
The Economic Impact of The University of Alabama in Huntsville

Current Economic, Employment, and Government Revenue Impacts

Final Executive Report (FY 09-10)

May 9, 2012



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UAH Economic Impact Study

UAH Annual Impact on the Alabama Economy



\$684.4 million in total economic impact generated by UAH in the state of Alabama.

7,773 in total jobs created and sustained by UAH in the state of Alabama.

\$35.0 million in tax revenue to state and local governments, including sales, property, and business tax payments.

\$43.1 million in state appropriations to UAH are leveraged to generate significant impact throughout the state.

UAH staff, faculty, and students generate more than **\$12.9 million annually** in charitable donations and volunteer services.

PROJECT OVERVIEW

In March 2011, Tripp Umbach was retained by the University of Alabama System to measure the economic, employment, and government revenue impacts of The University of Alabama in Huntsville's (UAH) current operations and research. The primary goal of the UAH economic impact study was to calculate the current (FY 2009-2010) business volume, employment, and government revenue impacts of UAH's operations on the state of Alabama.

UAH Economic Impact Study Overview

Study Period: Fiscal Year 2009-2010

Study Geography: State of Alabama

Methodology: American Council on Education (ACE): "Estimating the Impact of a College or University on the Local Economy."

METHODOLOGY EMPLOYED IN THE UAH ECONOMIC IMPACT STUDY

This economic impact analysis measures the effect of both direct and indirect business volume and government revenue impacts for UAH. The methodology employed in the calculation of these impacts is derived from the standard set of impact research tools developed by the American Council on Education (ACE) for the measurement of college and university economic impact.¹ The ACE-based methodology is well-established, having been

¹ Caffrey, John and Isaacs, Herbert, "Estimating the Impact of a College or University on the Local Economy," American Council on Education, 1971.

used in hundreds of impact studies throughout the United States. The ACE methodology employs linear cash-flow modeling to track the flow of institution-originated funds through a delineated spatial area.² For the UAH impact analysis, computerized spreadsheet models were developed for the University as a whole.

Economic impact begins when an organization spends money. Economic impact studies measure the direct economic impact of an organization's spending, plus additional indirect spending in the economy as a result of direct spending. Economic impact has nothing to do with dollars collected by institutions.

Total economic impact measures the dollars that are generated within the state of Alabama due to the presence of UAH. This includes not only spending on goods and services with a variety of vendors within the state, and the spending of its staff and visitors, but also the business volume generated by businesses within Alabama that benefit from UAH's spending. It is important to remember that not all dollars spent by a university remain in its home state. Dollars that "leak" out of the state in the form of purchases from out-of-state vendors are not included in the university's economic impact on the state. The multipliers utilized in this study are standard multipliers for public research universities in the United States, with the state multiplier being 2.3 for the statewide business volume impact and 2.5 for the employment impact.³

In completing this report, Tripp Umbach used data supplied by UAH and from Tripp Umbach's national databases developed over the years by conducting economic impact studies commissioned by a variety of prominent universities and medical schools throughout the country as a baseline. Key economic impact findings presented within the summary include the total current (FY 09-10) economic, employment, and state and local government revenue impact of UAH's operations.

² The ACE methodology is highly adaptable to different geographic scales. It is suitable for measuring impact on neighborhoods, municipalities, counties, states, regions, or nations.

³ Typically, multipliers for the operations of an organization are in the 2.0 to 4.0 range. The multipliers utilized in this study are derived from the in-depth research about the complex business activities of public research universities from the ACE-based methodology.

INTRODUCTION TO UAH

UAHuntsville offers 71 degree-granting programs that meet the highest standards of excellence, including 33 bachelor's degree programs, 23 masters' degree programs, and 15 Ph.D. programs through its five colleges — Business, Engineering, Liberal Arts, Nursing, and Science, as well as the School of Graduate Studies. UAH has some of the highest academic entry standards of any public university in Alabama. The average ACT of the freshman class of 2011 was 25.6.

The results presented in the UAH economic impact study are generated on an *annual* basis. It is important to note that the economic and employment impacts reported in this report represent the “fresh dollar” impact of UAH. Stated simply, if UAH were not located in the state, \$684.4 million in impact and over 7,773 jobs would not be generated.

UAH Fast Facts

- UAH has been classified in the “very high” research category by the Carnegie Foundation for the Advancement of Teaching, placing it among a select group of only 73 public universities in America.
- UAH consistently ranks among U.S. News & World Report's Tier 1 national universities.
- UAH was named as the 22nd best value for a college education in the nation, according to a 2010 report by USA Today.
- UAH ranks second in the state for return on your college investment, according to a Business Week report.
- UAH graduates earn the third highest mid-career salaries in the southeastern United States.
- UAH is listed as “very competitive” by Barron's Profiles of American Colleges, the only public university in Alabama to achieve this ranking.

