The EAST Conference is an annual gathering of over 2,000 EAST high school students, teachers, parents, community, and business leaders from more than 100 communities across America. UCA was represented by presenting in three breakout sessions. Dr. Steven Addison and Leigh Ann DenHartog talked about UCA’s STEM and EPIC Residential Hall. Computer Science Students Reema Taneja, Ashley Lawrence, and Melissa Beltran talked about UCA Student life and the opportunities for students in the Computer Science Department.
Science Specialist, Minnietta Ready, UCA STEM Institute, presented at “first ever” NSTA (National Science Teacher’s Association) STEM Forum and Expo at Atlantic City Convention Center in New Jersey. The STEM forum and expo focus was an incredible resource for teachers, administrators, and those involved with after-school and outreach programs—in other words, for anyone interested in developing better STEM opportunities for our students and professional development for STEM educators. With the onset of the Next Generation Science framework standards and Common Core State Standards the scope of the teacher’s work will be to identify practices, big concept understandings, habits, and dispositions that can be better developed in our students at a younger age to help them become more successful in STEM activities and other content subjects at higher levels.

Science Specialist Ready presented “Whole Lot of Shaking Going On” in the Earth Science division at the conference teamed with Curtis Varnell Western Arkansas Educational Cooperative Branch. The presentation was an interdisciplinary approach using engineering, literacy, math, history, and science to investigate the New Madrid earthquake. Shake intensity maps with Modified Mercalli Intensity values to determine the location of earthquake epicenters were introduced to participants. Participants explored the historical significance of the New Madrid Earthquake which had a span from Arkansas to Pennsylvania and beyond. Just how much damage an earthquake can do can be difficult to imagine. Geologists use shake tables to simulate earthquake waves. The participants were actively engaged in designing communities made of recycled materials to withstand another New Madrid earthquake simulated by shake tables teachers could design and use with students. Participants also learned how to use informational text and newspaper articles of earthquake accounts to research, collect, and calculate data to make maps, charts and journal entries.

The Forum was insightful and engaged all in activities that promote scientific thinking and engineering principles while providing a focused learning context.
The UCA STEM Institute received the STEM Center Math and Science Specialists Competitive grant of $173,000 from the Arkansas Department of Education. Dr. Umadevi Garimella, the director of STEM Institute, is the project director. The grant provides $86,500 each to support the work of a 12-month full time Mathematics Specialists and a 12-month full time Science Specialists in the Center. The Instructional Specialist at UCA are part of a statewide network of Instructional Specialists in other educational service cooperatives and/or university math/science centers. The Instructional Specialists provide services to Arkansas school districts for the purpose of improving instruction. These services include: on-site technical assistance, models of best practices, observation and coaching of teachers, support of school districts’ curriculum development and alignment, assessment analysis and alignment, technology integration, professional development and leadership.

STEM Institute received two science grants. “Science In Action” is $13,000 grant fund by Arkansas Committed to Education Foundation (CTE) through Arkansas STEM Coalition. The funds will be used to promote STEM education in Arkansas classrooms grades 3-6. Three elementary schools (Quitman, Mayflower, and Heber Springs) that incorporates a systematic approach to integrating science, technology, engineering and mathematics (STEM) education involving multiple grade levels will receive approximately $4,000 worth of science equipment based on the science content needs of the students and the teachers. The equipment will be used by the students as a science laboratory with hands-on learning situations to develop understanding of science concepts in life, physical and earth science. The science specialist, Minnietta Ready, will provide the professional development necessary to increase the teachers’ content and instructional skills in science. The professional development will be provided at the school site and in the student classrooms.

The “Science Core Team” grant is a $59,204 U.S. Department of Education grant funded through Arkansas Department of Higher Education (ADHE). Dr. Garimella, the Principal Investigator of the project, is collaborating with the faculty in the College of Natural Sciences and Mathematics and College of Education to provide 60 hours of professional Development training to 25 elementary school teachers. The program will offer STEM related level appropriate resources and professional development activities for elementary teachers provided by UCA faculty: Dr. Andrew Mason from Physics, Dr. Carolyn Pinchback from Mathematics and Jerry Mimms from Biology. The STEM Core Team is a content intensive professional development program for 25 teachers in Grades 3-5. The focus is on integrating science, technology, engineering and mathematics and Core Ideas Physical Sciences from Next Generation Science Standards in elementary schools so as to increase the probability of academic success for all students. Design elements will include the incorporation of multiple learning approaches (auditory, visual, and kinesthetic components) and the use of a progressive lesson format. Three hour graduate credit option is available for the teachers.

**UCA STEM Institute is offering free Praxis I and II prep classes.**

Praxis I and praxis II trainings are designed to prepare participants for the exams by concentrating on two keys to success: understanding the exams, and preparing for the exam. Participants will learn test-taking strategies, get familiar with the different types of questions that appear on the Reading and Writing tests, master the many areas of science and math, sharpen essay writing skills, and work on Praxis practice questions. Two full-length practice tests will be given. Students will learn to read test questions critically, prepare targeted study plans, and get tips that will improve their chances of passing.

