoma Occupational Safety and Health Administration Officials. (8 hours)
- Taught a one-day class, “Estimating,” for the Springfield (Mo.) Home Builders Association. (8 hours)
- Taught a two-day class, “Advanced Green Building,” for the Indiana Home Builders Association. (8 hours)
- Taught a two-month course at the Xi’an (China) University of Architecture and Technology. The students in the course were a group of 31 government officials. The course was to prepare the students for a one-semester course at the Public Policy Institute at Duke University.

Ray, C.
- RTH Commercial Construction Seminar Presentations
- RTH Commercial Contract Fundamentals
- RTH Commercial Documentation
- Construction Systems Inc. Proposal Development
- KDC Contract negotiation and review for Mid America Rehab Center HealthSouth in Overland Park, Kan., between KDC and Doster Construction

Squires, M.
- Consulted on residential remodeling work

Professional, University, and Community Service

Akhnoukh, A.
- College Awards Committee, Chair
- College Graduate Curriculum Committee, Secretary
- University Undergraduate Research Committee, Member
- American Concrete Institute, Arkansas Chapter, Board Member
- American Society for Civil Engineers, Member
- National Ready Mix Association, Member
- Associated Schools of Construction, Member
- Egyptian Association of Professional Engineers
- International Road Federation, Member
- American Concrete Institute (State Chapter) AR. Monthly
- Portland Cement Association, IL Sep. 2010
- American Concrete Institute (National), PA. Oct. 2010
- Associated Schools of Construction, TX., Oct. 2010
- Associated Schools of Construction, AL. Oct. 2010
- Arkansas Ready Mix Concrete Association, AR. Nov. 2010
- Arkansas Highway and Transportation Dept., AR. Nov. 2010

Blacklock, J.
- University Fringe Benefits Committee, Member
- University Library Committee, Member
- College Promotion and Tenure Committee, Member
- College Graduate Curriculum Committee, Member

Carr, J.
- Associated Schools of Construction Region V, Director
- EIT Assembly, Vice President
- University Athletic Committee, Chair
- University Sustainability Committee, Member
- College Retention and Recruitment Committee, Member
- College Assessment Committee, Member
- HBA of Greater Little Rock Board of Directors, Member
- HBA of Greater Little Rock Associates Council, Member
- HBA of Greater Little Rock Education Committee, Co-chair
- HBA of Greater Little Rock Green Building Council, Member
- Arkansas Home Builders Association Board of Directors, Member
- Arkansas Home Builders Association, Education Committee, Member
- Arkansas Home Builders Association, Association Committee, Representative
- NAHB National Board of Directors, Member
- NAHB Education Board, Member
- NAHB Health and Safety Committee, Member
- NAHB Faculty Advisory Board, Member
- Attended the National Association of Home Builders Annual Meeting
- Attended the American Council for Construction Education Annual and Mid-year meetings
- Attended the Associated Schools of Construction Annual Meeting.
- Attended the Associated Schools of Construction Region V Annual Meeting.
- Attended the National Association of Home Builders Meeting, Washington D.C.
- Attended the National Association of Home Builders Meeting, New York City
- Attended the Home Builders Association of Greater Little Rock meetings
- Judge for National Association of Home Builders Safety Awards for Excellence
Jovanovic, N.,

- Faculty Senate, Senator from EIT, University
- Honors and Awards, Member, University
- Curriculum Committee, Chair, Department
- Started the process to start a student chapter of the American Society of Civil Engineers (ASCE)
- Presented to the National Advisory Board on Construction Engineering
- Presented to the Construction Management Department Advisory Board on Construction Engineering

Ray, C.

- University Library Committee, Chair
- Committee on Committees, Member
- Attended Pre-Engineered Building Council
- Construction Specifications Institute North Central Region Conference, Green Bay

Squires, Mark

- Faculty sponsor for the National Timber Bridge Design Competition team
- BEST Robotics Field Construction and set-up
- Hosted lead abatement workshops for the Homebuilders Association
- Organized Sharefest volunteer work

Tramel, M.

- Visiting Professor of Xi’an University of Architecture and Technology, Xi’an, Shaanzi, China
- ASC/TEXO Region V meeting and Educator Conference
- ASC/TEXO Regional Student Competition and Regional Meetings
- Arkansas Construction Education Foundation OSHA 30-hour safety classes
  - Fire protection
  - Emergency response plans
  - Fall protection
  - Personal protective equipment
  - Flammable and Combustible Liquids
- CSI’s Certified Construction Contract Administrators curriculum, taught five courses:
  - Communication
  - Project Delivery
  - Quality
  - Claims and Disputes
  - Modifications
- Hosted ACEF’s 2010 statewide graduation ceremony
- American Institute of Constructors, Constructor, CPC’s Associate Level Exam Administrator
International Code Council
  o Code Compliance Certification Exam Administrator
  o Contractor Certification Exam Administrator

Local Education Administrator for Arkansas Workforce Education training funds for the
  o Arkansas Construction Education Foundation
  o Central Arkansas Joint Apprenticeship Committee
  o Little Rock Electrical Joint Apprenticeship and Training Committee

Charter Faculty Advisor for Sigma Lambda Chi, the International Honor Society for Leaders in Construction

Faculty coach for the ASC/TEXO Commercial Division Student Competition Team

University Undergraduate Council, Co-chair

University Environmental Health and Safety Committee, Member

College Undergraduate Curriculum Committee, Chair

Faculty Senator

University Core Pilot Program, Member

Judge for ABC 2011 Excellence in Construction Awards

**Woodard, J.**

- Professional design engineer for Children International and the Construction Management Department. Does PE-stamped calculations and drawings.

**Xie, H.**

- University Dean Search Committee
- University Campus Campaign Steering Committee
- University Academic Technology and Computing Committee
- University Policy and Personnel Advisory Committee
- College Ph.D. Engineering Task Force

**Professional Development**

**Carr, J.**

- Attended four seminars at the International Builders Show in Las Vegas.
- Participated in the American Council of Construction Education Mid-Year Meeting in Albuquerque, and the Annual Meeting in Boise.
- Attended the Associated Schools of Construction (ASC) Annual meeting hosted by Wentworth University, Boston.
- Attended the Associated Schools of Construction (ASC) Regional Meeting hosted by TEXO in Dallas.
Jovanovic, N.
- ABET Program Evaluator (PEV) web-based training, May 2010.
- ABET PEV face-to-face training, June 19-20, 2010, Louisville, KY
- ABET Faculty Workshop on Sustainable Assessment Practices, October 27, 2010, Baltimore, MD

Squires, M.
- Taking construction engineering courses in order to obtain the BS degree
- UAMS Teaching Technologies Symposium

Tramel, M.
- ASC/TEXO Regional meeting and attended three presentations
- Scaffold Training Institute Competent Person, Hands On, Design and Loading, Rigid and Suspended Scaffold Train the Trainer Course, four days, completed by examination

Woodard, J.
- 2010 Spring Concrete Seminar, April 21, 2010, six learning units, AHTD Building, Little Rock.
- CSI Concrete Solving Issues, July 8, 2010, five learning units, Jonesboro, Arkansas
- Decorative Concrete Seminar, University of Arkansas, Fayetteville, Arkansas, Sept 28, 2010, 2.2 learning units
- ACI, Engineering of Anchorage to Concrete, Little Rock, Arkansas, November 9, 2010, 7.5 learning units.
- Attended the World of Concrete conference seminar on Concrete Slabs

Professional Associations, Memberships, Certifications, and Registrations

Akhnoukh, A.
- American Society of Civil Engineers
- American Concrete Institute, Board Member
- International Road Federation
- National Ready Mix Association
- Precast/Pre-stressed Concrete Institute
- Engineering in Training
- Egyptian Association of Professional Engineers

Blacklock, J.
- American Society of Civil Engineers, life member
- ASCE Structures Institute
- ASCE Geotechnical Institute
- ASCE Construction Institute
- Arkansas Governor’s Earthquake Advisory Council
- Licensed Professional Engineer (Arkansas and Texas)

Carr, J.
- Graduate Master Builder
- NAHB Green Certification
- Associated Schools of Construction Member
- Arkansas Home Builders Association Board of Directors
- Arkansas Home Builders Association Education Committee
- Arkansas Home Builders Association Associates Council
- HBA of Greater Little Rock Board of Directors
- HBA of Greater Little Rock Education Committee
- HBA of Greater Little Rock Associate Council
- HBA of Greater Little Rock Green Building Council
- NAHB Board of Directors
- NAHB Education Committee
- NAHB Health and Safety Committee
- NAHB Faculty Advisory Board
- NAHB Graduate Master Builder Certification
- NAHB University of Housing Certified Instructor

Jovanovic, N.,
- American Society of Civil Engineers (ASCE), member
- ASCE Construction Institute (CI), member of Construction Engineering Education Committee
- ASCE Architectural Engineering Institute (AEI), member
- Engineers Without Borders (EWB), member
- American Society of Mechanical Engineers (ASME), member
- American Society of Heating, Ventilating, Air Conditioning, and Refrigerating Engineers (ASHRAE), member
- American Society for Engineering Education, member
- Accreditation Board for Engineering and Technology (ABET), Program Evaluator (PEV) for civil engineering, construction engineering, and architectural engineering programs.

Ray, C.
- CSI, Little Rock Chapter, member
- American Bar Association, member
- American Arbitration Association, member
- American Institute of Constructors
- CMAA
- CSI, Certified Construction Contract Administrator (by examination)
- AIC, Certified Professional Constructor (by examination)

Squires, M.
- American Institute of Constructors, Professional Constructor
- AIC Certified Professional Constructor
- Construction Specification Institute Professional Member
- CSI Construction Document Technologist (certification by examination)
- NAHB Professional Member
- International Code Council, Arkansas and National member
- Forest Product Society
- Sigma Lambda Chi, the International Honor Society for Leaders in Construction, Delta IV Chapter, Member
- Alpha Sigma Lambda Honor Society, Member

Tramel, M.
- Certified Competent Person for Design and Loading of Rigid and Suspended Scaffolds, #23809, July 2010 Certification by examination
- Certified Safety and Health Official, July 2008, 2nd Certification by examination
- Certified Professional Constructor, #682, since 1998 by examination, 3rd Certification by CEUs 2003
- Certified Construction Contract Administrator, #1360753, since 2000 by examination, 3rd Certification by CEUs, 2006
- Certified ACI Concrete Field Testing Technician Grade, 1 #977541, since 1997, 3rd Certification, by examination, 2003
- Certified ACI Concrete Flatwork Technician, #977541, 1st Certification by examination, 2003
- Certified OSHA Construction Industry Outreach Trainer #246817, since 1999 by examination, 3rd Certification by examination, 2006
- Certified Construction Quality Management for Contractors, since 1997 by examination 2006
- Certified Crane Rigger, since 1998 by examination
- CSI Construction Document Technologist (certification by examination)
- OSHA Construction Industry Outreach Trainer (by examination)
- OSHA General Industry Outreach Trainer (by examination)
- US Army Corps of Engineers Certified Construction Quality Management for Contractors (by examination)
- American Society of Safety Engineers, Member
- American Institute of Constructors, Professional Constructor
- Construction Specification Institute Professional Member
- Golden Key National Honor Society, member
- Epsilon Pi Tau, the International Honor Society for Professionals in Technology, Sigma Chapter member (past vice-president)
- Phi Kappa Phi Honor Society, member
- Phi Theta Kappa National Honor Society, member
- Sigma Lambda Chi, the International Honor Society for Leaders in Construction, Delta IV Chapter, charter member

Woodard, J.
- American Concrete Institute-Arkansas President of the Board of Directors
- Licensed Professional Engineer in 11 states: Alabama, Arkansas, Georgia, Kansas, Kentucky, Michigan, Mississippi, Louisiana, Oklahoma, Tennessee, Wisconsin
- Licensed Professional Surveyor, Louisiana
- American Society of Professional Estimators-Charter Member
- American Welding Society
- Arkansas Society of Professional Engineers
- National Society of Professional Engineers
- National Ready Mix Concrete Association, Quality Control Committee
- National Ready Mix Concrete Association, Flatwork Finishers Certification Committee
- American Concrete Institute, Certified Examiner for ACI Flatwork Examination
- American Society of Testing Materials
- Tau Beta Pi Engineering Honor Society, member
- Phi Kappa Phi Honor Society, member
- Sigma Xi, The Scientific Research Society, member
- Sigma Lambda Chi Construction Honor Society

Xie, H.
- Registered as Professional Engineer in Civil Engineering with specialty in Construction Engineering (Registered #13655), Arkansas Board of Registration for Professional Engineers Land Surveyors
- American Society of Civil Engineers, member
- American Society for Engineering Education, member
- Associated Schools of Construction, member
- Association of American Colleges and Universities, member
- American Institute of Constructors, Professional member
- AIC Certified Professional Constructor
- Construction Specifications Institute, Professional member
CSI Construction Document Technologist (certification by examination)
- National Association of Home Builders, member
- Sigma Lambda Chi, the International Honor Society for Construction, Delta IV Chapter (SLC)

Research/Creative Activities

Research articles in professional journals

Akhnoukh, A. Published

- Akhnoukh, A., “The Effect of Confinement on Transfer and Development Length of 0.7 in Prestress Strands” Concrete Bridge Conference, Phoenix, Arizona, Feb., 2010
- Akhnoukh, A., Meadati, P., Carr, J. “Bond Behavior of 0.7 in. Prestressing Strands in Pretensioned Applications” Second International Conference on Construction in Developing Countries, Cairo, Egypt, Aug. 2010.

