Donaghey College of
Engineering & Information Technology (EIT)
University of Arkansas at Little Rock

Annual Report
for the period
July 1, 2009 – June 30, 2010

DR. MARY L. GOOD
Dean
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIT Organizational Chart</td>
<td>5</td>
</tr>
<tr>
<td>Executive Summary and Overall Highlights</td>
<td>7</td>
</tr>
<tr>
<td>EIT External Affairs</td>
<td>14</td>
</tr>
<tr>
<td>Selected Department Successes</td>
<td>15</td>
</tr>
<tr>
<td>EIT Selected Student Achievements</td>
<td>16</td>
</tr>
<tr>
<td>EIT Selected Faculty Achievements</td>
<td>16</td>
</tr>
<tr>
<td>EIT Curriculum Highlights</td>
<td>17</td>
</tr>
<tr>
<td>Overall EIT Grant Applications/Awards</td>
<td>17</td>
</tr>
<tr>
<td>Overall Public Service Activities</td>
<td>18</td>
</tr>
<tr>
<td>Overall Research/Creative Activities</td>
<td>18</td>
</tr>
<tr>
<td>Overall Personnel Changes</td>
<td>19</td>
</tr>
<tr>
<td>EIT Recruitment and Retention</td>
<td>20</td>
</tr>
<tr>
<td>EIT Outreach</td>
<td>23</td>
</tr>
</tbody>
</table>

## ANNUAL REPORTS BY DEPARTMENT

<table>
<thead>
<tr>
<th>Department</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Science Department</td>
<td>35</td>
</tr>
<tr>
<td>Computer Science Department</td>
<td>47</td>
</tr>
<tr>
<td>Construction Management Department</td>
<td>55</td>
</tr>
<tr>
<td>Engineering Technology Department</td>
<td>65</td>
</tr>
<tr>
<td>Information Science Department</td>
<td>77</td>
</tr>
<tr>
<td>Systems Engineering Department</td>
<td>91</td>
</tr>
<tr>
<td>Graduate Institute of Technology</td>
<td>103</td>
</tr>
</tbody>
</table>

## APPENDIX

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Advisory Councils</td>
<td>115</td>
</tr>
<tr>
<td>Computer Science: Detailed Information</td>
<td>123</td>
</tr>
<tr>
<td>Construction Management: Detailed Information</td>
<td>127</td>
</tr>
<tr>
<td>Information Science: Detailed Information</td>
<td>137</td>
</tr>
<tr>
<td>Systems Engineering: Detailed Information</td>
<td>147</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY AND OVERALL HIGHLIGHTS

The 2009-2010 fiscal year was truly a watershed time for the Donaghey College of Engineering and Information Technology (EIT):

- In November 2009, more than 550 attendees heard former President Bill Clinton deliver the keynote address at the EIT 10th Anniversary Gala at the Jack Stephens Center, the largest single fund-raiser in UALR history and a tribute to founding dean Dr. Mary Good.

- The EIT National Advisory Council for the first time met with full in-person attendance, as nine nationally renowned experts with expertise and experience specifically relevant to EIT’s programs came to Little Rock for an all-day meeting, also in November 2009.

- In May 2010, faculty in the Computer Science, Information Science and Systems Engineering moved into the new six-story, 115,000-square-foot, $35 million EIT Building, which officially opens when fall 2010 classes begin August 19.

- As the fiscal year ended, Dr. Good announced her decision to retire June 30, 2011, and a national search for her replacement commenced.

More on the first three of those four major milestones and other highlights in EIT are summarized in the following sections.

EIT ANNIVERSARY GALA

A veritable who’s-who of business, civic and academic leaders from across Arkansas and beyond came to campus Nov. 19, 2009, to pay tribute to Dr. Mary Good and celebrate the 10th anniversary of the Donaghey College of Engineering and Information Technology, which she has served as dean since its inception in 1999.

More than 550 people – including about 60 members of the EIT faculty and staff – gathered in the concourse of the Jack Stephens Center for a cocktail reception that included greetings from EIT student ambassadors who served as event hosts and trays of hors d’oeuvres passed by members of the staff of Capers, the local restaurant that catered the event.

After a seated dinner featuring steak and shrimp, UALR Chancellor Joel Anderson introduced President Clinton, who in his 10-minute talk said, “I think 50 years from now, when you look back, you may think that the establishment of the College of Engineering and Information Technology – and the luring of this astonishing woman into this job – may wind up being the most significant thing this institution has done since its creation.”
Executive Summary (continued)

Former Acxiom CEO Charles Morgan and former Clinton chief of staff and Arkla Gas president Mack McLarty served as honorary chairs of the EIT 10th anniversary host committee, and each was a significant donor to the event. The EIT gala raised more than $200,000 to establish a fund to create an endowed deanship for EIT.

Other major sponsors of the event included: Acxiom, Arkansas Children’s Hospital, Coulson Foundation, Cromwell Architects Engineers, Glazer’s of Arkansas, Nabholz Construction and Weaver-Bailey Contractors, Inc.

As part of the 10th anniversary celebration, EIT partnered with Arkansas Times to produce a 48-page magazine, appropriately titled “Building Bright Futures,” that chronicled the history of the college. It included a profile of Dean Good, features on each of the six programs in the college and profiles of seven outstanding EIT students. View the magazine at: http://ualr.edu/eit/magazine/vol-1/

The celebration also was the appropriate time to produce a video that captures the history of the college and includes interviews with many of the key players, including Arkansas governor Mike Beebe, former UALR chancellor Charles Hathaway, current chancellor Joel Anderson, Dean Good, Little Rock Regional Chamber of Commerce president Jay Chesshir, Arkansas Economic Development Commission director Maria Haley, as well as EIT faculty, students and industry partners. Watch the video at: http://www.youtube.com/watch?v=hyfA2KshQ7I.

NATIONAL ADVISORY COUNCIL

The EIT 10th anniversary gala helped attract all nine members of EIT’s national advisory council, who attended the event Nov. 19 and then spent Nov. 20 at the college. An opening session set the stage, and then each member of the council met with the department chair, faculty and select students from the program that most closely aligned with the council member’s experience and expertise.

All council members later sent written reports on their experiences, evaluating the relevance and worthiness of the programs. Current EIT national advisory council members include:

- 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 and former Vice President of Worldwide University Relations for HP
- Roger Liska, Dept. Chair and Professor, Construction Science and Management, Clemson University
- Dr. Bob Lucky, Chair of the Technological Advisory Board of the Federal Communications Commission, Former Director 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
- Jim Womble, Former Senior Executive at Acxiom Corporation
EIT BUILDING NEARS COMPLETION

Before EIT was officially founded in 1999, there was a general knowledge at UALR that a new building would be required to support the growth in students and faculty that would accompany the start of a new college of engineering and information technology.

The first $5 million in state money to be used for the as-yet-undesigned building was appropriated in 1999, and soon visions of what the building could become began to be created. Consistent fund-raising efforts finally yielded a large enough portion of the building’s final cost to break ground in July 2008, and almost exactly two years later the EIT Building had reached substantial completion and the faculty and staff of three departments and the dean’s office had occupied the fifth and sixth floors.

The building’s official opening will come August 19, 2010, when classes begin for the fall 2010 semester, and the public ceremony to dedicate the building will be held September 10.

Originally, the adjacent two-story auditorium and the fourth floor of the main building were not going to be fully completed, but when the University of Arkansas Board of Trustees voted in September 2009 to approve a $34.1 million bond issue to fund construction on the UALR campus, Chancellor Anderson approved the use of $5.5 million to complete the EIT Building.

Finishing the fourth floor allowed EIT to make full use of the Steel Case cubicle furniture donated by Verizon Wireless, as 88 workstations are configured in the two large research bays on that floor as well as 44 in the sixth-floor research area and 13 in the research lab adjacent to the High Performance Computing Center (see more information in section below).

Another important highlight of the new building is its classroom and student lab computing environment. For the first time at UALR, a distributed computing system is being implemented, with software and operating system residing on servers in the building’s data centers and only thin client units, monitors and keyboards (in trays that also accommodate the mouse) on the classroom tables. This allows much more flexibility in scheduling classrooms and reduces software costs as a copy for each machine in each classroom is not required.

Another beneficial feature of this computing system is that each student will have a “profile,” so that when he or she logs on, from anywhere on the network, the proper software will be available, as will access to all files.

Highlights of the new building include (bottom to top):

- A 206-seat auditorium with all seats wired for data and power
- A Sub Connection café by Sodexo with seating for 50-plus, including patio tables and a walk-up window.
- A 24-workstation student computer laboratory in the Student Services suite
- A large first-floor room dedicated to student organization use.
- Three server rooms, only one currently utilized, to handle future growth in the building’s technology infrastructure.
**Executive Summary (continued)**

- Twelve terraced classrooms, each including between 36 and 40 workstations for students, outfitted with an HP thin-client computing terminal, monitor and keyboard.
- A two-classroom complex configured for use by systems engineering capstone student teams, outfitted with Verizon cubicles but leaving the core of the room for demonstrations and experiments that require room.
- A networking laboratory and wireless telecom laboratory
- Three 44-workstation research bays dedicated solely to graduate student research.
- A high-performance computing cluster (more information below) that when fully outfitted will be the second largest such center at an academic institution in Arkansas and an adjacent research area with 13 cubicle work spaces.

The building dedication ceremony is scheduled for September 10, and confirmed attendees include Governor Mike Beebe and the University of Arkansas Board of Trustees.

**TOYOTA QUALITY ADVISORY PANEL**

Thanks to her membership on the newly formed Toyota Quality Advisory Panel, Dr. Good helped facilitate the panel’s meeting June 9-10 in Little Rock. The event began with a reception in President Clinton’s private apartment at the Clinton Presidential Center, followed by a seated dinner in the Garden Room on the first floor.

Panel chairman Rodney Slater, former Secretary of Transportation in the Clinton administration, greeted a group that included panel members, speakers and local dignitaries.

The following day the panel met in the Legends Room at the Jack Stephens Center. The session marked the first time the panel members had heard from external experts in automobile safety and quality management.

Besides Slater and Good, Toyota panel members attending the UALR meeting included:

- Patricia Goldman, former vice chairman of the National Transportation Safety Board;
- Brian O’Neill, former president of the Insurance Institute for Highway Safety; and
- Dr. Sheila Widnall, professor at MIT and former Secretary of the U.S. Air Force.

Those sharing their views on auto safety and quality-assurance processes at the panel meeting at UALR included:

- Drs. Jeffrey Luftig and Barbara Lawton, University of Colorado engineering professors who teach the methods of quality pioneer Edwards Deming;
- Dr. Elizabeth Pierce, the chair of UALR’s Information Science program, who spoke to the group about the university’s Information Quality graduate program and its attempts to put the same disciplined processes into place in information quality that Deming did in manufacturing;
- Dr. Daniel Roos, MIT engineering professor and the founding director of MIT’s Center for Transportation Studies;
- Dr. Peter Sweatman, University of Michigan professor and Director of the Michigan Transportation Research Institute;
- Dr. John Morrell, engineering professor at Yale University and a member of the team that created the Segway two-wheeled dynamically stabilized human transporter;
- Dr. Nancy Leveson, engineering professor at MIT;
- Dr. Jeffrey Runge and Dr. Sue Bailey, both former administrators at the National Highway Traffic Safety Administration.

OUTREACH PROGRAMS

Vernard Henley, EIT director of educational outreach and diversity, continued to grow the college’s important outreach activities with the goal of building a pipeline of young students who are interested and have an aptitude in science, technology, engineering and mathematics.

He spearheaded a comprehensive effort – detailed in the Outreach section below – that included three summer programs.

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 48 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 175 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-eight students (24 boys and 24 girls) from 15 counties and 28 schools in 19 school districts across Arkansas were selected to participate in the camp from July 5-17, 2009. Forty-five students completed the academically rigorous program.

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. Dr. Harris visited UALR on July 7 and had dinner with the campers before appearing July 8 at Stella Boyle Smith Concert Hall to oversee a “Raft Rally” competition in which the campers created a “raft” from two pieces of aluminum foil and four plastic straws and then saw which raft could hold the most pennies while remaining afloat.

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. Twenty-four (24) of the 48 students who applied to the program were accepted (50 percent acceptance rate). Applicants came from 16 Arkansas counties. Nineteen students (10 male and 9 female) enrolled in and completed the program.

Ninety-two percent (92 percent) of the accepted students had a high school GPA of 3.50 or higher. Fifty-eight percent (58 percent) of the applicants had a high school GPA of 3.50 or higher.

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 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 will help high school students make informed choices on appropriate course work during their high school years to prepare to pursue careers in engineering.

Students were selected based on their academic merit, teachers’ recommendations, and expressed written desire to participate in the program. Sixteen of the 39 students who applied to the program were accepted (41 percent acceptance rate). Fourteen students (11 male and 3 female) enrolled in the program (88 percent enrollment rate) and all successfully completed the program.

All of the accepted students had a high school GPA of 3.0 or greater. Eighty-eight percent (88 percent) of the accepted students had a high school GPA of 3.3 or greater.

HIGH-PERFORMANCE COMPUTING CENTER

National Science Foundation grants have allowed EIT to expand the high-performance computing center that initially was installed in the ETAS building and is moving to a 2,000-square-foot, raised-floor, state-of-the-art data center on the sixth floor of the new EIT Building. The center will be managed by Kenji Yoshigoe, associate professor in Computer Science.

UALR’s Rocks 4.3 cluster will consist of 64 Dell PowerEdge machines (each with eight Xeon processors and 16GB RAM, for a total of 512 cores), 4TB storage, Gigabit Ethernet, and Infiniband interconnection among computing nodes for minimal IPC latency as well as between computing nodes and a 16TB Lustre parallel file system for fast file access.

It has the theoretical peak performance of 5.45TFlops (or 5.45 trillion floating point operations per second). The cluster is built for running large-scale, distributed-memory multiprocessing with MPI and for running large numbers of independent jobs simultaneously. The cluster is currently under a major upgrade to install Rocks 5.3 and expand the parallel file system capacity to 40TB. Furthermore, 16 new machines interconnected with 40Gbps links will have the capability to form a virtual symmetrical multiprocessor (SMP) system ideal for both highly
parallelized codes across multiple nodes and large-memory solutions for numerical simulation
and data analysis, and its performance will surpass that of a significantly more expensive SMP
system available on the market today.

Finally, a 12-core machine with 48GB memory will serve as a “data mover” to assure seamless
transfer of tera-scale data to the HPC cluster from collaborating institutions.

Our cluster has gained demand and popularity, and has been utilized in various research
projects, including:

- Molecular Hybrid Monte-Carlo/Data-Mining,
- Monte Carlo Modeling of Light Penetration into Deep Tissues,
- Modeling of HPC system,
- Performance Evaluation of Wireless Communication Systems,
- Analysis of Security in Heterogeneous Computer Networks,
- Gene Sequence Matching,
- Molecular Folding, and
- Text Retrieval Conference (TREC) Competition.

Upon the completion of the current upgrade, five of the eight rack units in the room will be
filled with the systems mentioned above. The remaining racks will be filled as needed over the
next two years. The HPC data center has sufficient space, power, and cooling capacity to host
up to 22 rack units, allowing future growth.

HONORARY DEGREE

EIT in May presented an honorary doctoral degree to Dr. Thomas Peterson, the head of the
National Science Foundation’s engineering directorate. Dr. Peterson came to UALR on May 16
and spent most of the day with the engineering faculty, first helping the group understand
NSF’s current priorities and then spending time with younger faculty members counseling with
them on their specific research projects.

ACCREDITATION ACTIVITIES

Both the Construction Management and Systems Engineering departments received visits
from teams tasked with assessing the departments’ worthiness for reaccreditation. Both
departments received favorable initial reports with final reports expected soon.

CURRICULUM ADDITIONS

The Arkansas Department of Higher Education approved two new programs in EIT:

- Ph.D. in integrated computing
- B.S. in construction engineering
Executive Summary (continued)

EXTERNAL AFFAIRS

It was a busy year for Kelley Bass, assistant dean of external affairs, who oversaw the two largest projects of the year – the EIT 10th anniversary gala and the EIT Building project – and coordinated the college’s most successful summer intern program to date.

Through his work with Verizon Wireless on a variety of initiatives, Kelley made the contacts with the Verizon public affairs group that led to an introduction to the facilities team leader. That meeting led to the ultimate donation of more than 170 Steelcase cubicle workstations, eight sets of wooden executive office furniture and 50 portable, adjustable-height tables, all of which are now being utilized in the new EIT Building. The cost of the donated furniture from Verizon, if purchased new, is more than $650,000.

Kelley also negotiated the teardown, storage, delivery and rebuilding of the Verizon furniture with Office Furniture Services, with a total cost of $63,000 to EIT, less than 10 percent of the new-purchase cost.

Working closely with Information Science systems administrator Jim Menth, Kelley worked on the purchase of the computer equipment for the new EIT Building, meeting often with Dell and HP before finally securing a successful HP bid of $698,000 (excluding sales tax) compared with Dell’s bid in excess of $1 million.

Kelley arranged visits to EIT or visited on-site with senior executives from a number of companies and critical EIT partners, including:

- Chesapeake Energy
- LM Glasfiber (now LM Wind Power)
- Mainstream Technologies
- Welspun Tubular
- Acxiom
- Staley, Inc.
- Arkansas Children’s Hospital
- Southwest Power Pool
- Arkansas Economic Development Commission
- Arkansas Association of General Contractors

Kelley also developed a new program to charge external users of the Virtual Reality Center – primarily contractors – $1,500 to model clients’ new buildings and provide the opportunity for the clients to virtually “tour” the buildings before ground on the project is even broken.

The Museum of Discovery invited Kelley to join its Board of Directors, and first-year highlights of his term included arranging Vernard Henley to include the museum as a day-long activity for the 48 children in the Bernard Harris ExxonMobil Summer Science Camp (see Outreach section below); introducing Dr. Haydar Al-Shukri to the museum executives, who enlisted his guidance
in planning and executing its new earthquake exhibit; connecting museum executives with Dr. Alex Biris, who participated in the museum’s Nano Days initiative.

Finally, Kelley oversaw an expanded internship program that improved the communication between potential employers and potential employees. It was the most successful to date with more than 30 interns placed, including 15 at Welspun Tubular, the Indian pipe company with a plant at the Little Rock Port.

SELECTED DEPARTMENTAL NEWS

In Construction Management:

- For the third year in a row, the Provost’s Assessment Advisory Group gave the Construction Management Department an award for Excellence in Assessment and provided a $500 assessment grant.
- For the second straight year, the Construction Management Department was the first academic unit on campus to have 100 percent of its faculty and staff donate to the Campus Campaign.

In Computer Science:

- At the end of the 2009-2010 academic year, after chairing the department for five years, Dr. Srini Ramaswamy transitioned to industry as the head of the Industrial Software Systems group for the energy-sector giant, ABB group of companies, at its corporate research center in Bangalore, India. Dr. Remzi Seker was elected to serve as the department chairperson beginning in July 2010.
- Two department personnel were promoted: Dr. Mariofanna Milanova (to professor) and Dr. Kenji Yoshigoe (to associate professor with tenure). Three new assistant professors will join the department in Fall 2010 (more information below).

In Information Science:

- 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 the spring 2010 semester, 70 graduate students, including 18 doctoral candidates, were enrolled in the IQ program. To date the MSIQ program has graduated 30 students, and the first two students to complete the IQ Ph.D. emphasis graduated in May 2010.
- The IQ program is unique in its ability to simultaneously support both distance and on-campus students through a blended classroom experience that integrates the live classroom with a virtual (webinar) interactive classroom. This new approach helped to earn the MSIQ degree a place on the Top 29 Ranked Best Buys for Online Graduate Degrees in Computer Science & Information Technology from GetEducated.com. The program currently has 15 distance education students including two students in Brazil. In 2009-10 the first two distance students graduated from the MSIQ program, one who lives in Sacramento and one from San Antonio. Both came to the UALR campus to defend their master’s projects.
- The INBRE grant managed in Bioinformatics was renewed for five years at approximately $338,000 per year.
SELECTED STUDENT ACHIEVEMENTS

In Construction Management:
- The Construction Management Department took second place and missed first place by one-half point in the ASC/TEXO Commercial Building Division Student Competition. The team consisted of Trevor Smith (captain), Josh Davenport, Kim Lewis, Justin Mack, Everett Smith, and Lance Wright. Mike Tramel and Eric Fritschie coached the team. The competition problem was the $55 million expansion of the Cotton Bowl.
- Graduating seniors are required to take the American Institute of Constructors’ Certified Professional Constructor associate level exam. This past year 84 percent of UALR students passed the exam, compared to a national pass rate of about 50 percent.
- Brian Adair was awarded a NASA Space Work Study Grant to assist Dr. Amin Akhnoukh with self-consolidating concrete research.

SELECTED FACULTY ACHIEVEMENTS

In Construction Management:
- Jim Carr: 2009 ASC Outstanding Educator Award for Region 5
- John Woodard was elected Vice President of the Board of Directors of the Arkansas American Concrete Institute

In Computer Science:
- Dr. Remzi Seker continues to serve as Associate Editor for Computers & Electrical Engineering, an Elsevier International Journal.
- Dr. Srini Ramaswamy served as Associate Editor for the IEEE Transactions on Systems Man and Cybernetics - Part C: Applications and Reviews.

In Information Science:
- Drs. Dan Berleant and Steve Jennings received an NSF grant award in conjunction with collaborators from the University of Central Arkansas, UAMS, and Cornell University for a web-based system for modeling and predicting neurodevelopment across mammalian species; two bioinformatics graduate students are supported.
- Dr. Elizabeth Pierce received the DAMA Academic Achievement Award for 2010 for her work at UALR to further Information Technology, Information Quality and Data Management.

In Systems Engineering:
- Dr. Rama N. Reddy published the following book: Rama N. Reddy and Carol A. Ziegler “C Programming for Scientists and Engineers with Applications” published by Jones and Bartlett, August 2009.
SELECTED CURRICULUM CHANGES

In Construction Management:
- Developed a new on-line “green” construction course that is offered campus-wide and helps with LEED points for the new EIT building.

In Information Science:
- IFSC 1305 Problem Solving Techniques in Information Science was revised to serve as the IFSC 1305 Freshman Experience Course.

PERSONNEL ADDITIONS

Three new faculty members were hired to fill job vacancies in Computer Science. For the second year, the college was able to hire its top choices for all open positions. Faculty who will begin working at EIT in August 2010 include:

- Dr. Keith Bush, who received his Ph.D. in Computer Science from Colorado State University in 2008. Dr. Bush obtained an M.S. in Computer Science in 2003, also from Colorado State, and got his B.S.E. in Chemical Engineering from University of Pennsylvania in 1998. Prior to joining UALR, Dr. Bush was a post-doctoral researcher at McGill University in Montreal, Canada. His research interests include gaming, identification and control of non-linear dynamic systems, and application of machine learning and adaptive control to neuroscience, sustainable energy and resource management.

- Dr. Mengjun Xie received his Ph.D. degree in Computer Science from College of William and Mary in December 2009. Dr. Xie holds an M.Eng. in Computer Science and Application from East China Normal University, Shanghai, China, received in 2002, and a B.Eng. from the same school, completed in 1999. Prior to joining UALR, Dr. Xie was an Adjunct Assistant Professor at College of William and Mary. Dr. Xie’s research interests are network and information security.

- Dr. Schucheng Yu received his Ph.D. degree in Electrical and Computer Engineering from Worcester Polytechnic Institute in summer 2010. Dr. Yu holds an M.S. in Computer Science obtained from Tsinghua University, Beijing, China in 2004 and a B.S. in Computer Science from Nanjing University of Posts & Telecom in Nanjing, China, in 1999. Dr. Yu worked a software engineer from 1999 to 2001. His research interests include network and system security, secure data sharing with attribute-based cryptography, and applied cryptography.

Overall EIT Grant Applications/Awards

a. Number of proposals submitted 120
b. Total dollar amount requested in proposals $31,219,875
c. Number of Awards (proposals funded) 78
d. Total dollars awarded $12,334,996
Overall Public Service Activities

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 42
b. Essays or articles in popular or semi-popular publications (in contrast to professional journals) 5
c. Consultantships (paid) 31
d. Consultantships (non-paid) 34
e. Other (please add other categories of public service as needed): 311

Overall 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 4 books
   16 book chapters
b. Books (new editions) 0
c. Research articles in professional journals 130
d. Research notes in professional journals 10
e. Formal presentations at professional meeting 98
f. Discussants at professional meeting 49
g. Art exhibits 0
h. Theatre productions/musical productions 0
i. Other 39
### Overall 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>Transfer</td>
<td>Nicholas Jovanovic</td>
<td>Construction Management</td>
<td>Associate Professor</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Promotion</td>
<td>Jim Carr</td>
<td>Construction Management</td>
<td>Professor</td>
<td>M.S.</td>
</tr>
<tr>
<td>Resigned</td>
<td>Srinivasan Ramaswamy</td>
<td>Computer Science</td>
<td>Professor and Chair</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Not Renewed</td>
<td>Sean Geoghegan</td>
<td>Computer Science</td>
<td>Assistant Professor</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Not Renewed</td>
<td>Jennifer Perkins</td>
<td>Computer Science</td>
<td>Instructor</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Terminated</td>
<td>Aaron Hoyt</td>
<td>Computer Science</td>
<td>Systems Administrator</td>
<td>N/A</td>
</tr>
<tr>
<td>Hired</td>
<td>Keith Bush</td>
<td>Computer Science</td>
<td>Assistant Professor</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Hired</td>
<td>Shucheng Yu</td>
<td>Computer Science</td>
<td>Assistant Professor</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Hired</td>
<td>Mengjuni Xie</td>
<td>Computer Science</td>
<td>Assistant Professor</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Hired</td>
<td>Chuck Reynolds</td>
<td>Computer Science</td>
<td>Systems Administrator</td>
<td>N/A</td>
</tr>
<tr>
<td>Resigned</td>
<td>Tong Jett</td>
<td>Computer Science</td>
<td>Administrative Assistant</td>
<td>N/A</td>
</tr>
<tr>
<td>Hired</td>
<td>Sarai Rodgers</td>
<td>Computer Science</td>
<td>Administrative Assistant</td>
<td>N/A</td>
</tr>
<tr>
<td>New Hire</td>
<td>Kristi Wright</td>
<td>GIT</td>
<td>Research Assistant/Unit Coordinator</td>
<td>B.S.</td>
</tr>
<tr>
<td>New Hire</td>
<td>Yao Liu</td>
<td>GIT / Biology (Lirong Zeng)</td>
<td>Research Assoc./Post Doc</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>New Hire</td>
<td>Shawn Bourdo</td>
<td>GIT / Nanotechnology Center (Tito Viswanathan)</td>
<td>Research Assoc./Post Doc</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>New Hire</td>
<td>David Clark</td>
<td>GIT / STRIVE/Stokes</td>
<td>Research Assistant</td>
<td>M.S.</td>
</tr>
<tr>
<td>New Hire</td>
<td>Xiaoning Liu</td>
<td>GIT / Systems Engineering (Guoliang Huang)</td>
<td>Research Assoc./Post Doc</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>New Hire</td>
<td>Tsai-Chi Li</td>
<td>GIT / Biology (Hong-Li Wang)</td>
<td>Temporary Post Doc</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Separation</td>
<td>R.B. Lenin</td>
<td>GIT / System Engineering (Srini Ramaswamy)</td>
<td>Research Assoc./Post Doc</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Separation</td>
<td>Hong Xu</td>
<td>GIT / Applied Science (Qingfang He)</td>
<td>Research Assoc./Post Doc</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Separation</td>
<td>Bo Liu</td>
<td>GIT / Nanotechnology Center</td>
<td>Temporary Post Doc</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Separation</td>
<td>Lixi Yuan</td>
<td>GIT / Nanotechnology Center (Hyewon Seo)</td>
<td>Postdoctoral Fellow</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>New Hire</td>
<td>Chitranjan Singh</td>
<td>GIT / Systems Engineering (Sesh Mohan)</td>
<td>Research Assoc./Post Doc</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>New Hire</td>
<td>Fuyou Fu</td>
<td>GIT / Biology (Hong-Li Wang)</td>
<td>Research Assoc./Post Doc</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>New Hire</td>
<td>Enke Dervishi</td>
<td>GIT/Nanotechnology Center</td>
<td>Research Assoc./Post Doc</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>New Hire</td>
<td>Nitin Agarwal</td>
<td>Information Science</td>
<td>Assistant Professor</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>New Hire</td>
<td>Brenda Barnhill</td>
<td>Information Science</td>
<td>ERIQ Laboratory Proj. Mgr.</td>
<td>B.S., PMP</td>
</tr>
<tr>
<td>New Hire</td>
<td>Gregg Webster</td>
<td>Information Science</td>
<td>ERIQ Laboratory Tech. Mgr.</td>
<td>B.A.</td>
</tr>
<tr>
<td>Promotion</td>
<td>Kamran Iqbal</td>
<td>Systems Engineering</td>
<td>Professor</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Promotion</td>
<td>Xian Liu</td>
<td>Systems Engineering</td>
<td>Professor</td>
<td>Ph.D.</td>
</tr>
</tbody>
</table>
RECRUITMENT AND RETENTION

Katie Young, Assistant Dean for Undergraduate Programs
Vernard Henley, Director of Recruitment and Outreach
Jennifer Moody, Student Services Coordinator
Olivia Ross, Recruitment Coordinator

The recruitment process for Fall 2010 began by defining the target student population as students with an ACT composite score of 26 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 events, school visits, and college fairs.

