Among the best opportunities for future job growth are for occupations in the fields of Science, Technology, Engineering and Mathematics (STEM).

Occupations in STEM, which require education and training in one or more of these fields, make up more than one out of every 10 jobs in the United States. Moreover, the wages in these occupations are approaching nearly twice the U.S. average, according to the U.S. Bureau of Labor Statistics.

How is The University of Alabama helping to prepare students, including women and minorities, for future jobs in STEM?

The University of Alabama has a host of programs designed and run by faculty and staff who provide educational training, research opportunities, and mentoring to increase the participation of women and other underrepresented groups in STEM disciplines. At The University of Alabama, we teach students early about the excitement of STEM through our K-12 outreach programs and continue our efforts through the graduate student level, emphasizing the joy of research discoveries.

Here are a few examples of exciting highlights of people, programs and STEM opportunities at The University of Alabama, The Capstone of Discoveries Transforming the World!
DR. MONICA ANDERSON

Dr. Monica Anderson, UA associate professor of computer science, is co-director of the Distributed Research Experiences for Undergraduates program, designed to increase the number of women and underrepresented groups entering graduate studies in the fields of computer science and engineering. This program matches undergraduate women and underrepresented groups with a faculty mentor for a summer research experience at the faculty member’s home institution. It provides students who are considering graduate school with a close view of what it is like and also increases their competitiveness as an applicant for graduate admissions and fellowships.

Anderson, whose research interests include robotics, is a co-principal investigator for the Institute for African American Mentoring in Computing Sciences, or iAAMCS. It aims to increase the number of African-Americans receiving doctoral degrees in computing sciences, promote and engage students in teaching and training opportunities, and to add more diverse researchers into the advanced technology workforce.

DR. JEFF GRAY

Dr. Jeff Gray, professor of computer science, is a national leader in computer science education and is a member of Code.org’s Education Advisory Council. With several National Science Foundation grants, Gray has worked with the College Board and Google to craft a new Advanced Placement computer science course. He also trains high-school teachers to integrate computer science into technology courses and to teach the upcoming new AP computer science course. His efforts have helped expand computer science education in Alabama schools, including rolling out the new AP course to 50 high schools in Alabama where 46 percent of the students are female and/or from underrepresented groups. Gray also hosts an annual robotics competition for middle and high-school students and summer computer camps for similarly aged students.

ALABAMA ASTROBOTICS

An extra-curricular student project team, Alabama Astrobotics includes students from The University of Alabama and nearby Shelton State Community College. The team competes in NASA’s Robotics Mining Competition. In 2015, they won the national contest for the second time in six years. Recently, they partnered with a designated Title 1 school within the local school district to teach STEM concepts through hands-on activities in the classroom.

SITE PROGRAM

The Student Introduction to Engineering Summer Program (SITE) is designed to provide high-school juniors and seniors with an overview of engineering. The Minority Engineering Program director co-directs the summer program. Recently, SITE has averaged approximately 25 percent minority participation. The College of Engineering provides scholarship support for students from Sumter County, a rural area located in central Alabama (75% of the population is African American).
SOCIETY OF WOMEN ENGINEERS
The UA chapter of the Society of Women Engineers is a robust chapter that has earned national recognition. Enrollment is at an all-time high, and UA leads the nation with the most members selected as Outstanding Collegiate Members since 2009. In 2014, the chapter hosted the regional SWE conference, and it has twice hosted the national outreach efforts. In 2013 and 2015, the UA SWE chapter organized and hosted a day-long conference for hundreds of middle-school-aged girls. The conference exposed the girls to STEM concepts, and it engaged them in projects throughout the day.

STEM PATH TO THE MBA PROGRAM
The Culverhouse College of Commerce and Business Administration offers the STEM Path to the MBA. The program focuses on attracting high-quality undergraduate students majoring in the science, technology, engineering and mathematics disciplines. It is an innovative approach to engage students early on as undergraduates and employs nontraditional classroom methods to allow top students to complete the MBA in one additional calendar year. The purpose of the path is to provide high-achieving students with the business knowledge needed to successfully manage high-tech businesses. The program has been successful in attracting female students and engaging them in entrepreneurship experiences throughout their time at the University.

WISE (WOMEN IN STEM EXPERIENCE)
WISE, the Women in STEM Experience, grew out of the UA Graduate School’s Tide Together initiative that seeks to support women in STEM programs through mentorship and networking in the hopes of narrowing the existing gender gap in these studies and careers. Through the programs, first-year graduate students studying science and math related fields have the opportunity to be placed with a graduate student, faculty and alumni mentor to help them develop skills in professionalism and in their field of study.

WISE has created annual symposiums and invites the UA community and regional universities to meet with fellow scholars and professionals to learn how to better navigate science, math and related fields and graduate programs. WISE is actively seeking collaboration and involvement with other organizations who share the mission to promote women in STEM fields.

RURAL MINORITY SCHOLARS PROGRAM
The University of Alabama Rural Minority Scholars Program is a five-week summer program for recent high school graduates who plan to enter college the next academic year. The students live on The University of Alabama campus and take a general chemistry course; attend tutorials, seminars and field trips to rural medical facilities; and shadow African-American physicians from their hometowns. The objective of this program is to increase the number of minority students from rural Alabama who qualify for admission to medical school through the Rural Medical Scholars Program. The mission of the Rural Medical Scholars Program is to produce physicians for rural Alabama who are leaders in developing healthy communities. Established in 1996, that program is open
to college seniors and graduate students who plan to go to medical school and practice medicine in a rural area.

**UA LSAMP**

Multiple UA departments are participants in the LSAMP (Louis Stokes Alliance for Minority Participation) program. The LSAMP program is funded by the National Science Foundation with the objective to increase the number of STEM degrees (B.S., M.S. and Ph.D.) awarded to students from underrepresented minority groups. The University of Alabama became the lead institution for the LSAMP Program in Alabama, which is a 12-institution alliance. Undergraduate students who are seniors at one of the LSAMP alliance schools are eligible to apply. Students who are selected receive an annual stipend of $30,000 and remission of tuition and fees during their first two years in graduate study. Upon completion of their Master of Science degrees, students will continue their graduate education, supported through a Research Assistantship and/or Graduate Teaching Assistantship for three more years.

**GRADUATE DEAN’S MERIT AND DEAN’S DIVERSITY AWARDS & RECRUITING EXPO**

In 2013-2014, the College of Arts and Sciences’ Office of the Dean awarded six Dean’s Diversity Merit Awards and six Dean’s Merit Awards. These awards are designed to recruit and retain top graduate students and are in addition to any other graduate assistantship received. The College of Arts and Sciences also hosts a Graduate Recruiting Expo weekend focused on recruiting women and minorities into STEM programs. In its first year, GREX brought in 22 pre-identified, prospective graduate students to campus, 10 of which ultimately enrolled at UA.

**STEM ENTREPRENEURSHIP ACADEMY**

The STEM Entrepreneurship Academy works with teachers and students from urban and rural high schools in Alabama. The year-long program exposes students to STEM-related research topics, while introducing them to innovative and entrepreneurial concepts related to the STEM fields. Sponsored by the UA Division of Community Affairs and in partnership with the UA colleges of Arts and Sciences, Business, and Engineering, the program also permits each participating high school to select four to five students for participation in a five day intensive summer camp experience.

**BY THE NUMBERS**

Fifty-five percent of University of Alabama students are female, and 15.7 percent are from underrepresented groups. In 2014, 16 percent of the students graduating from the College of Engineering were female.

**THE UNIVERSITY OF ALABAMA**