Car, J., Published


Xie, H. Published

- Xie, H., Shi, W., and Issa, R. R. (2010) INTEGRATION OF BIM AND RFID IN STEEL CONSTRUCTION:

- Xie, H. “Using RFID and Real-Time Virtual Reality Simulation for Optimization in Steel Construction,” ASC/TEXO Conference, Dallas, TX, October 7-8, 2010
- Xie, H., Shi, W., Issa, R., and Carr, J. “Ultrasonic sensor + 4D virtual reality simulation environment for safety training,” The International Conference on Computing in Civil and Building Engineering 2010 (ICCCBE 2010) and The XVII-ICE Workshop on Intelligent Computing in Engineering 2010 (EG-ICE10), The University of Nottingham, June 30-July 2, 2010

Akhnoukh, A., Articles accepted for publication

- Meadati, P., Akhnoukh, A., “BIM and Concrete Formwork Repository” Associated Schools of Construction National Conference, Omaha, NE, April, 2011

Tramel, J., Articles accepted for publication


Xie, H. Pending

Formal presentations at professional meeting

Akhnoukh, A.,

- Dr. Akhnoukh participated in a full-day seminar held at the Arkansas State University and titles “The New Madrid Seismic Zone: What We Know and How to Prepare,” Jonesboro, AR., Feb 2010
- The Effect of Confinement on Transfer and Development Length of 0.7 inch Prestressing Strands, presented at the Concrete Bridge Conference, Phoenix, AZ, Feb. 2010
- Concrete Research Lab in the University of Arkansas at Little Rock, presented in the Faculty Exchange Program with the University of Graz, Graz, Austria, May 2010
- Bond Behavior of 0.7 in. Strands in Pretention Application, presented at the Second International Conference of Construction in Developing Countries, Cairo, Egypt, Aug 2010
- Ultra-High Performance Concrete Applications in the United States of America, presented at the Associated Schools of Construction, Dallas, TX, Oct. 2010
- Dr Akhnoukh authored technical articles for the ACI Arkansas Chapter News Letter.
- Dr. Akhnoukh participated in different technical sessions and events on a national and international level, including:
  a- Portland Cement Association Seminar titled “AASHTO LRFD Specifications for Concrete Bridge Design,” Skokie, Illinois, Sep. 2010
  b- American Concrete Institute Fall Convention titled “Green Concrete in the Steel City,” Pittsburgh, PA, Oct. 2010
  c- American Concrete Institute National Seminar titled “Anchorage to Concrete,” Little Rock, Arkansas, Nov. 2010

- For the second year, Dr. Akhnoukh served as an elected board member in the American Concrete Institute, Arkansas Chapter. His role includes the participation in seminars, scientific meetings, Social events, and publishing and reviewing ACI brochures for industry professionals in the State of Arkansas.

Carr, J.,


Xie, H.,

- Contacted Department of Management, Xi’an University of Architecture and Technology (XUAUT), China, for research and teaching corporation opportunities. Dr. Xie started the exchange program between UALR and XUAUT in 2010. In spring 2011 semester, the first group of 6 Chinese students came to UALR and started their study. These students will attend the International Competition of Design/Build of Associated Schools of Construction in Region V.
- Building Information Modeling presentation to American Society of Professional Estimators (ASPE) on August 20, 2010
- Building Information Modeling presentation to Advising Board of the Construction Management Department of UALR on May 3, 2010
- Present research topic to ASC Region V conference at Dallas, TX, October 7, 2010
Other Scholarly Activities

Akhnoukh, A.,
Guided independent study students supervised.

<table>
<thead>
<tr>
<th>Student Name</th>
<th>Project Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brandon Byars</td>
<td>Development of Light Weight Concrete Mixes</td>
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<tr>
<td>Chris Baxter</td>
<td>Development of Light Weight Concrete Mixes</td>
</tr>
<tr>
<td>Allen Harris</td>
<td>Effect of Curing Temperature on Concrete Properties</td>
</tr>
<tr>
<td>Roshita Jordan</td>
<td>Properties of Light Weight Green Concrete Mixes</td>
</tr>
<tr>
<td>Christie Freemon</td>
<td>Detecting Rebars in Concrete using NDT Testing</td>
</tr>
<tr>
<td>Randy Murray</td>
<td>Development of High Strength Green Concrete</td>
</tr>
</tbody>
</table>

Carr, J.
- Independent Study, Jessica E. Jeffries, The EIT Building LEED Education Credit
- Assessment of Construction Management Alumni and Employers.
- Associated Schools of Construction, Session Moderator at annual meeting
- Reviewer for ASC

Jovanovic, N.,
- Acted as an Observer during an accreditation visit to Cleveland State University, Department of Civil Engineering, October 2010
- Attended the ABET Annual Meeting, Baltimore, MD, October 28-30, 2010
- Independent study with Omar Berumen, Donaghey Scholars senior project: cluster computing--ongoing
- Conducted research on existing construction engineering programs:
  - American University of Cairo
  - Iowa State University
  - North Carolina State University
  - North Dakota State University
  - Purdue University
  - University of Central Florida
  - University of Nebraska Lincoln
  - University of New Mexico
  - Western Michigan University
- Contacted 11 organizations to get support for a construction engineering program:
  - Batson Bravo Engineers: Charles Batson, Rick Geraci, and Mark Eakin
  - Lewis Architects Engineers: Randy Ragsdale
  - Garver USA: John Watkins
  - Riddick Engineering Corporation: Edgar Riddick, Chris Teas, Jack Rule, George Carroll, and Steve Sharp
  - TME, Inc.: Ed Tinsley, Rusty Mullen, Hamid Habibi, Steven Ward, and Mike Harkey
  - Engineering Consultants, Inc.: James Brown, Richard Brown, Frank Allison, and Grant Jordan
  - Cromwell Architects Engineers: Joe Hilliard
- Airetech Corporation: John Oliver and Chris Shaw
- McClelland Consulting Engineers, Inc.: Dan Beranek
- AR Board of Licensure for PE and LS: Steve Haralson and James Atchley
- W. H. Grant & Associates: Bill Grant

Ray, C.

Tramel, J.
- This year the Director of ACEF, Steve Schaeffer, and Mike Tramel met with our OSHA Area Director, Carlos Reynolds, to discuss training requirements for scaffold training. Since I am one of the few people in Arkansas certified in the design, erection, and use of rigid and hanging scaffolds we wanted to see how our area interprets the subpart. We plan to start having competent person certification training classes for the local contractors first and then for the rest of Arkansas later. I will incorporate the competent person certification into my safety class during the Spring 2011 semester so that student will leave the class with two certifications. There is a major shortage of scaffold-competent persons in Arkansas and this is one of the highest penalized parts of the standard for construction.

- Worked with MBA graduate student with an independent study to survey the membership of ABC to identify training needs that their companies and personnel need. We identified six primary needs and five secondary needs but development has been delayed until the economy recovers.

- Last year met with Senator Branch Lincoln’s Little Rock office staff manager on issues dealing with union organization and activities. Since Mike Tramel has been a building-trades union member since 1973 and served in the union organizations his advice was sought.

- Conducted a needs survey assessment for ACEF with their director. Interviewed eight specialty contractors to determine their training needs.

- Working on a joint effort with the U.S. Army Corps of Engineers in developing a series of training sessions for public sector construction for ACEF and ABC. A recent contractor survey has identified nine topics in which contractors want instruction. This is going to be the primary training goal for ACEF and ABC in 2011 since government funding is available for public sector projects.

Woodard, J.
- Independent Study Mark Gernhart, Design and Cost Estimate for a concrete, two-story structure with shear heads

- Independent Study, Daryl Wafford, Feasibility Study of Expanded Shale as a retaining wall backfill material

Xie, H.
- Worked on the proposal for the new Master of Science in Construction Management program. The proposal is submitted to the Construction Management Department for discussion. It will be sent to the Graduate Committee of the college and the Graduate Council of the university soon.
Appendix IV

Department of Engineering Technology

Detailed Information
ENGINEERING TECHNOLOGY

APPENDIX

COLLEGE/SCHOOL ASSESSMENT IMPLEMENTATION

Deans, please provide the following information for your college or school as an appendix to your annual report:

a. Describe college/school procedures for implementing assessment, including the college-level review process.

b. List activities undertaken to encourage good assessment practice within your college/school.

The Engineering Technology department adopted a combined, end-of-semester course and instructor evaluation and an indirect course assessment method. The indirect course assessment measures students' self-assessment of the level at which they grasped the course material and the related ABET learning criteria. It also provides them the opportunity to express their opinion about specific shortcomings in the course or the delivery process, and how improvements can be made to enhance their course experience.

The survey material is provided to the instructor at the end of the semester, so it may be combined with the regular direct assessment data obtained through actual students' performance measures, and course retention data to provide an important profile-feedback to the instructor for the purpose of course improvement.

The department has been actively pursuing this assessment method for a couple of years, and the results have been helpful in guiding the continuous improvement process. The following is a brief example of the application to the course ETME 3312: Production Systems

ETME 3312: Production Systems

Topics:
1. Production system (Prod. Sys. Design- Pg.12 - Prod. Sys. Attributes)
2. Product design and Design for Manufacturing (DFM) Chapter 2 (Pg. 29), **
3. Time Standards and Applications Chapter 3
4. Manufacturing Planning/ Outsourcing Chapter 4, **
5. Machine and Labor requirements Chapters 3 & 4
6. Flow and Relationship Analysis Techniques Chapters 5 & 6
7. Ergonomics and Workstation Design Chapter 7
8. Storage and Warehousing Chapter 8
9. Employee Services and Support Facilities Chapter 9
10. Material Handling Principles Chapter 10
11. Material Handling Equipment Chapter 11
12. Space Allocations and Facilities Design Chapters 13 & 14
13. Office Planning and Layout Chapter 12
14. Computer Analysis Technique Chapter 15
Learning Objectives:
- Upon successful completion of the course, students should be capable of:
  - Planning the manufacture of a part or a product, including Design for Manufacturing (DFM) analysis
  - Comprehending the production system planning process.
  - Applying suitable techniques in the analysis and planning of a production system.
  - Developing a plant layout and planning of a material handling system

Applicable ABET Criteria
a. Mastery of mechanical technology discipline
b. Apply and adapt knowledge to current technology
c. Ability to design systems
d. Ability to function effectively on teams
e. Ability to solve problems
f. Ability to communicate effectively
g. Lifelong (long-term) learning
h. Respect for diversity and knowledge of the issues
i. Commitment to quality, timeliness

Combined Assessment of Learning Objectives

<table>
<thead>
<tr>
<th>Direct Assessment</th>
<th>Indirect Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Design for Manufacturing (DFM)</td>
<td>DFM – Project ........................................................................................................</td>
</tr>
<tr>
<td>2. Manufacturing Process Planning</td>
<td>Course Project - phase I .....................................................................................</td>
</tr>
<tr>
<td>3. Determine Machine Requirements</td>
<td>Course Project - phase II, and Exam II ................................................................</td>
</tr>
<tr>
<td>4. Determine Machine Grouping</td>
<td>Course Project -Phase II, Material Flow and Manpower and Exam............................</td>
</tr>
<tr>
<td>5. Determine Material Handling</td>
<td>Course Project -phase III, Methods and Plant Layout and Exam III ........................</td>
</tr>
<tr>
<td>6. Familiarity with Available Computer Methods</td>
<td>...............................................................................................................................</td>
</tr>
</tbody>
</table>

Retention Data

<table>
<thead>
<tr>
<th>11 Day</th>
<th>Mid Term</th>
<th>After Drop Date</th>
<th>Completing</th>
<th>Passed Course</th>
<th>Retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>9</td>
<td>90%</td>
</tr>
</tbody>
</table>

Data Analysis and Conclusions (Example)

Design for Manufacturing (DFM) – Direct and Indirect Comparison

<table>
<thead>
<tr>
<th></th>
<th>Direct</th>
<th>Indirect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. Score</td>
<td>0.87</td>
<td>2.11</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.66</td>
<td>0.97</td>
</tr>
</tbody>
</table>

Conclusions:
- Most of the DFM effort is focused on the course project
- Need to emphasize and expand tutorial material and other applications
Appendix V

Department of Information Science

Detailed Information
# INFORMATION SCIENCE

## APPENDIX 1 – LIST OF PROPOSALS SUBMITTED AND AWARDS

### Proposals Submitted During 2010-2011

<table>
<thead>
<tr>
<th>Name</th>
<th>Proposal Description</th>
<th>Amount Requested</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Talburt</td>
<td>Air Force Research Lab Year 3 Proposal</td>
<td>$900,000</td>
<td>Submitted</td>
</tr>
<tr>
<td>John Talburt</td>
<td>Data to Decision Program of the Office of Naval Research, 5 years for $700,000/year</td>
<td>$827,254</td>
<td>Submitted</td>
</tr>
<tr>
<td>John Talburt</td>
<td>Arkansas Clinical Translational Science Institute (Year 3)</td>
<td>$108,563</td>
<td>Submitted</td>
</tr>
<tr>
<td>M.E. Tudoreanu</td>
<td>NSF: Integrating Information Quality in Visual Data Analytics,</td>
<td>$499,314</td>
<td>Declined</td>
</tr>
<tr>
<td>M.E. Tudoreanu</td>
<td>Interactive Sequencing Read Analysis Pipeline on Graphical Processing Units. Submitted to UAMS.</td>
<td>$113,188</td>
<td>Submitted</td>
</tr>
<tr>
<td>Rolf Wigand and Nitin Agarwal</td>
<td>Modeling Decentralized Strategic Interactions and Political Collective Actions in Social Media to DARPA. 3 years for a total of $2,133,433</td>
<td>$783,402</td>
<td>Submitted</td>
</tr>
<tr>
<td>Rolf Wigand and Nitin Agarwal</td>
<td>Finding Her Master's Voice: The Power of Collective Action Among Female Muslim Bloggers</td>
<td>$135,702</td>
<td>Submitted</td>
</tr>
<tr>
<td>Nitin Agarwal</td>
<td>Developing Context Aware Privacy Model: Towards an Invulnerable Crowd-sourcing Environment for HADR ops submitted to DARPA</td>
<td>$109,162</td>
<td>Submitted</td>
</tr>
</tbody>
</table>