The team visited college recruitment fairs throughout Arkansas during September, October, and November 2009, 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 or higher composite ACT score, a 26 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 170 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 26 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 fit the target educational achievement parameters and their parents at two recruiting events – Saturday, November 14, 2009; and a two-day event Friday-Saturday, February 19-20, 2010. The November event followed the pattern of the previous year. Upon arrival, each prospect was assigned an EIT student ambassador who was charged with hosting the visiting family throughout the day. The formal program began with an overview of the college before turning it over to student ambassadors who explained the specifics about the undergraduate programs in which they are majoring. Small groups rotated between a trio of demonstrations: 1) the Virtual Reality Center; 2) a robotics demonstration; 3) a tour of the new EIT building.

After all students and parents had experienced the three demonstrations, the group walked across campus and toured the apartments in South Hall, where the scholarship students live. After getting a taste of their potential next home away from home, the students and parents boarded a Little Rock Tours luxury coach for the short ride downtown. Parents dined at the Copper Grill, the upscale restaurant on the first floor of the 300 Third Tower. There they were met by and teamed with select faculty, student ambassadors and industry representatives from Windstream, Axiom, Hawker Beechcraft, Aristotle, Verizon Wireless, Nabholz Construction, Fidelity and Southwest Power Pool. Prospective students enjoyed an informal lunch at Gusano’s with current students and alumni.
Both groups re-boarded the bus and headed down Third Street to Acxiom’s corporate headquarters where they were greeted by Acxiom college recruiting leader Allison Nicholas. They listened as a group of students held a roundtable discussion on the internships they had experienced, a session moderated by Vernard Henley, EIT’s director of educational outreach and diversity.

During the entirety of the activities at Acxiom, Katie Young and Jennifer Moody met with each student and his or her parents to make on-the-spot scholarship offers. Five of the eight students who were offered scholarships at the November recruiting day accepted.

Based on feedback from previous events, the second recruitment event was modified to put an additional focus on the unique community environment of the EIT Scholars by hosting the prospective students in South Hall overnight on Friday, February 19. Students and parents reported to the University Commons, where they were assigned a Student Ambassador and introduced to their “roommate” for the night. The ambassador then took the family on a tour of South Hall. Students and Ambassadors enjoyed dinner at U.S. Pizza, then returned to the University Commons for an evening of movies, board games, and video games. In the meantime, parents attended a dinner at Capers with alumni and industry representatives.

Our formal program commenced on Saturday morning with an overview of the college. The Student Ambassadors (now familiar to the prospective students) explained the specifics of their undergraduate majors. Small groups then proceeded through four rotations: 1) the Virtual Reality Center; 2) a robotics demonstration; 3) a tour of the new EIT building.; 4) scholarship appointments with Katie Young, Vernard Henley, and Jennifer Moody.

Without exception, the revised format seemed to result in the prospective student forming a closer bond with the College. This is evidenced by the 100 percent scholarship acceptance rate; 13 of 15 students signed on the spot, and the other two committed soon after.

**EIT CyberScholar “Taking Care of Business”**

EIT hosted orientation for 27 of the 45 Fall 2010 CyberScholars Class of 2014 on June 10, 2010. 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 2010 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.

**Fall 2009 CyberScholar Freshman Class**

The CyberScholar Class of 2013, which consisted of 48 students, received a number of enrichment opportunities designed to increase community and enhance persistence.
Recruitment and Retention (continued)

- 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 ETAS 204 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 CyberScholars.

- 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. These students were required to submit accountability statements at semester as well as their plan for correction.

The CyberScholar class of 2013 had an overall retention rate of 85.4 percent, and 31 of the 48 students – or 64.5 percent – successfully completed at least 24 credit hours during the Fall 2009 and Spring 2010 semesters with the required 3.25 GPA; this qualified them to continue in EIT programs. It is expected that five students (10.4 percent) who failed to qualify to renew their scholarships will return to EIT programs and self-pay. Five students declared a major outside of EIT but remain at UALR (10.4 percent).

Data indicates that of the 14.6 percent who did not meet renewal requirements, high school GPA was a better predictor of success than ACT score. Of the seven students who are not returning to UALR, three had their scholarships canceled after the Fall 2009 semester for failure to earn a 2.00 GPA, three were cancelled after the Spring 2010 semester for failure to earn a 3.25 cumulative GPA and 24 earned hours. One student in good standing transferred to an institution outside Arkansas at semester for personal reasons.

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.

Changes have been approved to the scholarship renewal requirements for the Fall 2011 entering freshmen cohort (Class of 2015) which should positively affect renewal rates, which should in turn increase 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), but earned hours have been increased from 24 per fall/spring to 30 per fall/spring academic year. As with the ADHE policy, students will be allowed self-pay to earn additional credits during the summer term should they fall short of hours or GPA during the regular academic year.
Fall 2010 Cyberscholar Freshman Class

As of July 2010, the CyberScholar Class of 2014 consists of 45 students from across the state, with the largest number coming from Benton High School.

The average composite ACT score of this group is 27.7, and the average GPA is 3.7.

<table>
<thead>
<tr>
<th>School</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abundant Life (Sherwood)</td>
<td>1</td>
</tr>
<tr>
<td>Arkansas High (Texarkana)</td>
<td>1</td>
</tr>
<tr>
<td>ASMSA</td>
<td>3</td>
</tr>
<tr>
<td>Benton</td>
<td>5</td>
</tr>
<tr>
<td>Bentonville</td>
<td>1</td>
</tr>
<tr>
<td>Bryant</td>
<td>2</td>
</tr>
<tr>
<td>Cabot</td>
<td>2</td>
</tr>
<tr>
<td>Conway Christian</td>
<td>1</td>
</tr>
<tr>
<td>Dumas</td>
<td>2</td>
</tr>
<tr>
<td>Heber Springs</td>
<td>1</td>
</tr>
<tr>
<td>Hot Springs Lake Hamilton</td>
<td>2</td>
</tr>
<tr>
<td>Hot Springs Lakeside</td>
<td>2</td>
</tr>
<tr>
<td>Lamar</td>
<td>1</td>
</tr>
<tr>
<td>LISA Academy</td>
<td>1</td>
</tr>
<tr>
<td>Little Rock Catholic</td>
<td>1</td>
</tr>
<tr>
<td>Little Rock Central</td>
<td>2</td>
</tr>
<tr>
<td>Little Rock Mills</td>
<td>1</td>
</tr>
<tr>
<td>Malvern</td>
<td>1</td>
</tr>
<tr>
<td>Marshall</td>
<td>1</td>
</tr>
<tr>
<td>Mineral Springs</td>
<td>1</td>
</tr>
<tr>
<td>Monticello</td>
<td>1</td>
</tr>
<tr>
<td>Mountain Pine</td>
<td>1</td>
</tr>
<tr>
<td>Redwater High (Texarkana, Texas)</td>
<td>2</td>
</tr>
<tr>
<td>Sheridan</td>
<td>1</td>
</tr>
<tr>
<td>Star City</td>
<td>1</td>
</tr>
<tr>
<td>Sylvan Hills</td>
<td>2</td>
</tr>
<tr>
<td>Watson Chapel</td>
<td>2</td>
</tr>
<tr>
<td>Transfer (Shelby Breedlove)</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>45</td>
</tr>
</tbody>
</table>

The CyberScholars Class of 2014 is preliminarily distributed by major as follows:

<table>
<thead>
<tr>
<th>Major</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Science</td>
<td>10</td>
</tr>
<tr>
<td>Construction Engineering</td>
<td>4</td>
</tr>
<tr>
<td>Construction Management</td>
<td>4</td>
</tr>
<tr>
<td>Engineering Technology</td>
<td>4</td>
</tr>
<tr>
<td>Information Science</td>
<td>2</td>
</tr>
<tr>
<td>Systems Engineering (computer)</td>
<td>5</td>
</tr>
<tr>
<td>Systems Engineering (electrical)</td>
<td>5</td>
</tr>
<tr>
<td>Systems Engineering (mechanical)</td>
<td>7</td>
</tr>
<tr>
<td>Systems Engineering (telecom)</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>45</td>
</tr>
</tbody>
</table>

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 48 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 175 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-eight students (24 boys and 24 girls) from 15 counties and 28
Recruitment and Retention (continued)

schools in 19 school districts across Arkansas were selected to participate in the camp from July 5-17. Forty-five students completed the academically rigorous program.

One-third of the participants received free or reduced lunch. Every day, students attended classes in biology, chemistry, mathematics, engineering design, technology, and English.

The list below provides the number of students from each school and school district:

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

- **Huntsville School District (Huntsville)**
  - Huntsville Intermediate School – 2
  - Watson Intermediate School - 1

- **Little Rock School District (Little Rock)**
  - Carver Magnet Elementary School - 1
  - Dunbar Middle School – 3
  - Henderson Middle School – 1
  - Jefferson Elementary School - 1
  - Horace Mann Middle School – 3
  - Pulaski Heights Middle School – 1
  - Washington Elementary School - 1

- **Pulaski County Special School District (Little Rock)**
  - Oakbrooke Elementary School - 1

- **Fayetteville School District (Fayetteville)**
  - Owl Creek School - 3

- **Malvern School District (Malvern)**
  - Malvern Junior High School – 2
  - Wilson Intermediate School - 1

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

- **Marion School District (Marion)**
  - Marion Middle School - 1

- **Mountain Home School District (Mountain Home)**
  - Pinkston Middle School - 3

- **West Memphis School District (West Memphis)**
  - East Junior High School - 1

- **Arkadelphia School District (Arkadelphia)**
  - L.M. Goza Middle School - 2

- **Ouachita School District (Donaldson)**
  - Ouachita Elementary School - 2

- **Lee County School District (Marion)**
  - Anna Strong Elementary School - 1

- **Conway Public School District (Conway)**
  - Ruth Doyle Intermediate School - 3

- **Pine Bluff School District (Pine Bluff)**
  - Southeast Middle School - 1

- **Texarkana School District (Texarkana)**
  - North Heights Junior High School - 1

- **Clinton School District (Clinton)**
  - Clinton Junior High School - 1

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

- **KIPP Delta Public Charter School District (Helena-West Helena)**
  - KIPP Delta College Preparatory School – 4
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. Dr. Harris visited UALR on July 7 and had dinner with the campers before appearing July 8 at Stella Boyle Smith Concert Hall to oversee a “Raft Rally” competition in which the campers created a “raft” from two pieces of aluminum foil and four plastic straws and then saw which raft could hold the most pennies while remaining afloat.

**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. Twenty-four (24) of the 48 students who applied to the program were accepted (50 percent acceptance rate). Applicants came from 16 Arkansas counties. Nineteen students (10 male and 9 female) enrolled in and completed the program.

Ninety-two percent (92 percent) of the accepted students had a high school GPA of 3.50 or higher. Fifty-eight percent (58 percent) of the applicants had a high school GPA of 3.50 or higher.

The distribution of the composite ACT scores for the enrolled students (13) 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>
</tr>
</thead>
<tbody>
<tr>
<td>% of Enrolled Students</td>
<td>0%</td>
<td>46%</td>
<td>15%</td>
<td>15%</td>
<td>23%</td>
</tr>
</tbody>
</table>

Applicants for the High School Research Program came from the shaded counties shown on this map.
Recruitment and Retention (continued)

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>Ellyson Vasquez</td>
<td>Dr. Mariofanna Milanova</td>
</tr>
<tr>
<td>William Montgomery</td>
<td>Dr. Srinin Ramaswamy</td>
</tr>
<tr>
<td>Hans Wang</td>
<td>Dr. Jingbiao Cui</td>
</tr>
<tr>
<td>Gregory Thompson</td>
<td>Dr. Kenji Yoshigoe</td>
</tr>
<tr>
<td>Karan Batra</td>
<td>Dr. Sean Geoghegan</td>
</tr>
<tr>
<td>Karena Smith</td>
<td>Dr. Mariofanna Milanova</td>
</tr>
<tr>
<td>David Chen</td>
<td>Dr. Srinin Ramaswamy</td>
</tr>
<tr>
<td>Melissa Arms</td>
<td>Dr. Fusheng Tang</td>
</tr>
<tr>
<td>Ca’Ron Watkins</td>
<td>Dr. Srinin Ramaswamy</td>
</tr>
<tr>
<td>Alexis Joyner</td>
<td>Dr. Anindya Ghosh</td>
</tr>
<tr>
<td>Anton Alexeev</td>
<td>Dr. Mariofanna Milanova</td>
</tr>
<tr>
<td>Imran Mumtaz</td>
<td>Dr. Srinin Ramaswamy</td>
</tr>
<tr>
<td>Devika Mehta</td>
<td>Dr. Jingbiao Cui</td>
</tr>
<tr>
<td>Margaret Woods</td>
<td>Dr. Mariofanna Milanova</td>
</tr>
<tr>
<td>Sriharsha Bande</td>
<td>Dr. Srinin Ramaswamy</td>
</tr>
<tr>
<td>Arnab Dey</td>
<td>Dr. Steve Minsker</td>
</tr>
<tr>
<td>Joseph Whitfield</td>
<td>Dr. Srinin Ramaswamy</td>
</tr>
<tr>
<td>Nadia Bhatti</td>
<td>Dr. Anindya Ghosh</td>
</tr>
<tr>
<td>Kiara Swift</td>
<td>Dr. Srinin Ramaswamy &amp; Dr. Chia-Chu Chiang</td>
</tr>
</tbody>
</table>

Since 2006, 56 students have attended the program, and 31 of them have graduated from high school. All but two of the graduating seniors who attended the program (94%) have been contacted. Ninety-seven percent (97%) of the contacted students enrolled in a four-year college or university after graduation from high school.

An overwhelming majority (85%) of the students elected to enter STEM fields of study, with computer science and engineering the two dominant fields. Twenty-nine percent (29%) of the students attending the program have entered UALR (EIT).

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 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 will help high school students make informed choices on appropriate course work during their high school years to prepare to pursue careers in engineering.
Students were selected based on their academic merit, teachers’ recommendations, and expressed written desire to participate in the program. Sixteen of the 39 students who applied to the program were accepted (41 percent acceptance rate). Fourteen students (11 male and 3 female) enrolled in the program (88 percent enrollment rate) and all successfully completed the program.

All of the accepted students had a high school GPA of 3.0 or greater. Eighty-eight percent (88 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.

**BEST Robotics**

EIT served as a hub for the BEST Robotics Competition on October 24, 2009. Eight teams entered 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 transported from one area to another within three minutes. EIT faculty and students judged participants based on their engineering design notebook, sportsmanship and spirit, oral presentation, and table display.

BEST (Boosting Engineering Science and Technology) 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.
Outreach Activities (continued)

Schools competing were J.A. Fair High School, Little Rock Central High School, Bryant High School, Pulaski Heights Middle School, Cabot High School, Benton High School, and Stuttgart High School.

Classroom Visits

School accountability concerns are making this type of recruitment virtually 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 285 students at six Arkansas middle schools and high schools. All of the students were contacted through existing outreach activities or special student assemblies and programs (e.g., career day) that were organized in conjunction with the school’s existing curriculum and programs.

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 400 students visited EIT and took part in tours of the college’s labs and facilities. The nature of the tours varied according to the amount of time teachers allocated. Students were also afforded tours of the campus and got 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. Thirteen teams from eight schools participated on February 17, 2010. This event was held during National Engineer’s Week.

Teachers identified students who would comprise their schools’ teams. Ninety-two 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) 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 2010 JETS TEAMS Competition included:

- Arkansas School for Mathematics, Sciences & the Arts
- Arkadelphia High School
- Bauxite High School
- eSTEM Charter High School
- Highland High School
- J.A. Fair High School
- Little Rock Central High School
- Oak Grove High School
State winners in the 2010 JETS TEAMS Competition.
- Division 1 – eSTEM Charter High School (Team B)
- Division 2 – Arkansas School for Mathematics, Science & the Arts
- Division 3 – Oak Grove High School
- Division 5 – J.A. Fair High School
- Division 9 – Little Rock Central High School

National honors:

9th/10th Grade Level
- Division 1 – eSTEM High School - 26th place
- Division 3 – Bauxite High School – 34th place (tie)
  Arkadelphia High School – 37th place

11th/12th Grade Level
- Division 9 – Little Rock Central High School – 47th place (tie)

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 65 high school students attended two half-day sessions designed to generate interest in engineering.

On February 13, 2010, an “Introduction to Engineering” seminar was held. More than 85 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 24, 2010, 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 tours of the Virtual Reality Center and the Nanotechnology 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.
Outreach Activities (continued)

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 presented the awards at each fair’s awards ceremony. Awardees for the 2010 EIT Regional Science and Engineering Fair Awards:

**Northwest Arkansas Regional Science & Engineering Fair**
- Montana Ruth - Kimmons Junior High School
- Kaylee Tiffee – Fort Smith Public Schools

**South Central Arkansas Regional Science Fair**
- Zara Loye - Lakeside Junior High School
- Andrue Anderson - Benton Harmony Grove High School

**Southeast Arkansas Regional Science Fair**
- Christy Munson - Ridgeway Christian

**Northeast Arkansas Regional Science Fair**
- Hayden Cornell - Nettleton High School
- Romenette Rivera - Annie Camp Junior High School

**West Central Science Fair**
- Giancarlo Devich – Arkansas School for Mathematics, Sciences and the Arts

**Central Arkansas Regional Science Fair**
- Boshan Zhao - Little Rock Central High School

**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.

Initiated by EIT, the Pre-College Diversity Engineering Program is implemented at various schools, primarily within the Little Rock School District, through the formation of engineering clubs that 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.

Sponsors 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 100 students registered in the Pre-College Diversity Engineering Program at the following schools:

- J.A. Fair High School
- KIPP Delta Collegiate 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. The results for the Engineering Essay Contest:

- **Level I (6th and 7th Grades):**
  - 1st Place – Sydnei Miller, Horace Mann Middle School, “Technology’s Effect on the Entertainment Industry”
  - 2nd Place – Shayconna Miller, Horace Mann Middle School, “Using Engineering to Think Green”

- **Level II (8th Grade):**
  - 1st Place – Deborah Rookey, Horace Mann Middle School, “Mechanical Engineering”
  - 2nd Place – Eric Grasby, Horace Mann Middle School, “Mechanical Engineering”
  - 3rd Place – Olivia Speed, Horace Mann Middle School, “Max Karl Ernst Ludwig Planck”

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

- **Level IV (11th and 12th Grades):**
  - 1st Place – Austin Klais, J.A. Fair High School, “Using Engineering to Think Green”

**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 Olympic 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.
Outreach Activities (continued)

The Junior Division Olympiad was held February 18, 2010 and had more than 85 students participating. Forty-five high school students competed in the Senior Division Olympiad on February 25, 2010. 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 tried to solve all of the problems correctly in the shortest amount of time.

The other two events in the Junior Division Olympiad were the Spaghetti Bridge Competition and the Balloon Buggy Race. In the Spaghetti Bridge Competition, students were required to economically design and build a bridge that could hold the greatest number of pennies. The bridge was designed to meet certain design specifications and could consist of marshmallows, spaghetti, and/or linguine. Scoring was determined based on a ratio of cost and strength. In the Balloon Buggy Race, students were required to design and build a lightweight balloon buggy that was able to travel the farthest distance. The buggy could be powered only by a balloon.

In the Senior Olympiad, the other two events were the Sling Shot Racer Contest and the Egg Drop Competition. The Sling Shot Racer Contest required students to design and build a lightweight sling shot/rubber band racer that traveled the greatest distance. In the Egg Drop Competition, students placed a raw egg inside a pre-fabricated device and dropped the device from a height of approximately 45 feet without breaking the egg. The device had to be designed within prescribed size and weight limits.

The results from the Engineering Olympics:

**Junior Division Engineering Olympics**
- Spaghetti Bridge Competition
  - Gold medal – Hot Springs Intermediate School
  - Silver medal – Pulaski Heights Middle School (Team 3)
  - Bronze medal – Pulaski Heights Middle School (Team 2)
- Critical Thinking Problems
  - Gold medal – Pulaski Heights Middle School (Team 1)
  - Silver medal – North Heights Junior High School
  - Bronze medal – Horace Mann Middle School
- Balloon Buggy Race
  - Gold medal – Hot Springs Intermediate School
  - Silver medal – eSTEM Middle School
  - Bronze medal – Hot Springs Middle School
- Overall winner:
  - Hot Springs Intermediate School
Senior Division Engineering Olympics

- Sling Shot Racer Contest
  - Gold medal – KIPP Delta Collegiate High School
  - Silver medal – Little Rock Central High School
  - Bronze medal – eSTEM High School

- Critical Thinking Problems
  - Gold medal – Little Rock Central High School
  - Silver medal – KIPP Delta Collegiate High School
  - Bronze medal – J.A. Fair High School (Team 1)

- Egg Drop Competition
  - Gold medal – Little Rock Central High School

- Overall winner:
  - Little Rock Central High School
Department of
Applied Science
University of Arkansas at Little Rock

Annual Report
for the period
July 1, 2009 – June 30, 2010

DR. HAYDAR AL-SHUKRI
Chairman
Summary of Highlights

This text should be an overview of the entire year for your unit. This text will be used in the final Academic Affairs report; please use complete sentences.

Student enrollment in the Applied Science program increased from 148 (129 Ph.D. and 19 M.S.) students in Fall 2009 semester to 154 (136 Ph.D. and 18 M.S.) students in Spring 2010. Twelve students were awarded their Doctorate degree and one student was awarded an M.S. degree during the academic year. In 2009-2010, 53 new students enrolled in the Applied Science program.

The department was awarded $4,442,506 of externally supported grants to continue the scientific achievement and student education. Also, the department requested $8,828,623.00 by submitting 19 proposals for external funding.

The department faculty collectively published 55 journal articles and had 31 papers/abstracts chosen for conference participation.

Student Achievements

A list of important student achievements and awards in your unit. This text will be used in the final Academic Affairs report; please use a list format.

Achievements

Twelve students were awarded the Doctorate of Philosophy degree:

Student Achievements (continued)


One student was awarded the Master’s degree:


Awards

- One Ph.D. and one Master’s student received the M.K. Testerman award for excellence in research: Mr. Okba Al-Qadhi and Mr. Mustafa Al-Adami, respectively.

- One Ph.D. and one Master’s student received the department award for the Most Outstanding First-Year Graduate Student: Ms. Souzan Eassa and Mr. Mehmet Erdem, respectively.

- Two Ph.D. students received the Presentation/Publication Award: Mr. Fei Song and Mr. Srinivasan Vairavan.

Graduate research forum was cancelled for 2009-2010.
Faculty Achievements

A list of important faculty achievements and awards in your unit. This text will be used in the final Academic Affairs report; please use a list format.

The faculty of the Applied Science Department conducted about 70 collaborative activities with other universities, state and local government entities, and the private sector. Dr. Haydar Al-Shukri

- He continues the appointment of the Department Chair and the Director of Arkansas Earthquake Center.
- He continues his collaboration with Iraqi universities. A collaborative agreement was signed between UALR and the University of Duhok and Kurdistan University of Science and Technology.
- He and his research team published two peer-reviewed papers and three conference publications.
- He led the renewal of the NASA/EPSCoR ($750,000) and the Space Grant ($45,000) projects.
- Renewed funding of DeepSix ($142,549) projects.
- Helped secure funding of a new project with the United States Geological Survey ($500,000).
- 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 and for earthquake risk assessment in Arkansas.
- Recruited 46 sponsored graduate students and expects the addition of about 10 to 15 more.
- Continued monitoring the induced seismicity related to oil shale operations near Enola, Ark.
- Recruited three Ph.D. students to the geophysics group.
- Gave numerous invited talks and news media interviews related to the seismic activity in the state.
- Graduated one Ph.D. student, and another is defending.
- Worked with the Guatemalan government through the National Guard to help the assessment process of natural disasters in that country.

Dr. Gary T. Anderson

- Was awarded two grants from NASA for $695,000 (1 co-PI and 1 PI).
- Had Graduate Certificate in Technology Innovation and all courses approved.
- Admitted first students into program for Fall 2010.
- Served as Section Editor in the Instrumentation Magazine for IEEE Aerospace & Electronics Systems.
- Was a member of the Editorial Review Board for SPRINGER/KLUWER Major Reference Work “Bioengineering Techniques & Applications”
- Served on the program committee in 2009 for IEEE Systems Man & Cybernetics Society
Faculty Achievements (continued)

Dr. Abhijit Bhattacharyya
- His research group in Smart Materials and MEMS capped another successful year of collaboration with Los Alamos National Laboratory, NM.
- His graduate student, Mike Wolverton, continues his doctoral research as a resident researcher in Los Alamos National Laboratory, Los Alamos, NM, 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.
- Serves the engineering community on behalf of the American Society of Mechanical Engineers as an ABET evaluator.
- Is active in his role as the graduate coordinator of the Applied Science graduate program.
- Successfully participated as part of a team for NSF-EPSCOR funding.