These Praxis Preparatory Classes are an intricate component of the UCA Partnership for Transition to Teaching grant. This project is part of a $2.3 million grant from the U. S. Department of Education that focuses on recruiting, preparing, placing and retaining highly qualified mid-career professional or a recent graduate from an institution of higher education and want to become a licensed mathematics or science teacher in our partnership school districts in the Little Rock or North Little Rock School Districts.

Dr. Uma Garimella, the director STEM Institute is collaborating with Dr. Carolyn Williams, the Project Investigator to offer these content refresher trainings. Faculty from the University College, Bob Reising and Carl Olds will prepare the students on the reading and writing part of the Praxis exam while Kassy Ballard and Sarah LeMaster, from the Department of Mathematics will prepare students for Mathematics.
Sarthak Garg, a high school student from Little Rock, got the best in state award at the State Science Fair held at UCA on March 30, 2012. Sarthak was mentored by Dr. Rahul Mehta, Department of Physics and Astronomy. His topic of project was "Adverse effect of Malathion on Brine Shrimp". This project will now go from the state to compete at the international science fair (ISEF).

Here is more info on this project from Sarthak:

Pesticides are commonly used for agricultural purposes, but are accumulated in all life. Approximately 90% of all pesticide applications affect non-target species. Malathion is the most used pesticide in the United States and is used for many things. This pesticide is used to treat over 100 food crops. Approximately 16.7 million lbs of active ingredients are used annually throughout the US. About half the total applications in the US are on cotton, wheat, sorghum, rice and alfalfa. Recently, a study in Atlanta showed that 0.38 to several hundreds of ng/g was found in popular food. Pesticides travel through different strata of the food chain and ultimately affect humans.

My study shows how malathion severely affects the growth, development and various proteins of *Artemia salina*. *Artemia salina* is commonly known as brine shrimp. High amount of phosphorus were accumulated in the body of brine shrimp. This project was done at the University of Arkansas for Medical Sciences in Little Rock. Dr. Rahul Mehta, Department of Physics, UCA, provided me with the scanning electron microscopy facility and guided me throughout.
Logistics:
What year did you graduate from the University of Central Arkansas?  1976

What degree did you receive from the University of Central Arkansas?
BS – Major - General Science, Minor - History

Are there any other degrees/certifications that you have received thus far?
MD – University of Arkansas for Medical Sciences

What company and the position do you work for today?
Chair, Department of Pediatrics, University of North Carolina at Chapel Hill, Physician in Chief, North Carolina Children's Hospital

Career Accomplishments:
What has been some of your career accomplishments?
I spent my career in academic medicine first at the University of Arkansas for Medical Sciences, then Duke University and now the University of North Carolina. Most of my time has been devoted to research in the field of pediatric allergy but I have been able to continue patient care and teach medical students and residents as part of my work. As a chair of pediatrics I am able to spend time helping students, residents and faculty with their professional and career choices. It is a privilege to serve at a children's hospital and see the impact that a group of health care providers can make in the life of a child.

UCA Experience and Faculty:
Was there a teacher or teachers who had a particularly strong influence on your life?
Several professors at UCA had a profound impact on my life and work. I could mention quite a few but several come to the front. The first one would be Jerry Manion who taught chemistry; he was a dynamic teacher in an area not easy to teach. He was tough but encouraging and had a big impact on many of us who took his classes. T.J. Burgess was the head of the premed program and guided many of us as a fatherly figure and also encouraged us to be persistent in our career goals. Ralph Behrens, Rusty Rogers and Ann Machen all in their different ways were personal mentors who helped guide me through the college years and in learning how to think and become independent personally. Harry Readnour from the history department helped me to think outside of the normal paradigm and to enjoy the students you would teach. I still remember the day he hid a phone in the class and when the phone rang, he answered, "Yes, Mr. President". I was fortunate to have my father as both a professor and a coach on the tennis team. I learned from him how to deal with others with integrity and how to treat everyone equally and fairly regardless of their status in life.

What are some of your UCA experiences?
One of my favorite memories is playing intramural sports, particularly basketball. I went to UCA with one of my childhood friends, Rush Hardin. We played on the same college team for three years and I am still waiting on the "Bermuda Triangle" to pass the ball back to me. Rush is a great friend, was a good teammate and has been a strong supporter for UCA for over 40 years.
Sharing Your Experiences/Wisdom:

What are some of your experiences or wisdom that you would like to share?

**Mentor** – I would hope that while in college you would be able to find several mentors. I would encourage college students to seek out several professors as mentors for different reasons and tell them who you are and what you want to do and listen to their thoughts and guidance.

**Personal relationships** – I would take the time to build relationships with other students, staff and professors from all walks of life. What you learn from them will be invaluable whatever you do later in life.

**Learning to read and how to think** – The knowledge you learn in college will change in 5 -10 years but what you learn in how to read and what you learn as you listen to your professors and how they think will stay with you the rest of your life. Critical thinking, not being critical, but thinking about what you are learning and why is a lifetime skill that is important in anything you do.

**Plan for only 5-7 years, not for life** – Too often as we finish one milestone in our life we want emotionally to make a decision that will allow us to go one place next and stay forever. Life brings so many opportunities and changes that even if you think you will go one place after graduation that likely will change. Make a choice after college that puts you on a path for the next 5 – 7 years, then after that time you can make the next choice for the next 5 – 7 years. The decisions you make will be much more straightforward and easier.