### New Proposals Awarded During 2010-2011

<table>
<thead>
<tr>
<th>Grant Number</th>
<th>Grant Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>250026</td>
<td>Agarwal, N., BlogTrackers: Analyzing Social Media for Cultural Modeling (Amend # 1) in conjunction with Arizona State University. UALR's Portion is $10,208 for Summer 2010 and another $10,209 for Summer 2011.</td>
</tr>
</tbody>
</table>
## Ongoing Award Activity During 2010-2011

<table>
<thead>
<tr>
<th>Grant Number</th>
<th>Grant Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>281545</td>
<td>Talburt, J. (PI): Master's degree in information quality [Year 4]. Acxiom Corporation education grant to the University of Arkansas at Little Rock, Close out funds, Jul 1, 2009 – Jun 30, 2011</td>
</tr>
<tr>
<td>250066</td>
<td>Berleant, J.R., NSF Collaborative Research: A Web-Based System for Modeling and Predicting Neurodevelopment Across Mammalian Species.; 2009-2012, $331,123</td>
</tr>
<tr>
<td>253116</td>
<td>Jennings, S., NIH/NCRR: INBRE - Arkansas IDeA Network of Biomedical Research Excellence (INBRE), Open Ended Pending Renewal Review, $414,738 per year</td>
</tr>
<tr>
<td>279211</td>
<td>Jennings, S., UAMS: College of Medicine Bioinformatics Graduate Assistantships., Open Ended, $95,500 per year</td>
</tr>
<tr>
<td>277400</td>
<td>Jennings, S. et al., National Science Foundation 2007 Arkansas EPSCoR Program, Efficient Algorithms for Protein Structure Prediction and Applications in RTB Binding Occupancy Determination, $16,509.35</td>
</tr>
</tbody>
</table>
APPENDIX 2
LIST OF 2010/2011 FACULTY RESEARCH/Creative ACTIVITIES

Books

Research Articles in Professional Journals (* denotes student author)
- Designing Digital Communities that Transform Urban Life: Introduction to the Special Section on Digital Cities (**R. T. Wigand** with Youngjin Yoo and Antony Bryant). Communications of the Association for Information Systems (CAIS), Special Section on Digital Cities. 2010, Vol. 27, Article 33. Available at: [http://aisel.aisnet.org/cais/vol27/iss1/33](http://aisel.aisnet.org/cais/vol27/iss1/33).
- Digital Cities (**R. T. Wigand** with Youngjin Yoo and Antony Bryant, Eds.). Communications of the Association for Information Systems (CAIS), Special Section on Digital Cities. 2010, Vol. 27, Article 33. Available at: [http://aisel.aisnet.org/cais/vol27/iss1/33](http://aisel.aisnet.org/cais/vol27/iss1/33).

Formal Presentations at professional meetings
- **Nitin Agarwal**: Invited talk on Information Quality in Social Media: Challenges and Opportunities. International Association for Information and Data Quality (IAIDQ) - Student Chapter, Little Rock, Arkansas. September 17, 2010.
- **John Talburt**: Invited Speaker, ECCMA Conference and Workshop, Oct 13, 2010
- **Rolf Wigand**: Presented his NSF project on Virtual Organizations, October, 2010, University of Munich, Germany
- **Rolf Wigand**: Presentation on NSF Standards Development Project, University of Frankfurt, Germany, October, 2010.
Discussants at professional meetings


Other: Research Articles/Presentations in Refereed Conference Proceedings

- Xiaowei Xu, Mutlu Mete*, Halil Bisgin*, Kemal Aydin, Nitin Agarwal, and Thomas A.J. Schweiger. Finding Community Leaders in Social Networks. The fourth ACM Workshop on Social Network Mining and Analysis (SNAKDD) held in conjunction with the 16th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2010). July 25, 2010, Washington DC, USA.
- Halil Bisgin*, Nitin Agarwal, and Xiaowei Xu. Does Similarity breed Connection? - An Investigation in BlogCatalog and Last.fm Communities. The fourth ACM Workshop on Social Network Mining and Analysis (SNAKDD) held in conjunction with the 16th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2010). July 25, 2010, Washington DC, USA.


Other: Book Chapters and Encyclopedia Entries (* denotes student author)


Other: Abstracts (* denotes student author)


Other: Posters (* denotes student author)


- June 16-18, 2010: Jennings SF and Hall RA, The MidSouth Bioinformatics Center at UALR, National IDeA Symposium of Biomedical Research Excellence (NISBRE), Bethesda, MD.


- April 2, 2011: Walker KA, Cramer CL, Jennings SF, and Huang X, TERPRED: A Dynamic Structural Bioinformatics Tool, 8th Annual Conference of the MidSouth Computational Biology and Bioinformatics Society, College Station, TX.
APPENDIX 3
LIST OF FACULTY PUBLIC SERVICE ACTIVITIES FOR 2010-2011

Lectures and presentations, discipline-based, to non-discipline related audiences
- **Steve Jennings**, Invited Talk: University of Central Arkansas, Computer Science Seminar, Oct 1, What is Bioinformatics?

Essays or articles in popular or semi-popular publications *(in contrast to professional journals)*
- None

Consultantships (paid)
- **Steve Jennings**, Book proposal reviewer for Elsevier in the area of bioinformatics; one hour.
- **Steve Jennings**, Proposal reviewer for Oklahoma Economic Development Generating Excellence (EDGE) program; eight hours.
- **John Talbut**, Black Oak Partners, LLC, Senior Information Quality Analyst, six billable hours in 2010

Consultantships (non-paid)
- **Thomas Wallace**: Little Rock Children’s House Montessori – Consulting and implementation of technology for administration, PTO and classrooms
- **Thomas Wallace**: Pulaski Heights United Methodist Church – Web committee and web site consultant
- **Thomas Wallace**: Boy Scouts of America – Web Migration Committee
- **Steve Jennings**: Advisor to Jackson State University (HBCU in Jackson, Miss.) on establishing a bioinformatics educational program

Other – Active Participation in Professional/Learned Societies, College or University Committees
- **Nitin Agarwal** (4)
  - UALR E-Lag Committee Member
  - Served as a judge for the BEST Robotics competition for middle and high schools around central Arkansas held in Little Rock on November 6, 2010.


Dan Berleant (4)
- Reviewing activities: American Chemical Society Books (2010); Bioinformatics (2010); CHI 2011 (2010)
- Past-President, MidSouth Computational Biology and Bioinformatics Society (MCBIOS), 2009-2010.

Russel Bruhn (N/A)
- Just returned to the department from serving as the EIT College’s Associate Dean.

Serhan Dagtas (3)
- EIT Faculty Assembly President
- UALR IRB Committee Member

Steve Jennings (Bioinformatics Director and Executive Director, MidSouth Bioinformatics Center - 15)
- President of UALR Graduate Council
- Joint UALR/UAMS/UCA Grad Council Member
- Chancellor’s Leadership Group Member
- Chancellor’s Policy Advisory Group Member
- UALR Internet2 Faculty Representative
- UALR Research Symposia Committee Member
- Professional Science Masters in Biotechnology External Advisory Committee (Arkansas State) Member
- INBRE Steering Committee Member
Bioinformatics Steering, Admission, Curriculum, and Student Evaluation Committees

MidSouth Computational Biology Bioinformatics Society Board Member

Faculty Advisor to ARBIOS – MCBIOS Central Arkansas Chapter

Board Member for National Network of IDeA-funded Core Laboratories (NICL)

Chair, Association of Biomolecular Resource Facilities Affiliates Committee

International Society for Computational Biology member

Great Plains Network Biosciences Group member

Elizabeth Pierce (Department Chair - 6)

PAAG Assessment Committee

EIT Dean Search Committee

UALR Graduate Council Member

EIT Assembly Secretary

ICIQ 201 Program Chair

Associate Editor for ACM Journal of Information Quality

John Talburt (IQ Program Coordinator - 13)

EIT Integrated Computing PhD Steering Committee Member

EIT Doctoral Affairs Committee Member

UALR-Acxiom Relationship Committee Member

UALR High-Perf Computing (HPC) Steering Committee Member

UALR Graduate Coordinators Council Member

EIT Dean Search Firm Committee Member

IFSC Dept Coordinator for the UALR Campus Campaign. IFSC was one of only 7 departments on campus to attain 100% participation.

Member of the Executive Biomedical Informatics Committee for the Center for Clinical and Translational Research (CCTR), University of Arkansas for Medical Sciences (appointed December 2010)

Member of the Executive Committee, Arkansas Academy of Computing (elected April 2010)

Executive Director, UALR Laboratory for Advanced Research in Entity Resolution and Information Quality. Plan and direct all Laboratory activities, write proposals and white papers, and maintain the website (technologize.ualr.edu/eriq)

Associate Director of the Acxiom Laboratory for Applied Research (ALAR). Help plan and direct the Laboratory’s research program and annual conference.

ICIQ 2010 Conference Chair

Identity Summit, May 4-5, 2011, Univ TX, Austin, Member of Research and Education Committee

Mihail Tudoreanu (VRC Manager - 6)

UALR Faculty Senate Member

UALR Committee on Tenure Member

UALR Committee on Committees Member
- EIT Policy and Personnel Advisory Committee Member
- EIT PhD in Engineering Task Force Member
- Reviewer for IEEE VisWeek / InfoVis

**Rolf Wigand (9)**
- Review Board Member/Reviewer for 27 different journals as well as 10 different book series
- Program Committee Member for multiple conferences: ICEC, EGOV, IFIP, IADIS, International Conference on Mobile Government, International Symposium on Electronic Marketplace Integration & Interoperability
- Program Committee Member for multiple conferences: ICEC, EGOV, IFIP, IADIS, International Conference on Mobile Government, International Symposium on Electronic Marketplace Integration & Interoperability
- Review Board Member/Reviewer for 27 different journals as well as 10 different book series
- Program Committee Member for multiple conferences: ICEC, EGOV, IFIP, IADIS, International Conference on Mobile Government, International Symposium on Electronic Marketplace Integration & Interoperability

- Evaluator of grant proposals for the NSF and German NSF,
- Holds Editorial Positions on 12 different journals
- Program Committee Member for 8 International Conferences
- COB – Dean’s Strategy Committee Member
- University District Economic Development Team Member
- External Tenure Reviewer at 8 universities, External Dissertation Committee member at 7 universities

**Ningning Wu (4)**
- EIT Awards Committee Member
- EIT & CSAM Doctoral Affairs Committee Member
- UALR Personnel & Tenure Committee Member
- Reviewer for ICIQ 2010, ISDPE, CISSE, and AMCS Conferences as well as reviewer for ACM Journal of Data and Information Quality.

**Xiaowei Xu (4)**
- EIT Integrated Computing Steering Committee Member
- EIT Graduate Curriculum Committee Member
- Program Committee/Reviewer for ACM SIGKDD, IEEE Data Mining (ICDM), Int‘l Conf. on Computational Aspect of Social Networks, International Journal on Very Large Data Bases, IEEE Transactions in Data Engineering
- Served as proposal reviewer for NSF Division of Information and Intelligent Systems

**Catherine Lowry (IT Program Coordinator - 2)**
- Provost’s Chief of Staff for the EIT Dean Search
- Co-facilitator for the Promise Neighborhood Data Team

**Thomas Wallace (College Webmaster – 2)**
- Campus EAI Portal Committee Member
- UALR Web Services Committee Member
Appendix VI

Department of Systems Engineering

Detailed Information

This annual report assembles or borrows text from a number of other departmental documents produced throughout the year by the department faculty. The contribution of the faculty is gratefully acknowledged.
SYSTEMS ENGINEERING APPENDIX

COLLEGE/SCHOOL ASSESSMENT IMPLEMENTATION

*Deans, please provide the following information for your college or school as an appendix to your annual report:*

**a.** Describe college/school procedures for implementing assessment, including the college-level review process.

Systems Engineering formulated an assessment plan and is carrying out the plan. PAAG is a good avenue for dissemination.

**b.** List activities undertaken to encourage good assessment practice within your college/school.

Systems Engineering completed a self-study report, hosted an ABET EAC team visit in fall 2009, and responded to AUDIT STATEMENT; the department submitted a well-formulated assessment plan as part of the response and began the implementation of it starting from fall 2009. The program has been accredited to 2016.

**c.** Identify the strongest assessment program in your college/school.

Systems Engineering has one of the strongest assessment programs in the college.

**d.** Identify the programs that need the most help with assessment and your plans to assist them.

Systems Engineering sends the chair or others responsible for assessment to ABET annual meeting; the department should be encouraged to continue the activity with support from the dean’s office.