Dr. Alexandru S. Biris
- Serves as 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.
- Serves as managing editor and member of the editorial board for the Particulate Science and Technology Journal.
- Co-founder of a private company, Orlumet LLC, that commercializes the technology developed by Dr. Biris at UALR/Nanotechnology Center in the area of tissue engineering.
- Co-founder of a private company, Provectus International LLC, that commercializes the anti-counterfeit security taggant technology developed by Dr. Biris and colleagues
- Due to the high-performance of the project, received additional funding from the Department of Energy to develop organic solar panels. This is the third year in a row of funding for this project.
- Received funding from the Department of Defense to develop coatings for anti-icing applications
- Is a Co-PI on a NASA-funded project to develop an electrodynamic screen for dust mitigation
- Advises eight Ph.D. and seven undergraduate students along with two post-doctoral fellows and leads three research assistant professors.
- Serves 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, Electrostatics Society of America, and published in prestigious journals such as Carbon, Chemical Physics Letters, Chemistry of Materials, Advanced Functional Materials, etc.
- Chosen as spokesperson for the “I Create Little Rock” campaign funded by the city government and Little Rock Regional Chamber of Commerce
- Chosen as a member of the 2010 Arkansas Business list of “40 under 40”. The list 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.
- Submitted two articles for publication.
- Preparing two articles for submission.
- Submitted annual report to NSF for CAREER grant.
- Organized 34th Annual Photosynthesis Conference in Marshall, Ind.
- Presented an oral presentation at the 34th Annual Photosynthesis Conference.
- Submitted nine meeting abstracts including posters and oral presentations.

Dr. Tansel Karabacak
- Studying nanostructured metal hydrides for hydrogen storage applications.
- Investigating nanostructured compound materials (e.g. oxides, nitrides, sulfides) for applications including sensors and energy conversion systems.
- Investigating growth dynamics and properties of nanostructures by glancing angle deposition.
- Studying the morphological growth front evolution of thin films during deposition and etching.
- Investigating network dynamics during thin film growth.
- Published eight journal and four conference papers.
- Attended two international conferences and presented/coauthored 10 oral presentations and posters.
- Submitted 10 grant proposals (eight as PI and two as Co-PI) to federal agencies (NSF, NASA, and DOE). Total dollar amounts of these proposals were about $10 million, of which $9 million was UALR’s portion, and about $3 million of that was Dr. Karabacak’s portion. Dr. Karabacak secured a NASA-EPSCoR grant for $750,000. In addition, he has been serving in one DOE grant, and also in two ASGC/NASA grants.
Faculty Achievements (continued)

- Involved in several collaborative projects with faculty at UALR, Arkansas State University, Rensselaer Polytechnic University, 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).

- Developed and proposed the Micro- and Nano-Fabrication course as a Candidacy Exam Course under the candidacy subject “Materials Engineering” of “Engineering Science and Systems” emphasis area. This became the first candidacy course ever listed under the long-sought materials engineering candidacy subject.

- Served as an organizing committee member and chair for the Glancing Angle Deposition Session in Thin Film Division of AVS 56th International Symposium.

- Established contacts with 2 companies and about 10 program managers from federal funding agencies.

Dr. Mariya Khodakovskaya

- Supervised four Ph.D. students and two undergraduate students

- Received RID Grant Award from Arkansas Space Grant Consortium

- Served as Principal Investigator for NSF-EPSCoR grant, “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”

- Organized symposium, “Rice Research in Arkansas,” for researches in Arkansas involved in study of rice

- 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 number of collaborative projects with faculty of UALR, industry, state and national organizations

- Was invited to make three lectures/talks for academic institutions in Arkansas

- Participated in student exchange program between CESI University (France) and UALR and supervised research projects for two French students during summer 2010.

Dr. Andrew Wright

- Chair of program committee to integrate MS&E and IES&E draft curricular proposal to department.

- Continued work in formalizing novel (and perhaps revolutionary) control algorithm (Mode Selection Logic).

- Successfully tested feedback control Mode Selection Diagram on Control and Sensor
Submitted energy pre-proposal to NSF IGERT

Designed and built prototype acoustic reflective shaping actuator.

Former student Traig Born became lead design engineer at Agrobotics, a start-up business in Little Rock.

Dr. Cang Ye

Was a faculty fellow (ONR-funded) at Space and Naval Warfare Systems Center Pacific.

Got his pending patent licensed to a U.S. company that is the leading designer and manufacturer of specialty PTZ cameras and high-end camera control systems.

Served as an NSF panelist.

Serves as a 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 ($750,000), and a senior personnel of the NSF EPSCoR RII Track 2 Award ($3,370,951).

Serves as a PI of a pending NSF proposal ($320,389) of which the award abstract was requested by the NSF.

Published four peer-reviewed papers; submitted four additional papers, two of which have been accepted.

Curriculum

Detail program additions, deletions, and revisions; steps taken to strengthen the academic program; etc.

The following curriculum activities were conducted during the 2009-2010 academic year:

Five new graduate courses were approved: ASCI 5308 Linux Systems Programming, ASCI 7118 Research Ethics in Science and Engineering, ASCI 7306 Real-Time Embedded Systems, ASCI 7315 Micro- and Nano-Fabrication (also approved as a Candidacy Examination Course), and ASCI 7317 Nanostructural Materials: Physical and Chemical Properties (also approved as a Candidacy Examination Course).

ASCI 7375 Biochemistry and Biological Molecules was approved as a Candidacy Examination Course.

The candidacy examination areas were updated by including regular courses and adding a discipline-specific option to all emphasis areas.

Working on a new direction for the department through the developing of a new Ph.D./M.S. emphasis areas with the goal of expanding it to an undergraduate program. The faculty is in the process of integrating two proposals – the first in the field of Material Science and Engineering and the second in Integrated Energy Science and Engineering.
Grant Applications/Awards

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

a. Number of proposals submitted 19
b. Total dollar amount requested in proposals $8,828,623
c. Number of Awards (proposals funded) 18
d. Total dollars awarded $4,442,506

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 26
b. Essays or articles in popular or semi-popular publications (in contrast to professional journals) 5
c. Consultantships (paid) 0
d. Consultantships (non-paid) 0
e. Other (please add other categories of public service as needed): 45

Contact with Possible Funding Agencies 45

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 0
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 31
f. Discussants at professional meeting 4
g. Art exhibits 0
h. Theatre productions/musical productions 0
i. Other 1
Information Technology

*Detail efforts to integrate technology into the curriculum; significant acquisitions, etc.*

Faculty information, including research interests and personal web links, were updated on the Applied Science Department website. Also, the Graduate Student Handbook was made available on the homepage in a PDF version.

Recruitment and Retention

*Summarize recruitment and retention efforts during the past year*

The department of Applied Science had successful recruiting and retention efforts during the past academic year. 53 new students (11 M.S. and 42 Ph.D.) were enrolled in the program for the reporting year. 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, Norway, Sweden, Austria, and other countries to recruit such students. Forty-six Iraqi students (fully supported by the Iraqi Ministry of High Education) are on campus, and we anticipate the addition of up to five more students by fall 2010.

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></td>
<td></td>
<td></td>
<td></td>
<td></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.*
APPENDIX
College/School Assessment Implementation - Applied Science

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

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

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

Identify the strongest assessment program in your college/school.

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

Account for spending of assessment funds. Include any additional college/school funds allocated for assessment.
Department of Computer Science
University of Arkansas at Little Rock

Annual Report
for the period
July 1, 2009 – June 30, 2010

DR. SRINI RAMASWAMY
Chairman
Summary of Highlights

This text should be an overview of the entire year for your unit. This text will be used in the final Academic Affairs report; please use complete sentences.

The 2009-10 academic year was very productive for the Computer Science Department with the receipt of two more NSF grants (Dr. Srini Ramaswamy—RII2 grant, and Dr. Kenji Yoshigoe—CRI grant). These grants represent the building blocks for UALR’s much-anticipated High Performance Computing center that is well underway and will begin operating in the new EIT building from Fall 2010. Also beginning in Fall 2010 will be the new college-wide Ph.D. program in Integrated Computing, another example of UALR building successful interdepartmental programs that address and serve the emerging needs of our students and stakeholders in a highly collaborative and sustainable manner.

At the end of the 2009-10 academic year, after chairing the department for five years, Dr. Ramaswamy transitioned to industry as the head of the Industrial Software Systems group for the energy-sector giant, ABB group of companies, at its corporate research center in Bangalore, India. Dr. Remzi Seker was elected to serve as the department chairperson beginning in July 2010. Two department personnel were promoted: Dr. Mariofanna Milanova (to professor) and Dr. Kenji Yoshigoe (to associate professor with tenure). Three new assistant professors will join the department in Fall 2010. The department’s programs are diverse and strong, and student enrollments continue to increase in these programs. The High School Research Program initiated by the department’s faculty in 2006 has become a highly successful recruitment model for the college and university and was publicized in ACM’s CSTA Voice magazine.

Student Achievements

A list of important student achievements and awards in your unit. This text will be used in the final Academic Affairs report; please use a list format.

Our students continue to perform well. The program continues to be popular among Arkansas students, especially the game option.
Student Achievements *(continued)*

Department level awards were presented to the following students:

1. Master Student Service Award: Travis Bennett
2. Undergraduate Service Technical Support: Larry Beachler
3. Most Promising Undergraduate Research Student: Alexandra Anghelescu and Albert Moropoulos
4. Senior Academic Student Awards: Carson Harper and Matthew Dombkowski
5. Junior Academic Student Awards: Andrew Hays, Summer Hall, Michael Jolley, and Keenan Gillispie
6. Sophomore Academic Student Awards: Chandramohan Sol

Faculty Achievements

*A list of important faculty achievements and awards in your unit. This text will be used in the final Academic Affairs report; please use a list format.*

1. Six Computer Science faculty members (Drs. Chiang (1), Geoghegan (1), Milanova (1), Ramaswamy (3), Seker (2) and Yoshigoe (3)) are either PIs, Co-PIs or active senior investigators and participants on several National Science Foundation (NSF) grants.
2. Dr. Milanova continues to be active on DHS and NIH INBRE grants.
3. The faculty collectively had more than 65 conference and journal publications, including several collaborative publications.
4. Six of our faculty are active on international and multi-university grants and collaborations (Drs. Bayrak, Geoghegan, Milanova, Yoshigoe, Ramaswamy, and Seker)
5. Dr. Ramaswamy continues to serve as a Commissioner to the Computing Accrediting Commission of ABET.
6. Dr. Seker continues to serve as Associate Editor for Computers & Electrical Engineering, an Elsevier International Journal, and Dr. Ramaswamy is Associate Editor for the IEEE Transactions on Systems Man and Cybernetics - Part C: Applications and Reviews.
7. Faculty has served on the program committees of many major conferences in the field.
Curriculum

Detail program additions, deletions, and revisions; steps taken to strengthen the academic program; etc.

1. CPSC had a successful ABET reaccreditation report submitted in June 2009.
2. CPSC faculty members have reviewed and updated the CPSC master’s program as well as done several undergraduate curricular revisions.
3. CPSC, IFSC and SYEN have successfully proposed and had approved the Ph.D. program in Integrated Computing, which will begin in Fall 2010.

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 $8,379,710
c. Number of Awards (proposals funded) 6
d. Total dollars awarded $2,379,164

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
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 (Book Chapters) 3 book chapters
b. Books (new editions) 0
c. Research articles in professional journals 23
d. Research notes in professional journals 0
e. Formal presentations at professional meeting 14
f. Discussants at professional meeting 39
g. Art exhibits 0
h. Theatre productions/musical productions 0
i. Other 4

Information Technology

Detail efforts to integrate technology into the curriculum; significant acquisitions, etc.

All departmental labs moved to the new EIT Building in Summer 2010

Recruitment and Retention

Summarize recruitment and retention efforts during the past year.

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

<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>Resigned</td>
<td>Ramaswamy Srinivasan</td>
<td>CPSC</td>
<td>Prof. and Chair</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Not renewed</td>
<td>Sean Geoghegan</td>
<td>CPSC</td>
<td>Assistant Professor</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Not renewed</td>
<td>Jennifer Perkins</td>
<td>CPSC</td>
<td>Instructor</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Terminated</td>
<td>Aaron Hoyt</td>
<td>CPSC</td>
<td>Systems Administrator</td>
<td>N/A</td>
</tr>
<tr>
<td>Offer Accepted</td>
<td>Keith Bush</td>
<td>CPSC</td>
<td>Assistant Professor</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Offer Accepted</td>
<td>Shucheng Yu</td>
<td>CPSC</td>
<td>Assistant Professor</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Offer Accepted</td>
<td>Mengjun Xie</td>
<td>CPSC</td>
<td>Assistant Professor</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Offer Accepted</td>
<td>Chuck Reynolds</td>
<td>CPSC</td>
<td>Systems Administrator</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Resigned</td>
<td>Tong Jett</td>
<td>CPSC</td>
<td>Administrative Assistant</td>
<td>N/A</td>
</tr>
<tr>
<td>Offer Accepted</td>
<td>Sarai Rodgers</td>
<td>CPSC</td>
<td>Administrative Assistant</td>
<td>N/A</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.
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.

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 2007 visit. With this data we are submitting an ABET Interim Report in June 2009.

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.

Summary of Highlights

This text should be an overview of the entire year for your unit. This text will be used in the final Academic Affairs report; please use complete sentences.

The Construction Management Department

The Construction Management Department’s student enrollment had another decline with a total of only 165 declared majors currently enrolled. The Department continues to be ranked as one of the top ten largest departments on campus. This year the Department’s new student enrollment was the lowest in several years with only 53 new students entering with 32 in the Fall 2009 semester and 21 in the Spring 2010 semester. The annual graduation record was also down with only 49 for the academic year, with 17 in the Fall 2009 semester and 32 in the Spring 2010 semester. It appears that the downturn in the economy has impacted the construction industry tremendously which also impacts student enrollment.

Due to economic factors graduates are still finding local employment with the smaller specialty contractors instead of the larger general contractors. The entry-level salaries, bonus incentive, vehicle allowance, and fringe benefit package continue to be equal to the national average for the Construction Industry.

For the third year in row the Construction Management Department was the first academic unit on campus to have 100% donations to Campus Campaign.

The Construction Management Advisory Council, co-chaired by Bill Hannah, CEO of Nabholz Construction, continues to be recognized as one of the most active and supportive councils within EIT. This year the scholarship funds were increased by an annual $40,000 donation by the Arkansas Contractors License Board. The Board also donated $70,000 to set up the Howard Williams Endowed Scholarship. Thompson Electric also donated $25,000 to their existing endowed scholarship fund. The National Association of Women in Construction (NAWIC) has finalized their new scholarship fund that will generate $2000 annually. The Construction Management Department currently has 24 scholarship funds with 21 funds endowed.

The Associated Builders and Contractors of Arkansas requested for the second year that the Construction Management Department faculty be the judges for the 2010 ABC Excellence in Construction Awards. Faculty members reviewed over 30 company project portfolios and graded each one based on their division criteria.
Construction Management Program

The Program had an excellent re-accreditation report with two strengths and one weakness. The two strengths were faculty commitment to the students in terms of being supportive and building relationships and the advisory council's financial support and service to the program. The one weakness was that outcome assessment does not indicate evidence that data was collected for alumni and industry in order to close the loop. The alumni and advisory council need to be surveyed to collect data.

The summer classes had a total of 139 students enrolled in 10 classes. This was the first summer that CNMG 4345 the senior capstone was offered to allow for summer graduates.

The University Plaza Construction Management Methods Laboratory is completed except for the development of the lab areas. The classroom was used during the academic year by three classes and by the Home Builders Association for safety classes. The Dean's temporary storage room was converted to a secured area for the storage of the surveying equipment. The surveying class will be conducted in the Plaza during the summer 2010 semester.

The Construction Management Department had 12 students that competed in the annual TEXO/ASC Region V student construction competition. The UALR Commercial Building Team took 1st place and the UALR Heavy-civil Team took 2nd place. This was the largest competition to date with 27 teams and included for the first time an international team from the Dublin Institute of Technology. This was the first year that both teams placed in the competition and the first time that Arkansas AGC sponsored two teams.

The Commercial Building Team was coached by Department Chair, Mike Tramel and the team consisted of Jessica Jeffries, Krystal Handy, Caleb DeWoody, Trey Hefley, Larry Newkirk, and Kevin Sullivan. UALR took 1st place, John Brown University took 2nd place and Texas A&M University took 3rd place. There were a total of 12 teams competing in the Commercial Building Division with teams from Oklahoma State University, Oklahoma Institute of Technology, University of Oklahoma, University of Louisiana Monroe, Texas Tech University, University of North Texas, Texas State University, Texas A&M Commerce, and Austin College.

The problem was sponsored by J.E. Dunn and consisted of a 5 million dollar Monastery of the Most Holy Trinity add on and remodeling. There were 17,000 square feet of new construction and 10,000 square feet of remodeling work. The main issue was privacy and security for the Monastery Nuns and the remodeling of the commercial kitchen. The Nuns bake bread for distribution and a temporary kitchen had to be in place before the existing kitchen could be remodeled. The security issues were predominate since men were not allowed on the second floor and the site campus had to be secured at all times. The UALR team's schedule was within one day of the actual schedule and their estimate was within $100,000 of actual cost. Their bid for the general requirements was within $1000 of actual cost and their insurance/bond cost was within $100 of actual cost. J.E. Dunn took seven days to estimate and schedule the project and the UALR students had only 16 hours. Of course J.E. Dunn provided enough information
for the team to complete the task but the other 11 teams did not come close to the actual estimate or actual schedule. UALR should really be proud of what these students accomplished in such a short time.

The Heavy Civil Team was coached by Instructor Larry Blackmon and the team consisted of Captain Mark Gernhart, Chris Baxter, Jay Lewis, Malcolm Jeffers, Chris Meyer, and Josh Morris. UALR took 2nd place with the University of Oklahoma taking 1st place and Louisiana Tech University taking 3rd place. There was a total of eight teams that competed in the Heavy Civil Division with other teams from Oklahoma State University, Texas A&M University, Texas Tech University, University of Louisiana Monroe, and the University of North Texas.

The problem was sponsored by McCarthy's Texas Civil Division and consisted of a $63,000,000 elevated railroad bridge with two rail lines for the new DART transportation system in Dallas Texas. The UALR team's estimate for the entire project was closest to the actual estimated cost with the other teams missing by over $10,000,000. The Heavy Civil Team was literally locked in a hotel room for the 16 hour period with no access to cell phones or the internet. They had to develop a plan that would phase the project around the existing rail line and not interrupt the main street that parallels the rail line. Over the years UALR has consistently come closest to the actual estimated bid cost and this year was no exception. This year McCarthy's bid opening procedure duplicated the way that public bid lettings are done. The real world approach resulted in four teams not filling out the bid forms correctly resulting in their bids being non-responsive. This resulted in a 200 point deduction from the 1000 point total. During the debriefing McCarthy expressed their concern that teams could not follow basic highway bidding procedures. In the real world a non-responsive bid is not accepted by the public sector entity. This speaks volumes for how well Larry Blackmon prepares our students in his Heavy Civil elective course.

With the addition of the new Construction Engineering program UALR will be able to send a third team and compete in the Design Build division. The ASC/TEXO Region V competition has become an international student competition with additional teams coming from the United Kingdom.

Construction Engineering Program

The Construction Engineering program was approved by the Department of Higher Education on April 30, 2010 and the curriculum was approved on April 28, 2010 by the Undergraduate Council. Dr. Nicholas Jovanovic was transferred from Systems Engineering to Construction Management to join Dr. Amin Akhnoukh as construction engineering faculty. Dr. Jovanovic has been accepted as an ABET Program Reviewer in preparation of getting the program ABET accredited. Two students are doing a double major and will graduate from the new program in 2011. This will allow the new program to apply for ABET accreditation sooner than expected. Dr. Jovanovic and Dr. Akhnoukh are to be commended for getting the program approved in record time. Dr. Jovanovic is also to be commended for preparing the curriculum change forms and presenting and defending them to the Undergraduate Council. The Systems Engineering Department also deserves special thanks for their timely assistance in approving the eleven courses that are cross listed.
Summary of Highlights (continued)

Dr. Jovanovic has agreed to be the Construction Management Department web page master. He has already revised the web page to reflect the addition of the new construction engineering program and revised the scholarship applications. The current Department news has been added to the News Section and he is working on adding links to Arkansas construction associations and organizations. The Department is thankful that Dr. Jovanovic has agreed to take on this monumental task.

Student Achievements

A list of important student achievements and awards in your unit. This text will be used in the final Academic Affairs report; please use a list format.

A list of important student achievements and awards in your unit. This text will be used in the final Academic Affairs report; please use a list format.

- The 2010 Excellence Awards for Academic Scholarship were given to:
  - Chris Baxter
  - Jennifer Franczak
  - Keith Mashburn.
- UALR took first place in the ASC/TEXO Region V Commercial Building Division student competition
- UALR took second place in the ASC/TEXO Region V Heavy Civil Division student competition
- Sigma Lambda Chi International Construction Honor Society inducted eleven new candidates and two honorary faculty:
  - Jorge Osorio
  - Adam Morsy
  - Kevin Sullivan
  - Alex Garr
  - Chad Craig
  - Jessica Jeffries
  - Drew Welch
  - Chris Baxter
  - Logan McInvale
  - Gary Ringgold
  - Robert Hubbard
  - Danielle Alsbrook
  - John Woodard – Honorary
  - Ron Bank – Honorary
- Brain Adair undergraduate research in the development of user friendly high performance concrete mixes
- Brian Adair undergraduate research in introducing construction engineering applications to K-12 students
- Ender Cecen undergraduate research in development of ternary concrete mixes for bridge applications
Faculty Achievements

A list of important faculty achievements and awards in your unit. This text will be used in the final Academic Affairs report; please use a list format.

Akhnoukh, A.
- Had a publication in one of the most recognized international journals for concrete research. Akhnoukh, A., “Ultra-High Performance Concrete Bridge I-Girders”, Concrete Plant International Journal, 2009

Woodard, J.
- Elected President of the Board of Directors of the Arkansas American Concrete Institute

Tramel, J.
- One of 28 professors selected for the Kiewit Professor four day event at Omaha NB. Professors from Construction Management and Engineering programs across the United States were invited as part of a recruiting introduction to the company

Xie, H.
- Nominated as “Excellent and Innovative Researcher of Shaanxi Province, China” in 2009

Curriculum

Detail program additions, deletions, and revisions; steps taken to strengthen the academic program; etc.

Construction Management
- Reduced the total number of credit hours required for the degree from 127 to 125
- Transfer students given the option take an additional construction management elective instead of the introduction course CNMG 1301 Construction Industry
- Changed prerequisite to CNMG 1305 Drawings and Specifications
- The material topics of CNMG 2310 Materials and Methods I and CNMG 2312 Materials and Methods II was combined into a new course CNMG 2313 Construction Materials and the methods topics will be taught in CNMG 2195 Service Learning and CNMG 3195 Community Service Projects
- Changed prerequisite to CNMG 2316 Construction Surveying
- New course CNMG 2218 Building Information Modeling will replace ETME 1300 Computer Graphics to introduce students to BIM
- Changed prerequisite to CNMG 3327 Field operations
- Changed prerequisite to CNMG 3339 Bid Process
- Changed prerequisite to CNMG 4329 Construction Planning and Scheduling
- New course CNMG 4214 Advanced BIM added to provided students with current industry applications
- CNMG 3342 Construction Safety changed to CNMG 4342 in preparation for the Master of Science in Construction Management
- Added a science elective that allows students to take either STAT 2350, ERSC 1303, PHYS 1322, or MGMT 3352
- New course IFSC 2200 Ethics in the Profession was added to the EIT core to provide students with discipline specific ethics
Curriculum (continued)

Construction Engineering

- Changed title, prerequisite, and description to CNMG 3312 Field Engineering (CNMG 3312 Structural Analysis for construction engineering)
- Changed prerequisite and description to CNMG 4321 Reinforced Concrete Design
- Changed prerequisite and description to CNMG 4370 Structural Steel Design
- New course CNMG 4385 Construction Engineering Design Experience (capstone)
- Changed CNMG 3147 Soil Mechanics Lab to CNMG 4437 Soil Mechanics
- New course CNMG 4389 Professional Engineering Licensure
- Cross listed SYEN 3301 Engineering Economy to CNMG 3301
- Cross listed SYEN 3370 Statics and Dynamics to CNMG 3370
- Cross listed SYEN 3372 Engineering Materials to CNMG 3372
- Cross listed SYEN 3378 Engineering Thermodynamics to CNMG 3378
- Cross listed SYEN 4374 Fluid Mechanics to CNMG 4374
- Cross listed SYEN 4174 Fluid Mechanics Lab to CNMG 4174
- Cross listed SYEN 4376 Mechanics of Materials to CNMG 4376
- Cross listed SYEN 4176 Mechanics of Materials Lab to CNMG 4176
- Cross listed SYEN 4379 Heat Transfer to CNMG 4379
- Cross listed SYEN 4380 HVACR Systems to CNMG 4380
- Cross listed SYEN 4381 Thermal and Fluid System Design to CNMG 4381

Grant Applications/Awards

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

- Number of proposals submitted 25
- Total dollar amount requested in proposals $586,382
- Number of Awards (proposals funded) 17
- Total dollars awarded $90,035
  - Arkansas Contractors Licensing Board Award funded $10,000
  - Carr, J., NAHB funded $6,000
  - Ray, C., ABC funded $2,500
  - Tramel, J., LEA Funds $9,200
  - Tramel, J., AGC funded $3,000
  - Tramel, J., ASC/TEXO Award funded $1750
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)
c. Consultantships (paid)  24
d. Consultantships (non-paid)
e. Other (please add other categories of public service as needed):
   Professional, University and Community Service  74
   Professional Development  18
   Professional Associations, Memberships, Certifications, and Registrations  82

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  7
d. Research notes in professional journals  0
e. Formal presentations at professional meeting  4
f. Discussants at professional meeting  0
g. Art exhibits  0
h. Theatre productions/musical productions  0
i. Other  14
Information Technology

*Detail efforts to integrate technology into the curriculum; significant acquisitions, etc.*

The Construction Management Department continues to update and utilize technology in nearly every course in the curriculum and was the first department within the College to offer on-line courses. A new on line course dealing with construction materials will be offered in the Fall 2010 semester. Then revised construction engineering course CNMG 4437 Soil Mechanics will incorporate the soils lab update for engineering soils testing which is electronic data acquisition based. The new CNMG 2218 Building Information Modeling and CNMG 4214 Advanced BIM will provide students with the most current applications of building information modeling. The construction industry now uses BIM as a construction tool with project cost and scheduling being added to the three dimensional model.

The addition of the new high strength concrete lab will enhance the concrete construction course and the reinforced concrete design course. The state of the art equipment is also being used for undergraduate and graduate research. Dr. Akhnoukh has several funded research projects utilizing the new lab.

Recruitment and Retention

*Summarize recruitment and retention efforts during the past year)*

The Construction Management Department continues to be the largest academic unit in the College and recruitment of entering freshman has increased through the efforts of the Dean's office, faculty, and industry organizations.

