2014 Research Highlights

- The Office of the Vice President for Research and Economic Development (OVPRED) has assisted in bringing in new – early career stage faculty members – that have received early recognition from CAREER to PECASE awards.
  - Over the last 3 years, the Research Grants Committee Award Program through OVPRED has funded 145 investigator awards totaling over $800,000 in investments to support faculty research and scholarship. A total of 258 awards were funded over the last 5 years, in excess of $1.2 million – leading to a host of successes across all disciplines.
  - Prestigious awards by our faculty include:
    - NSF CAREER awards are NSF’s most prestigious recognition of top-performing young scientists and engineers who are beginning their careers. The OVPRED has also sponsored workshops for early-career stage faculty interested in CAREER awards. UA faculty members have received 10 awards since 2008.
      - February 2014, Dr. Xiangrong Shen assistant professor of mechanical engineering.
      - (2013) Dr. Patrick Frantom, an assistant professor in the department of chemistry.
      - (2012) Dr. Yuping Bao, an assistant professor in chemical and biological engineering; Dr. Samantha Hansen, assistant professor of geological sciences; and Dr. Dawen Li, assistant professor in electrical and computer engineering.
      - (2010) Dr. Seongsin Margaret Kim, assistant professor of electrical and computer engineering, and Dr. Tim Mewes, assistant professor in the department of physics and astronomy.
      - (2009) Drs. Michael Jennings, Timothy Snowden and Laura Busenlehner, assistant professors in the department of chemistry, Dr. Kim Caldwell, assistant professor in the department of biological sciences.
    - Awards in the last year:
      - July 2014: Dr. Lin Li was selected for a Ralph E. Powe Junior Faculty Enhancement Award from Oak Ridge Associated Universities (ORAU). This award will support Li's research on multi-scale modeling of shear banding in metallic glasses. Her research addresses how detailed metallic glass structure determines the formation of shear bands by virtue of multi-scale computer simulations and material models.
        [We’ve had two other Ralph E. Powe awards within the past 5 years; Dr. Yuping Bao in 2010 and Dr. Brian Fisher in 2012.]
      - February 2014: Dr. Xiangrong Shen assistant professor of mechanical engineering received an NSF CAREER Award for his research into a robotic prosthesis that could help amputees walk better. Shen was awarded nearly $424,000 to assist his innovative work into a biologically-inspired, powered prosthesis that mimics natural joints. There are more than 400,000 people with a leg amputated below the hip in the United States, and this number is expected to double by 2050.
December 2013: PECASE (Presidential Early Career Award for Scientists and Engineers) UA assistant professor of geological sciences, Dr. Samantha Hansen, among 102 up-and-coming researchers recognized by President Obama for her innovative research (and commitment to community service) on earthquake-monitoring in hopes of understanding the origins of Antarctica’s longest mountain range. She was nominated by the National Science Foundation, which awarded her a five-year $715,000 CAREER grant in 2012 that has funded her trips to Antarctica to research the formation of the Transantarctic Mountains.

December 2013: Dr. Ernest A. Mancini, professor emeritus in the department of geological sciences and retired Distinguished Research Professor, was named the 2014 recipient of the Sidney Powers Memorial Award by the American Association of Petroleum Geologists. Dr. Mancini was recognized at the opening session of the April 2014 AAPG Annual Convention and Exhibition in Houston. The Powers Award is given annually in recognition of distinguished and outstanding contributions to, or achievements in, petroleum geology. Mancini became the 67th Powers medalist.

August 2013: Dr. Chunmiao Zheng, professor of geological sciences was named as the 2013 recipient of the O.E. Meinzer Award by the Geological Society of America. The award is given annually to the author(s) of a published paper or papers of distinction that have advanced the science of hydrogeology or some closely related field. Since the award’s inception in 1965, it has been considered the highest distinction for hydrogeologists internationally. Zheng was also awarded the M. King Hubbert Award from the National Ground Water Association, which honors a scientist who has made a major contribution to the groundwater industry through research, publications, teaching, or practical applications.

August 2013: Dr. Daniel Levine, assistant professor of political science, has been awarded the 2013 Sussex International Theory Prize. The award is given each year for the best piece of innovative theoretical research published in the field of international relations.

June 2013: Biochemist Dr. Patrick Frantom, an assistant professor in the Department of Chemistry, received a five-year NSF CAREER Award for his research in understanding how enzymes evolve diverse properties and abilities.

April 2013: Dr. Beverly E. Thorn received one of the first 25 Patient-Centered Outcomes Research Institute (PCORI) awards. The initial funding, for $1.3 million, was awarded to study different psychosocial treatments for chronic pain management: cognitive-behavioral therapy compared to pain education groups in individuals with low income and limited literacy.

- An initial $125,792 provided to UA through the Governor’s Alabama Innovation Fund (AIF) Renewal Program funding in 2012 – has led to development of 5 companies, SBIR and Launchpad Awards in excess of $630K (in addition to other applications that were submitted or are in review), and 11 new jobs are already in place.

- UA and the OVPRED have supported, mentored and incubated over a dozen new ventures. This investment has generated follow on investments of $19.8 million and contributed to the creation of 39 jobs.
• Investments in technology have increased UA’s innovation capacity—over the past 5 years there have been over 225 new technologies disclosed, which have contributed to the issuance of over 20 US patents.

• Inducted 25 inventors into the National Academy of Inventors. The academy recognizes individuals that have received an issued US patent.

• Through the OVPRED, six new proposals requesting postdoctoral fellow support were awarded in 2014. The Research Stimulation Program (RSP), initiated in 2010, has now funded or agreed to fund 40 postdoctoral fellows and generated new extramural grant applications associated with each award between 2010 and 2013.

• UA and the OVPRED have facilitated commercialization opportunities of our faculty, students and UA stakeholders.
  o In 2013, the OVPRED assisted faculty members, staff and students to create both new businesses and minimum viable prototypes. Two of these projects have spun out of the AIME center into commercial ventures.
  o Spin-offs: In 2013, UA technologies commercialized included MagnnPro and ThruPore; both companies involved UA students and graduates and received federal support funds.
  o In 2013, the Bama Technology Incubator housed 8 companies. 2013 saw the addition of two new companies and two companies graduated from the incubator and moved to a permanent location in Tuscaloosa. A total of 31 jobs were created by companies housed in the Bama Technology Incubator in 2013.

• The University of Alabama has invested more than $25 million in the build out of the campus cyber infrastructure to support the research and academic mission of our University. This includes a major data center renovation, modernization and expansion of the campus network, the build out of continuity of operations capability, and a shared high-performance computing platform.

• MINT Cluster Hire program in 2008 funded 6 faculty members and one postdoctoral fellow along with $200K for instrument support and a summer program. In return, $9M in funded research over last 5 years. The program averaged 40 faculty members per year, over 100 publications per year, and a minimum of 4 patents granted/year.
  o A new cluster hire initiative is underway with a selection of a new program in late 2014.

• The Central Analytical Facility (CAF): A total of 239 hands-on instrument users were served with an increasing number of undergraduate users. In addition to quality graduate education this research infrastructure unit supports the research projects of a growing number of undergraduate researchers. Research groups that are currently using the CAF have more than $5 million in external research funding.