**e.** Account for spending of assessment funds. Include any additional college/school funds allocated for assessment.

Systems Engineering used funds for hosting the ABET team in 2009 and attend ABET meetings.
# Grant Applications/Awards

## DR. Al-Rizzo

### Ongoing Proposals

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>PI &amp; Co-PI</th>
<th>Amount Requested</th>
<th>Submitted To Date</th>
<th>Funded/Not Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integration of Ground and Space-Based Observations to Detect and Identify Sources of Sand and Dust Storms in Iraq</td>
<td>PI</td>
<td>$17,400</td>
<td>Co-PI: Dr. Abdulkareem Abd Ali Mohammed, Atmosphere and Space Science Center, Directorate of Space Technology &amp; Communication, Ministry of Science and Technology, Baghdad, Iraq</td>
<td>Funded</td>
</tr>
<tr>
<td>Smart Current Sensor</td>
<td>PI</td>
<td>$15,000</td>
<td>Dr. Asaad M. J. Al-Hindawi, Assistant Professor of Communication Engineering, Department of Communication Engineering, Sulaimani Technical College, Sulaimaniya, Iraq, Bilal Asaad Mubdir, College of Electrical and Electronic Techniques, Foundation of Technical Education, Baghdad, Iraq, Dr. Sabah Nasir Hussein, College of Electrical &amp; Electronic Techniques, Foundation of Technical Education, Baghdad, Iraq</td>
<td>Funded</td>
</tr>
<tr>
<td>Fulbright Visiting Scholar Program for Iraq: University of Arkansas at Little Rock Program Proposal, PI, Fulbright Visiting Scholar Program for Iraq, 2/16/2010</td>
<td>PI</td>
<td>$5,000</td>
<td>U. S. Department of State's Bureau of Educational and Cultural Affairs (ECA)</td>
<td>Denied</td>
</tr>
<tr>
<td>MRI: ACQUISITION OF A FABRICATION AND CHARACTERIZATION SYSTEM FOR MULTIFUNCTIONAL THIN FILMS AND NANOSTRUCTURED MATERIALS, Proposal No: 1040401, Co-PI, Apr 21 2010</td>
<td>Co-PI</td>
<td></td>
<td>NSF, MRI</td>
<td>Denied</td>
</tr>
</tbody>
</table>

**Other research or scholarly activities completed during the current year and not reported above.**

- Prepared lecture notes and simulations for the courses: SYEN 7357 and 4300
- Completed the design and installation of the UALR’s anechoic chamber, the first in the State of Arkansas, ordered all testing equipment, received testing equipment for measuring Specific Absorption Rate from Speag, also received the dielectric testing equipment from Agilent, and the SAM Phantom model.
- Installed and operated the RF printer, the first in the State of Arkansas for manufacturing flexible antennas and RF devices.
- Established contacts with several industries and prepared quotations on equipment, testing devices, and laboratories for the EPSCOR grant.
DR. BABICEANU

New Proposals

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>PI &amp; Co-PIs</th>
<th>Amount Requested</th>
<th>Submitted To Date</th>
<th>Funded/Not Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systems Engineering Approach to Lifetime and Reliability Prediction for Wireless Sensor Networks</td>
<td>PI</td>
<td>$4,000.00</td>
<td>ADHE - SURF</td>
<td>Funded</td>
</tr>
<tr>
<td>Early Warning System to Improve Student Retention and Graduation Rates</td>
<td>PI</td>
<td>$9,726.72</td>
<td>UALR Office of the Provost</td>
<td>Pending</td>
</tr>
<tr>
<td>Arkansas Health Information Exchange Project - UALR Offer of Collaboration</td>
<td>PI</td>
<td></td>
<td>Arkansas Office of Health Information Technology</td>
<td>Pending</td>
</tr>
<tr>
<td>Systems Engineering Approach to Process Monitoring for Large-Scale Holonic Enterprise Systems</td>
<td>PI</td>
<td>$400,837.00</td>
<td>NSF</td>
<td>Not funded</td>
</tr>
<tr>
<td>Collaborative Research Paradigms on Validation: A Case Study on Cyber Transportation Logistics</td>
<td>Co-PI</td>
<td>$222,058.00</td>
<td>NSF</td>
<td>Not funded</td>
</tr>
<tr>
<td>Enterprise Systems Behavior Prediction Enhanced by Complex Systems Science and Simulation Methodologies</td>
<td>PI</td>
<td>$6,985.00</td>
<td>Kathleen Thomsen Hall Charitable Trust Grant</td>
<td>Not funded</td>
</tr>
<tr>
<td>Systems Engineering Approach to the Design and Operation of Wireless Sensor Networks</td>
<td>PI</td>
<td>$500.00</td>
<td>UALR - Northrop Young Researcher Award</td>
<td>Not funded</td>
</tr>
</tbody>
</table>

Other research or scholarly activities completed during the current year and not reported above.

- Presentations:


**Course Development:**

• SYEN 7399: ST: Agent-Based Modeling and Simulation

**Ongoing Projects**

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>Funding Agency</th>
<th>Duration</th>
<th>Funded Amount</th>
<th>Months of effort/year</th>
<th>Your Role (PI,CPI,C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas ASSET Initiative – Wireless Nano-Bio- and Info-Tech Sensor and System</td>
<td>NSF</td>
<td>2</td>
<td></td>
<td></td>
<td>Senior personnel</td>
</tr>
</tbody>
</table>

**DR. BOUAYNAYA**

**New Proposals**

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>PI &amp; Co-PIs</th>
<th>Amount Requested</th>
<th>Submitted To Date</th>
<th>Funded/Not Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal-Perturbation Dynamic Control of the Melanoma Gene Regulatory Network</td>
<td>Co-PI²</td>
<td>$1,200,000</td>
<td>National Institutes of Health (NIH) 08/15/2010 - 08/14/1014</td>
<td>Funded</td>
</tr>
<tr>
<td>Extension of the MUSIC algorithm to AM-FM signals</td>
<td>PI</td>
<td>$4,000</td>
<td>Arkansas Department of Higher Education (ADHE) 01/01/2010 – 12/31/2010</td>
<td>Funded</td>
</tr>
<tr>
<td>Design and Implementation of Synthetic Genetic Networks</td>
<td>PI</td>
<td>$4,000</td>
<td>Arkansas Department of Higher Education (ADHE) 01/01/2011 – 12/31/2011</td>
<td>Funded</td>
</tr>
<tr>
<td>3D Biofilm Modeling and Analysis for Medical Purposes</td>
<td>PI</td>
<td>$4,000</td>
<td>Arkansas Department of Higher Education (ADHE) 01/01/2011 – 12/31/2011</td>
<td>Funded</td>
</tr>
<tr>
<td>Early-Warning Software to Improve Graduation Rates</td>
<td>PI</td>
<td>$6,200</td>
<td>UALR</td>
<td>Funded</td>
</tr>
<tr>
<td>Time-Varying Molecular Networks: Inference, Analysis and Control</td>
<td>PI</td>
<td>$290,957</td>
<td>DARPA</td>
<td>Denied</td>
</tr>
<tr>
<td>CAREER: A Probabilistic Tensor Approach To Time-Varying Genetic Regulatory Networks</td>
<td>PI</td>
<td>$407,487</td>
<td>National Institutes of Sciences (NSF)</td>
<td>Denied</td>
</tr>
<tr>
<td>Inferring Temporally Rewiring Genetic Networks from Gene Expression Data</td>
<td>PI</td>
<td>$7,000</td>
<td>Kathleen Thomsen Hall Charitable Trust, UALR</td>
<td>Denied</td>
</tr>
<tr>
<td>Time-Varying Molecular Networks: Inference, Analysis and Control</td>
<td>PI</td>
<td>$500</td>
<td>Northrop Award. UALR</td>
<td>Denied</td>
</tr>
</tbody>
</table>
Other research or scholarly activities completed during the current year and not reported above.

- I was invited at the University of Alabama at Birmingham to give a talk entitled “Analysis of Proteomics and Genomics Based on Signal Processing, Communication and Control Theory.”
- I was invited at Hofstra University, NY to give a talk entitled “Inverse Perturbation for Optimal Intervention in Genetic Regulatory Networks.”

Ongoing Proposals

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>Funding Agency</th>
<th>Duration</th>
<th>Funded Amount</th>
<th>Months of effort/year</th>
<th>Your Role (PI, CPI, C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal-Perturbation Dynamic Control of the Melanoma Gene Regulatory Network</td>
<td>National Institutes of Health (NIH)</td>
<td>4 years</td>
<td>$1,200,000</td>
<td>2</td>
<td>Co-PI</td>
</tr>
<tr>
<td>Extension of the MUSIC algorithm to AM-FM signals</td>
<td>Arkansas Department of Higher Education (ADHE)</td>
<td>1 year</td>
<td>$4,000</td>
<td>0.5</td>
<td>PI</td>
</tr>
</tbody>
</table>

DR. CHAN

New Proposals

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>PI &amp; Co-PIs</th>
<th>Amount Requested</th>
<th>Submitted To Date</th>
<th>Funded/ Not Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Reliability and Capacity: Preventing Hazards and Attacks</td>
<td>Chan (PI)</td>
<td>$334,611</td>
<td>National Science Foundation</td>
<td>Not funded</td>
</tr>
<tr>
<td>Collaborative Research Paradigms on Validation: A Case Study of Cyber Transportation Logistics</td>
<td>Chan (PI)</td>
<td>$222,058</td>
<td>National Science Foundation</td>
<td>Not funded</td>
</tr>
<tr>
<td>Network Throughput and Reliability: Preventing Hazards and Attacks</td>
<td>Chan (PI)</td>
<td>$337,387</td>
<td>National Science Foundation</td>
<td>Not funded</td>
</tr>
<tr>
<td>Network Throughput and Reliability: Resilience against Hazards and Attacks</td>
<td>Chan (PI)</td>
<td>$368,795</td>
<td>National Science Foundation</td>
<td>Pending</td>
</tr>
</tbody>
</table>

Ongoing Projects

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>Funding Agency</th>
<th>Duration</th>
<th>Funded Amount</th>
<th>Months of effort/year</th>
<th>Your Role (PI, CPI, C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reality Simulation Center for Industries &amp; Academia</td>
<td>Economic Development of AR Fund Commission</td>
<td>2001-2010</td>
<td>$291,450</td>
<td>A week</td>
<td>PI</td>
</tr>
</tbody>
</table>
DR. HUANG

New Proposals

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>PI &amp; Co-PIs</th>
<th>Amount Requested</th>
<th>Submitted To Date</th>
<th>Funded/Not Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure for Wireless, Nano-, Bio-, Info-Tech Sensors and Systems</td>
<td>Senior Investigator</td>
<td></td>
<td>NSF EPSCoR</td>
<td>Funded</td>
</tr>
<tr>
<td>EAGER: Multifunctional Cellular Metacomposite: Low Frequency Noise Absorber and Energy Harvesting</td>
<td>PI</td>
<td>30,000</td>
<td>NSF</td>
<td>Funded</td>
</tr>
<tr>
<td>A Novel Paradigm for Flying-Wing Design: Chiral Elastic Metamaterial Airfoil</td>
<td>Co-PI</td>
<td>20,000</td>
<td>NASA EPSCoR RID</td>
<td>Funded</td>
</tr>
<tr>
<td>Development of meta-composite materials with negative mass density</td>
<td>Co-PI</td>
<td>170,000</td>
<td>Air Force of Scientific Research</td>
<td>Funded (second year)</td>
</tr>
<tr>
<td>CAREER: Dynamic Characterization and Functional Design of Broadband Elastic Metamaterials</td>
<td>Co-PI</td>
<td>460,276</td>
<td>NSF</td>
<td>Pending</td>
</tr>
<tr>
<td>MRI: Acquisition of a Fabrication and Characterization System for Multi-functional Thin Films and Nanostructured Materials</td>
<td>Co-PI</td>
<td>$1,330,880.00</td>
<td>NSF</td>
<td>Declined</td>
</tr>
<tr>
<td>MRI: Development of A Novel Instrumentation for Nano-Structure Metamaterial Based Wearable and Virtual MIMO Wireless Systems</td>
<td>Co-PI</td>
<td>$1,105,986.00</td>
<td>NSF</td>
<td>Declined</td>
</tr>
<tr>
<td>A New Multiscale Continuum Modelling of Dynamic Behavior in Nano Thin Films</td>
<td>PI</td>
<td>7000</td>
<td>Kathleen Thomsen Hall Charitable Trust Grant, UALR</td>
<td>Declined</td>
</tr>
<tr>
<td>Design and Analysis of Acoustic Metamaterials for Energy Harvesting</td>
<td>Supervisor</td>
<td>4000</td>
<td>SURF</td>
<td>funded</td>
</tr>
</tbody>
</table>

Other research or scholarly activities completed during the current year and not reported above.

- Lab demonstration for high school students in Stimulating STEM Education in the State of Arkansas program
- Supervisor of summer high school student’s research “fabrication of MEMs-based piezoelectric sensors”

DR. HUANG

Ongoing Projects

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>Funding Agency</th>
<th>Duration</th>
<th>Funded Amount</th>
<th>Months of effort/year</th>
<th>Your Role (PI,CPI,C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure for Wireless, Nano-, Bio-Info-Tech Sensors and Systems</td>
<td>NSF</td>
<td>3 years</td>
<td></td>
<td>1</td>
<td>Senior Investigator</td>
</tr>
<tr>
<td>Development of meta-composite materials with negative mass density</td>
<td>Air Force Research Lab</td>
<td>second-year</td>
<td>170,000</td>
<td>1</td>
<td>PI</td>
</tr>
<tr>
<td>A Novel Paradigm for Flying-Wing Design: Chiral Elastic Metamaterial Airfoil</td>
<td>NASA EPSCoR</td>
<td>First year</td>
<td>20,000</td>
<td>1</td>
<td>Co-PI</td>
</tr>
</tbody>
</table>
DR. IQBAL

New Proposals

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>PI &amp; Co-PIs</th>
<th>Amount Requested</th>
<th>Submitted To Date</th>
<th>Funded/Not Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRI: Acquisition of an Experimental Platform to Support Research and Education in Human Movement Studies</td>
<td>K. Iqbal</td>
<td>$150,000</td>
<td>To be submitted</td>
<td></td>
</tr>
<tr>
<td>A Sensory Perception Model for Improved Understanding of Sensorimotor Interactions in Microgravity</td>
<td>K. Iqbal, A. Ahmad, S. Swaid</td>
<td>$19,970</td>
<td>10/10</td>
<td>Not funded</td>
</tr>
</tbody>
</table>

Ongoing Proposals

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>Funding Agency</th>
<th>Duration</th>
<th>Funded Amount</th>
<th>Months of effort/year</th>
<th>Your Role (PI,CPI,C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3D simulation of human movement in SimMechanics</td>
<td>Graduate school</td>
<td>6 mo</td>
<td>500</td>
<td>1</td>
<td>Mentor</td>
</tr>
</tbody>
</table>

DR. KIM

New Proposals

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>PI &amp; Co-Pls</th>
<th>Amount Requested</th>
<th>Submitted To Date</th>
<th>Funded/Not Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridge Structural Health Monitoring: Data Analysis</td>
<td>PI</td>
<td>$36,232</td>
<td>Submitted to Samsung</td>
<td>Awarded</td>
</tr>
<tr>
<td>InGaN Solar Cell Development</td>
<td>Senior Researcher</td>
<td>$38,500</td>
<td>Submitted to LG Electronics</td>
<td>Awarded</td>
</tr>
<tr>
<td>Supercomputing Time to Execute Dynamic Algorithm On Dictystelium Cell</td>
<td>PI</td>
<td>10,000 unit hours</td>
<td>National Advanced Computational Infrastructure</td>
<td>Awarded</td>
</tr>
</tbody>
</table>