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>Transfer</td>
<td>Nicholas Jovanovic</td>
<td>Construction Management</td>
<td>Associate Professor</td>
<td>Ph. D.</td>
</tr>
<tr>
<td>Promotion</td>
<td>Jim Carr</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.*

- Howard Burris was added to the Department as a technical support staff member.
Department of Engineering Technology
University of Arkansas at Little Rock

Annual Report
for the period
July 1, 2009 – June 30, 2010

DR. MAMDOUH BAKR
Chairman
DEPARTMENT OF ENGINEERING TECHNOLOGY

UALR Provost’s Annual Report
July 1, 2009 – June 30, 2010

Summary of Highlights

This text should be an overview of the entire year for your unit. This text will be used in the final Academic Affairs report; please use complete sentences.

The Engineering Technology Department enjoyed a successful 2009-2010 academic year with rising student enrollment, expansion, development and update of lab facilities. Many of the department’s students earned, and were recognized for, outstanding performance. In addition, presentations of projects accomplished by graduating seniors in the capstone courses showed a high degree of achievement and skill in the development of working solutions and in presenting their projects. The department adopted an honors program to recognize and motivate high achievers and to promote undergraduate research.

The department also adopted an indirect course assessment to support the course “continuous improvement” process and has expanded efforts in recruiting and retention. In addition, the faculty engaged in exploring research opportunities, and has submitted a number of proposals, although the level of funding was less than expected. The faculty also participated in many events in the college and across campus, as well as representing the department and the college in faculty governance.

Student Achievements

A list of important student achievements and awards in your unit. This text will be used in the final Academic Affairs report; please use a list format.

Research and Scholarship Awards

The department grants competitive merit scholarships from funds received from industry and foundations to support outstanding students enrolled in Engineering Technology programs. The annual amount varies depending on the return on investment and on donations.

Following are the scholarship recipients for the Spring of 2010. Each winner received $750.

1. Andrew Bedinghaus, Senior - Mechanical
2. John Bumpers, Senior - Post Baccalaureate - Electronics & Computers
4. Kristle Hill, Senior - Electronics & Computers
5. Henry Okoh, Senior - Electronics & Computers
6. Tasha Sims, Junior - Electronics & Computers
Student Achievements (continued)

Also, Sara Castleberry, Sophomore - Electronics & Computers - received the Rotary Club Academic Scholarship in honor of Dr. Charles Hathway, Fall 2010

Outstanding Senior Project Awards

Senior projects undertaken in the capstone courses require the collective knowledge and skill achieved in a multitude of courses in the particular discipline. Seniors are called on to solve technical problems or design products. Their achievement reflects the degree to which they are able to apply their knowledge to meet the challenges of engineering applications. Senior projects are planned and managed in close collaboration with the course faculty and other faculty advisers to assure that students and student teams are properly coached, throughout the application of the design process.

The department has an established tradition to honor the outstanding senior projects from the Electronics & Computers and Mechanical programs.

Outstanding senior project winners and a brief description of their projects follows:

1. Electronics & Computers Program:
   Matthew Shelby: “Automatic Remote Following Robotic Wagon.” A light, battery-powered electric wagon capable of following a person telegraphing his/her location and motion using a simple hand-held transmitter. The project involved design, development and construction, and testing of a prototype.

2. Mechanical Program (Given to recognize projects completed in the Spring of 2009):
   Tom Flowers and Will Pumphery: “CNG Conversion.” The project involved the design, and plans for converting a mid-size automobile to a dual fuel usage, comprised of gasoline and compressed natural gas (CNG). The project also included the analysis and development of a procedure for complying with the EPA and certification requirements.

Undergraduate Research Expo Competition Award

Students submitted the following three research projects to the Undergraduate Research Expo competition held April 26, 2010 at the Donaghey Student Center. The research project submitted by Eric Jackson won first place.

Students and their projects:

1. “Solar Powered Refrigerator,” by Eric Jackson, Senior - Electronics & Computers, Mentor Dr. Patangia (first-place award winner). The project demonstrated the design, development and prototyping of a small, 12-volt solar-powered refrigerator.

2. “A Low Cost MPPT Controller,” by Nikhil Gupta, Afzal Siddique and Sachin Sharma, exchange students from SRM University, Mentor Dr. Patangia.

3. “Electrical Characteristics of a Polymer,” by Rohit Sharma and Anurag Saha, exchange students from SRM University, Mentor Dr. Bhattacharyya.
College Awards

The following students were recognized for their academic achievement in the annual college awards ceremony:

- **Electronics and Computers Program:**
  - Wally Barrington - Outstanding Senior Award
  - Garry Brand - Outstanding Junior Award
  - Guillermo Zarruk - Outstanding Sophomore Award
  - Terry Hall - Outstanding Freshman Award
  - Carson Harper - EIT College Outstanding Associate Degree graduate

- **Mechanical Program:**
  - Philip Schmidt - Outstanding Senior Award
  - Gary Iwatsuru - Outstanding Junior Award
  - Daniel Shelman - Outstanding Sophomore Award
  - Clay Rattenbury - Outstanding Freshman Award

In addition, the outstanding senior project awards were also presented to:

- Matthew Shelby - Electronics & Computers Program
- Tom Flowers and Will Pumphrey - Mechanical Program

Faculty Achievements

*A list of important faculty achievements and awards in your unit. This text will be used in the final Academic Affairs report; please use a list format.*

**Prof. David Luneau:**

Professor Luneau received an Off-Campus Duty Assignment (OCDA) leave in fall 2009. His goal was to explore the use of technical societies-sponsored national competitions (such as the Solar Splash boat racing competition, sponsored by the ASME) as senior projects for students in the Systems Engineering and Engineering Technology programs. He contacted and visited a number of universities to identify their history of participation, and the views of their faculty and their expectations of the elements of such competition that would enhance the applicability of such projects to capstone courses. He expects to apply his findings to the Solar Splash national competition, for which he is the technical director. In addition, he is also working with the department to identify commercial applications for which the solar splash research and competition can provide future applications in the boating industry.

**Dr. Steve Menhart:**

Dr. Menhart was the instructor of record for the Electronics and Computers senior project course. He provided coaching and guidance to students for a number of successful projects ranging from an “Automatic Remote Following Robotic Wagon” to a “Sensor-Based Automatic Watering System.” It was clear in the final senior project presentations that students had applied their knowledge and creativity to achieve solutions through the optimal design and construction of working models.
Faculty Achievements (continued)

He attended the ASEE Gulf-Southwest Annual Conference in Lake Charles, La., in March 2010, and presented a paper on “Embedding Assessment into the End of Course Evaluation Form.” The paper describes in some detail the “Indirect Assessment System” adopted by the Engineering Technology department in an effort to support the continuous course improvement process.


He also participated in exploring a joint research project with the Mid-South Technical College in West Memphis for “The Modification and Control of a Diesel Engine to Include the Injection of Augmented Water.”

Dr. Swaminadham Midturi:

Dr. Midturi heavy teaching and laboratory development workload did not slow his activities in exploring research opportunities, performing pilot research and being engaged in various outreach activities.

In addition to submitting five major proposals that did not receive funding, he participated in meetings to explore research opportunities in the following areas:

“The Use of Alternate Fuel for Central Arkansas Transit Authority (CATA) Buses”;
“Enhancing Diesel Engine Performance Through Augmented Water Injection” in collaboration with the Mid-South Technical College in West Memphis; and

“Reducing Emission From Coal-Fired Power Plants” with the U.S. Department of Energy.

He received NASA - AR Space Consortium funding of $13,000 to undertake a pilot research project on the “High Strength, High Temperature Structural Material Systems for Space Vehicles,” which explores the use of multi-layer, sandwiched materials to achieve the desired material properties for space exploration.

He served as an external evaluator on a doctoral thesis on “Investigative Studies of Foil Bearings” by K.N. Shashidhara, Bangalore University, Bangalore, India. In addition, he mentored Ms. Arhita Dasgupta of Little Rock Central High School, the first-place winner in the regional science competition, on her project to explore the strength to weight characteristics of bamboo compared with other construction materials. The project also received the third-place bronze medal in the 2010 International Science Competition in Houston.

His publications and conference papers included:

- “A Link between Industry and Engineering and Engineering Technology Institutions,” ASEE Gulf-Southwest Annual Conference, Lake Charles, La., March 2010
Faculty Achievements (continued)

Dr. Hirak Patangia:

Dr. Patangia coordinates the Electronics and Computers program, he advises students, and stays in touch with them. He is also the advisor of the IEEE student organization, which maintains a fairly active agenda. In addition to his teaching load, he manages a major share of the undergraduate research in the department. His current research activities include the following, in addition to a multitude of previously cited smaller projects:

2. “A Vibration Energy Harvester for Low-Power Applications,” SURF-funded project for 2010-11
3. “Development of an Efficient Photo-Voltaic Test Bed for Green Energy Education.” Project is funded by a grant from the State Energy Office, the project hardware installation is completed, lab work and educational material development continues.
4. “Development of Novel Learning Materials for Green Energy Education Centered Around A Photovoltaic Test Station.” Project has just been funded by the NSF

His publications and conference papers include:


In addition, he presented “Solar Energy Research” at the Engineering Technology Advisory Council meeting, UALR, December 2009.

Dr. Srikanth Pidugu:

Dr. Pidugu is actively involved in the development and application of information technology to his teaching and laboratory development activities. In addition, he is the faculty advisor to the ASME, and the co-advisor to the ASHRAE student organizations.

He participated in meetings to explore research opportunities in the following areas:

“The Use of Alternate Fuel for Central Arkansas Transit Authority (CATA) Buses”; “Enhancing Diesel Engine Performance Through Augmented Water Injection” in collaboration with the Mid-South Technical College in West Memphis; and “Reducing Emissions From Coal-Fired Power Plants” with the U.S. Department of Energy.

His research includes: “Efficient Micromixers for Microfluidic Devices,” funded by a SURF grant from the AHDE, 2010.

His publications and conference papers include: “Flowfield Analysis in T-Junction Microchannel with Bubble Formation” by S.B. Pidugu, T. Abdel-Salam, and T. Bayraktar, International Conference on Nanochannel, Microchannels and Minichannels, Montréal, Canada, August 2010.
Faculty Achievements (continued)

Prof. George Tebbetts:
Prof. Tebbetts coordinates the Mechanical Engineering Technology program. He maintains an active student advising schedule, and maintains the support of a number of part-time faculty. He is involved in laboratory development, the addition of a second CAD Lab, and the acquisition of a Rapid Prototyping System to complement the lab. He attended 16 hours of advanced training in Solidworks, computer graphics software, in North Little Rock.

He presented a description of the CAD lab facilities at the Engineering Technology Advisory Council meeting, December 2009.

In addition, he participated in the cultural and scientific exchange with the University of Graz, in Graz, Austria, May 2010. His visit included cultural orientation in addition to meetings with faculty from the Technical University, Institute for Mechanics, and the Department of Business Informatics.

Prof. Pete Tschumi:
Prof. Tschumi, in addition to carrying a full teaching load, advises the Bachelor of Applied Technology (BAT) - Industrial Computing Majors, and chairs the department committee responsible for managing scholarship funds.

He is also active in faculty governance, and participates on a number of university committees. He provided studies and research to support the revision of the university admissions policy.

In addition, he shepherded a two-year effort to develop and receive approval for an “Ethics in Engineering” course in May, 2010. The course is to be adopted by departments in the EIT College to satisfy the requirements of the accrediting organizations.

Dr. Wenle Zhang:
Dr. Zhang focuses primarily on teaching and lab development. He has provided academic guidance for an application course in Information Science, taught by a guest lecturer from industry. His areas of research are artificial intelligence and neural networks.

His current publications and conference papers include:


Dr. Mo Bakr, Department Chair:
This academic year has been fairly productive for the Engineering Technology Department (please see the summary on the first page). Response to student inquiry and student advising
has been streamlined. Reports have been generated on student retention and provided to the faculty to identify the root cause of retention issues, and to determine the need for and the type of intervention necessary to alleviate the problem.

The department implemented an indirect course assessment process for continuous course improvement. The department also enacted an honors program to recognize and motivate student achievers. The program is currently on hold pending the development of a college-wide honors program.

Dr. Bakr's personal achievements include involvement with the “sustainability committee” and serving on the “Student Projects and Rewards” subcommittee. In addition, an appointment to the “Industry Retention Work Group” of the AEDC involved monthly meetings, many hearings and the supervision of a senior project undertaken by Phil Schmidt to provide an analysis of the work group findings and a model for the industry retention process as being developed by the work group.

Research activities centered around the senior projects, and included the third phase development of the “Human Powered Hydrofoil,” which also included design plans to adapt the hydrofoil to the “Solar Splash Competition.”

Publications and conference papers included:

“Multidimensional Connectivity with Industry of Mechanical Engineering Technology Program - Experience Gained and Lessons Learned,” ASEE Annual Conference, Louisville Ky., June 2010. The paper chronicles the mechanical program’s experience in planning and undertaking joint research projects with industry. It analyzes the results and provides the outline of a model for selecting projects with the potential of future success.

Curriculum

*Detail program additions, deletions, and revisions; steps taken to strengthen the academic program; etc.*

Highlights included the adoption and implementation of an indirect course assessment plan in combination with the required end-of-semester course and instructor evaluation. The assessment provides timely feedback to the instructor to support the “Continuous Course Improvement Process.”

Grant Applications/Awards

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

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Number of proposals submitted</td>
</tr>
<tr>
<td>b.</td>
<td>Total dollar amount requested in proposals</td>
</tr>
<tr>
<td>c.</td>
<td>Number of Awards (proposals funded)</td>
</tr>
<tr>
<td>d.</td>
<td>Total dollars awarded</td>
</tr>
</tbody>
</table>
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) 0
d. Consultantships (non-paid) 1
e. Other (please add other categories of public service as needed):
   Judge Science/Engineering Competition 1
   Organize 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 0
b. Books (new editions) 0
c. Research articles in professional journals 1
d. Research notes in professional journals 0
e. Formal presentations at professional meeting 9
f. Discussants at professional meeting 0
g. Art exhibits 0
h. Theatre productions/musical productions 0
i. Other 0
Information Technology

*Detail efforts to integrate technology into the curriculum; significant acquisitions, etc.*

The department updates regularly the computer graphics software used in the Computer Aided Design (CAD) labs.

Recruitment and Retention

*Summarize recruitment and retention efforts during the past year*

Recruitment efforts focused on maintaining working relationship with two-year colleges, especially Pulaski Technical College, where participation in transfer days has become routine. It also involved participation in high school career days, when invited to attend. In addition, departmental personnel handle students inquiries and referrals expeditiously.

Improving retention efforts started with the development of retention reports and discussing them in department meetings. The purpose is to develop a historical baseline and identify the root cause for the increase or decrease in retention rates and provide for intervention when necessary.

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).*

None.
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 new, end-of-semester course and instructor evaluation combined with indirect course assessment. The indirect course assessment surveys the students' personal assessment of the level to which they have achieved the course's technical and the predetermined ABET learning objectives. It also provides them the opportunity to express their opinions about specific shortcomings in the course or the delivery process, and how improvements can be made. The information is fairly comprehensive and is provided to the instructor at the end of the semester, so that it can be combined with the regular direct course assessment, obtained through actual students' performance measures, to provide an important profile-feedback to the instructor for the purpose of continuous improvement.

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

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.
Department of
Information Science
University of Arkansas at Little Rock

Annual Report
for the period
July 1, 2009 – June 30, 2010

Dr. Elizabeth Pierce
Chairman
DEPARTMENT OF INFORMATION SCIENCE
UALR Provost’s Annual Report
July 1, 2009 – June 30, 2010

Summary of Highlights
This text should be an overview of the entire year for your unit. This text will be used in the final Academic Affairs report; please use complete sentences.

UALR’s Information Science Department is home to five programs:

- Information Science B.S. Program
- Information Technology Minor
- Information Quality Graduate Program
- Bioinformatics Graduate Program, and
- Graduate Certificate in Technology Innovation, our newest program.

Each of the five programs accomplished the following milestones during the 2009-2010 academic year.

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 computer-related information field. Students learn 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 related to information. Graduates are hired as database administrators, network specialists, programmer/systems analysts, and web developers, among other information-related positions.

Departmental highlights from 2009-2010:

- The Information Science Program completed its strategic plan for updating its undergraduate curriculum to incorporate more web technologies. Based on this strategic plan, a revised, streamlined program including several revamped courses will be submitted to the undergraduate curriculum change process in Fall 2010. The department’s efforts to expand the curriculum to include the web sciences have been greatly helped by the addition of Dr. Nitin Agarwal, who joined the faculty in Fall 2009. His expertise in data mining and the blogosphere has greatly improved our ability to offer upper-level and graduate courses focusing on social media.
The Department continues to refine its assessment and evaluation processes. An interim accreditation report describing our progress was submitted to ABET in Summer 2009 and the decision on whether to renew our accreditation is expected in Summer 2010.

Information Science seniors completed four capstone projects. One team worked on an in-depth assessment of green computing policies for UALR’s Property Accounting group. Another team assisted Arkansas’ Aerospace Education Center with several IT infrastructure improvements projects. A third team worked with a local business, Canine Country Club of Arkansas, to revamp its web page and social media marketing plan. The fourth team worked with the State’s Department of Information Systems to review metadata repository options and to investigate data warehouse tools that would support a variety of reporting needs.

In April 2010, ADHE gave final approval to the Integrated Computing Doctoral Program, a new Ph.D. program designed to promote strong multidisciplinary collaborations across several computing disciplines whose bodies of knowledge influence are intertwined. Faculty, curriculum, and resources for this program will come from three departments: Computer Science, Information Science, and Systems Engineering.

In May 2010, the Information Science faculty and staff moved into its new offices in the just completed EIT Building.

IT Minor: The Information Technology Minor (IT 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 knowledge base for the IT Minor consists of three six-credit courses.

- IITEC 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 the 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.

During the 2009-2010 academic year, 10 students completed the IT Minor program. Second-year students in the IT Minor program completed database projects and designed websites for the following non-profit clients: Cord Blood Bank at UAMS, Diamond Girl Scout District, Single Parent Scholarship Fund of Pulaski County, Women’s Foundation of Arkansas, and Perry County Health Advocate Team. Capstone / Third Semester IT Minor students worked on database and website projects with a variety of corporate and campus partners including: Arkansas Food Policy Council, Women and Children First, and Arkansas Health Care Foundation.

The IT Minor is also offered in two additional versions: (1) a non-credit IT Certificate Program designed for working professionals to enhance their computer skills and (2) a Cyber Teacher Certificate designed for Little Rock School District teachers in grades K-12 to enhance their...
IT skills. During Fall 2009, the IT Certificate was combined with the IT Minor. During Summer 2009, 16 teachers from the Little Rock School District completed the six-week, 12 credit hours IT course, which prepares “teacher leaders” to instruct colleagues and students in technology. To date the Cyber Teacher Program has equipped 197 participants with the necessary IT skills to be more effective 21st-century teachers.

Information Quality Program: The Information Quality (IQ) Program at UALR prepares students to pursue careers in roles such as Information Quality Manager, Information Quality Analyst, Information Quality Consultant, and Information Quality System Developer, as well as enabling 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, and economic development.

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 the spring 2010 semester, 70 graduate students, including 18 doctoral candidates, were enrolled in the IQ program. To date the MSIQ program has graduated 30 students and the first two students to complete the IQ Ph.D. emphasis graduated in May 2010.

The IQ Program is unique in its ability to simultaneously support both distance and on-campus students through a blended classroom experience that integrates the live classroom with a virtual (webinar) interactive classroom. This new approach helped to earn the MSIQ degree a place on the Top 29 Ranked Best Buys for Online Graduate Degrees in Computer Science & Information Technology from GetEducated.com. The program currently has 15 distance education students including two students in Brazil. In 2009-10 the first two distance students graduated from the MSIQ program, one who lives in Sacramento and one from San Antonio. Both came to the UALR campus to defend their master’s projects.

Research and Professional Service: The IQ graduate program continues to gain recognition. UALR was selected to host the International Conference on Information Quality November 12-14, 2010, an event that had been held at MIT for 13 consecutive years. 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 the 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 the IQ graduate programs.

Research support for the UALR IQ Graduate Program is provided through the UALR Laboratory for Advanced Research in Entity Resolution and Information Quality (ERIQ). ERIQ is beginning its second year of a research contract with the U.S. Air Force Research Laboratory at Wright
Summary of Highlights (continued)

Patterson Air Force Base in Dayton, Ohio. In partnership with Qbase, Inc., the $2 million project is focused on developing “Information Quality Tools for Persistent Surveillance Data Sets.” In summer 2009, four graduate students and four faculty members participated in a 10-week research collaboration at Tec^Edge in Dayton, where the UALR team interacted with more than 90 other Tec^Edge participants from other universities, government contracting companies, and AFRL research staff. In its second year of participation, UALR graduate students lead projects at Tec^Edge through the entire 2010-2011 academic year. The AFRL project will provide 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 second 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.

The ERIQ Laboratory has completed a research project to develop an entity resolution software application to support longitudinal studies in education. The project was funded by the Arkansas Department of Education and supported two graduate research assistants, one undergraduate researcher, and two faculty researchers, Dr. Ningning Wu and Dr. John Talburt from the UALR Information Science Department.

The ERIQ Laboratory signed an agreement with Infoglide Software to work together to advance the fields of entity resolution, information quality, and analysis software and methodology. As part of the agreement, Infoglide has provided the ERIQ Laboratory with an academic license for its Identity Resolution Engine software application and a $5,000 student scholarship.

The ERIQ Laboratory signed an agreement with Analytix Corporation than includes an academic license to use its Analytix Mapping Manager software package. The ERIQ Laboratory also joined the Center for Applied Identity Management Research (CAIMR, caimr.org)

Economic Development: The UALR IQ Graduate Program is also providing an impetus for new business in the area of information quality. Two students have formed their own information quality consulting companies, Information & Process Quality, LLC, and Hi! IQ, LLC. Another student in the program who owns and operates a successful software development company is now undertaking the development and marketing of a new software product aimed at automating statistical process control in non-manufacturing lines of business. Perhaps the most significant achievement in this area is the incubation of a new company, Black Oak Partners, LLC. In this case, the principals of the company are not students, but executives who left a local company to build a new company around information quality with assistance from EIT. Black Oak has already generated some successful consulting engagements and is in the process of capital formation and further business plan development around data asset management.
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 supports an undergraduate minor, a master’s 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 2010, the Bioinformatics Program will have graduated 17 MS and five Ph.D. students, with three more MS and one more Ph.D. expected by the end of 2010. Of these graduates, 78 percent have remained in Arkansas, and all have either found jobs or moved into the Ph.D. program. The program receives approximately 30 applications per year, and a number of Ph.D. students now have externally-supported graduate assistantships at UALR, UAMS, and the National Center for Toxicological Research (NCTR).

Major developments this past year include:

- New offices for the MidSouth Bioinformatics Center (MBC) that occupy 1,600 square feet in the new EIT Building, as well as a tripling of bioinformatics graduate student desks in common areas.
- A five-year renewal of the INBRE grant for approximately $338,000 per year.
- The hiring at UAMS of Dr. Bill Hogan, the Chief of the Division of Biomedical Informatics. Dr. Hogan has become very actively involved in the bioinformatics graduate program, and we anticipate his participation leading to additions in medical and health informatics.
- Drs. Dan Berleant and Steve Jennings received an NSF grant award in conjunction with collaborators from the University of Central Arkansas, UAMS, and Cornell University for a web-based system for modeling and predicting neurodevelopment across mammalian species; two bioinformatics graduate students are supported.

This past year, the MBC supported more than 60 users working on 80-plus projects thanks in part to the National Institutes of Health’s (NIH) Arkansas IDeA Network for Biomedical Research Excellence (INBRE) grant. 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 nine journal articles, two conference papers, five local posters, three local presentations, 30 regional posters, nine regional presentations, 39 national/international posters, and five national/international presentations. During 2009-2010, the MidSouth Bioinformatics Center hosted a number of workshops, symposia, and outreach activities, including:

- Workshops
  - Linux/Apache/MySQL/Perl (LAMP) Boot Camp (full week)
  - xNix File Guru (2 workshops)
  - HTML Forms and CGI Basics
  - Perl Library Examples (3 workshops)
  - HTML Forms and CGI Basics
Summary of Highlights (continued)

- A series of Friday afternoon “Laptop Workshops”
  - Introduction to Perl
  - R Statistical Programming
  - Systems with BioPerl and MySQL
  - NCBI eUtils Web Services
  - From Zero to Hero; Learn to Publish Perl
- Perl User Group meetings
- Bioinformatics Graduate Student Orientation
- Sponsored attendance
  - Oklahoma Supercomputing Symposium
  - INBRE Undergraduate Research Symposium
  - SE Regional INBRE Conference
  - Seventh Annual MidSouth Computational Biology and Bioinformatics Society Conference, hosted at Arkansas State University and chaired by Dr. Dan Berleant with 234 attendees, including 132 students from 15 states and Canada (also provided logistical support include conference registration services; MCBIOS was founded by Dr. Jennings in 2002.)
  - 3rd Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE)
- Central High Science Fair Mentoring (Ms Kamakshi Duvvuru won first place in the Senior Division in Computer Science and first place overall in the Arkansas Science Fair and was invited to the 2010 International Science Fair.)

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. In 2009-2010, the Bioinformatics Program has become more involved in regional and national outreach efforts:

- Dr. Jennings has been instrumental in organizing a new national network of IDeA-funded Core Laboratories group (www.niclweb.org) that is now affiliating with the Association of Biomolecular Resource Facilities (www.abrf.org), a new chapter program proposed and led by Dr. Jennings.
- Dr. Jennings’ involvement with the Jackson State University Bioinformatics Center has now expanded into a new minority student program incorporating workshops at JSU with 10 students and research associates visiting UALR for a week in summer 2010.
- Dr. Jennings has been active in the Great Plains Network Bioinformatics and Computational Biology Group.
- Dr. Jennings helped reestablish the Bioinformatics Workshop on Education at the annual conference of the International Society for Computational Biology in summer 2009 in
Stockholm and served as a panelist at this event. (He also serves on this international organization’s Education and Affiliates Committees.)

- Arkansans continue to be the backbone behind the MidSouth Computational Biology and Bioinformatics Society, providing technical/web support and a strong representation on the Board. Dr. Jennings facilitated the first annual board strategic planning retreat in summer 2009 and provided funding for this retreat and the summer 2010 retreat through the INBRE grant.

- Dr. Jennings has reviewed a number of articles for bioinformatics journals, a bioinformatics book proposal for Elsevier, grant proposals for the National Science Foundation’s Human-Centered Computing CAREER panel, and seed grant proposals for the Mississippi NSF EPSCoR program.

Technology Innovation Program: A new Graduate Certificate in Technology Innovation was approved, with notification being sent to the University of Arkansas Board of Trustees and the Arkansas Department of Higher Education. Two new courses for the program, TINV 4301/5301 Strategies for Innovation and TINV 4303/5303 Applied Innovation Project, were approved. KUAR ran a radio spot advertising the program and UALR has received its first applications for the program, with students being admitted for the Fall 2010 semester. While approval for TINV 4301/5301 was pending, it was taught as a special topic IFSC 4399/5399. This course had 14 students enrolled. Based partly on projects in the class, the program already can boast some commercial successes. One student proposed a new product in a local engineering company, and that product is under development. Another student has begun the process of forming a company to pursue his idea.

Student Achievements

A list of important student achievements and awards in your unit. This text will be used in the final Academic Affairs report; please use a list format.