DR. LAI

New Proposals

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>PI &amp; Co-PIs</th>
<th>Amount Requested</th>
<th>Submitted To Date</th>
<th>Funded/Not Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressive Sensing Based Malicious Activity Detection and Localization in Large Scale Networks</td>
<td>Mentor</td>
<td>4,000</td>
<td>ADHE, SURF, Oct. 2010</td>
<td>Funded</td>
</tr>
<tr>
<td>ATD: Collaborative Research: Distributed Quickest Detection with Heterogeneous Change Points</td>
<td>PI</td>
<td>163,523</td>
<td>NSF, May 2010</td>
<td>Pending</td>
</tr>
<tr>
<td>CAREER: Building Secure Wireless Communication Systems via Physical Layer Resources</td>
<td>PI</td>
<td>400,000</td>
<td>NSF, July 2010</td>
<td>Pending</td>
</tr>
</tbody>
</table>
Ongoing Proposals

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>Funding Agency</th>
<th>Duration</th>
<th>Funded Amount</th>
<th>Months of effort/year</th>
<th>Your Role (PI,CPI,C)</th>
</tr>
</thead>
</table>

New Proposals

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>PI &amp; Co-PIs</th>
<th>Amount Requested</th>
<th>Submitted To Date</th>
<th>Funded/Not Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data analysis and low-power wireless transmission</td>
<td>Co-PI</td>
<td>36,232</td>
<td>4/2010</td>
<td>Funded</td>
</tr>
<tr>
<td>Development of novel learning materials for green energy education centered around a photovoltaic test station</td>
<td>SP</td>
<td>199,965</td>
<td>5/2009</td>
<td>Funded</td>
</tr>
<tr>
<td>Design of the adaptive lidar for smart wind turbines</td>
<td>PI</td>
<td>43,922</td>
<td>10/2010</td>
<td>Pending</td>
</tr>
</tbody>
</table>

**DR. MOHAN**

New Proposals

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>PI &amp; Co-PIs</th>
<th>Amount Requested</th>
<th>Submitted To Date</th>
<th>Funded/Not Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas ASSET (Advancing and Supporting Science, Engineering, and Technology) Initiative</td>
<td>PI-UALR</td>
<td>$13, 500, 000</td>
<td>Submitted to NSF EPSCOR (a multi-university, multi-project proposal)</td>
<td>Year 3 funding Awarded</td>
</tr>
<tr>
<td>MRI: Development of A Novel Instrumentation for Nano-Structure Metamaterial Based Wearable and Virtual MIMO Wireless Systems.</td>
<td>PI</td>
<td>$1,579,987</td>
<td>NSF, MRI</td>
<td>Not funded</td>
</tr>
<tr>
<td>Lasercom Network Architecture for Mesh Node Applications</td>
<td>Co-PI</td>
<td>$150,000</td>
<td>Submitted to NSF SBIR in collaboration with Space Photonics</td>
<td>Not funded</td>
</tr>
<tr>
<td>A Novel Policy-based Routing and Automatic Configuration (PRAC) Technique for Airborne Networks</td>
<td>Co-PI</td>
<td>$150,000</td>
<td>Submitted to Airforce, SBIR in collaboration with Space Photonics</td>
<td>Not funded</td>
</tr>
</tbody>
</table>

The NSF EPSCOR proposal, which is now funded for the third year, has facilitated the department in building advanced wireless infrastructure and stimulating wireless research; it supports four faculty
members within the department and a total of 7 faculty members within the College besides supporting 2 post docs and 2 Ph.D students.

The proposal to NSF on “Lasercom Network Architecture for Mesh Node Applications,” is part of the continuing collaboration between Collaborative Optical and Wireless Information Networking (COWIN) Lab of UALR and Space Phtonics; this work supports a graduate student.

The proposal “A Novel Policy-based Routing and Automatic Configuration (PRAC) Technique for Airborne Networks,” is part of the continuing collaboration between Collaborative Optical and Wireless Information Networking (COWIN) Lab of UALR and Space Phtonics; this work supports a graduate student.

**Ongoing Projects**

<table>
<thead>
<tr>
<th>Proposal Title</th>
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<th>Duration</th>
<th>Funded Amount</th>
<th>Months of effort/year</th>
<th>Your Role (PI,Co-PI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas ASSET (Advancing and Supporting Science, Engineering, and Technology) Initiative</td>
<td>NSF EPSCoR</td>
<td>3 years</td>
<td>$13,500</td>
<td>1</td>
<td>PI-UALR</td>
</tr>
</tbody>
</table>

UALR received $2.5 M. The original project, submitted in collaboration with UAF and ASU was titled, “An Infrastructure for Wireless Nano-, Bio-, Info-Tech Sensor and System Center;” PI: Dr. Vijay Varadan, Co-PIs: Seshadri Mohan, Malathi Srivatsan

**DR. XI**

**New Proposals**

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>PI &amp; Co-PIs</th>
<th>Amount Requested</th>
<th>Submitted To Date</th>
<th>Funded/Not Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlled lung delivery of nano and micrometer aerosols through condensation growth</td>
<td>Co-PI</td>
<td>$10,800</td>
<td>NIH/May 2008</td>
<td>Awarded</td>
</tr>
<tr>
<td>Development of infant nasal airway models for evaluation of inhalation toxicology and therapeutic aerosol delivery</td>
<td>PI</td>
<td>$2,500</td>
<td>SURF/Oct 2009</td>
<td>Awarded</td>
</tr>
<tr>
<td>Development of a smart intranasal delivery system with electromagnetic guidance using computational, in vitro, and in vivo techniques</td>
<td>PI</td>
<td>$300,000</td>
<td>NSF/Sept. 2009</td>
<td>Not funded</td>
</tr>
<tr>
<td>Experimental and Numerical Study of Micro-devices</td>
<td>Co-PI</td>
<td>$300,000</td>
<td>NSF/Sept. 2009</td>
<td>Not funded</td>
</tr>
</tbody>
</table>

Other research or scholarly activities completed during the current year and not reported above.

**Conference papers:**

- “Effect of Respiratory Anatomy on Expiratory Flow and Acoustics in Human Airways,” The 6th Meeting of the MidSouth Chapter of the Acoustic Society of America, the University of Central Arkansas, Conway, AR, March 12-13, 2010.

**Course Development:**

- SYEN 7399 Advanced Fluid Mechanics
DR. ZHANG

New Proposals

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>PI &amp; Co-Pls</th>
<th>Amount Requested</th>
<th>Submitted To Date</th>
<th>Funded/Not Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart Educational Power Systems Lab</td>
<td>PI</td>
<td>199,750</td>
<td>5/26/2010</td>
<td>Not funded</td>
</tr>
</tbody>
</table>

Ongoing Proposals

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>Funding Agency</th>
<th>Duration</th>
<th>Funded Amount</th>
<th>Months of effort/year</th>
<th>Your Role (PI, CPI, C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation of BEST hub</td>
<td>ASTA</td>
<td>1 yr</td>
<td>$2000</td>
<td>4 mo/yr</td>
<td>PI</td>
</tr>
</tbody>
</table>

Research/Creative Activities

DR. AL-RIZZO

8. Publications

Patents:


a. Articles published (attach a copy of each publication and use a standard bibliographic form, including page reference and date).


b. Articles submitted for publication


c. **Articles being prepared for submission**

**In Preparation:**


Note: 1, 2 and 5 are delayed from publications because of patents issues.
DR. BABICEANU

Publications

d. Articles published (attach a copy of each publication and use a standard bibliographic form, including page reference and date).


Articles accepted for publication


- Babiceanu, R. F., Mohan, S., Iqbal, K., Quantifying component abilities of program outcomes and continuous improvement models, Accepted for *Annual ABET Symposium*, Indianapolis, IN, April 2011.


e. Articles submitted for publication

- Babiceanu, R. F., Large-scale computational experiments for complex enterprise systems model identification and behavior prediction, Submitted to the *IEEE Systems Journal*. 

• Babiceanu, R. F., Monitoring and control of distributed manufacturing enterprises enabled by sensors, wireless communication, and cloud computing, Submitted to the *21st International Conference on Flexible Automation and Intelligent Manufacturing*, Taichung, Taiwan, June 2011 – Abstract Accepted.


• Babiceanu, R. F., Factors that influence the decision-making process of coordinated distributed enterprises, Submitted to the *Annual Industrial Engineering Research Conference*, Reno, NV, May 2011 – Abstract Accepted.

f. Articles being prepared for submission

• Babiceanu, R. F., Systems engineering modeling approach to lifetime and coverage of wireless sensor network systems, To be submitted to the *IEEE Systems Journal*

• Babiceanu, R. F., Systems engineering approach to the design and operation of monitoring and recovery systems for large-scale enterprise systems, To be submitted to the *Systems Engineering Journal*.

e. Other research or scholarly activies completed during the current year and not reported above.

• Presentations:


• Course Development:
  
  SYEN 7399: ST: Agent-Based Modeling and Simulation

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**DR. BOUAYNAYA**

**Accepted Journal papers**


**Accepted Conference papers**


PDF copies of my accepted and published papers can be found at: [http://syen.ualr.edu/nxbouaynaya/publications.htm](http://syen.ualr.edu/nxbouaynaya/publications.htm)
g. **Articles submitted for publication**

**Journal papers submitted**


**Conference papers submitted**


h. **Articles being prepared for submission**


**DR. CHAN**

Publications

a. Articles published (attach a copy of each publication and use a standard bibliographic form, including page reference and date).


b. Articles accepted for publication


f. Textbooks, chapters, or manuals in preparation


**DR. HUANG**

Publications

**Journal Publication:**


**Conference Publication:**


**Articles accepted for publication**


**Articles submitted for publication**


**Textbooks, chapters, or manuals published**


**Textbooks, chapters, or manuals in preparation**

MEMS Lab---Safety Manual and Standard Operating Procedure

MEMS Lab—Training Videos for each equipment in MEMs Lab

MEMS Lab---Manuals for Sputtering Machine, Mask Aligner, Spin coater and Wet Bench.

**DR. IQBAL**

**Publications**

a. Articles published (attach a copy of each publication and use a standard bibliographic form, including page reference and date).


b. Articles accepted for publication


c. Articles submitted for publication

• A.M. Mughal and K. Iqbal, “Optimal Control of Sit-To-Stand Movement Using a Fuzzy Biomechanical Model,” Computer Modeling in Engineering and Sciences (CMES00902151176), Tech Science Press


• K. Iqbal and A.M. Mughal, “Physiological LQR design for postural control and coordination of sit-to-stand movement,” IEEE Transactions on Biomedical Engineering (TBME-00150-2009)

d. Textbooks, chapters, or manuals published


DR. KIM

Publications

a. Published

Journal

Conference Proceedings


DR. LAI

8. Publications

a. Articles published (attach a copy of each publication and use a standard bibliographic form, including page reference and date).


b. Articles accepted for publication


c. Articles submitted for publication


Publications

a. Articles published (attach a copy of each publication and use a standard bibliographic form, including page reference and date).


- S. Huang, H. Wu, S. Chang, and X. Liu, “Novel sequence design for low-PMEPR and high-code-rate OFDM systems”, *IEEE Transactions on Communications*, vol. 58, no. 2, pp. 405-410, 2010.


- X. Liu and J. Kim, “Optimization of satellite optical transmission subject to reciprocal Pareto fading”, *IEEE International Conference on Communications (ICC) 2010*.


b. Articles accepted for publication

DR. MOHAN

8. Publications

a. Articles published (attach a copy of each publication and use a standard bibliographic form, including page reference and date).


- R. Ghimire and S. Mohan, “A Multi-Path Routing Scheme for GMPLS-Controlled WDM Networks,” *IEEE Advanced Networks and Telecommunications Systems*, Mumbai, India, December 16-18, 2010; the paper received the BEST PAPER AWARD.


c. Articles accepted for publication

- Babiceanu, R. F., Mohan, S., Iqbal, K., Quantifying component abilities of program outcomes and continuous improvement models, Accepted for Annual ABET Symposium, Indianapolis, IN, April 2011.

Society for Engineering Education (ASEE) 2011 Annual Conference & Exposition, Vancouver, BC, Canada.


d. Articles submitted for publication


e. Articles being prepared for submission

- A book chapter on “IP Multimedia Subsystems: Services and Analysis” is being prepared.
DR. REDDY

Publications

9. Text book Published

C programming for Scientists and Engineers with Applications - copyright 2010
Published by Jones and Bartlet. This book is used in many universities in US and many
other countries in the world.

10. Current research projects or other scholarly activities in which you are presently
engaged (include funding proposals that you are preparing and those you submitted
that were declined or are pending):

Working on a Textbook

Object Oriented Design (OOD) and Object Oriented Programming (OOP) in C++ for
Computer Scientists, Scientists, and Engineering with applications

15. Department, school, and university committees

<table>
<thead>
<tr>
<th>Committee</th>
<th>Nature of Service</th>
<th>Level (Department, college, university)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Coordinate Committee</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>Peer evaluation</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>Tenure and Promotion committee</td>
<td>Member</td>
<td>Department</td>
</tr>
</tbody>
</table>

17. Off-campus professional, public, and community services

Central High School Science Fair Judge
Junior Academy Science Fair Judge
Arkansas Math and Science Junior Academy Judge
Hot Springs ASMSE

19. Additional information

Doing research to write a comprehensive text book on Object Oriented Design (OOD)
and Object Oriented Programming (OOP) in C++ for Computer Scientist, Scientists and
Engineers with applications

DR. XI

8. Publications

a. Articles accepted for publication

- P.W. Longest, and J. Xi, “A Novel Drift Flux Model with Application in Respiratory
  Submicrometer Aerosol Dynamics,” in *Advances in Computational Fluid Mechanics and

- J. Xi, X, Si, J. Kim, and A Blinski, “Simulation of Airflow and Aerosol Deposition in the
d. Articles being prepared for submission
   - J.W. Kim, and J. Xi, “The Effect of Nasal Inlet Angle on Nano- and Micrometer Aerosol depositions,” *Journal of Biomechanics*
   - J. Xi, and P.W. Longest, “Numerical Investigation of Extra-thoracic Physiological Effect on Airflows and Nasal Airway Aerosol Deposition,” *Respiratory Physiology and Neurobiology*

f. Textbooks, chapters, or manuals published

B. PUBLIC SERVICE

DR. AL-RIZZO

12. Memberships and/or offices held in professional associations

<table>
<thead>
<tr>
<th>Professional Association (chapter, region, national)</th>
<th>Office Held</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE, Antennas and Propagation Society</td>
<td></td>
<td>since 1992</td>
</tr>
<tr>
<td>IEEE, Microwave Theory and Techniques Society</td>
<td></td>
<td>since 1992</td>
</tr>
<tr>
<td>Materials Research Society</td>
<td></td>
<td>since 1992</td>
</tr>
<tr>
<td>International Microwave Power Institute</td>
<td></td>
<td>since 1992</td>
</tr>
<tr>
<td>Applied Computational Electromagnetic Society</td>
<td></td>
<td>since 1992</td>
</tr>
</tbody>
</table>

16. Meetings of professional associations attended (include those cited above if present)

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Location</th>
<th>Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visited ETS-Lingren to test miniaturized antennas, Texas.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

17. Contacts made with potential funders (consulting, industrial, government)

UAMs, NASA, DoD, Fulbright, Iraqi Ministry of Science and Technology

18. Department, school, and university committees

<table>
<thead>
<tr>
<th>Committee</th>
<th>Nature of Service (Chairman/Member)</th>
<th>Level (Department, school, university)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Performance Evaluation</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>Undergraduate Student Advisor</td>
<td>Advisor</td>
<td>Department</td>
</tr>
<tr>
<td>College Undergraduate Curriculum Committee</td>
<td>Alternate</td>
<td>College</td>
</tr>
<tr>
<td>Intern. Student Advisor</td>
<td>Advisor</td>
<td>College</td>
</tr>
<tr>
<td>Replacement member of The Graduate Council</td>
<td>Member</td>
<td>University</td>
</tr>
<tr>
<td>P&amp;T Committee</td>
<td>Chair</td>
<td>Department</td>
</tr>
<tr>
<td>Graduate Students/Travel</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Administrative duties other than committee work

International Students’ Advisor/College

19. **Off-campus professional, public, and community services**

Volunteer to the Lions School for the Blind

Held several meetings with product designers and software vendors: CST, Speag, Agilent, Ansoft, VisSim, and AMI. A Network Analyzer and CST Design Suite, VisSim, SEMCAD have been installed in the Telecommunications Lab.

20. **Additional information**

- Associate Editor, Online Journal of Engineering Education
- Supervising one postdoctoral visitor, Dr. Ahmed Shaheen, Associate Dean of Medical School, University, Iraq
- Integration of Ground and Space-Based Observations to Detect and Identify Sources of Sand and Dust Storms in Iraq, PI, Co-PI: Dr. Abdulkareem Abd Ali Mohammed, Atmosphere and Space Science Center, Directorate of Space Technology & Communication, Ministry of Science and Technology, Baghdad, Iraq
- Smart Current Sensor, PI. Co-PIs: Dr. Asaad M. J. Al-Hindawi, Assistant Professor of Communication Engineering, Sulaimani Technical College, Sulaimaniya, Iraq, Bilal Asaad Mubdir, College of Electrical and Electronic Techniques, Foundation of Technical Education, Baghdad, Iraq, Dr. Sabah Nasir Hussein, College of Electrical & Electronic Techniques, Foundation of Technical Education, Baghdad, Iraq

DR. BABICEANU

12. Memberships and/or offices held in professional associations

<table>
<thead>
<tr>
<th>Professional Association (chapter, region, national)</th>
<th>Office Held</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASEE</td>
<td>Member</td>
<td>2010-present</td>
</tr>
<tr>
<td>o Systems Eng Constituent Comm</td>
<td>Member</td>
<td>2010-present</td>
</tr>
<tr>
<td>INCOSE</td>
<td>Member</td>
<td>2006-present</td>
</tr>
<tr>
<td>o Complex Syst. Working Group</td>
<td>Member</td>
<td>2007-present</td>
</tr>
<tr>
<td>IEEE</td>
<td>Member</td>
<td>2006-present</td>
</tr>
<tr>
<td>o Systems, Man, and Cybernetics</td>
<td>Member</td>
<td>2006-present</td>
</tr>
<tr>
<td>INFORMS</td>
<td>Member</td>
<td>2004-present</td>
</tr>
<tr>
<td>Instiutute of Industrial Engineers (IIE)</td>
<td>Member</td>
<td>2002-present</td>
</tr>
</tbody>
</table>
13. Participation in activities of professional or learned societies

a. Contribution to a meeting program or reviewing of journal or proceedings articles

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal of Enterprise Transformation</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Omega, The International Journal of Management Science</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Robotics and Computer Integrated Manufacturing</td>
<td>Reviewer</td>
</tr>
<tr>
<td>IEEE Transactions on Systems, Man, and Cybernetics</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Journal of Manufacturing Systems</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Journal of Intelligent Manufacturing</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Computers and Electrical Engineering</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Systems Research Forum</td>
<td>Reviewer</td>
</tr>
<tr>
<td>ASEE Annual Conference</td>
<td>Reviewer</td>
</tr>
<tr>
<td>INCOSE Annual Symposium</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Industrial Engineering Research Conference</td>
<td>Reviewer</td>
</tr>
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</table>

b. Meetings of professional associations attended (include those cited above if present)

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Location</th>
<th>Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>INFORMS Annual Meeting</em></td>
<td>Austin, TX</td>
<td>Nov. 2010</td>
</tr>
<tr>
<td><em>Arkansas NSF EPSCoR Annual Conference</em></td>
<td>Little Rock, AR</td>
<td>Oct. 2010</td>
</tr>
<tr>
<td><em>13th Semi-Annual Software Assurance Forum</em></td>
<td>NIST, MD</td>
<td>Sept. 2010</td>
</tr>
<tr>
<td><em>INCOSE International Symposium</em></td>
<td>Chicago, IL</td>
<td>July 2010</td>
</tr>
<tr>
<td><em>Annual Industrial Engineering Research Conference</em></td>
<td>Cancun, Mexico</td>
<td>June 2010</td>
</tr>
<tr>
<td><em>IEEE International Systems Conference</em></td>
<td>San Diego, CA</td>
<td>April 2010</td>
</tr>
<tr>
<td><em>ASME 2010 First Global Congress on NanoEngineering for Medicine and Biology</em></td>
<td>Houston, TX</td>
<td>Feb. 2010</td>
</tr>
</tbody>
</table>

14. Contacts made with potential funders (consulting, industrial, government)

15. Department, school, and university committees

<table>
<thead>
<tr>
<th>Committee</th>
<th>Nature of Service (Chairman/Member)</th>
<th>Level (Department, school, university)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Senate</td>
<td>Member</td>
<td>University</td>
</tr>
<tr>
<td>PAAG Assessment Committee</td>
<td>Member</td>
<td>College</td>
</tr>
<tr>
<td>• Prepared the Annual Undergrad Degree Program Assessment Progress Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ph.D. in Engineering Task Force</td>
<td>Member</td>
<td>College</td>
</tr>
<tr>
<td>College Assembly Initiative Task Force on Research Clusters</td>
<td>Member</td>
<td>College</td>
</tr>
<tr>
<td>Assessment Committee</td>
<td>Chair</td>
<td>Department</td>
</tr>
<tr>
<td>Curriculum Committee</td>
<td>Chair</td>
<td>Department</td>
</tr>
<tr>
<td>ABET Task Force</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>Program Coordination Committee</td>
<td>Invited Participant</td>
<td>Department</td>
</tr>
</tbody>
</table>

16. Administrative duties other than committee work

17. Off-campus professional, public, and community services

- Reviewer for the BKCASE™ Project
  - BKCASE- SEBoK (Body of Knowledge and Curriculum to Advance Systems Engineering - Systems Engineering Body of Knowledge)
  - GRCSE (Graduate Reference Curriculum for Systems Engineering)

- International Program Committee: The 12th IEEE International High Assurance Systems Engineering Symposium (HASE), San Jose, CA, Nov. 2010.

18. Awards and recognition received


Dr. Bouaynaya

12. Memberships and/or offices held in professional associations

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Office Held</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Institute of Electrical and Electronics Engineers</td>
<td>Member</td>
<td>Since 2004</td>
</tr>
<tr>
<td>Women In Engineering and the Society of Women Engineers</td>
<td>Member</td>
<td>Since 2004</td>
</tr>
</tbody>
</table>

13. Participation in activities of professional or learned societies

a. Contribution to a meeting program or reviewing of journal or proceedings articles

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swiss National Science Foundation (SNSF) Div. Mathematics, Physical and Engineering Sciences</td>
<td>Panel reviewer (invited by Dr. Pascal Fischer)</td>
</tr>
<tr>
<td>IEEE Signal processing magazine</td>
<td>Reviewer (invited by AE: Dr. Ying Wu)</td>
</tr>
<tr>
<td>IEEE PAMI</td>
<td>Reviewer (invited by AE: Dr. Petros Maragos)</td>
</tr>
<tr>
<td>Frontiers in Systems Biology</td>
<td>Reviewer (invited by AE: Radhakrishnan Nagarajan)</td>
</tr>
<tr>
<td>IEEE Transactions on Robotics</td>
<td>Reviewer (invited by AE: Cyrill Stachniss)</td>
</tr>
<tr>
<td>Journal of Electronic Imaging</td>
<td>Reviewer (invited by AE: Robert Loce)</td>
</tr>
</tbody>
</table>
b. Meetings of professional associations attended (include those cited above if present)

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Location</th>
<th>Dates / Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE International Workshop on Genomic Signal Processing and Statistics (GENSIPS’10)</td>
<td>New York, NY</td>
<td>November 2010</td>
</tr>
<tr>
<td>IEEE International Conference on Signal Processing and Communications</td>
<td>Bangalore, India</td>
<td>July 2010</td>
</tr>
<tr>
<td>Conference of the MidSouth Computational Biology and Bioinformatics Society (MCBIOS)</td>
<td>Jonesboro, AR</td>
<td>February 2010</td>
</tr>
</tbody>
</table>

14. Contacts made with potential funders (consulting, industrial, government)

- I went to NSF, Washington DC, to meet with two program managers:
  - Dr. Cozzens: Division of Computing and Communication Foundations – Theoretical Foundations.
  - Dr. Mitra Basu: Division of Computer and Information Science and Engineering – Computational Biology.
- I also went, with Dr. Pat Pellicane, to NIH, Virginia, to meet with a program manager.

15. Department, school, and university committees

<table>
<thead>
<tr>
<th>Committee</th>
<th>Nature of Service</th>
<th>Level (Department, school, university)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UALR Information Science representative of the Bioinformatics Steering Committee</td>
<td>Member</td>
<td>University</td>
</tr>
<tr>
<td>Bioinformatics Student Evaluation Committee</td>
<td>Member</td>
<td>University</td>
</tr>
<tr>
<td>University Research Symposium Committee</td>
<td>Member</td>
<td>University</td>
</tr>
<tr>
<td>Awards College Committee</td>
<td>Member</td>
<td>College</td>
</tr>
<tr>
<td>College Initiative Task Force</td>
<td>Member</td>
<td>College</td>
</tr>
<tr>
<td>Graduate Student Travel Award Committee</td>
<td>Member</td>
<td>College</td>
</tr>
<tr>
<td>EE option Curriculum committee</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>Recruitment, Retention and Advising Committee</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>Annual Performance Evaluation Committee</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>Candidacy Areas Committee</td>
<td>Member</td>
<td>Department</td>
</tr>
</tbody>
</table>

**DR. CHAN**

11. Paid Consulting or Contracts as an individual (list client, work title, total billed hours)

  - External Academic Advisor for their Master of Arts in Supply Chain Management, Department of Management Sciences, City University of Hong Kong, 1 October 2007– September 2010 (15 hours total).
  - External Academic Advisor for their Master of Arts in Supply Chain Management, Department of Management Sciences, City University of Hong Kong, 1 October 2010– September 2014 (20 hours total).
12. Memberships and/or offices held in professional associations

<table>
<thead>
<tr>
<th>Professional Affiliation</th>
<th>Office Held</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation Research Board (National) Academies</td>
<td>University Representative for UALR</td>
<td>4/04 to present</td>
</tr>
<tr>
<td>Institute for Operations Research &amp; Management Science (National)</td>
<td>Vice-President, Section on Location Analysis</td>
<td>11/08 to 10/10</td>
</tr>
<tr>
<td></td>
<td>President, Section on Location Analysis</td>
<td>11/10 to present</td>
</tr>
<tr>
<td>American Society of Civil Engineers (National)</td>
<td>Associate Editor, <em>Urban Planning &amp; Development Journal</em></td>
<td>10/88 to present</td>
</tr>
<tr>
<td>International Journal of Interdisciplinary Telecommunications &amp; Networking</td>
<td>Associate Editor</td>
<td>1/08 to present</td>
</tr>
<tr>
<td>International Journal of Society Systems Science</td>
<td>American Editor</td>
<td>4/08 to present</td>
</tr>
<tr>
<td>ABET</td>
<td>Accreditation Evaluator</td>
<td>9/07 to present</td>
</tr>
<tr>
<td>Omega Rho International Honor Society</td>
<td>Past President</td>
<td>11/04 to 10/10</td>
</tr>
<tr>
<td></td>
<td>Rep. to Assoc. of College Honor Societies</td>
<td>11/10 - present</td>
</tr>
</tbody>
</table>