The Donaghey College of Engineering and Information Technology Awards Ceremony was held May 15, 2010 at the Acxiom River Market Building in downtown Little Rock. At that event, the following students were recognized.

Information Science

- Outstanding Senior Service Award: Amber N. Goins
- Outstanding Senior Leadership Award: Asha E. Merrill
- Outstanding Senior Academic Awards: James R. Canada and Jonathan T. Ulrich
- Outstanding Junior Academic Awards: James R. Haley, Karan B. Topiwala, Amber B. Farmer, and John M. Jeffers
- Outstanding Sophomore Academic Award: Wesley J. Martin
- Outstanding Freshman Academic Awards: Meridee C. Burnett, Emilee Hughes, and Caitlin Shank

Ph.D. Academic Excellence Awards: Gregg Holland and Neal Gibson

- Bioinformatics
Student Achievements (continued)

IT Minor

- IT Minor Outstanding Student Award: Derrick Koon. Derrick completed the IT Minor and served as a tutor during the spring semester. He is a Speech Communication major.

Information Quality

- MSIQ Academic Excellence Awards: Patricia Rosas, Jeff Tyzzer, Yinle Zhou, Sabitha Govindarajan, and Mou Sarkar

Faculty Achievements

A list of important faculty achievements and awards in your unit. This text will be used in the final Academic Affairs report; please use a list format.

The following faculty members earned distinctions during 2009-2010:

- Catherine Lowry was recognized by David Belcher, UALR Provost, for her excellent leadership of the Faculty Roles and Rewards II (FRR2) Task Force
- Elizabeth Pierce received the DAMA Academic Achievement Award for 2010 for her work at UALR to further Information Technology, Information Quality and Data Management

Curriculum

Detail program additions, deletions, and revisions; steps taken to strengthen the academic program; etc.

In 2009-2010, the Information Science Department saw the passage of several program and course revisions.

Program Revisions for the Information Science Bachelor of Science Degree

- IFSC 1305 Problem Solving Techniques in Information Science was revised to serve as the IFSC 1305 Freshman Experience Course.
- The prerequisites for all IFSC courses were reviewed, and six courses were revised to streamline and update their prerequisites.
- Plans are underway to revise the IFSC program and to add several new courses to add a web technology focus to the major.
- Program/Course Revisions for the Information Quality Program
- Prerequisites for the 7000-level courses (IFSC 7325, IFSC 7330, INFQ 7303, and INFQ 7318) were revised.
- The set of core classes required for the Graduate Certificate and the Master of Science in Information Quality were revised to bring the curriculum in line with the latest recommendations from the International Association of Information and Data Quality.
- IFSC 7320 Database Systems was updated to better address database and information architecture concepts.
- Program Revision for the Bioinformatics Minor Program
The Bioinformatics Minor Curriculum was revised to include IFSC 1310 Internet Technologies rather than IFSC 1305 Freshman Experience.

New Program: Graduate Certificate in Technology Innovation

The interdisciplinary Graduate Certificate in Technology Innovation was approved.

New Program: the Integrated Computing Doctoral Degree

The Information Science Department along with Computer Science and Systems Engineering gained approval for a Ph.D. program that emphasizes the Computer Engineering, Computer Science, and Computer-Related Information fields.

Grant Applications/Awards

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

a. Number of proposals submitted 5
b. Total dollar amount requested in proposals $1,010,968
c. Number of Awards (proposals funded) 2
d. Total dollars awarded $896,123

See Appendix 1 for a listing of Information Science faculty's grant proposals submitted and awarded.

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 0
b. Essays or articles in popular or semi-popular publications (in contrast to professional journals) 0
c. Consultantships (paid) 3
d. Consultantships (non-paid) 6
e. Other (please add other categories of public service as needed): 57

See Appendix 3 for a listing of Information Science faculty’s public service activities.
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 2
b. Books (new editions) 0
c. Research articles in professional journals 7
d. Research notes in professional journals 0
e. Formal presentations at professional meeting 6
f. Discussants at professional meeting 1
g. Art exhibits 0
h. Theatre productions/musical productions 0
i. Other: Research Articles in Refereed Proceedings 14
   Other: Articles in Industry Publications 1
   Other: Book Chapters 7
   Other: Poster Presentations 4
   Other: Abstracts 7

Information Technology

Detail efforts to integrate technology into the curriculum; significant acquisitions, etc.

A major advance in our Department’s IT resources comes this summer with the implementation of the virtual machine architecture in the new EIT building. Virtual machine (VM) refers to a software implementation of a computer that executes programs like a physical machine. Rather than regular PCs, our classrooms will be equipped with 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 will be provided by a set of central servers housed on the first floor of the new EIT building. When students need software for a class, they will turn on their thin client, select the desired class profile, and the needed operating system, software packages, and data will be automatically transferred via the network from the server to the thin client. When students leave the classroom, they can access their applications and data from anywhere in the building via the wireless network. With the VM technology, we no longer have to dedicate software to a particular room and machine. The central servers will keep track of the number of software licenses and will make them available on demand, thus increasing the efficiency of the software usage.
Recruitment and Retention

Summarize recruitment and retention efforts during the past year.

Recruiting remains an on-going priority for all the programs that make up the Information Science Department. At the undergraduate level, efforts have been made to improve the advising experience for students, upgrade the curriculum, and to pay more attention to the job placement of graduates. For the 2010-2011 academic year, these efforts will need to be intensified along with generating some new initiatives among the faculty to offer summer programs targeting prospective high school students. In addition, pursuing highly visible research projects and industry partnerships have proven critical to generating the type of positive exposure needed to attract prospective students to all our programs.

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>New Hire</td>
<td>Nitin Agarwal</td>
<td>Information Science</td>
<td>Assistant Professor</td>
<td>Ph.D</td>
</tr>
<tr>
<td>New Hire</td>
<td>Brenda Barnhill</td>
<td>Information Science</td>
<td>ERIQ Laboratory Project Manager</td>
<td>B.S., PMP</td>
</tr>
<tr>
<td>New Hire</td>
<td>Gregg Webster</td>
<td>Information Science</td>
<td>ERIQ Laboratory Technical Manager</td>
<td>B.A.</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
Systems Engineering
University of Arkansas at Little Rock

Annual Report
for the period
July 1, 2009 – June 30, 2010

Dr. Seshadri Mohan
Chairman
Summary of Highlights

This text should be an overview of the entire year for your unit. This text will be used in the final Academic Affairs report; please use complete sentences.

Introduction

During the 2009-2010 academic year, the Systems Engineering Department continued its growth in multiple ways. Dr. Lifeng Lai, a new faculty member, joined the department; funding was received from the National Science Foundation for the third year of the NSF EPSCOR program, which provided substantial new laboratory infrastructure in wireless networking and telecommunications; faculty publications and new proposal activities grew substantially; the Master of Science in Systems Engineering program began to grow; faculty and students continued to excel. Systems Engineering graduates successfully met the needs of industries in Central Arkansas.

The Graduate Certificate program, started in Fall 2006, and the Masters program, started in Fall 2008, have admitted 33 and 17 students, respectively. These programs provide professionals and engineers a knowledge of systems engineering principles and methodologies for effective design of real-world systems, their production, deployment, reliable operation, maintenance, refinement, and retirement within a given set of cost and time constraints. Additionally, both programs offer students one of four specialization tracks.

Under the supervision of Dr. Huang, the department has completed the installation of Micro-Electro-Mechanical Systems (MEMS) laboratory. This state-of-the-art laboratory is being utilized by undergraduate, graduate, and faculty researchers. A course in MEMS taught by Dr. Huang is scheduled to be offered in fall 2010.

In the area of assessment, the department prepared a self-study report that was submitted to ABET in June 2009. While the entire faculty provided data for the self study report, Dr. Iqbal led its preparation. An ABET team visited the department in fall 2009, reviewed the documents prepared by faculty members, and interviewed the faculty members, students, university administrators, and the external advisory council members. The ABET team provided an audit statement at the conclusion of the visit and subsequently a draft statement that identified weaknesses in three criteria: Students, Program Education Objectives, and Program. The team also identified one concern: Continuous Improvement. The department took actions to address the issues, which should help successfully secure reaccreditation for another six-year period.
Summary of Highlights (continued)

The department conducted a search for one faculty position in the area of telecom, computers, or electrical and successfully recruited Dr. Lifeng Lai, who joined the department in Fall 2009. His research interests include wireless network security, statistical analysis in cognitive radio networks, biometric security systems and cooperative communications.

The department received support for wireless research when, in 2007, it received a $2.5 million-plus award from the National Science Foundation and the State of Arkansas, for a three-year period starting in August 2007. Since receiving the grant, UALR has partnered with the University of Arkansas at Fayetteville and Arkansas State University in Jonesboro to create a three-campus research initiative aimed at converting research discoveries into commercially viable products and dramatically advancing Arkansas' knowledge- and technology-based economy. This project is part of the Arkansas Advancing and Supporting Science, Engineering and Technology (ASSET) Initiative and has advanced to the third and concluding year with research resulting in many significant publications and collaborative efforts between the three universities.

Dr. Seshadri Mohan continued to serve as UALR’s principal lead for the project and works with a team of researchers consisting of Dr. Hussain Al-Rizzo, Dr. Radu Babiceanu, Dr. Guoliang Huang, all from the Systems Engineering Department, and Dr. Srini Ramaswamy, Dr. Remzi Seker, and Dr. Kenji Yoshigoe, all from Computer Science Department. The team included two Ph.D students, Daniel Rucker and Subramanian Vimalathithan, and two post doctoral researchers, Dr. Lenin Rathinaswamy and Dr. Chitaranjan Singh.

Besides the anechoic chamber and high performance computing cluster reported previously, new infrastructure acquired with NSF EPSCOR funding included a testbed for Multiple Input Multiple Output (MIMO), which consists of four Vector Signal Generators (VSGs) and four Vector Signal Analyzers (VSAs) from Keithley Instruments. The equipments are equipped with firmware supporting modeling of several wireless systems, and testing and prototyping user-supplied algorithms and systems.

Other significant awards include those received by Dr. Huang from NASA, Korean Institute of Geosciences and Mineral Resources (with Dr.Kim as the Co-PI), and Air Force Research Laboratory.

Significant outreach efforts were carried out in 2009. Led by Dr. Zhang, UALR hosted “Best Robotics,” a contest in which a number of high schools participated. Dr. Zhang mentored high school teams in their robotics projects and helped them participate in a statewide competition. Following the initial funding Dr. Mohan received in 2008 from ASTA and the Winthrop Rockefeller Foundation for the project, titled “Engineering Scholars Program,” in 2009, 16 high school students were trained in several disciplines of engineering in which faculty members from Systems Engineering and Engineering Technology participated. Faculty members that actively participated in the program included Dr. Mohan, Dr. Iqbal, Dr. Huang, Dr. Reddy, Dr. Bouaynaya, and Dr. Xi from Systems Engineering and Dr. Patangia from Engineering Technology. This two-week residential program received very high ratings from the student participants.
Students in the Systems Engineering capstone classes carried out several significant projects.

- CAPSTONE I projects included:
  - Autonomous Underwater Vehicle (AUV)
  - Low Wind Power Generator
  - Unmanned Aerial Vehicle (UAV)
- CAPSTONE II projects included:
  - Cognitive Radio
  - Master Slave Robotic Arm
  - Wind Tunnel

The projects were coordinated by Dr. Nisanci. Technical mentoring was provided by Dr. Al-Rizzo, Dr. Huang, Dr. Lai, Dr. Xi, and Dr. Zhang.

Systems Engineering undergraduate students conducted research under the direction of Dr. Bouaynaya, Dr. Huang, Dr. Iqbal, Dr. Lifeng, and Dr. Xi, who secured awards from ADHE and/or ASTA (as part of Arkansas NSF EPSCOR ASSET Project) for mentoring Systems Engineering students.

Under the leadership of Dr. Jinxiang Xi (Systems Engineering) and Dr. Srikanth Pidugu (Engineering Technology), UALR established a new American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) student chapter. This will provide students the opportunity to promote the study of HVAC&R and to work with the Arkansas chapter and its professional members.

The department has begun the process of formulating a proposal to begin a new Ph.D. program in Systems Engineering that we expect to launch in Fall 2012.

As goals for the 2010-2011 year, the department will:

- Ensure that the processes communicated to ABET in our response to its draft statement are pursued each semester without fail;
- Ensure the continued growth of student enrollment in all four options;
- Ensure the teaching infrastructure (laboratories and equipment) is properly maintained and upgraded as needed to allow faculty to offer state-of-the-art engineering education;
- Aggressively pursue recruitment of new students to the undergraduate and graduate programs;
- Ensure the new masters program is properly publicized to improve recruiting and help the program grow;
- Building on the success of the 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;
- Ensure that the departmental website is kept updated.
Student Achievements

A list of important student achievements and awards in your unit. This text will be used in the final Academic Affairs report; please use a list format.

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

- Christina Dunlap
- Sharonda Williams
- Robert Newcomb
- Heather Keathley
- Bruce Stracener

The department recognized the following students for their outstanding academic achievements in 2009-2010:

- **Freshmen:**
  - Eric Anderson
  - Bruce Stracener
- **Sophomores:**
  - Jimmy Shyaka
  - Jean Luc Umwungeri
  - Valens Nteziyaremye
- **Juniors:**
  - Christina Dunlop
  - Noor Jabur
  - Travis Lux
- **Seniors:**
  - Heather Keathley
  - Guiliana De Francesco

The following students successfully passed the Fundamentals of Engineering (FE) exam:

- **Spring 2010**
  - Arnold, J. Caleb - mechanical option
  - McElderry, Adam - mechanical option
  - Mobbs, Wade - mechanical option
  - Reising, J. Nicci - mechanical option
  - Sims, Michael - mechanical option
  - Thompson, Josh - mechanical option
Spring 2009
- Ballard, Brandon - mechanical option
- Farrell, Sarah - mechanical option
- Faulkner, Chris - mechanical option
- Ramey, Dalton - mechanical option
- Robison, Jason - electrical option

The following students exhibited posters and presented their research work at the Undergraduate Research Expo:
- Valens Nteziyaremye (mentor: Dr. Alex Biris)
- Christina Dunlap (mentor: Dr. Bouaynaya)
- Jean Luc Umwungeri (mentor: Dr. Alex Biris)
- Robert Newcomb: (mentor: Dr. Jinxiang Xi)
- Sharonda Harmon (mentor: Dr. Lai)
- Bruce Stracener (mentor: Dr. Iqbal)
- Jimmy Shyaka (mentor: Enkeleda Devrishi)
- Rabindra Ghimire (mentor: Dr. Mohan) won the best poster presentation at the Annual NSF EPSCOR graduate research presentation at the state capitol.
- Adeyemi Fowe (mentor: Dr. Chan) received the research award during the EIT graduation reception and awards ceremony at Acxiom.

Faculty Achievements

A list of important faculty achievements and awards in your unit. This text will be used in the final Academic Affairs report; please use a list format.

- Dr. Rama N. Reddy published the following book:
- Rama N. Reddy and Carol A. Ziegler “C Programming for Scientists and Engineers with Applications” published by Jones and Bartlett, August 2009.
- Dr. Bouaynaya, Dr. Huang, Dr. Iqbal, Dr. Lifeng, and Dr. Xi successfully secured awards from ADHE and/or ASTA (as part of Arkansas NSF EPSCOR ASSET Project)
- Dr. Huang successfully received funding from NASA, Korean Institute of Geosciences and Mineral Resources (with Dr. Kim as the co-PI), and Air Force Research Laboratory.
- Dr. Mohan and his co-researchers received their third-year grant from NSF EPSCOR for continuing the project titled “Infrastructure for Wireless, Nano-, Bio-, Info-Tech Sensors and Systems.”
- Dr. Nidhal gave a speech on Analysis of Proteomics and Genomics Based on Signal Processing, Communication and Control Theory to the Mathematics Department at University of Alabama, Birmingham.
Faculty Achievements (continued)

- Dr. Huang presented an invited paper titled “Damage Detection in Hexagonal Honeycomb Sandwich Composite Using Guided Wave Propagation” at the second International Conference on Smart Materials and Nanotechnology in Engineering, Weihai, China, July 8-11, 2009.

- Dr. Babiceanu was interviewed to be featured as a Work Perfect profile in the Industrial Engineer Magazine, Fall 2009 (interview to be published in 2010).

- Dr. Babiceanu served as a Session Chair of Sensor Applications, Industrial Engineering Research Conference, Miami, May 2009.

- Dr. Bouaynaya served as the publicity chair for IEEE International Workshop on Genomic Signal Processing and Statistics 2009.


- Dr. Chan served as the External Academic Advisor for the Master of Arts in Supply Chain Management, Department of Management Sciences, City University of Hong Kong.

- Dr. Huang served as a session chair of second International Conference on Smart Materials and Nanotechnology in Engineering, 2009.

- Dr. Huang served as session chair of SPIE Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring, 2009.

- Dr. Mohan served as the TPC Chair for the Area “Networking Broadly Defined” of 2009 IEEE Advanced Networking and Telecommunications Systems, held December 15-17, 2009, in Mumbai, India.

- Dr. Mohan was invited to be the Co-Chair of the Technical Program Committee of IEEE IMSAA 2010 Conference to be held in Bangalore in December 2010.

- Led by Dr. Mohan, EIT has signed a memorandum of understanding with Pondicherry University, India, to promote educational and cultural cooperation in the areas of education, research, student/faculty exchange and other activities in systems engineering.

- Dr. Mohan served as a SBIR panelist for NSF.

- Dr. Nisanci served as an Intermittent Expert for NSF.
Curriculum

Detail program additions, deletions, and revisions; steps taken to strengthen the academic program; etc.

SYEN 3301 Engineering Economy was added as a new course to the SYEN curriculum.

Grant Applications/Awards

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

a. Number of proposals submitted 27
b. Total dollar amount requested in proposals $8,117,688.00
c. Number of Awards (proposals funded) 13
d. Total dollars awarded $1,524,316

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 0
b. Essays or articles in popular or semi-popular publications (in contrast to professional journals) 0
c. Consultantships (paid) 3
d. Consultantships (non-paid) 0
e. Other (please add other categories of public service as needed):
   Presentation to Local Organizations 1
   National (e.g., NSF) Panels 2
   Track/Session/Panel Chair 5
   Technical Program Committees/Program Advisor 23
   Co-Op/Student Exchange Program Advisor 0
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 24
d. Research notes in professional journals 1
e. Formal presentations at professional meeting 25
f. Discussants at professional meeting 5
g. Art exhibits 0
h. Theatre productions/musical productions 0
i. Other 5 chapter contributions to books

Information Technology

Detail efforts to integrate technology into the curriculum; significant acquisitions, etc.

- New laboratory equipment for electrical, telecom, and mechanical options
- New classroom computers acquired
- New software acquired

Recruitment and Retention

Summarize recruitment and retention efforts during the past year

- Participated in college weekend activities;
- Visited schools;
- 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;
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>Kamran Iqbal</td>
<td>SYEN</td>
<td>Professor</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Promotion</td>
<td>Xian Liu</td>
<td>SYEN</td>
<td>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.
Graduate Institute of Technology
University of Arkansas at Little Rock

Annual Report
for the period
July 1, 2009 – June 30, 2010

Dr. Keith Hudson
Chairman
GRADUATE INSTITUTE OF TECHNOLOGY

UALR Provost’s Annual Report
July 1, 2009 – June 30, 2010

<table>
<thead>
<tr>
<th>Academic Unit (College, School, Division):</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Institute of Technology</td>
<td>6/13/10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Department</th>
<th>Prepared by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Institute of Technology</td>
<td>Keith Hudson</td>
</tr>
</tbody>
</table>

Summary of Highlights

This text should be an overview of the entire year for your unit. This text will be used in the final Academic Affairs report; please use complete sentences.

Research, Grants, and Contracts: GIT has continued to fulfill its role in assisting faculty with their proposal preparation and working closely with both Dean’s Offices 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. We also work to ensure we are abreast of 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. Missy Hill, Assistant to the Director, attended the Departmental Research Administration Workshop presented by the National Council of University Research Administrators.

Grants Administration and Sponsorship: The Graduate Institute has continued administering and sponsoring several statewide programs as well as certain intercollege 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 19th year in Arkansas, NASA Space Grant continues to fund aerospace-related activities at 16 Arkansas campuses, and has established ties with several industries in the state involved in aerospace activities. The Institute also administers four NASA EPSCoR Research Grants for Arkansas.

- NSF Internet II – We continue to administer researcher access to I2. Many of the developing projects in EIT will utilize this bandwidth and are made possible by this project. The availability of this bandwidth will continue to have a major impact on UALR for years. We work closely with Computing Services in this area, and are looking to the future Lambda Rail/Internet II/AR E-Corridor.

- 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 gets more media coverage than any 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 a major earthquake or seismic event.
Summary of Highlights (Continued)

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

- NSF-EPSCoR - UALR is concluding its third year as part of a team on an award from ASTA and NSF including BioProduction and NanoSensor projects. The three-year project was budgeted to bring $3,392,505 to UALR. We have purchased a number of new instruments and conducted research that led to a number of publications. The UALR BioProduction team end date is October 31, 2010 and the NanoSensor team end date is December 31, 2010. ASTA has told us the 2010 proposal was funded by NSF. UALR has three teams that will receive funding on this sub-award.

Major Equipment Support: GIT provides support by acting as consultants to individual labs and academic departments for issues involving research and to the necessary task of maintaining a host of major equipment for science and engineering training and research. Units such as the AFM, NMR, PNMR, AA Spec, ESR, FTIR, UV-VIS-NIR, SEM, LC-MS, GC-MS, TGA/SDTA, Structural Test Equipment, and the DNA Facility 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. 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 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 money in the Major Equipment Repair Fund. In addition to maintaining and repairing the major instrumentation, Drs. Ali and Post have trained and certified students and faculty to use 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 (ie. Fluorine Laser in Physics). Finally, as another aspect of services provided by GIT, Dr. Post designs and develops low-cost, high-quality instruments and systems for individual research groups.

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 single-core (AMD) and dual-core (Intel) machines continue to be used by student and faculty researchers in GIT and from Chemistry, Physics, Computer Science, Applied Science and the Nanotechnology Center. These computers can operate as a cluster, with MPICH2 and Open MPI environments. We are beginning to use these machines for visualization of data generated by the Computer Science cluster. While these machines normally run Linux for long-running compute jobs, some of them can be booted into Windows for training purposes or when a research application requires it.

- Shared Memory Computing - For applications that require massive memory in 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, 32GB RAM) 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 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. Falling memory prices will enable us to move to 64GB and beyond in these machines. In summer 2010, GIT and Computer Science will 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, several departments continue to use the 64-node (8 x 2.66GHz cpu and 16GB RAM per node) cluster built by GIT and Computer Science for scientific and engineering applications for teaching and research. We will upgrade network speeds in summer 2010 for faster message passing and parallel disk access; parallel storage capacity will increase from 16TB to 40TB. We continue to add users and applications to the cluster. UALR, UAMS and UA/ Fayetteville look forward to collaborating on projects, taking advantage of resources on all three campuses. We have been testing some applications on the national TeraGrid with good results.

- 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/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 computational specialists, who support and focus on science and engineering advanced computing activities. Albert Everett, Jason Kratz, Rubben Johnson, and Ken Kalb work closely with Computing Services as well as the CSAM and EIT programs that use their talents. UNIX/Linux (Albert Everett), Windows NT and 2000 (Jason Kratz and Rubben Johnson), and Windows 95/98 (Ken Kalb), 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. We 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.

Renovation of Facilities: GIT has become active in the area of renovations of facilities, particularly certain ETAS spaces that become office or engineering labs. In this role, Bill Sipes and Ray Wallace work in coordination with the Construction Management Department 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

Approximately 30 major renovation projects were completed during the 2009-2010 academic year. In addition, the staffers completed a number of other odd and end jobs as requested.
Summary of Highlights (Continued)

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 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 basic shop operations and Computer Numerical Control (CNC) machining. Howard Burris, Electronics Shop Technician, was reassigned to the Construction Management Department. However, he has maintained a presence in the Annex and has been available for repairs and other activities in the Electronics Shop when not working on assignments for Construction Management. The majority of the shop is available for use by students, faculty, and staff who can prove their proficiency in operating the equipment safely. Recent upgrades to the shop include a foundry furnace and a CNC vertical machining center. The furnace, which was acquired from the Fine Arts Department, gives the capability to melt metals and produce molded castings. The vertical machining center replaces an aging unit and allows instruction on a much more current and relevant machine. In the requisition process, some underutilized pieces of equipment were traded to free up much-needed floor space. In the past year, the shop completed more than 40 documented projects and provided facilities for five shop courses.

Graduate Assistantships and Post-Doctoral Assistance: GIT traditionally has awarded Graduate Assistantships and now maintains a pool of 51 GAships: 23 from GIT funds, 19 from EIT, and nine from a combination of graduate school and other university salary funding. This year, GIT awarded GAships to support students in each of the Applied Science emphasis areas and assigned most to 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 GIT for these services include Applied Science, Bioinformatics, Systems Engineering, Chemistry, Computer Science, Physics, Engineering Technology, Information Science, Biology, and GIT. In addition, GIT finance personnel manage the appointments and tuition postings for all grant- supported Ph.D. Graduate Assistants for faculties in the Science and Engineering Colleges and The Institute.

In the 2009-2010 academic year, GIT provided $45,000 in match to grants to help pay salary of Post-Doctoral Researchers in Applied Science, Computer Science, Biology, and Physics.

Other highlights:

- Hazardous Waste Disposal. GIT has made arrangements to dispose of all wastes to date, with a major disposal in 2002 and several smaller disposals, most recently in April 2008. We dispose immediately of high-level hazards and store others. GIT continues to work with waste disposal; however, primary responsibility has been turned over to the Facilities Management Safety Office, as approved at the February 2009 Budget Hearing. GIT had expended all funds available for waste, and Facilities Management Director David Millay had requested that his operation take over responsibility for these functions, including future funding.
Radiation Safety Office. RSO activities have been running smoothly without any serious non-compliance issues or radioactive hazard exposures. The major effort in the 2009-2010 academic year was to submit the radiation license renewal application package in February, before expiration of the current license. This was accomplished following consultation with an independent external expert. After we receive comments from the Arkansas Department of Health (ADH), we will revise the application, if suggested, and resubmit as needed. The RSO also obtained approval of a few amendments to our current license, including inclusion of a new authorized user and reducing mandatory radiation safety committee meetings to only one per academic year, down from two. During this reporting period we have had two inspections from ADH. One inspection was related to the safe operation of the X-ray diffractometer and the other was a regular inspection of our radiation safety program. Both inspections turned out satisfactory without any serious violations of the State of Arkansas/NRC regulations. The RSO has also conducted the annual radiation safety committee meeting and reviewed the program performance with the committee members. The RSO has organized a safety awareness seminar for graduate students and faculty. We have also provided radiation safety training to students and a faculty member for radiation use in their research. The RSO activities include maintenance of radioactive source inventory, leak tests, surveys, instrument calibration, record keeping, purchasing receiving, storage, transfer and disposal. In January 2006, Chase Environmental disposed of almost all radioactive sources not in use and all radiation activity wastes.

Student Achievements

A list of important student achievements and awards in your unit. This text will be used in the final Academic Affairs report; please use a list format.

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

A list of important faculty achievements and awards in your unit. This text will be used in the final Academic Affairs report; please use a list format.

- Director Keith Hudson holds memberships in six professional associations, served as a reviewer of three journals, and had one article accepted for publication. He serves on 11 Ph.D. and 1 M.S. student committees, serves as faculty advisor for the Amateur Radio Club, and co-faculty advisor for the SATELLITE Equinox 3 club. 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). He is a Federal Aviation Administration private pilot and is a member of the Civil Air Patrol/U.S. Air Force Auxiliary. The CAP promoted him to Major in 2009 where he is the 42nd Squadron Aerospace Education Officer and the Arkansas Wing - External Aerospace Education Officer.

- 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 filed for one patent, had five articles published, and graduated one Ph.D. student.
Faculty Achievements (Continued)

- Dr. Nawab Ali is our biotechnology expert and 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. He is also involved in university committees including the Institutional Review Board, Environmental Health and Safety, Radiation Safety Committee, and Institutional Biosafety Committee. He is actively involved in research, mentoring graduate (one Ph.D. student graduated this year) and undergraduate students and serving on their committees. He also works with high school students. He collaborates well with other scientists, actively writes grants, and published four papers. He attended national meetings, reviewed grants and papers, gave invited seminars, and served as president of the local chapter of Sigma Xi. Dr. Ali also celebrated his 10th year of employment with UALR.

- Dr. Hanan Mahdi concluded the summer IRIS project and served as its PI. She continued serving as Co-PI on other NASA- and Deep Six-funded projects, as well as the regular archiving of Arkansas seismic observatory stations data. She had one article published. Dr. Mahdi also continued serving on the Arkansas Pre-Disaster Mitigation Advisory Council and the Arkansas Governor’s Earthquake Advisory Council. She was promoted to Research Associate Professor, to take effect July 1, 2010.

- Dr. Nancy Marley continued as PI on two DOE funds and Co-PI on two additional DOE funds. She published seven articles and made six presentations at professional meetings. 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 co-faculty advisor for the SATELLITE Equinox 3 student group.

Curriculum

Detail program additions, deletions, and revisions; steps taken to strengthen the academic program; etc.

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

Grant Applications/Awards

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

- Number of proposals submitted 18
- Total dollar amount requested in proposals $2,782,101
- Number of Awards (proposals funded) 18
- Total dollars awarded $2,782,101
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 7
b. Essays or articles in popular or semi-popular publications (in contrast to professional journals) 0
c. Consultantships (paid) 1
d. Consultantships (non-paid) 27
e. Other (please add other categories of public service as needed): 20

Hudson: EPScR Committee, Chair, State of AR; AR Space Grant Consortium, Chair; NASA EPScR TAC, Chair, State of AR; National EPSCoR Coalition, Member, Board of Directors 5
Wilson: AR State Highway and Transportation Department Advisory Council 1
Mahdi: AR Governor’s Earthquake Advisory Council; AR Pre-Disaster Mitigation Advisory Council 2
Ali: Association of Scientists of Indian Origin in America, Council Member; AR Academy of Science, State Science Fair Judge 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 0
b. Books (new editions) 0
c. Research articles in professional journals 13
d. Research notes in professional journals 1
e. Formal presentations at professional meeting 8
f. Discussants at professional meeting 3
g. Art exhibits 0
h. Theatre productions/musical productions 0
i. Other 1
Information Technology

*Detail efforts to integrate technology into the curriculum; significant acquisitions, etc.*

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

Recruitment and Retention

*Summarize recruitment and retention efforts during the past year*

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

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>New Hire</td>
<td>Kristi Wright</td>
<td>GIT</td>
<td>Research Assistant/Unit Coordinator</td>
<td>Bachelor's</td>
</tr>
<tr>
<td>New Hire</td>
<td>Yao Liu</td>
<td>GIT / Biology (Lirong Zeng)</td>
<td>Research Associate/Post Doc</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>New Hire</td>
<td>Shawn Bourdo</td>
<td>GIT / Nanotechnology Center (Tito Viswanathan)</td>
<td>Research Associate/Post Doc</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>New Hire</td>
<td>David Clark</td>
<td>GIT / STRIVE/Stokes</td>
<td>Research Assistant</td>
<td>Master’s</td>
</tr>
<tr>
<td>New Hire</td>
<td>Xiaoning Liu</td>
<td>GIT / Systems Engineering (Guoliang Huang)</td>
<td>Research Associate/Post Doc</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>New Hire</td>
<td>Tsai-Chi Li</td>
<td>GIT / Biology (Hong-Li Wang)</td>
<td>Temporary Post Doc</td>
<td>Ph.D.</td>
</tr>
</tbody>
</table>

Not reported on the 2008 annual report but hired late May and early June after we completed the GIT report.

<p>| Separation  | R.B. Lenin    | GIT / System Engineering (Sri Ramaswamy)        | Research Associate/Post Doc              | Ph.D.          |
| Separation  | Hong Xu       | GIT / Applied Science (Qingfang He)             | Research Associate/Post Doc              | Ph.D.          |
| Separation  | Bo Liu        | GIT / Nanotechnology Center                     | Temporary Post Doc                       | Ph.D.          |
| Separation  | Lixi Yuan     | GIT / Nanotechnology Center (Hyewon Seo)        | Postdoctoral Fellow                      | Ph.D.          |</p>
<table>
<thead>
<tr>
<th>New Hire</th>
<th>Name</th>
<th>Department</th>
<th>Position</th>
<th>Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Hire</td>
<td>Chitranjan Singh</td>
<td>GIT / Systems Engineering</td>
<td>Research Associate/Post Doc</td>
<td>Ph.D.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Sesh Mohan)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Hire</td>
<td>Fuyou Fu</td>
<td>GIT / Biology (Hong-Li Wang)</td>
<td>Research Associate/Post Doc</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>New Hire</td>
<td>Enke Dervishi</td>
<td>GIT/ Nanotechnology Center</td>
<td>Research Associate/Post Doc</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.*
Appendix I

College Advisory Councils
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.
## Computer Science Advisory Council
Chair John Burgess/Mainstream Technologies

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acxiom</td>
<td>Ding, Yijun</td>
</tr>
<tr>
<td>Acxiom</td>
<td>Purdom, Bob</td>
</tr>
<tr>
<td>Aristotle</td>
<td>Presley, Tyler</td>
</tr>
<tr>
<td>Arkansas Industrial Computing</td>
<td>Epperson, Tim</td>
</tr>
<tr>
<td>Catalyst</td>
<td>Weiand, Kent</td>
</tr>
<tr>
<td>Entergy</td>
<td>Post, Steve</td>
</tr>
<tr>
<td>FBI</td>
<td>Wagnon, Jay</td>
</tr>
<tr>
<td>GDH Consulting</td>
<td>Olson, Kristie</td>
</tr>
<tr>
<td>GDH Consulting</td>
<td>Brooks, Scott</td>
</tr>
<tr>
<td>LWI</td>
<td>Lavender, Mickey</td>
</tr>
<tr>
<td>Mainstream Technologies</td>
<td>Burgess, John</td>
</tr>
<tr>
<td>QualChoice</td>
<td>Wilson, Haley</td>
</tr>
<tr>
<td>Quattlebaum, Grooms, Tull &amp; Burrow PLLC</td>
<td>Appleton, Steve</td>
</tr>
<tr>
<td>Reach Solutions</td>
<td>Nicklaus, Danny</td>
</tr>
<tr>
<td>Softwyre</td>
<td>McConnell, Holt</td>
</tr>
<tr>
<td>Tromik Technology</td>
<td>Ballew, Brent</td>
</tr>
<tr>
<td>Unity Ware</td>
<td>Stack, Brian</td>
</tr>
</tbody>
</table>
## Construction Management Advisory Council

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ark. Building Authority</td>
<td>Burrell, Anita</td>
</tr>
<tr>
<td>Acme Brick</td>
<td>Switzer, Bryce</td>
</tr>
<tr>
<td>Acme Brick</td>
<td>Bufford, John</td>
</tr>
<tr>
<td>Acme Brick</td>
<td>Anderson, Mike</td>
</tr>
<tr>
<td>AFCO Steel</td>
<td>Johnson, Gary</td>
</tr>
<tr>
<td>AFCO Steel</td>
<td>Harvell, Grady</td>
</tr>
<tr>
<td>AGC</td>
<td>Lee, Dan</td>
</tr>
<tr>
<td>AGC</td>
<td>Hileman, Rob</td>
</tr>
<tr>
<td>Arkansas Building Authority</td>
<td>Ehenger, Paul</td>
</tr>
<tr>
<td>Arkansas Contractors Licensing Board</td>
<td>Crow, Greg</td>
</tr>
<tr>
<td>Arkansas Division, Federal Highway</td>
<td>McDaniel, Valera</td>
</tr>
<tr>
<td>Arkansas Home Builders Association</td>
<td>Mills, Julie</td>
</tr>
<tr>
<td>Associated Builders and Contractors</td>
<td>Schaeffer, Steve</td>
</tr>
<tr>
<td>Associated General Contractors of Arkansas</td>
<td>Fish, Tommy</td>
</tr>
<tr>
<td>Atlas Asphalt</td>
<td>Lamberth, Mark</td>
</tr>
<tr>
<td>Baldwin &amp; Shell</td>
<td>Phillips, Doyle</td>
</tr>
<tr>
<td>Baldwin &amp; Shell</td>
<td>Copas, Scott</td>
</tr>
<tr>
<td>Baldwin &amp; Shell Construction Co</td>
<td>Shell, Bob</td>
</tr>
<tr>
<td>CDI</td>
<td>Garrison, Lloyd</td>
</tr>
<tr>
<td>City of Little Rock</td>
<td>Paul, Jerry</td>
</tr>
<tr>
<td>Construction Management and Maintenance Company</td>
<td>Erwin, James</td>
</tr>
<tr>
<td>Contractors Licensing Board</td>
<td>Williams, Howard</td>
</tr>
<tr>
<td>Darragh Company</td>
<td>Darragh, Kramer</td>
</tr>
<tr>
<td>Diamond Construction Company</td>
<td>Wright, Danny</td>
</tr>
<tr>
<td>Doyne Construction Company</td>
<td>Doyne, Dexter</td>
</tr>
<tr>
<td>East-Harding Inc.</td>
<td>Tilbury, Van</td>
</tr>
<tr>
<td>Federal Highway Administration - Arkansas</td>
<td>Turner, Derrell</td>
</tr>
<tr>
<td>First Ark. Insurance</td>
<td>Shelton, Dwayne</td>
</tr>
</tbody>
</table>
## Construction Management Advisory Council

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Arkansas Insurance</td>
<td>Russell, Steve</td>
</tr>
<tr>
<td>Fleming Electric, Inc.</td>
<td>Rhoads, Don</td>
</tr>
<tr>
<td>Glass Erectors</td>
<td>Smith, Gary</td>
</tr>
<tr>
<td>Hudson Cisne</td>
<td>Hudson, Johnny</td>
</tr>
<tr>
<td>Justco Inc.</td>
<td>Bank, Ronald</td>
</tr>
<tr>
<td>Kinco</td>
<td>Wasson, Doug</td>
</tr>
<tr>
<td>Kinnaman Consulting</td>
<td>Kinnaman, Doug</td>
</tr>
<tr>
<td>Koontz Electric Company</td>
<td>Massey, Jack</td>
</tr>
<tr>
<td>Leak Barrier</td>
<td>Ratcliff, Gary</td>
</tr>
<tr>
<td>Lexicon Inc.</td>
<td>Schueck, Patrick</td>
</tr>
<tr>
<td>LR Home Builders Association</td>
<td>Burak, Joe</td>
</tr>
<tr>
<td>Markus Homes, Inc.</td>
<td>Markus, Melinda</td>
</tr>
<tr>
<td>May Construction Company</td>
<td>May, Lewis</td>
</tr>
<tr>
<td>Middleton Heat &amp; Air</td>
<td>Middleton, Mark</td>
</tr>
<tr>
<td>Moorefield Construction</td>
<td>Schroeder, Patrick</td>
</tr>
<tr>
<td>Nabholz Construction</td>
<td>Hannah, Bill</td>
</tr>
<tr>
<td>Nabholz Construction</td>
<td>Gordon, Clay</td>
</tr>
<tr>
<td>Nabholz Construction Services</td>
<td>Nabholz, David</td>
</tr>
<tr>
<td>Razorback Concrete Company</td>
<td>Ingram, Keith</td>
</tr>
<tr>
<td>Rebsamen Insurance</td>
<td>Hill, Jim</td>
</tr>
<tr>
<td>RKF&amp;L</td>
<td>Irvin, Randy</td>
</tr>
<tr>
<td>RKF&amp;L</td>
<td>Kennedy, Rolfe</td>
</tr>
<tr>
<td>Thompson Electric</td>
<td>Thompson, Keith</td>
</tr>
<tr>
<td>TME</td>
<td>Harkey, Mike</td>
</tr>
<tr>
<td>Today's Office</td>
<td>Bradley, Rhonda</td>
</tr>
<tr>
<td>Trane</td>
<td>Harrison, Bill</td>
</tr>
<tr>
<td>Vratsinas Construction Company</td>
<td>Vratsinas, Gus</td>
</tr>
<tr>
<td>Weaver-Bailey Contractors</td>
<td>Weaver, Don</td>
</tr>
<tr>
<td>Wilcox Group Architects</td>
<td>Kinzler, Steven</td>
</tr>
</tbody>
</table>
# Engineering Technology Advisory Council

Chair: Mike Hill, DeCrane Aerospace

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Cabling Systems</td>
<td>Hicks, Ron</td>
</tr>
<tr>
<td>ARMA Design</td>
<td>Wheeler, Keith</td>
</tr>
<tr>
<td>Hawker Beechcraft</td>
<td>Bryant, Bob</td>
</tr>
<tr>
<td>DeCrane Aerospace</td>
<td>Hill, Mike</td>
</tr>
<tr>
<td>FAA</td>
<td>Kamarunas, Joe</td>
</tr>
<tr>
<td>Falcon Jet</td>
<td>Webb, Antony</td>
</tr>
<tr>
<td>George Fischer Sloane</td>
<td>Mastro, Paul</td>
</tr>
<tr>
<td>Global Manufacturing, Inc.</td>
<td>Baine, Bob</td>
</tr>
<tr>
<td>Kohler</td>
<td>Beard, Tony</td>
</tr>
<tr>
<td>Kohler</td>
<td>Laughlin, Ian</td>
</tr>
<tr>
<td>Molex</td>
<td>Jameson, Chad</td>
</tr>
<tr>
<td>PTI</td>
<td>Burgess, William</td>
</tr>
<tr>
<td>Snap-On Tools</td>
<td>Rogers, Fred</td>
</tr>
<tr>
<td>Smith Fiberglass Products</td>
<td>Snyder, Dave</td>
</tr>
<tr>
<td>Speas Technology</td>
<td>Heiss, Larry</td>
</tr>
<tr>
<td>Trane</td>
<td>Harrison, Bill</td>
</tr>
<tr>
<td>Welspun Pipes</td>
<td>Janicki, Richard</td>
</tr>
<tr>
<td>Welspun Pipes</td>
<td>Swaim, James</td>
</tr>
<tr>
<td>Welspun Pipes</td>
<td>Lamb, Charlie</td>
</tr>
<tr>
<td>Washington Group</td>
<td>Hadley, Erika</td>
</tr>
</tbody>
</table>
## Systems Engineering Advisory Council
Chair Bruce Rew, Southwest Power Pool

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>3M</td>
<td>Cantrell, Todd</td>
</tr>
<tr>
<td>Acxiom</td>
<td>Kolluru, Srinivas</td>
</tr>
<tr>
<td>Arkansas Industrial Computing</td>
<td>Epperson, Tim</td>
</tr>
<tr>
<td>ARMA Design</td>
<td>Wheeler, Keith</td>
</tr>
<tr>
<td>AT&amp;T</td>
<td>Ellis, Bob</td>
</tr>
<tr>
<td>AT&amp;T</td>
<td>Crolley, Wayne</td>
</tr>
<tr>
<td>Batson Bravo Engineers</td>
<td>Batson, Charles</td>
</tr>
<tr>
<td>Brown Engineers</td>
<td>Brown, Dee</td>
</tr>
<tr>
<td>Cromwell Architects Eng.</td>
<td>Seay, Rob</td>
</tr>
<tr>
<td>Curtis Stout AV</td>
<td>Crook, David</td>
</tr>
<tr>
<td>DeCrane Aerospace</td>
<td>Hill, Mike</td>
</tr>
<tr>
<td>Evergreen Packaging, Inc.</td>
<td>Haven, Dianne</td>
</tr>
<tr>
<td>Jay Stanley &amp; Associates</td>
<td>Stanley, Jay</td>
</tr>
<tr>
<td>Lewis Elliott McMorran Vaden Ragsdale &amp; Woodward Inc.</td>
<td>Ragsdale, Randy</td>
</tr>
<tr>
<td>Little Rock Air Force Base</td>
<td>Toney, Melody</td>
</tr>
<tr>
<td>Little Rock Air Force Base</td>
<td>Schaab, Consander</td>
</tr>
<tr>
<td>LM Glasfiber</td>
<td>Schurra, Todd</td>
</tr>
<tr>
<td>Molex</td>
<td>Ahmad, Munawar</td>
</tr>
<tr>
<td>Molex</td>
<td>Mahmood, Rehan</td>
</tr>
<tr>
<td>Pettit and Pettit</td>
<td>Yarbrough, David</td>
</tr>
<tr>
<td>Raytheon</td>
<td>Hendrick, John</td>
</tr>
<tr>
<td>Rineco Chemicals</td>
<td>Wikstrom, Carl</td>
</tr>
<tr>
<td>SAIC</td>
<td>Orellana, George</td>
</tr>
<tr>
<td>SAIC</td>
<td>Johnson, James</td>
</tr>
<tr>
<td>Shreeve Engineering</td>
<td>Shreeve, Kent</td>
</tr>
<tr>
<td>Southwest Power Pool</td>
<td>Rew, Bruce</td>
</tr>
<tr>
<td>Space Photonics</td>
<td>Chalfant, Chuck</td>
</tr>
<tr>
<td>Staley, Inc.</td>
<td>Stormoe, Jason</td>
</tr>
<tr>
<td>TME, Inc.</td>
<td>Habibi, Hamid</td>
</tr>
<tr>
<td>Washington Group</td>
<td>Hadley, Erika</td>
</tr>
<tr>
<td>WH Grant</td>
<td>Grant, Bill</td>
</tr>
<tr>
<td>WINDSTREAM</td>
<td>Roberts, Jim</td>
</tr>
</tbody>
</table>
Appendix II

Department of Computer Science

Detailed Information
JOURNAL ARTICLES AND BOOK CHAPTERS


Processing,” manuscript number ASP/754696., accepted


ACTIVE GRANTS (PI and Co-PI involvement only. Those with Senior Personnel level involvement not listed)

1 Cooperation in Education and Vocational Training, EU-US Atlantis Program, DoE, 2007-2008, $180,000. Grant Number: P116J0700XX

2 Polymorphic Encryption for Secure Communication, NSA-DoD, 2007-2008, $1,000,000 – funded. Grant Number: H98230-07-C-0403

4 NSF CNS, Sponsored Project: Development of an Interdisciplinary Arkansas Emulation Laboratory, University of Arkansas at Little Rock, $299,750.00, 8/1/2006 - 7/31/2009.

5 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.


8 NSF RII “Collaborative Research: Cyberinfrastructure for Transformational Scientific Discovery in Arkansas and West Virginia (CI-Train),” 2009 –2012

9 FDA, “A Support Framework for Semantic Data Mining and Integration,” University of Arkansas at Little Rock, 2009


Appendix III

Department of
Construction Management

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>Development of User-Friendly High Performance Concrete Mixes</td>
<td>Arkansas Space Grant Consortium</td>
<td>12 months</td>
<td>$6,500</td>
<td>3 months</td>
<td>PI</td>
</tr>
<tr>
<td>Non-Destructive Testing Guidelines for High Strength Concrete</td>
<td>Arkansas Space Grant Consortium</td>
<td>4 months</td>
<td>$2,000</td>
<td>1 months</td>
<td>PI</td>
</tr>
<tr>
<td>Non-Destructive Testing Guidelines for High Strength Concrete – Travel Support</td>
<td>Arkansas Space Grant Consortium</td>
<td>1 month</td>
<td>$500</td>
<td>1 month</td>
<td>PI</td>
</tr>
<tr>
<td>Development of High Performance Light Weight Concrete</td>
<td>Arkansas Department of Higher Education</td>
<td>12 months</td>
<td>$3,895</td>
<td>1 month</td>
<td>PI</td>
</tr>
<tr>
<td>The Effect of Curing Temperature on Concrete Performance</td>
<td>Arkansas Department of Higher Education</td>
<td>12 months</td>
<td>$4,895</td>
<td>1 month</td>
<td>PI</td>
</tr>
<tr>
<td>Establishing UALR High Performance Concrete Lab</td>
<td>Chryso Chemicals, Holcim Cement, Silica Fume Assoc.</td>
<td>24 months</td>
<td>$500</td>
<td>6 months</td>
<td>PI</td>
</tr>
<tr>
<td>Concrete Bridge Conference Participation, Phoenix</td>
<td>Arkansas Space Grant Consortium</td>
<td>1 month</td>
<td>$1,000</td>
<td>1 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>
</tr>
</tbody>
</table>

Akhnoukh, A. submitted proposals:

“Transfer and Development Length of 0.7 in. Strands in UHPC,” submitted to the National Cooperative Highway Research Program (NCHRP), $152,637, (Co PI)
“Development of Economic, Self-Consolidating High Strength Concrete Mixes,” submitted to the Mack Blackwell Transportation Center (MBTC), $50,000, (PI)
“The Impact of Class C Fly Ash on Concrete Properties,” Submitted to the Mack Blackwell Transportation Center (MBTC), $40,000, (PI)
“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)
“Economic Feasibility of Short Span Metal Arch Bridges versus Concrete Boxes,” submitted to the Arkansas Highway and Transportation Department (AHTD), $25,000, (PI).
“Development of Green Concrete for NASA Applications,” submitted to the Arkansas Space Grant Consortium (ASGC), $19,800, (PI)
“Investigating the Need for Construction Engineering Program,” submitted to the Arkansas Department of Higher Education (ADHE), $3,900 (PI)

Dr. Akhnoukh has presented his research in different seminars and research meetings held at different scientific societies in Arkansas. The following represents a list of Dr. Akhnoukh presentations:

Development of Ternary High Strength Concrete Mixes – Presented at the American
Society for Civil Engineers, Arkansas Chapter Honor Colloquium, September 2009, Little Rock.

Non-Destructive Testing of Concrete Bridge Decks Poured on Stay-In-Place Metal Forms – Presented at the Arkansas Highway and Transportation Department (AHTD) Transportation Research Committee meeting, November 2009, Little Rock.

Applications of Self-Consolidating Concrete – Presented to the Little Rock Engineers Club, December 2009, Little Rock.

Dr. Akhnoukh is working to establish a joint research team with professors at the University of Arkansas at Fayetteville, University of Arkansas Cooperative Extension Service, and Arkansas State University. In addition, Dr. Akhnoukh is establishing a research team with professors in the Civil Engineering Departments at the University of Illinois at Urbana Champaign and George Washington University. The national research team targets NSF undergraduate research grants.

Dr. Akhnoukh has applied for the Sloan Foundation Fellowship. This is a two-year grant for non-tenured faculty members (nationwide). This fellowship has a total cash amount of $45,000 (for the two years). Dr. Akhnoukh has been nominated by the EIT dean’s office and the Construction Management Department Chair. If it is awarded, this fellowship will be used to complete the UALR material lab, the purchase of lab consumables, undergraduate students’ stipends, and Dr. Akhnoukh’s summer salary.

Xie, H. Funded Proposals

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>Funding Agency</th>
<th>Duration</th>
<th>Funded Mon. of effort/year</th>
<th>Your Role (PI, CPI, C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategies of Building Information Modeling Training in the Electrical Contracting Firms</td>
<td>Electri International Fund</td>
<td>11 months</td>
<td>$36,300</td>
<td>PI</td>
</tr>
<tr>
<td>Implementing Sustainability Concepts in Building Information Modeling Course</td>
<td>UALR Sustainability Committee Grant</td>
<td>3 months</td>
<td>$500</td>
<td>PI</td>
</tr>
<tr>
<td>Post-Construction Use of Building Information Models for the Mechanical, Electrical, and Plumbing Systems in Educational Buildings</td>
<td>UALR Sustainability Committee Grant Competition</td>
<td>1 month</td>
<td>$494.99</td>
<td>PI</td>
</tr>
</tbody>
</table>

Public Service

Lectures and presentations, discipline-based, to non-discipline related audiences
Squires, M., Children International, College preparation mentor

Consultantships (paid)

Carr, J.
Arkansas Home Builders Association,
  Green Buildings
  Business Management
  Design Build
Northwest Louisiana Home Builders Association
  Green Building
  Basics of Building
  Customer Service
Dallas Home Builders Association,
  Big Four Safety Issues
Oklahoma Home Builders Association
  Green Building
  Business Management
  Estimating
Tulsa Home Builders Association
  Estimating

Ray, C.
  Pre-engineered Building Council Seminar Series
  RTH Commercial Construction Seminar Presentations
  RTH Employee Handbook
  RTH Company Sub-contract Development
  RTH Company Addendum
  Expert Witness
  Mediation between General Contractor and Subcontractor

Squires, M.
  Consulted on the construction of a $3.5 million residence.

Tramel, M.
  Arkansas Construction Education Foundation OSHA 30-hour safety classes
    Fire protection
    Emergency response plans
    Fall protection
    Personal protective equipment
    Flammable and Combustible Liquids

Professional, University, and Community Service

Akhnoukh, A.
  College Graduate Curriculum Committee, Secretary
  College 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
  Attended American Concrete Institute, Arkansas Chapter board meetings
  Attended Arkansas Ready Mix Concrete Association meetings
  Attended American Society for Civil Engineers meetings
  Attended Arkansas Highway and Transportation Department research meeting
  Attended Associated Schools of Construction Region V Educator Conference

Blacklock, J.
  University Fringe Benefits Committee, Member
  University Library Committee, Member
  College Promotion and Tenure Committee, Member
  College Graduate Curriculum Committee, Member
Carr, J.
EIT Assembly Secretary
Attended the Arkansas Home Builders Association Mid-year and Annual Meetings
Attended the American Council for Construction Education Annual and Mid-year meetings
Attended the Associated Schools of Construction Annual Meeting.
Attended the National Association of Home Builders Annual Meeting
Attended the Arkansas Green Building Meeting
NAHB National Board of Directors, Member
NAHB Education Board, Stakeholder
NAHB Health and Safety Committee, Member
NAHB Faculty Advisory Board, Member
Arkansas HBA Board of Directors, Member
Arkansas HBA Education Committee, Co-Chair
Arkansas HBA Associates Council, 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, Member
University Distance Education Advisory Committee, Member
University Athletic Committee, Chair
College Retention and Recruitment Committee, Member
College Taskforce on Distance Education, Member,
Department Scholarship Committee, Chair
Riverfest Volunteer
Judge for the Building Arkansas Magazine of the year
Safety manager for the Extreme Makeover project
Judge for the Tulsa Home Builders Parade of Homes

Ray, C.
Tenure and Promotion Committee, Chair
EIT Assembly Vice President
Attended Pre-Engineered Building Council

Squires, M.
Faculty sponsor for the National Timber Bridge Design Competition team

Tramel, M.
ASC/TEXO Region V meeting and Educator Conference
ASC/TEXO Regional Student Competition and Regional Meetings
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 and was one of the guest speakers.
American Institute of Constructors, Constructors, CPC's Associate Level Exam
Administrator
International Code Council
  Code Compliance Certification Exam Administrator
  Contractor Certification Exam Administrator
Local Education Administrator for Arkansas Workforce Education training funds for the
  Arkansas Construction Education Foundation
  Central Arkansas Joint Apprenticeship Committee
  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/TEOX Commercial Division Student Competition Team
University Undergraduate Council, Member
University Environmental Health and Safety Committee, Member
College Undergraduate Curriculum Committee, Chair
Faculty Senator
Faculty Senate Library Committee, Member
UALR Core Pilot Program, Member

Woodard, J.
  Professional Design engineer for Children International and the Construction Management Department. Does PE stamped calculations and drawings.