13. Participation in activities of professional or learned societies

a. Contribution to a meeting program or reviewing of journal or proceedings articles
   Reviewed numerous journal articles.

b. Meetings of professional associations attended (include those cited above if present)

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Location</th>
<th>Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>89th Annual Meeting of the Transportation Research Board</td>
<td></td>
<td>1/10/10 to 1/12/10</td>
</tr>
<tr>
<td>Arkansas Research Alliance Workshop on SMART Infrastructure, Petit Jean Mountain, AR</td>
<td>Presentation on “Electric Transportation and Smart Grid”</td>
<td>10/31/10 - 11/2/10</td>
</tr>
<tr>
<td>Fall national meeting of the Institute of Operations Research &amp; Management Sciences, Austin, TX</td>
<td>Committee meetings and presentation</td>
<td>11/6/10 to 11/9/10</td>
</tr>
</tbody>
</table>

14. Contacts made with potential funders (consulting, industrial, government)

- Project Selection and Review Panel, National Cooperative Highway Research Program, Transportation Research Board, January 2008 through December 2010
- Naval Research Office
- Federal Highway Administration, U.S. Dept. of Transportation
- National Science Foundation
15. Department, school, and university committees

<table>
<thead>
<tr>
<th>Committee</th>
<th>Nature of Service (Chairman/Member)</th>
<th>Level (Dept/School/University)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UALR Senate</td>
<td>Senator (through Spring 10)</td>
<td>University</td>
</tr>
<tr>
<td>UALR Cooperative Education Board</td>
<td>Member (through Spring 10)</td>
<td>University</td>
</tr>
<tr>
<td>EIT College Graduate Curriculum Committee</td>
<td>Chair (through Spring 10), member (Fall 2010)</td>
<td>College</td>
</tr>
<tr>
<td>EIT College Ad Hoc Library Committee</td>
<td>Member (through Spring 10)</td>
<td>College</td>
</tr>
<tr>
<td>Assessment Standing Committee</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>Department Program Coordination Committee</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>Ad Hoc Committee on Engineering PhD program</td>
<td>Member</td>
<td>College</td>
</tr>
<tr>
<td>Ad Hoc Committee on Graduate Course Sequencing</td>
<td>Chair</td>
<td>Department</td>
</tr>
<tr>
<td>Ad Hoc Committee to re-design course evaluation questionnaire</td>
<td>Member</td>
<td>Department</td>
</tr>
</tbody>
</table>

16. Administrative duties other than committee work

- Coordinator of Exchange Program with the City University of Hong Kong
- Graduate Coordinator, Graduate Program in Systems Engineering
- UALR Planning and Finance Committee, contributed toward the “Budget and Spending Reductions at UALR” report
- Faculty Advisor, INCOSE Chapter, UALR
- Contribute toward “Alternate Fuel Study” for Central Arkansas Transit Authority

17. Off-campus professional, public, and community services

I am a program advisor for the Supply Chain Management Program of the Dept. of Management Science Dept. at the City University of Hong Kong (CityU). The initial activity started nine years ago. This results in an international exchange agreement between CityU and UALR. There is also an opportunity to effect a joint research program between the two campuses, joined later by Arkansas State University, University of Arkansas at Pine Bluff, and University of La Havre, La Havre, France.


Between the Fall of 2007 and Spring 2010, I serve as MIT Educational Counselor, interviewing high school students for admission to MIT.
18. **Awards and recognition received**

Received recognition for a 2003 study for the Central Arkansas Transit Authority (CATA). It pertains to how to finance the transit authority. The acclamation was from Mr. Marsico, who is “well respected in the transit industry and not given to idle praise. [CATA] was proud to see that he shares [CATA’s] opinion of the UALR report.”

**DR. HUANG**

11. **Paid Consulting or Contracts as an individual (list client, work title, total billed hours)**

Nil

12. **Memberships and/or offices held in professional associations**

<table>
<thead>
<tr>
<th>Professional Association (chapter, region, national)</th>
<th>Office Held</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Society of Mechanical Engineering</td>
<td>Member</td>
<td>2005-present</td>
</tr>
<tr>
<td>SPIE (Society of Photographic Instrumentation Engineers)</td>
<td>Member</td>
<td>2007-present</td>
</tr>
</tbody>
</table>

13. **Participation in activities of professional or learned societies**

a. Contribution to a meeting program or reviewing of journal or proceedings articles

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal of Engineering Fracture</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Nanotechnology</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Composite Materials and Technology</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Journal of Applied Physics</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Smart Materials and Structures</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Mechanics of Advanced Materials and Structures</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Journal of Nanoengineering and Nanotechnology</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Applied Physics Letters</td>
<td>Reviewer</td>
</tr>
</tbody>
</table>

b. Meetings of professional associations attended (include those cited above if present)

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Location</th>
<th>Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPIE Smart Structures and Materials &amp; Nondestructive Evaluation and Health Monitoring</td>
<td>San Diego, CA</td>
<td>March 8-11, 2010</td>
</tr>
<tr>
<td>16th US National Congress of Theoretical and Applied Mechanics, State College, PA</td>
<td>State College, PA</td>
<td>June 27-July 2, 2010</td>
</tr>
<tr>
<td>International Conference on Mechanical Properties of Materials</td>
<td>Huangzhou, China</td>
<td>May 24-28, 2010</td>
</tr>
<tr>
<td>ASME 2010 International Mechanical Engr. Congress &amp; Exposition</td>
<td>Vancouver, Canada</td>
<td>Nov 2010</td>
</tr>
</tbody>
</table>

14. **Contacts made with potential funders (consulting, industrial, government)**

15. **Department, school, and university committees**

<table>
<thead>
<tr>
<th>Committee</th>
<th>Nature of Service</th>
<th>Level (Department, school, university)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curriculum Committee</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>Assessment Committee</td>
<td>Member</td>
<td>Department</td>
</tr>
</tbody>
</table>
16. Administrative duties other than committee work

1. Supervisor and Director of MEMS LAB
2. Daily maintains of MEMS Lab
3. Supervision of a research laboratory “Advance Materials and Ultrasonics Wave Laboratory” at UALR
4. Supervision of Mechanics of Materials Lab at UALR
5. Served in curriculum committee for mechanical option
6. Served in assessment committee

17. Off-campus professional, public, and community services

- Scientific committee of International Symposium of Acoustic Metamaterials, 2010
- Steering committee of workshop on smart materials and process, Arkansas, 2010
- Session Chair, 2010 International Conference on Mechanical Properties of Material, Hangzhou, China
- hosted high school students at the 2010 Summer Engineering Scholars Program
- hosted high school summer research program

DR. IQBAL

12. Memberships and/or offices held in professional associations

<table>
<thead>
<tr>
<th>Professional Association (chapter, region, national)</th>
<th>Office Held</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institute of Electrical and Electronics Engineers (IEEE), Soc: Control Systems; System, Man, and Cybernetics, Computational intelligence</td>
<td>Senior (Member)</td>
<td>2006(1985)-present</td>
</tr>
<tr>
<td>International Council on Systems Engineering (INCOSE)</td>
<td>Member</td>
<td>2002-present</td>
</tr>
<tr>
<td>International Association of Science and Technology for Development (Technical committee on control)</td>
<td>Member</td>
<td>2001-present</td>
</tr>
<tr>
<td>Institution of Engineering and Technology (UK)</td>
<td>Member</td>
<td>2003-present</td>
</tr>
<tr>
<td>Sigma Xi scientific honor society</td>
<td>Secretary/treasurer</td>
<td>2009-present</td>
</tr>
<tr>
<td>Pakistan Engineering Council</td>
<td>Life Member</td>
<td>1980-present</td>
</tr>
</tbody>
</table>

13. Participation in activities of professional or learned societies

a. Contribution to a meeting program or reviewing of journal or proceedings articles

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE Transactions on Biomedical Engineering</td>
<td>Reviewer</td>
</tr>
</tbody>
</table>
IEEE Control and Decision Conference Reviewer
IEEE American Control Conference Reviewer
IEEE Systems Man and Cybernetics Conference Member technical committee, Reviewer
IEEE Engineering in Medicine and Biology Conference Reviewer
IEEE International Conf. on Mechatronics and Automation Member technical committee, Reviewer

a. Meetings of professional associations attended (include those cited above if present)

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Location</th>
<th>Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE Systems Man and Cybernetics Conference</td>
<td>Istanbul, Turkey</td>
<td>Oct 10-13, 2010</td>
</tr>
<tr>
<td>Fifty sixth AECC Engineering Workshop</td>
<td>Little Rock, AR</td>
<td>Dec 9-10, 2010</td>
</tr>
<tr>
<td>Building the Arkansas Innovation Economy Seminar</td>
<td>Little Rock, AR</td>
<td>Mar 25, 2010</td>
</tr>
</tbody>
</table>

15. Department, school, and university committees

<table>
<thead>
<tr>
<th>Committee</th>
<th>Nature of Service</th>
<th>Level (Department, school, university)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curricula Committee</td>
<td>Member/Chair</td>
<td>SYEN</td>
</tr>
<tr>
<td>Tenure and Promotion Committee</td>
<td>Member</td>
<td>SYEN</td>
</tr>
<tr>
<td>Website Committee</td>
<td>Member</td>
<td>SYEN</td>
</tr>
<tr>
<td>Eng Sc &amp;Sys PhD Program Task Force</td>
<td>Member</td>
<td>EIT</td>
</tr>
<tr>
<td>Integrated Computing PhD program Task Force</td>
<td>Member</td>
<td>EIT</td>
</tr>
<tr>
<td>Infrastructure Task Force</td>
<td>Member</td>
<td>EIT</td>
</tr>
<tr>
<td>Undergraduate Research Council</td>
<td>Member</td>
<td>UALR</td>
</tr>
<tr>
<td>Undergraduate Council</td>
<td>Member</td>
<td>UALR</td>
</tr>
<tr>
<td>Academic Technology and Computing Committee</td>
<td>Member</td>
<td>UALR</td>
</tr>
<tr>
<td>Honors and Awards Committee</td>
<td>Member</td>
<td>UALR</td>
</tr>
</tbody>
</table>

16. Administrative duties other than committee work
Assistant Chair, Department of Systems Engineering

17. Off-campus professional, public, and community services
Secretary/treasurer Sigma Xi Central Ark. Chapter
Secretary, Islamic Center of Little Rock

18. Awards and recognition received
Nominated for Faculty Excellence Award in Teaching

19. Additional information
I delivered an invited talk at the 56th AECC Engineering Workshop held at Little Rock, AR on Dec 10, 2010. The talk was titled ‘Intelligent control systems in the power industry’. The talk covered the principles of intelligent control systems and examples of their applications to the power industry, and was attended by about 40 executives from Electric Cooperatives of Arkansas.
DR. KIM

12. Memberships and/or offices held in professional associations

<table>
<thead>
<tr>
<th>Professional Association (chapter, region, national)</th>
<th>Office Held</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE Computer Society</td>
<td>Senior member</td>
</tr>
</tbody>
</table>

13. Participation in activities of professional or learned societies

a. Contribution to a meeting program or reviewing of journal or proceedings articles

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE Computer Society</td>
<td>reviewer</td>
</tr>
</tbody>
</table>

14. Contacts made with potential funders (consulting, industrial, government)

Industrial (Samsung SDS, GE Electronics), Government (NIH, NSF, DoD), CF foundation

15. Department, school, and university committees

<table>
<thead>
<tr>
<th>Committee</th>
<th>Nature of Service</th>
<th>Level</th>
<th>(Department, school, university)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenure and Promotion</td>
<td>member</td>
<td></td>
<td>Department</td>
</tr>
</tbody>
</table>

DR. LAI

12. Memberships and/or offices held in professional associations

<table>
<thead>
<tr>
<th>Professional Association (chapter, region, national)</th>
<th>Office Held</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE</td>
<td>Member</td>
<td>Since 2007</td>
</tr>
</tbody>
</table>

13. Participation in activities of professional or learned societies

a. Contribution to a meeting program or reviewing of journal or proceedings articles

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE Glocobem 2011</td>
<td>Session Chair</td>
</tr>
<tr>
<td>IEEE Globecom 2011</td>
<td>TPC member</td>
</tr>
<tr>
<td>IEEE ICC 2011</td>
<td>TPC member</td>
</tr>
<tr>
<td>IEEE INFOCOM 2011</td>
<td>TPC member</td>
</tr>
<tr>
<td>IEEE Transactions on Information Theory</td>
<td>Reviewer</td>
</tr>
<tr>
<td>IEEE Transactions on Wireless Communications</td>
<td>Reviewer</td>
</tr>
<tr>
<td>IEEE Transactions on Communications</td>
<td>Reviewer</td>
</tr>
<tr>
<td>IEEE Transactions on Signal Processing</td>
<td>Reviewer</td>
</tr>
</tbody>
</table>

b. Meetings of professional associations attended (include those cited above if present)

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Location</th>
<th>Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSD Workshop on Information theory and applications</td>
<td>San Diego</td>
<td>Feb. 2010</td>
</tr>
<tr>
<td>IEEE International Symposium on Information Theory</td>
<td>Austin, TX</td>
<td>June 2010</td>
</tr>
<tr>
<td>International Workshop on Applied Probability (IWAP)</td>
<td>Madrid, Spain</td>
<td>July 2010</td>
</tr>
<tr>
<td>IEEE Glocobem</td>
<td>Miami</td>
<td>Dec. 2010</td>
</tr>
</tbody>
</table>
14. Contacts made with potential funders (consulting, industrial, government)

1. Dr. Robert L. Herklotz, Air Force Office of Scientific Research
2. Dr. Randy Zachery, U.S. Army Research Laboratory

15. Department, school, and university committees

<table>
<thead>
<tr>
<th>Committee</th>
<th>Nature of Service (Chairman/Member)</th>
<th>Level (Department, school, university)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIT Undergraduate Curriculum Committee</td>
<td>Member</td>
<td>School</td>
</tr>
</tbody>
</table>