Xie, H.
  Undergraduate Council, member
  EIT Policy and Personnel Advisory Committee, Secretary
  EIT Task Force on Research Clusters, member
  EIT Task Force on Research Infrastructure, member
  Departmental Microsoft MSDN administrator
  Attended Advance Engineering and Science Retreat Conference

Professional Development

Carr, J.
  International Home Builders show attended four seminars
  Annual meeting for WebCt users attended seven seminars

Tramel, M.
  ASC/TEOX Regional meeting and attended three presentations

Woodard, J.
  Attended the World of Concrete conference seminar on Concrete Slabs

Xie, H.
  Workshops offered by Scholarly Technology and Resources (StaR)
  Blackboard training
  On-line seminar “Teaching Troubled Students”
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 & Texas)

Carr, J.
- 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
- Sigma Lambda Chi, the International Honor Society for Leaders in Construction, Delta IV Chapter, Charter Member

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.
American Society of Safety Engineers, Member
American Institute of Constructors, Professional Constructor
Construction Specification Institute Professional Member
AIC Certified Professional Constructor #682 (by examination)
ACI Concrete Field Testing Technician Grade 1 (certification by examination)
ACI Concrete Flatwork Technician (certification by examination)
CSI Construction Document Technologist (certification by examination)
NACB Certified Crane Rigger (by examination)
OSHA Construction Industry Outreach Trainer (by examination)
OSHA General Industry Outreach Trainer (by examination)
U.S. Army Corps of Engineers Certified Construction Quality Management for Contractors (by examination)
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.
National Society of Professional Engineers
Arkansas Society of Professional Engineers
American Concrete Institute-Arkansas Board of Directors
American Welding Society
American Society of Testing Materials
American Society of Professional Estimators-Charter Member
Licensed Professional Engineer in 11 states: Alabama, Arkansas, Georgia, Kansas, Kentucky, Michigan, Mississipp, Louisiana, Oklahoma, Tennessee, Wisconsin
Tau Beta Pi Engineering Honor Society, member
Phi Kappa Phi Honor Society, member
Sigma Xi, The Scientific Research Society, member

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)
Visiting Professor of Xi’an University of Architecture and Technology, Xi’an, Shaanxi, China

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, 2010
Akhnoukh, A., Meadati, P., “The Use of Large 0.7 in. Strands in Pretensioned Applications,” Second International Conference on Construction in Developing Countries, Cairo, Egypt, 2010

Xie, H. Published

Xie, H. Pending
Xie, H. and Shi, W. “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

Formal presentations at professional meeting
Akhnoukh, A. “High Strength Self-Consolidating Concrete Project Review.” The Arkansas Chapter ACI & ARMCA Self-Consolidating Concrete 2009 Summer Seminars, Conway
Akhnoukh, A., “Development of Ternary High Strength Concrete Mixes,” the American
Society for Civil Engineers, Arkansas Chapter Honor Colloquium, 2009, Little Rock
Akhnoukh, A., “Non-Destructive Testing of Concrete Bridge Decks Poured on Stay-In-Place Metal Forms,” the Arkansas Highway and Transportation Department (AHTD) Transportation Research Committee meeting, 2009, Little Rock
Akhnoukh, A., “Applications of Self-Consolidating Concrete,” the Little Rock Engineers Club, 2009, Little Rock

Other

Akhnoukh, A.,
Undergraduate research, “Development of User-Friendly High Performance Concrete Mixes”
Undergraduate research, “Development of Ternary Concrete Mixes for Bridge Applications”
Undergraduate research, “Introducing Construction Engineering Applications to K-12 Students”

Carr, J.
“The National Association of Home Builders’ Safety Education and Training Efforts.”
“The National Association of Home Builders Safety Program” pending publication
“Green Building for the Building Professional.” Subject matter expert for a NAHB University of Housing course manual.
“Scheduling.” Subject matter expert for a NAHB University of Housing course manual
“Weatherization for Craft Workers.” Subject matter expert for a Home Builders Institute (HBI) certificate program
“Pre Apprenticeship Certificate Training (PACT) curriculum.” Subject matter expert for a Home Builders Institute (HBI) training program.
“Job Corps Training and Achievement Record.” Subject matter expert for identifying green practices for Job Corps programs of the Home Builders Institute (HBI).

Ray, C.

Tramel, J.
Appendix IV

Department of Information Science

Detailed Information
## Appendix 1 – List of Proposals Submitted and Awards

### Proposals Submitted During 2009-2010

<table>
<thead>
<tr>
<th>Name</th>
<th>Proposal Description</th>
<th>Amount Requested</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitin Agarwal</td>
<td>Sloan Industry Studies Fellowship: IT Search Industry</td>
<td>Not Specified</td>
<td>Declined</td>
</tr>
<tr>
<td>Nitin Agarwal</td>
<td>Microsoft research faculty fellowship</td>
<td>Not Specified</td>
<td>Declined</td>
</tr>
<tr>
<td>Dan Berleant</td>
<td>USDA-SBIR Subcontract from Infinite Eversole Specialty Crop Services, LLC. “A Prototype Program for Attaining Specialty Crop Non-Regulated Status.”</td>
<td>$22,752</td>
<td>Pending</td>
</tr>
<tr>
<td>Elizabeth Pierce</td>
<td>NSF – Creating a Virtual Learning Community to Support Students in Engineering and IT</td>
<td>$589,000</td>
<td>Declined</td>
</tr>
<tr>
<td>Ningning Wu and Edi Tudoreanu</td>
<td>NSF – Smart Education Power System Lab</td>
<td>$399,216</td>
<td>Declined</td>
</tr>
</tbody>
</table>

### Proposals Awarded During 2009-2010

<table>
<thead>
<tr>
<th>Grant Number</th>
<th>Grant Description</th>
<th>Grant Recipients</th>
<th>Duration</th>
<th>Amount Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td>250066</td>
<td>NSF Collaborative Research: A Web-Based System for Modeling and Predicting Neurodevelopment Across Mammalian Species.</td>
<td>Dan Berleant</td>
<td>2009-2012</td>
<td>$331,123</td>
</tr>
</tbody>
</table>

### Ongoing Awards in 2009-2010

<table>
<thead>
<tr>
<th>Grant Number</th>
<th>Grant Description</th>
<th>Grant Recipients</th>
<th>Duration</th>
<th>Amount Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td>211020</td>
<td>AR Dept of Education - Proof-of-Concept for an Open-System, Entity Resolution Engine to Support Longitudinal Studies in Education</td>
<td>John Talburt and N. Wu</td>
<td>June 2009-May 2010</td>
<td>$125,000 in total</td>
</tr>
<tr>
<td>250023</td>
<td>NSF – Communication, Trust and Leadership in Virtual Organizations and Teams</td>
<td>Rolf Wigand</td>
<td>2008-2010</td>
<td>$385,866 in total</td>
</tr>
<tr>
<td>250100</td>
<td>NSF – Inter-organizational Information Systems Integration through Industry-wide IS Standardization</td>
<td>Rolf Wigand</td>
<td>2007-2010</td>
<td>$842,844 in total</td>
</tr>
<tr>
<td>Project Number</td>
<td>Description</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>281542</td>
<td>Acxiom: A Parallel Database Engine</td>
<td>Xiaowei Xu</td>
<td>2009-2010</td>
<td>$40,000</td>
</tr>
<tr>
<td>RR16460-06</td>
<td>NIH/NCRR: INBRE - Arkansas IDeA Network of Biomedical Research Excellence (INBRE)</td>
<td>Steve Jennings</td>
<td>Open Ended</td>
<td>$358,000 per year</td>
</tr>
<tr>
<td>P3-101</td>
<td>NSF 2007 Arkansas EPSCoR Program UALR subcontract, seed grant from Plant-based Bioproduction program: Efficient Algorithms for Protein Structure Prediction and Applications in RTB Binding Occupancy Determination</td>
<td>Steve Jennings</td>
<td>May 2008 – May 2010</td>
<td>$68,505 in total with extension</td>
</tr>
<tr>
<td>N/A</td>
<td>UAMS: College of Medicine Bioinformatics Graduate Assistantships</td>
<td>Steve Jennings</td>
<td>Open Ended</td>
<td>$95,500 per year</td>
</tr>
</tbody>
</table>

Appendix 2 – List of 2009/2010 Faculty Research/Creative Activities

Books


Research Articles in Professional Journals (* denotes student author)


Formal Presentations at professional meetings

- Nitin Agarwal - Guest lecture on Social Computing: Studying Behavior on Social Media at CSAM-EIT Fall 2009 Colloquium - UALR.
- Nitin Agarwal - Guest lecture on Behavior Patterns in Social Media and Applications at Yahoo research, India Dec 21, 2009.
- Elizabeth Pierce – Presented “Using IQ Policies and Strategies to Empower the Knowledge Worker” at the Data Governance/IDQ Conference held in San Diego, CA, June 9, 2010.
- John Talburt – Invited Speaker - Board Meeting, Intelligence and National Security Alliance (INSA), Washington DC, Dec 15, 2009

Discussants at professional meetings

- Steve Jennings – Panel Discussion Member on career paths in bioinformatics for Workshop on Education in Bioinformatics (WEB09, International Conference for Intelligent Systems for Molecular Biology)

Other: Research Articles/Presentations in Refereed Conference Proceedings

to support entity resolution instruction and research. 2009 International Conference on Information Quality, Potsdam, Germany (pp. 91-105).


**Other: Articles in Industry Publications (denotes student author)**


**Other: Book Chapters (denotes student author)**


- Zhidan Feng, Xiaowei Xu*, Nurcan Yuruk*, and Thomas Schweiger, A Novel


Other: Posters (* denotes student author)


Other: Industry Project Proposal


Appendix 3 – List of Faculty Public Service Activities

Lectures and presentations, discipline-based, to non-discipline related audiences

- None

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

- None

Consultantships (paid)

- Ningning Wu - Nutrient Database Development and Quality Analysis, USDA
- John Talburt - Black Oak Partners, LLC, Senior Information Quality Analyst, 32 billable hrs in 2009
- Steve Jennings - Workshop presenter for University of Tennessee/ORNL/ Kentucky BRIN Bioinformatics summit on Bioinformatics Education; two days

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 website consultant
Catherine Lowry - Arkansas School for the Deaf, facilitation of project team
John Talburt - Technical advisor to Infoglide Software, Austin, TX, and invited to post monthly on their Identity Resolution Daily Links blog
Steve Jennings - Founded Sector3 Informatics to provide informatics, data quality, and IT infrastructure services to not-for-profit organizations.

Other – Active Participation in Professional/Learned Societies, College or University Committees

Nitin Agarwal (3)
- UALR E-Lag Committee Member
- Program Committee member for ACM Conference on Information and Knowledge Management (CIKM 2009), SBP 2009, SBP 2010, ACM Conference on Management of Emergent Digital Ecosystems (MEDES 2010), Mining in Social Media (MSM 2009)

Dan Berleant (4)
- President and Proceedings Associate Editor for MidSouth Computational Biology and Bioinformatics Society
- Program Committee/Reviewer for International Symposium on Imprecise Probabilities: Theory and Application (ISIPTA 2009), International Journal of General Systems
- UALR/UAMS Joint Bioinformatics Program Steering Committee Member
- EIT Undergraduate Curriculum Committee

Serhan Dagtas (1)

Steve Jennings (Bioinformatics Director and Executive Director, MidSouth Bioinformatics Center - 12)
- President of UALR Graduate Council
- Joint UALR/UAMS/UCA Grad Council Member
- Chancellor’s Leadership Group Member
- Chancellor’s Policy Advisory Group Member
- Technology Innovation Advisory Council 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)
- Reviewer for PLOS Computational Biology, International Journal of Environment Research and Public Health, Mississippi NSF EPSCor, Faculty Early Career Development (CAREER) Program (Division of Information & Intelligent Systems; Human-Centered Computing), Elsevier Book Proposals.

Elizabeth Pierce (Department Chair - 6)
- PAAG Assessment Committee
- UALR Graduate Council Member
- Curriculum Coordinator for the Integrated Computing Doctoral Program
- EIT Assembly President
- ICIQ 2010 Program Chair
- Reviewer for ACM Journal of Information Quality, ICIQ 2009

John Talburt (IQ Program Coordinator - 10)
- Doctoral Affairs Committee Member
- Applied Science IQ Emphasis Area Track Coordinator
- UALR-Acxiom Relationship Committee Member
- High-Performance Computing (HPC) Steering Committee Member
- IAIDQ Board Member
- ICIQ Conference Chair
- ABET Evaluator (Computer Science)
- 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.
- Reviewer for 4th International Conference on Cooperation and Promotion of Information Resources in Science and Technology (COINFO’09), Beijing, China, Nov 21-23, 2009,

Mihail Tudoreanu (VRC Manager - 3)
- UALR Committee on Tenure Member
- UALR Faculty Senator
- Special Projects: Worked with Nabholz to allow them to use the Virtual Reality Center and our expertise to bring their clients in for virtual tours of new building projects.

Rolf Wigand (6)
- Review Board Member/Reviewer for 28 different journals as well as 9 different
book series
- Holds Editorial Positions on 11 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 7 Universities

- **Ningning Wu (4)**
  - EIT Graduate Committee Member
  - EIT Awards Committee Member
  - UALR Personal & Tenure Committee

- **Xiaowei Xu (4)**
  - UAMS/UALR Bioinformatics Student Admission Committee Member
  - Program Committee/Reviewer for ACM SIGKDD, IEEE Data Mining (ICDM), ACM SIGKDD Workshop on Social Network Mining, Int’l Conf. on Computational Aspect of Social Networks, International Journal on Very Large Data Bases
  - Served as proposal reviewer for NSF Division of Information and Intelligent Systems (IIS)
  - Served as external tenure and promotion committee member for Department of Computer and Information Science, University of Mississippi

- **Catherine Lowry (IT Program Coordinator - 2)**
  - UALR Accreditation Self Study Team
  - Roles and Rewards Task Force, Chair

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

Department of
Systems Engineering

Detailed Information
ADDENDUM TO ANNUAL REPORT

Systems Engineering Department
PREPARED BY: Dr. Seshadri Mohan, Chair
GRANT APPLICATIONS/AWARD

DR. AL-RIZZO

Other research or scholarly activities completed during the current year and not reported above.
- Prepared lecture notes and simulations for the graduate course: SYEN 4356 and 5356
- 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.
- Established contacts with several industries and prepared quotations on equipment, testing devices, and laboratories for the EPSCOR grant

DR. Al-Rizzo
Ongoing 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>
</table>

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>Cyber Transportation Logistics: A Global Value Chain for Services</td>
<td>Co-PI</td>
<td>To be submitted to the NSF VOSS Program</td>
<td>In preparation</td>
<td></td>
</tr>
</tbody>
</table>

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

- Babiceanu, R. F., In-transit visibility enabled supply chain management information system, Annual Industrial Engineering Research Conference, Miami, FL, May 2009

- Training Sessions:

- Course Development:
  - SYEN 1310: Introduction to Systems Engineering

**DR. BABICEANU**

**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>3 yrs.</td>
<td></td>
<td>2</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>Extension of the MUSIC algorithm to AM-FM Signals</td>
<td>PI</td>
<td>$4,000</td>
<td>ADHE SURF Jan 2009-Aug 2009</td>
<td>Funded</td>
</tr>
<tr>
<td>Minimal-Perturbation Dynamic Control of the Melanoma Gene Regulatory Network</td>
<td>PI</td>
<td>$1,075,427</td>
<td>NSF/NIH Submitted on October 2009</td>
<td>Pending</td>
</tr>
<tr>
<td>Inverse Perturbation in Systems Biology for Intervention in Network Dynamics</td>
<td>PI</td>
<td>499,918</td>
<td>NSF CIF Submitted on December 2009</td>
<td>Pending</td>
</tr>
<tr>
<td>An Engineering Prospect to Genetic Disease Therapeutics: Optimal Intervention in Inhomogeneous Gene Regulatory Network</td>
<td>PI</td>
<td>$7,000</td>
<td>Kathleen Thomsen Hall Charitable Trust Grant April 2009</td>
<td>Denied</td>
</tr>
<tr>
<td>Modeling and Intervention in a Transcriptional Network for Differentiation</td>
<td>PI</td>
<td>$811,049</td>
<td>NIH Challenge Grant April 2009</td>
<td>Denied</td>
</tr>
</tbody>
</table>
DR. BOUAYNAYA
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>Extension of the MUSIC Algorithm to AM-FM Signals</td>
<td>Arkansas Department of Higher Education</td>
<td>9 months</td>
<td>$4,000</td>
<td></td>
<td>PI</td>
</tr>
</tbody>
</table>

DR. CHAN
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>A New Paradigm for Sustaining Information Quality through Automatic Identification</td>
<td>Chan (Co-Pl)</td>
<td>$250,000</td>
<td>National Science Foundation, Dec 2008</td>
<td>Denied</td>
</tr>
<tr>
<td>Network Reliability and Throughput: Guarding against Hazards and Attacks</td>
<td>Chan (PI)</td>
<td>$326,805</td>
<td>National Science Foundation, Feb 2009</td>
<td>Denied</td>
</tr>
<tr>
<td>Network Reliability and Capacity: Preventing Hazards and Attacks</td>
<td>Chan (PI)</td>
<td>$334,611</td>
<td>National Science Foundation, Oct 2009</td>
<td>Pending</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, Jan 2010</td>
<td>Pending</td>
</tr>
</tbody>
</table>

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

- “Incident-Management In Central Arkansas – An ITS Application” (Y. Chan) Presentation in the Annual Meeting of the Missouri Valley Section of the Institute of Transportation Engineers, Rogers, AR
- “Incident-Management in Central Arkansas – An ITS Application.” (Y. Chan, A. Fowe) Presentation in the Spring Meeting of the Transportation Research Committee, Arkansas Highway and Transportation Department; May, 2009; Little Rock, Arkansas.
### DR. CHAN
#### 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>UALR Intelligent Transportation System</td>
<td>Federal Highway Administration</td>
<td>10/1/04 – 10/31/09</td>
<td>$415,972</td>
<td>0.75 month per year</td>
<td>PI</td>
</tr>
<tr>
<td>Reality Simulation Center for Industries &amp; Academia</td>
<td>Economic Development of AR Fund Commission</td>
<td>Indefinite</td>
<td>$291,450</td>
<td>Indefinite</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>Real-Time Damage Detection in Sandwich Honeycomb Panels by Using Complementary Vibration and Wave Propagation Approaches (supplement award)</td>
<td>PI</td>
<td>10,000</td>
<td>07/15/2009 (NASA RID)</td>
<td>Funded</td>
</tr>
<tr>
<td>A Novel Paradigm for Flying-Wing Design: Chiral Elastic Metamaterial Airfoil</td>
<td>PI</td>
<td>20,000</td>
<td>11/1/2009 (NASA RID)</td>
<td>Funded</td>
</tr>
<tr>
<td>A New smart system for bridge structural health monitoring</td>
<td>PI</td>
<td>23,000</td>
<td>Korean Institute of Geosciences and Mineral Resources</td>
<td>Funded (third year)</td>
</tr>
<tr>
<td>Development of meta-composite materials with negative mass density</td>
<td>Co-PI</td>
<td>120,000</td>
<td>Air Force Research Laboratory</td>
<td>Funded (first year)</td>
</tr>
<tr>
<td>Development of meta-composite materials with negative mass density (extension proposal from 2010-2012)</td>
<td>Co-PI</td>
<td>400,000</td>
<td>08/10/2009 (Air Force Research Laboratory)</td>
<td>Pending</td>
</tr>
<tr>
<td>Nonlocal Characterization and Design of Elastic Metamaterials with Different Micro-Structures</td>
<td>PI</td>
<td>266,015</td>
<td>10/15/2009 NSF Proposal</td>
<td>Pending</td>
</tr>
<tr>
<td>Multiscale Continuum Analysis of Dynamic Behavior of Ultra-Thin Films with Complex Micro- or Nano- Structures</td>
<td>PI</td>
<td>406,543</td>
<td>6/27/08 DOE EPSCoR</td>
<td>Denied</td>
</tr>
<tr>
<td>Higher continuum modeling of nanomaterials</td>
<td>PI</td>
<td>500</td>
<td>02/10/2009 Northrop Young Research Award</td>
<td>Funded</td>
</tr>
<tr>
<td>A New Multiscale Continuum Modelling of Dynamic Behavior in Nano Thin Films</td>
<td>PI</td>
<td>7000</td>
<td>02/03/09 Kathleen Thomsen Hall Charitable Trust Grant, UALR</td>
<td>Denied</td>
</tr>
<tr>
<td>Numerical and Experimental Study of Fatigue Life of MEMS-Based Piezoelectric Sensors</td>
<td>Supervisor</td>
<td>2650</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”.
- Posters for Arkansas EPSCoR meeting:
  - F. Song and G.L. Huang, 2009, “High order continuum modeling of dynamic behavior of nanowires”.

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>2</td>
<td></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>First year</td>
<td>50,000</td>
<td>2</td>
<td>PI</td>
</tr>
<tr>
<td>On-Line Structure Health Monitoring for Space Structures by Using MEMs-Based Piezoelectric Sensors</td>
<td>NASA EPSCoR</td>
<td>Third year</td>
<td>20,000</td>
<td>1</td>
<td>PI</td>
</tr>
<tr>
<td>A New smart system for bridge structural health monitoring</td>
<td>Korean Institute of Geosciences and Mineral Resources</td>
<td>Third year</td>
<td>23,000</td>
<td>1</td>
<td>PI</td>
</tr>
</tbody>
</table>

DR. IQBAL
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>Integrative Neuromuscular, Motor, and Behavioral Modeling for Investigation of Motor Control Functions (PI), NSF-IIS,</td>
<td>K.Iqbal A. Ahmad N. Bouaynaya</td>
<td>$789,279</td>
<td>Feb. 2008</td>
<td>Denied</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>A New smart system for bridge structural health monitoring</td>
<td>Co-PI</td>
<td>$25,000</td>
<td>Submitted to Samsung</td>
<td>Funded</td>
</tr>
</tbody>
</table>
### Computational approach to finding mutations in the CFTR promoter region in cystic fibrosis patients

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>PI</th>
<th>Amount Requested</th>
<th>Submitted To Date</th>
<th>Funded/Not Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td>A New smart system for bridge structural health monitoring</td>
<td>Co-PI</td>
<td>$24,000</td>
<td>Submitted to Samsung</td>
<td>Funded</td>
</tr>
<tr>
<td>Bioinformatics approach to finding mutations in the CFTR promoter region in cystic fibrosis patients</td>
<td>Co-PI</td>
<td>$50,000</td>
<td>Submitted to Arkansas Bioscience Institute</td>
<td>Funded</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>Funded</td>
</tr>
</tbody>
</table>

### Dr. Kim

**Ongoing 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>A New smart system for bridge structural health monitoring</td>
<td>Co-PI</td>
<td>$24,000</td>
<td>Submitted to Samsung</td>
<td>Funded</td>
</tr>
<tr>
<td>Bioinformatics approach to finding mutations in the CFTR promoter region in cystic fibrosis patients</td>
<td>Co-PI</td>
<td>$50,000</td>
<td>Submitted to Arkansas Bioscience Institute</td>
<td>Funded</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>Funded</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>Quickest Compressive Pan-Network Malicious Activity Detection and Localization in Large Scale Networks: Per4-Y-3</td>
<td>PI</td>
<td>$200,000</td>
<td>DTRA Nov. 2009</td>
<td>Pending</td>
</tr>
<tr>
<td>Quickest Opportunity Detection in Cognitive Radio Systems</td>
<td>mentor</td>
<td>$3900</td>
<td>SURF Nov. 2009</td>
<td>Funded</td>
</tr>
</tbody>
</table>
DR. LIU
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>Toward Optimization of Electricity Smart Grid</td>
<td>PI</td>
<td>177491</td>
<td>Sept. 2009</td>
<td>Pending</td>
</tr>
<tr>
<td>Design of S-Boxes for Compact Ciphers</td>
<td>PI</td>
<td>124373</td>
<td>Dec. 2009</td>
<td>Pending</td>
</tr>
<tr>
<td>Wireless Optical Communications with Tunable Lasers</td>
<td>PI</td>
<td>305339</td>
<td>Dec. 2009</td>
<td>Pending</td>
</tr>
</tbody>
</table>

Other research or scholarly activities completed during the current year and not reported above.
- Submitted a SURF proposal and several preliminary proposals on electricity smart grid.

DR. MOHAN
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>Arkansas ASSET (Advancing and Supporting Science, Engineering, and Technology)</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>Wireless Optical Communications with Tunable Lasers</td>
<td>Co-PI</td>
<td>$305,339</td>
<td>Dec. 2009</td>
<td>Pending</td>
</tr>
</tbody>
</table>

- The NSF EPSCOR proposal, which is now funded for the third year, has facilitated the department build advanced wireless infrastructure and stimulate 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 Photonics; this work supports a graduate student.
- The proposal “Wireless Optical Communications with Tunable Lasers” is to implement optical MIMO and conduct advanced research in this area.