19. Additional information

Invited Talks:


Outreach Activities:

1. Instructor, Engineering Scholars Program
2. Volunteer, Best Robtics

Outreach Activities:

1. Instructor, Engineering Scholars Program
2. Volunteer, Best Robtics

DR. LIU

12. Memberships and/or offices held in professional associations

<table>
<thead>
<tr>
<th>Professional Association (chapter, region, national)</th>
<th>Office Held</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE</td>
<td>Senior Member</td>
<td>2010</td>
</tr>
</tbody>
</table>

13. Participation in activities of professional or learned societies

a. Contribution to a meeting program or reviewing of journal or proceedings articles

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE Transactions on Sustainable Energy:</td>
<td>Reviewer (4 papers)</td>
</tr>
<tr>
<td>IEEE Transactions on Broadcasting:</td>
<td>Reviewer (1 paper)</td>
</tr>
<tr>
<td>IET Communications:</td>
<td>Reviewer (1 paper)</td>
</tr>
<tr>
<td>Journal of Communications:</td>
<td>Reviewer (1 paper)</td>
</tr>
</tbody>
</table>
European Transactions on Electrical Power: Reviewer (1 paper)
IEEE Globecom 2010: Reviewer (1 paper)
JEIEEC 2011: Reviewer (1 paper)

b. Meetings of professional associations attended (include those cited above if present)

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Location</th>
<th>Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE PES Transmission &amp; Distribution Conference &amp; Exposition</td>
<td>New Orleans</td>
<td>Apr. 2010</td>
</tr>
<tr>
<td>2010 Wind Turbine Blade Workshop</td>
<td>Sandia National Lab.</td>
<td>July 2010</td>
</tr>
</tbody>
</table>

14. Contacts made with potential funders (consulting, industrial, government)

   Strategic Marketing Innovations
   
   National Renewable Energy Laboratory

15. Department, school, and university committees

<table>
<thead>
<tr>
<th>Committee</th>
<th>Nature of Service</th>
<th>Level (Department, school, university)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Integrity and Grievance University</td>
<td>Committee</td>
<td>Member</td>
</tr>
<tr>
<td>Honors and Awards Committee</td>
<td>Member</td>
<td>University</td>
</tr>
<tr>
<td>Award Committee</td>
<td>Member (alt.)</td>
<td>College</td>
</tr>
<tr>
<td>Integrated Computing Ph.D Program Committee</td>
<td>Member</td>
<td>College</td>
</tr>
<tr>
<td>Graduate Curriculum Committee</td>
<td>Member (alt.)</td>
<td>College</td>
</tr>
<tr>
<td>Bio-informatics admission committee</td>
<td>Member</td>
<td>College</td>
</tr>
<tr>
<td>Teaching Evaluation Form Ad-Hoc Committee</td>
<td>Chairman</td>
<td>Department</td>
</tr>
<tr>
<td>Curriculum Committee</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>Undergraduate Student Adviser</td>
<td>Adviser</td>
<td>Department</td>
</tr>
</tbody>
</table>

DR. MOHAN

12. Memberships and/or offices held in professional associations

<table>
<thead>
<tr>
<th>Committee</th>
<th>Nature of Service</th>
<th>Level (Department, school, university)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE</td>
<td>Member</td>
<td>Since 1975</td>
</tr>
</tbody>
</table>

13. Participation in activities of professional or learned societies

a. Contribution to a meeting program or reviewing of journal or proceedings articles

   Professional Association: Contribution
   - Served as a panelist, reviewer, and chair of NSF SBIR panel;
   - Served as the Technical Editor for IEEE Communications Magazine
• Served on the ‘International Advisory Board,’ of the conference IEEE Advanced Networking and Telecommunications Systems, was responsible for reviewing 12 papers.
• Served as the Technical Program Committee member of IEEE Globecom 2010; was responsible for reviewing/assigning papers for two different tracks; Chaired three sessions.
• IWCMC 2010, TPC Member, reviewed 1 paper and assigned for review several others
• IEEE WCNC 2010, TPC member, Networking Track
• WTS 2010, TPC Member
• IEEE ICC 2010, TPC Member, reviewed 3 papers and assigned several others for review.

INVITED TALKS / INVITED CONTRIBUTIONS

b. Meetings of professional associations attended (include those cited above if present)

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Location</th>
<th>Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE ANTS 2010</td>
<td>Mumbai, India</td>
<td>December 17-18, 2010</td>
</tr>
<tr>
<td>IEEE IMSAA 2010</td>
<td>Bangalore, India</td>
<td>December 14-16, 2010</td>
</tr>
</tbody>
</table>

14. Contacts made with potential funders (consulting, industrial, government)
• NSF: Met with program directors when I visited NSF to participate as a panelist and reviewer of NSF SBIR; Met with Don Senich and Bapu Dasgupta and discussed starting a telecom center by putting together a proposal to NSF - Industry University Cooperative Research Center
• Space Photonics, Fayetteville, Arkansas; two SBIR proposals were submitted in collaboration with Space Photonics, which formed part of SBIR proposal to NSF and Air Force; Chuck Chalfant, CEO of Space Photonics is a member of the Industrial Advisory Council;
• With the help of Joni Lee and Kelley Bass, had telephone conferences with Airforce Research Labs and Rockwell Collins to discuss telecom proposals; involved Dr. Al-Rizzo;

15. Department, school, and university committees

<table>
<thead>
<tr>
<th>Committee</th>
<th>Nature of Service</th>
<th>Level (Department, school, university)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dean Search Committee,</td>
<td>Member</td>
<td>University</td>
</tr>
<tr>
<td>PhD in Engineering Science and Sysems, Ad hoc Committee,</td>
<td>Chair</td>
<td>College</td>
</tr>
<tr>
<td>Systems Engineering Vision Task Force,</td>
<td>Chair</td>
<td>Department</td>
</tr>
<tr>
<td>Program Coordination Committee,</td>
<td>Chair</td>
<td>Department</td>
</tr>
<tr>
<td>Systems Engineering Recruiting, Retention, and Advising Task Force,</td>
<td>Chair</td>
<td>Department</td>
</tr>
</tbody>
</table>
16. Administrative duties other than committee work
   Chair, Systems Engineering Department

17. Off-campus professional, public, and community services
   • See under 13 – 15.

18. Awards and recognition received
   • Nominated by Dean Good, I received the IEEE Region 5 Outstanding Educator Award. Region 5 includes Arkansas, Texas, Colorado, Kansas, Louisiana, Missouri, Oklahoma and parts of Nebraska, South Dakota and Wyoming,
   • Was invited to ICTON 2010 at Munich to present an invited talk
   • Was awarded the Best Paper Award for our paper presented at IEEE ANTS 2010
   • Was invited to IEEE Wireless Vitae in Chennai, India, to present an invited talk.

19. Additional information:
   • Outreach Efforts
     o For the third year, oversaw successful implementation of the Engineering Scholars’ Program with 22 high school students who were given engineering experience during a 2-week residential summer program; besides helping build engineering talent within the State of Arkansas, this effort will help recruit students to the College.

DR. NISANCI

12. Memberships and/or offices held in professional associations

- Professional Association (chapter, region, national) Office Held Dates
  American Society for Engineering Education (ASEE) Member 2009-10

14. Contacts made with potential funders (consulting, industrial, government)
   I am always in contact with the National Science Foundation and always at no cost to UALR.

15. Department, school, and university committees

- Committee Nature of Service Level (Department, school, university)
  P&T committee Member Department
  Mid-Term Tenure Member Department
  Systems Engineering Group Member Department

17. Off-campus professional, public, and community services
   Chaired 5 proposal review panels for the following National Science Foundation programs:
   • Advanced Technological Education (ATE),
   • Transforming Undergraduate Education in Science, Technology, Engineering, and Mathematics (TUES), Type 1.
• Transforming Undergraduate Education in Science, Technology, Engineering, and Mathematics (TUES), Type 2 & 3.
• National STEM Education Distributed Learning (NSDL).
• NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM).

Also, reviewed on-line “Special Project” for NSF.

19. Additional information

• In Fall 2010 semester:
  o I was the only faculty in the Systems Engineering department and in the College who taught 4 courses.
  o I generated more than 20% of the total SSCH generated by the entire Systems Engineering Department.
  o I had more students in my classes than the 7 systems Engineering faculty combined.
• Advised students who were considering attending graduate school.
• Advised students who were searching jobs, scholarships, and internships.
• Wrote numerous reference letters to graduate schools and employers.
• Interviewed by the potential employers of students.
• Continued refining the Systems Engineering Capstone Design I & II courses
• Revised the SYEN 1310 Introduction to Systems Engineering course to make it a
  First-Year Colloquium (FYC) course.

DR. REDDY

12. Memberships and/or offices held in professional associations

<table>
<thead>
<tr>
<th>Professional Association (chapter, region, national)</th>
<th>Office Held</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member INCOSE</td>
<td>member</td>
<td>2005-2006</td>
</tr>
</tbody>
</table>

15. Department, school, and university committees

<table>
<thead>
<tr>
<th>Committee</th>
<th>Nature of Service</th>
<th>Level (Department, college, university)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Coordinate Committee</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>Peer evaluation</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>Tenure and Promotion committee</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>IT Search Committee</td>
<td>Member</td>
<td>Department</td>
</tr>
</tbody>
</table>

17. Off-campus professional, public, and community services

Central High School Science Fair Judge
Junior academy Science Fair Judge
Arkansas math and Science junior academy Judge
State of Arkansas junior academy (UCA) Judge
Bryant High School Engineering fair Judge
19. Additional information

Doing research to write a comprehensive text book on Object Oriented Design (OOD) and Object Oriented Programming (OOP) in C++ for Computer Scientist, Scientists and Engineers with applications

DR. XI

12. Memberships and/or offices held in professional associations

<table>
<thead>
<tr>
<th>Professional Association (chapter, region, national)</th>
<th>Office Held</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASME</td>
<td>Member</td>
<td>1999-present</td>
</tr>
<tr>
<td>Biomedical Engineering Society</td>
<td>Member</td>
<td>2006-present</td>
</tr>
<tr>
<td>Society of American Physical Society</td>
<td>Member</td>
<td>2008-present</td>
</tr>
<tr>
<td>American Association for Aerosol Research</td>
<td>Member</td>
<td>2008-present</td>
</tr>
<tr>
<td>Sigma Xi Society</td>
<td>Full Member</td>
<td>2008-present</td>
</tr>
<tr>
<td>ASHRAE</td>
<td>Member/Student Adviser</td>
<td>2009-present</td>
</tr>
</tbody>
</table>

13. Participation in activities of professional or learned societies

a. Contribution to a meeting program or reviewing of journal or proceedings articles

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal of Aerosol Science (1)</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Annals of Biomedical Engineering (3)</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Aerosol Science and Technology (4)</td>
<td>Reviewer</td>
</tr>
<tr>
<td>European Journal of Fluid Mechanics (1)</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Numerical Methods in Biomedical Engr. (1)</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Journal of Hazardous Materials (1)</td>
<td>Reviewer</td>
</tr>
</tbody>
</table>

b. Meetings of professional associations attended (include those cited above if present)

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Location</th>
<th>Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAAR 29th Annual Conference</td>
<td>Portland, OR</td>
<td>Oct. 2010</td>
</tr>
</tbody>
</table>

14. Contacts made with potential funders (consulting, industrial, government)

- Amway Inc. Grand Rapids, MI, Inhaler devices development for Children

DR. ZHANG

12. Memberships and/or offices held in professional associations

<table>
<thead>
<tr>
<th>Professional Association (chapter, region, national)</th>
<th>Office Held</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE</td>
<td>member</td>
<td>Jan.09–Dec.09</td>
</tr>
<tr>
<td>1) Industrial Electronics Society</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Control Systems Society</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Power &amp; Energy Society</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
13. Participation in activities of professional or learned societies

a. Contribution to a meeting program or reviewing of journal or proceedings articles

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal of Sensors</td>
<td>Review 1 paper</td>
</tr>
<tr>
<td>ACTapress</td>
<td>Review 1 paper</td>
</tr>
<tr>
<td>OPTIM10</td>
<td>Review 1 paper</td>
</tr>
<tr>
<td>INDIN2010</td>
<td>Review 1 paper</td>
</tr>
<tr>
<td>ISIE10</td>
<td>Review 2 papers</td>
</tr>
<tr>
<td>ICARCV 2010</td>
<td>Review 5 papers</td>
</tr>
</tbody>
</table>

b. Meetings of professional associations attended (include those cited above if present)

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Location</th>
<th>Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARA Smartgrid Workshop</td>
<td>Petit Jean, Arkansas</td>
<td>10/31-11/2/2010</td>
</tr>
</tbody>
</table>

17. Off-campus professional, public, and community services

- Member of Steering Committee for ARA Smartgrid Workshop 2010
- Working Group Member of IEEE p2030 Standard, 2010

(Footnotes)

1. A multi-university project; UALR received about $2.5m

2. The original submission was a collaborative proposal, where both Dan Schonfeld and Nidhal Bouaynaya were PIs, and Fathallah-Shaykh was the only co-PI. However, upon consideration of the proposal for funding, the NIH program officer requested that only one PI can be nominated. Subsequently, Dan Schonfeld was nominated as the only PI.
Appendix VII

Department of Graduate Institute of Technology

Detailed Information
July 1, 2010 to June 30, 2011
Graduate Institute of Technology
APPENDIX
College/School Assessment Implementation

Deans, please provide the following information for your college or school as an appendix to your annual report:

a. Describe college/school procedures for implementing assessment, including the college-level review process.

N/A

b. List activities undertaken to encourage good assessment practice within your college/school.

N/A

c. Identify the strongest assessment program in your college/school.

N/A

d. Identify the programs that need the most help with assessment and your plans to assist them.

N/A

e. Account for spending of assessment funds. Include any additional college/school funds allocated for assessment.

N/A