DR. MOHAN
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)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas ASSET (Advancing and Supporting Science, Engineering, and Technology)</td>
<td>NSF EPSCoR</td>
<td>3 years</td>
<td>$13,500</td>
<td>1</td>
<td>PI- UALR</td>
</tr>
</tbody>
</table>
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>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>Pending</td>
</tr>
<tr>
<td>Numerical study on deposition and solidification of supercooled water droplets on helicopter blades and aircraft wings</td>
<td>PI</td>
<td>$14,000</td>
<td>NASA ASGC/Dec. 2009</td>
<td>Pending</td>
</tr>
<tr>
<td>Micro- and nano-particle transport and deposition in the respiratory tract at reduced or zero gravity: a numerical study</td>
<td>PI</td>
<td>$14,000</td>
<td>NASA ASGC/Dec. 2009</td>
<td>Pending</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 2008</td>
<td>Funded</td>
</tr>
<tr>
<td>Controlled lung delivery of nano and micrometer aerosols through condensation growth</td>
<td>Co-PI</td>
<td>$250,000</td>
<td>NIH/May 2008</td>
<td>Funded</td>
</tr>
</tbody>
</table>

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

- Conference papers:

- Course Development
  - SYEN 4399/5399: Computer Method in Fluids and Heat Transfer

- Patent
  - Enhanced Delivery of Nanoparticle and Micron Sized Pharmaceutical Aerosols to The Lung through Hygroscopic Growth (US patent #: WO2009105445)
DR. ZHANG
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>Smart Educational Power Systems Lab</td>
<td>PI</td>
<td>$399,878</td>
<td>NSF, 3/11/2009</td>
<td>Denied</td>
</tr>
</tbody>
</table>

DR. ZHANG
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>Three-Phase High-Voltage Power Supply</td>
<td>Jet Propulsion Lab</td>
<td>5 month</td>
<td>$25,385</td>
<td>5</td>
<td>PI</td>
</tr>
<tr>
<td>Little Rock BEST Robotic Hub</td>
<td>ASTA</td>
<td>18 month</td>
<td>$15,000</td>
<td>10</td>
<td>PI</td>
</tr>
<tr>
<td>DC Electric Power System for Residential Applications (Laura Lawson’s EPSCoR Fellowship)</td>
<td>ASTA</td>
<td>12 month</td>
<td>$2,500</td>
<td>12</td>
<td>PI</td>
</tr>
</tbody>
</table>

RESEARCH/CREATIVE ACTIVITIES

DEPARTMENT: Systems Engineering

COLLEGE/SCHOOL/DIVISION: DCEIT

PREPARED BY: Dr. Seshadri Mohan, Chair, Systems Engineering

DR. AL-RIZZO

Publications


**Articles submitted for publication**


**Articles being prepared for submission**


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

DR. BABICEANU

Publications


Articles accepted for publication


Articles submitted for publication


Articles being prepared for submission

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

- **Presentations:**

- **Training Sessions:**

- **Course Development:**
  - SYEN 1310: Introduction to Systems Engineering

DR. BOUAYNAYA

**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)

**Journal papers submitted**

Conference papers submitted


Articles being prepared for submission


DR. CHAN

Publications


Articles accepted for publication

• “Predictive Models of Cognitive Outcomes of Developmental Insults.” (Y. Chan, N. Bouaynaya, P. Chowdhury, D. Leszczynska, T. A. Patterson, O. Tarasenko) 2009 Proceedings of the Biology, Nanotechnology, and Toxicology International Conference, American Institute of Physics Publisher (in CDROM)

Textbooks, chapters, or manuals published


Textbooks, chapters, or manuals in preparation


DR. HUANG

Journal Publication:


Conference Publication:


**Articles accepted 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**


**Articles accepted for publication**

- A.M. Mughal and K. Iqbal, “Asymmetrical Bipedal Modeling for Biomechanical Sit-to-Stand
Articles submitted for publication


Articles being prepared for submission

- 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), being revised for resubmission
- S. Kockara, T. Halic, C. Bayrak, K. Iqbal, and R. Rowe, “Balls hierarchy and possible application areas,” Elsevier Information Sciences, being revised for resubmission

Textbooks, chapters, or manuals published


DR. KIM

Publications


Accepted

Publications


Articles accepted for publication


Articles submitted for publication


Textbooks, chapters, or manuals published

DR. LIU

Publications

- X. Liu, “Corrections to and comments on ‘Optimization of urban optical wireless communication systems’”, *IEEE Transactions on Wireless Communications*, vol. 8, no. 6, pp. 2763-2765, 2009.

Articles accepted for publication

- S. Huang, H. Wu, S. Chang, and X. Liu, “Novel sequence design for low-PMEPR and high-code-rate OFDM systems”, accepted by *IEEE Transactions on Communications*
- X. Liu and W. Xu, “Minimum emission dispatch constrained by stochastic wind power availability and cost”, accepted by *IEEE Transactions on Power Systems*

DR. MOHAN

Publications


Articles accepted for publication

- Yasir Rahmatallah, Nidhal Bouaynaya and Seshadri Mohan, “ARMA Companding Scheme With Improved Symbol Error Rate For PAPR Reduction In OFDM Systems,” In proc. Wireless Telecomm. Symposium, April 2010, Tampa, FL, USA.
Articles submitted for publication


DR. REDDY

Publications


Text book Published

- Rama N. Reddy and Carol A. Ziegler “C programming for Scientists and Engineers with Applications” the book is published by “JONES and BARTLETT” on “August 2009”

Working on a Textbook

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

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

- NSF Grant

DR. XI

Publications


Articles being prepared for submission

- J. Xi, and B, Ariel “Aerosol transport and Deposition in a 5-year-old Nasal Airway model,” Journal of
Applied Physiology

- 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*

Textbooks, chapters, or manuals published


DR. ZHANG

Publications


B. PUBLIC SERVICE

DR. AL-RIZZO

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>

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>Conference 7399, SPIE vol. 7399</td>
<td>San Diego</td>
<td>5 - 6 August 2009.</td>
</tr>
</tbody>
</table>
Contacts made with potential funders (consulting, industrial, government)

- UAMS, NASA, DoD, Fulbright

Department, school, and university committees

<table>
<thead>
<tr>
<th>(Department, Committee)</th>
<th>(Chairman/Member)</th>
<th>Nature of Service</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABET Task Force</td>
<td>Member</td>
<td>Department</td>
<td></td>
</tr>
<tr>
<td>Annual Performance</td>
<td>Member</td>
<td>Department</td>
<td></td>
</tr>
<tr>
<td>Evaluation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curriculum Committee</td>
<td>Member</td>
<td>Department</td>
<td></td>
</tr>
<tr>
<td>Undergraduate Student</td>
<td>Advisor</td>
<td>Department</td>
<td></td>
</tr>
<tr>
<td>College Undergraduate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curriculum Committee</td>
<td>Alternate</td>
<td>College</td>
<td></td>
</tr>
<tr>
<td>Intern. Student Advisor</td>
<td>Advisor</td>
<td>College</td>
<td></td>
</tr>
<tr>
<td>Traffic Committee</td>
<td>Member</td>
<td>University</td>
<td></td>
</tr>
<tr>
<td>Replacement member of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the Graduate Council</td>
<td>Member</td>
<td>University</td>
<td></td>
</tr>
<tr>
<td>Academic Technology and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computing Committee</td>
<td>Member</td>
<td>University</td>
<td></td>
</tr>
<tr>
<td>Ambassador for the</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systems Engineering</td>
<td>Member</td>
<td>University</td>
<td></td>
</tr>
<tr>
<td>Campus Campaign</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Council</td>
<td>Replacement</td>
<td>University</td>
<td></td>
</tr>
<tr>
<td>Search Committee</td>
<td>Chair</td>
<td>Department</td>
<td></td>
</tr>
<tr>
<td>Graduate Students/Travel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fund Committee</td>
<td>Member</td>
<td>College</td>
<td></td>
</tr>
<tr>
<td>College Assembly</td>
<td>Secretary</td>
<td>College</td>
<td></td>
</tr>
<tr>
<td>Promotion and Tenure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Committee</td>
<td>Member</td>
<td>Department</td>
<td></td>
</tr>
</tbody>
</table>

Administrative duties other than committee work

- International Students’ Advisor/College

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.
Awards and recognition received

Additional information

- Ambassador for the Systems Engineering Department, Campus Campaign.
- Assisted the chair during the preparation for the ABET visit during Summer 2009.
- Member of the Technical Advisory Committee of the International Microwave Power Institute, three-year term started on February, 2005.

DR. BABICEANU

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>INCOSE</td>
<td>Member</td>
<td>2006-present</td>
</tr>
<tr>
<td>INCOSE – 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>IEEE - 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>

Participation in activities of professional or learned societies

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 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>INCOSE Annual Symposium</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Industrial Engineering Research Conference</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Int'l Workshop on Enterprise &amp; Organizational M&amp;S</td>
<td>Reviewer</td>
</tr>
<tr>
<td>INCOSE – Complex Syst. Group (CxSWG)</td>
<td>Contributor</td>
</tr>
</tbody>
</table>

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>Global Conf. on Systems and Enterprises</td>
<td>Washington, DC</td>
<td>Dec. 2009</td>
</tr>
</tbody>
</table>
• IIE Annual Conference
  Miami, FL
  May 2009
• Industrial Eng Research Conference
  Miami, FL
  May 2009

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

• NASA - Glenn Space Center – Dr. Mark D. Kankam – Fall 2009

Department, school, and university committees

<table>
<thead>
<tr>
<th>(Department, Committee)</th>
<th>Nature of Service</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment Committee</td>
<td>Chair</td>
<td>Department</td>
</tr>
<tr>
<td>PAAG Assessment Committee</td>
<td>Member</td>
<td>College</td>
</tr>
<tr>
<td>Curriculum Committee</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>Program Coordination Committee</td>
<td>Invited Participant</td>
<td>Department</td>
</tr>
<tr>
<td>College Assembly Initiative Task</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Force on Research Clusters</td>
<td>Member</td>
<td>College</td>
</tr>
<tr>
<td>Faculty Search Committee</td>
<td>Chair</td>
<td>Department</td>
</tr>
</tbody>
</table>

Administrative duties other than committee work

Off-campus professional, public, and community services


Awards and recognition received

• Interviewed to be featured as a *Work Perfect* profile in the *Industrial Engineer Magazine*, Fall 2009 (interview to be published in 2010).

DR. BOUAYNAYA

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>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>
Participation in activities of professional or learned societies

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 International Workshop on Genomic Signal Processing and Statistics 2009 Committee</td>
<td>Publicity Chair &amp; Program</td>
</tr>
<tr>
<td>IEEE Transactions on. Circuits and Systems for Video Technology</td>
<td>Reviewer</td>
</tr>
<tr>
<td>IEEE Signal Processing Magazine</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Nature Methods</td>
<td>Reviewer</td>
</tr>
</tbody>
</table>

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 International Conference on Image processing</td>
<td>Cairo, Egypt</td>
<td>Nov 2009</td>
</tr>
<tr>
<td>IEEE International Workshop on Genomic Signal processing and Statistics</td>
<td>Minneapolis, Minnesota</td>
<td>May 2009</td>
</tr>
<tr>
<td>Conference of the MidSouth Computational Biology and Bioinformatics Society (MCBIOS)</td>
<td>Mississippi</td>
<td>Feb 2009</td>
</tr>
</tbody>
</table>

Department, school, and university committees

<table>
<thead>
<tr>
<th>(Department, Committee)</th>
<th>Nature of Service</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Chairman/Member)</td>
<td>school, university</td>
<td></td>
</tr>
<tr>
<td>Recruitment, Retention and Advising Committee</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>College Initiative</td>
<td>Member</td>
<td>College</td>
</tr>
<tr>
<td>Faculty Search 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

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).

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>Transportation Research Board (National) Academies</td>
<td>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 present</td>
</tr>
<tr>
<td>American Society of Civil Engineers (National)</td>
<td>Associate Editor</td>
<td>10/88 to present</td>
</tr>
<tr>
<td>International Journal of Interdisciplinary Associate Editor Telecommunications &amp; Networking</td>
<td>1/08 to present</td>
<td></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 Past President (International)</td>
<td></td>
<td>11/04 to present</td>
</tr>
</tbody>
</table>

Participation in activities of professional or learned societies

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


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

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Contribution</th>
<th>Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>88th Annual Meeting of the Transportation Research Board</td>
<td>Committee meetings</td>
<td>1/11/09 to 1/13/09</td>
</tr>
<tr>
<td>Missouri Valley Section of the Institute of Transportation Engineers</td>
<td>Presentation on the UALR Intelligent Transportation Systems Project</td>
<td>5/5/2010</td>
</tr>
<tr>
<td>Spring Meeting of the Transportation Research Committee, AR Highway &amp; Transportation Dept.</td>
<td>Presentation on the UALR Intelligent Transportation Systems Project</td>
<td>5/5/2010</td>
</tr>
<tr>
<td>Fall national meeting of the</td>
<td>Committee meetings</td>
<td>10/12/08 to</td>
</tr>
</tbody>
</table>
Institute of Operations Research and Management Sciences, Washington, DC

10/14/08

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 2009
- Air Force Office of Scientific Research
- Federal Highway Administration, U.S. Dept. of Transportation
- National Science Foundation

Department, school, and university committees

<table>
<thead>
<tr>
<th>(Department, Committee)</th>
<th>(Chairman/Member)</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>UALR Senate</td>
<td>Senator</td>
<td>University</td>
</tr>
<tr>
<td>UALR Cooperative Education Board</td>
<td>Member</td>
<td>University</td>
</tr>
<tr>
<td>EIT College Graduate Curriculum Committee</td>
<td>Member</td>
<td>College</td>
</tr>
<tr>
<td>EIT College Ad Hoc Library Committee</td>
<td>Member</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>
</tbody>
</table>

Administrative duties other than committee work

- Coordinator of Exchange Program with the City University of Hong Kong
- Graduate Coordinator, Graduate Program in Systems Engineering
- Coordinator, Co-operative Education Courses
- Faculty Advisor, INCOSE Chapter, UALR

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 eight
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.

- On the Technical Advisory Council of Metroplan since 2003. Metroplan is the regional council of government for Little Rock in charge of transportation and regional planning. Since the Fall of 2007, I serve as MIT Educational Counselor, interviewing high school students for admission to MIT.

**Awards and recognition received**

- My master’s student, Adeyemi Fowe, received the research award during the EIT Annual Reception at Acxiom downtown building on 5/15/09. Notice this is a competition among all Applied Science students. (Adeyemi Fowe also received the best first-year student award in 2008.)

---

**DR. HUANG**

**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>ASME</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>

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

**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>Nanotechnology</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Composite Materials and Technoloby</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Journal of Physics D</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>
</tbody>
</table>

**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, 2009</td>
</tr>
<tr>
<td>2nd International Conference on Smart</td>
<td>Weihai, China</td>
<td>July 8-11, 2009</td>
</tr>
</tbody>
</table>
materials and Nanotechnology in Engineering,

- Arkansas EPSCoR meeting Little Rock, AR Oct 2009

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

Department, school, and university committees

<table>
<thead>
<tr>
<th>(Department, Committee)</th>
<th>Nature of Service</th>
<th>Level</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>
<tr>
<td>Undergraduate Curriculum Committee</td>
<td>Member</td>
<td>College</td>
</tr>
</tbody>
</table>

Administrative duties other than committee work

- Supervisor and Director of MEMS LAB
- Daily maintains of MEMS Lab
- Supervision of a research laboratory “Advance Materials and Wave Laboratory” at UALR
- Supervision of Mechanics of Materials Lab at UALR
- Served in curriculum committee for new course set up and change in mechanical option
- Served in assessment committee for preparing materials for ABET visit and after ABET visit
- Proposing a new canadiate area for mechanical option

Off-campus professional, public, and community services

- Section chair of 2nd International Conference on Smart materials and Nanotechnology in Engineering, 2009.
- Hosted high school students at the 2009 Summer Engineering Scholars Program
- Hosted high school summer research program

Awards and recognition received

- Northrop Young Research Award, UALR

DR. IQBAL

Memberships and/or offices held in professional associations
Professional Association | Office Held | Dates
--- | --- | ---
Sigma Xi central Arkansas chapter | Secretary/Treasurer | 2009-10

### Participation in activities of professional or learned societies

### 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>World Research Institutes, CSIE 2009</td>
<td>Member technical committee</td>
</tr>
<tr>
<td>IEEE (Pak), CCCC 2009</td>
<td>Member technical committee</td>
</tr>
<tr>
<td>Springer, Medical and Biological Eng &amp; Comp</td>
<td>Reviewer</td>
</tr>
<tr>
<td>IEEE, ACC 2009</td>
<td>Reviewer</td>
</tr>
<tr>
<td>IEEE, CDC 2009</td>
<td>Reviewer</td>
</tr>
<tr>
<td>IFAC, SYSID 2009</td>
<td>Reviewer</td>
</tr>
</tbody>
</table>

### 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 SMC Conference</td>
<td>San Antonio, TX</td>
<td>Oct 2009</td>
</tr>
</tbody>
</table>

### Contacts made with potential funders (consulting, industrial, government)

- University of Arkansas for Medical Sciences
- Chicago Rehabilitation Research Corporation
- National Institute of Health

### 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>ABET Task Force</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>Program Coordination</td>
<td>Member</td>
<td>Department</td>
</tr>
<tr>
<td>Curriculum</td>
<td>Chair</td>
<td>Department</td>
</tr>
<tr>
<td>Research Infrastructure</td>
<td>Member</td>
<td>EIT</td>
</tr>
<tr>
<td>Integrated Computing</td>
<td>Member</td>
<td>EIT</td>
</tr>
<tr>
<td>Honors and Awards</td>
<td>Member</td>
<td>UALR</td>
</tr>
<tr>
<td>Academic Technology</td>
<td>Member</td>
<td>UALR</td>
</tr>
<tr>
<td>Undergraduate Research</td>
<td>Member</td>
<td>UALR</td>
</tr>
</tbody>
</table>

### Administrative duties other than committee work

- Undergraduate student advisor/Asst. chair
Off-campus professional, public, and community services

- Arkansas BRIN mentor

Awards and recognition received

- UALR ME Studies Program faculty grant ($3,000)
- ADHE SURF grant ($1,000)

DR JOVANOVIC

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>ASME</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>ASEE</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Department, school, and university committees

<table>
<thead>
<tr>
<th>Committee</th>
<th>Nature of Service</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Chairman/Member)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Faculty Senate Senator University

I led a campus debate and a debate in the Faculty Senate about the proposed policy changes for the Institutional Review Board (IRB), which reviews research proposals involving human subjects. I pointed out many flaws in the proposal and proposed a resolution, which was passed by the Faculty Senate, to withhold approval of the document until faculty concerns had been addressed.

Administrative duties other than committee work

- Developed the curriculum for a new program in Construction Engineering.
- Wrote the Letter of Notification for the Construction Engineering program.
- Contacted several engineering design firms in central Arkansas to develop support for the Construction Engineering program.

Off-campus professional, public, and community services

- Visited the Arkansas State Board of Licensure for Professional Engineers and Professional Surveyors to obtain materials for my students in SYEN 4399 PE Registration and Licensure, and discussed the Construction Engineering program with the Executive Director.
- Visited with the owner of Heritage Engineering to discuss the Construction Engineering program.
- Met with an employee of TME, Inc. to discuss the Construction Engineering program.
- Met with employees of W.H. Grant & Associates to discuss the Construction Engineering program.
DR. KIM

Memberships and/or offices held in professional associations

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Office Held</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEEE Computer Society</td>
<td>Senior member</td>
</tr>
</tbody>
</table>

Participation in activities of professional or learned societies

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>

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

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

- Industrial (Samsung SDS, GE Electronics), Government (NIH, NSF, DoD), CF foundation

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>Tenure and Promotion</td>
<td>Member</td>
<td>Department</td>
</tr>
</tbody>
</table>

DR. LAI

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>IEEE Information Theory Society</td>
<td>Member</td>
<td>Since 2007</td>
</tr>
</tbody>
</table>

Participation in activities of professional or learned societies

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 Globecom 2010</td>
<td>TPC member</td>
</tr>
<tr>
<td>IEEE RWS 2010</td>
<td>TPC member</td>
</tr>
</tbody>
</table>
• IEEE WCNC 2010 TPC member
• IEEE ICC 2010 TPC member
• IEEE PIMRC 2010 TPC member
• IEEE CCECE 2009 TPC member
• IEEE WCSP 2009 TPC member
• IEEE Transactions on Information Theory Reviewer
• IEEE Transactions on Wireless Communications Reviewer
• IEEE Transactions on Communications Reviewer
• IEEE Transactions on Signal Processing Reviewer

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

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

Department, school, and university committees

DR. LIU

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>IEEE</td>
<td>Senior Member</td>
<td>2009</td>
</tr>
</tbody>
</table>

Participation in activities of professional or learned societies

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 Globecom 2009</td>
<td>TPC/Paper reviewer</td>
</tr>
<tr>
<td>IEEE Globecom 2010</td>
<td>TPC/Paper reviewer</td>
</tr>
<tr>
<td>IEEE VTC Spring 2010</td>
<td>TPC</td>
</tr>
<tr>
<td>IEEE Power Engineering Letters (1)</td>
<td>Reviewer</td>
</tr>
<tr>
<td>IEEE Communication Letters (1)</td>
<td>Reviewer</td>
</tr>
<tr>
<td>IEEE Journal on Selected Areas in Communications (1)</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Journal of Optical Communications and Networking (1)</td>
<td>Reviewer</td>
</tr>
</tbody>
</table>

Department, school, and university committees

<table>
<thead>
<tr>
<th>Committee</th>
<th>Nature of Service</th>
<th>Level (Department, school, university)</th>
</tr>
</thead>
</table>
• Award Committee (till August) Member College
• Graduate Curriculum Committee Member (alt.) College
• Undergraduate Student Adviser Adviser Department
• Library Liaison (till August) Adviser Department
• IT Specialist Search Committee (Fall) Chair Department
• Bio-informatics admission committee Member College
• Academic Integrity and Grievance Adviser Department
• Committee (since August) Member University
• Honors and Awards Committee Member University

DR. MOHAN

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>IEEE</td>
<td>Member</td>
<td>Since 1975</td>
</tr>
<tr>
<td>Associate Editor, IEEE Comm. Magazine</td>
<td>Member</td>
<td>Since 2004</td>
</tr>
<tr>
<td>INCOSE</td>
<td>Member</td>
<td>Since 2004</td>
</tr>
<tr>
<td>ASEE</td>
<td>Member</td>
<td>Since 2004</td>
</tr>
</tbody>
</table>

Participation in activities of professional or learned societies

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

• Served as a panelist, reviewer, and chair of NSF SBIR panel;
• Served as the Associate Editor for IEEE Communications Magazine
• Served as TPC Chair for the Area ‘Networking Broadly Defined’ of the conference IEEE Advanced Networking and Telecommunications Systems, was responsible for reviewing 24 papers.
• Served as the Technical Program Committee member of IEEE Globecom 2009; was responsible for reviewing/assigning papers for two different tracks;
• IEEE WCNC 2009, TPC member, Networking Track, was responsible for reviewing papers
• IWCMC’09 General Symposium, TPC member, was responsible for reviewing papers
• IWCMC’09 Wireless LANs and Wireless PANs Symposium, TPC member, was responsible for reviewing papers
• IEEE International Communications Conference ‘09, Wireless Networking, TPC Member
• WTS 2009, Track Chair

Meetings of professional associations attended (include those cited above if present)
Professional Association

- IEEE ANTS
- 2009 INCOSE International Symposium

<table>
<thead>
<tr>
<th>Location</th>
<th>Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore</td>
<td>June 15-18, 2009</td>
</tr>
</tbody>
</table>

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;
- Space Photonics, Fayetteville, Arkansas; a SBIR proposal was submitted to Space Photonics, which formed part of SBIR proposal to DoE; Chuck Chalfant, CEO of Space Photonics is now a member of the Industrial Advisory Council;

Department, school, and university committees

<table>
<thead>
<tr>
<th>Committee</th>
<th>Nature of Service</th>
<th>Level (Department, Committee (Chairman/Member), school, university)</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>University Inventions Advisory Committee</td>
<td>Member</td>
<td>University</td>
</tr>
</tbody>
</table>

Administrative duties other than committee work

- Chair, Systems Engineering Department
- Academic Affairs
- Led and Coordinated the preparation of assessment, conducting surveys, and preparation of ABET SELF STUDY REPORT
- Responsible for successful execution of MoU with Pondicherry University, India, for student/faculty exchange;
- Organized and oversaw successful visit by ABET.

Off-campus professional, public, and community services

- See under 13 – 15.

Awards and recognition received

- Nominated by Dean Good to the IEEE Region 5 Outstanding Educator Award and was awarded ‘Runner Up,’ a significant accomplishment considering that Region 5 included states such as Texas, Tennessee, Oklahoma, and
Additional information:

- **Outreach Efforts**
  - For the second year, I oversaw successful implementation of the Engineering Scholars’ Program with 16 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.
  - Provided adequate support to Dr. Zhang for the BEST Robotics Hub and served as a judge for the competition.

DR. NISANCI

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

- National Science Foundation consulting, work title: Intermittent Expert, about 40 billed hours. This does not include NSF proposal reviews or service as review panel chair.

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

<table>
<thead>
<tr>
<th>Professional Association</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Society for Engineering Education (ASEE)</td>
<td>2008</td>
</tr>
<tr>
<td>Society of Automotive Engineering International (SAE International)</td>
<td>2008</td>
</tr>
</tbody>
</table>

**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>P&amp;T committee</td>
<td>Chairman</td>
<td>Department</td>
</tr>
<tr>
<td>Mid-Term Tenure</td>
<td>Chairman</td>
<td>Department</td>
</tr>
<tr>
<td>Evaluation Committee</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

- Chaired proposal review panels for the following National Science Foundation programs:
  - Advanced Technological Education (ATE),
  - Course, Curriculum, and laboratory Improvement (CCLI) Phase I,
  - Course, Curriculum, and laboratory Improvement (CCLI) Phase II,
  - National Science Digital Library (NSDL).

**Awards and recognition received**
• Appointed as Federal Employee to National Science Foundation as Intermittent Expert,

**Additional information**

• Assisted SYEN faculty with CAREER grants. Provided information, sources, and insights regarding the program
• Reviewed the proposal of Dr. Liu to be submitted to NSF
• Recommended faculty members as potential reviewers to NSF programs. Wrote letters of recommendation to NSF program directors
• Supported SURF applications by providing reference letters for two students. Both of them were accepted.

**DR. REDDY**

**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>

**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>

**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

**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

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>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>
</tbody>
</table>

Participation in activities of professional or learned societies

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 (2)</td>
<td>Reviewer</td>
</tr>
<tr>
<td>Annals of Biomedical Engineering (2)</td>
<td>Reviewer</td>
</tr>
<tr>
<td>AIAA Journal (1)</td>
<td>Reviewer</td>
</tr>
</tbody>
</table>

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>ICAMISS Annual Conference</td>
<td>Birmingham, AL</td>
<td>Oct. 2009</td>
</tr>
</tbody>
</table>

Department, school, and university committees

Committee: Recorder (Jan. ~ May, 2009)  
Nature of Service: Level (Department, school, university)  
Department

DR. ZHANG

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

- Consulting for Company Xedia, Inc. “Devices for Power Factor Correction and Energy Consumption”
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>IEEE</td>
<td>Member</td>
<td>Jan.09–Dec.09</td>
</tr>
<tr>
<td>Industrial Electronics Society</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Systems Society</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power &amp; Energy Society</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Participation in activities of professional or learned societies

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>DOE</td>
<td>Proposal review</td>
</tr>
<tr>
<td>7 proposals for Smart Grid Investment Grant Program DE-FOA-0000058</td>
<td></td>
</tr>
<tr>
<td>2 proposals for Smart Grid Demonstrations DE-FOA-0000036</td>
<td></td>
</tr>
</tbody>
</table>

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>2009 Electrostatics Joint Conference</td>
<td>Boston University,</td>
<td>6/16-18/2009</td>
</tr>
</tbody>
</table>

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>Undergraduate Curriculum Assessment committee</td>
<td>Member till May 2009</td>
<td>Department</td>
</tr>
<tr>
<td></td>
<td>Chair member till May 2009</td>
<td>Department</td>
</tr>
</tbody>
</table>

Awards and recognition received

- Passed the PE examination in Power Engineering taken on 10/23/2009 and got the PE license (Certification No. 14059)