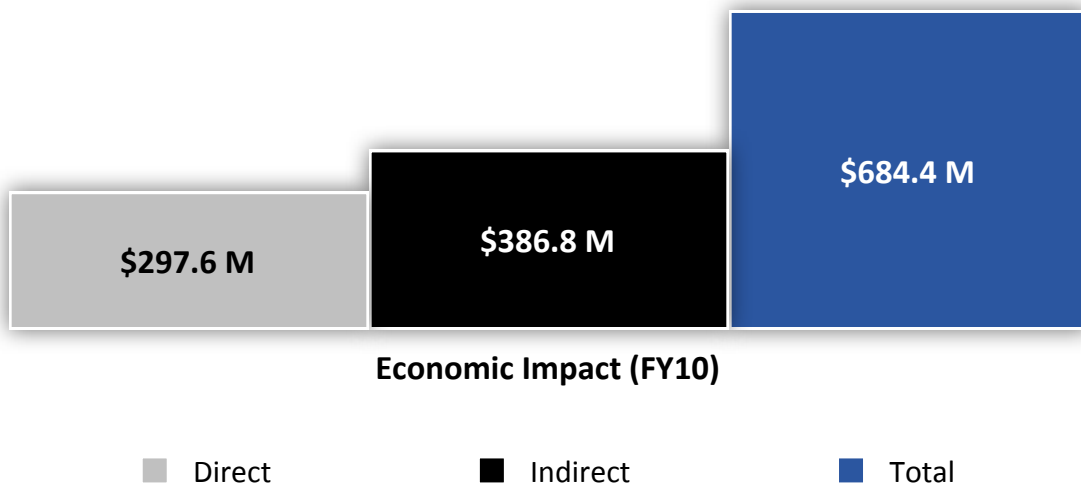
UAH BUSINESS VOLUME IMPACT

UAH is an economic engine, directly or indirectly affecting residents throughout the state of Alabama. It generates \$684.4 million annually in overall economic impact in FY 09-10. UAH affects business volume in the state of Alabama in two ways:

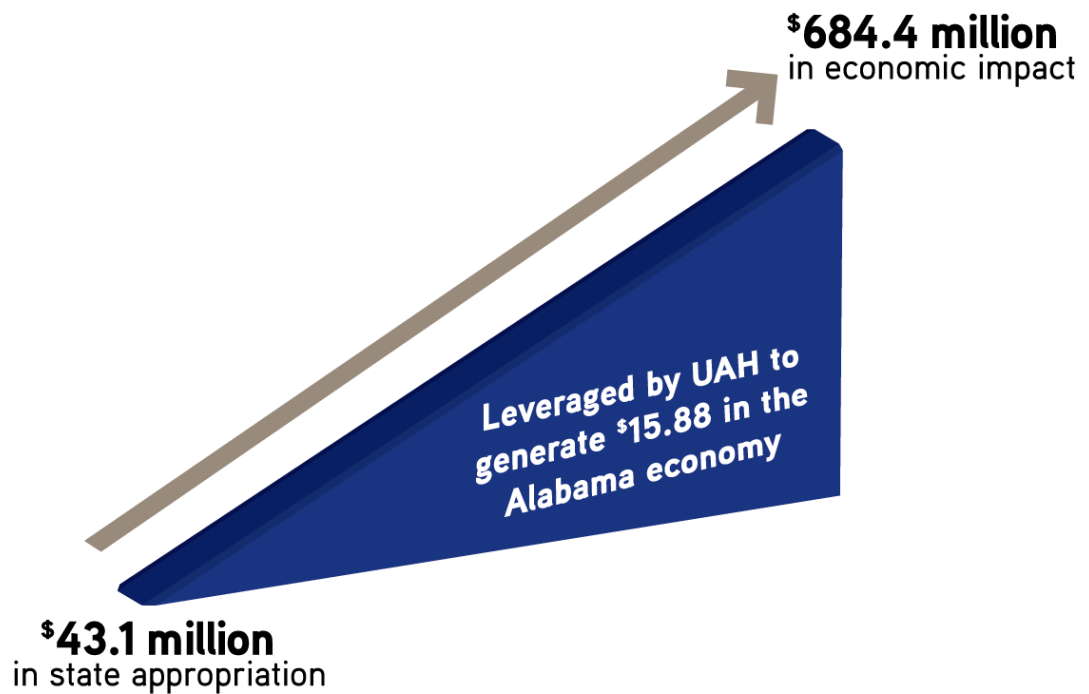
- 1) Direct expenditures for goods and services by the University, its employees, students, and visitors. This spending supports local businesses, which in turn employ local individuals to sell the goods and provide the services that University constituencies need.
- 2) Induced or indirect spending within state of Alabama. The businesses and individuals that receive direct expenditures re-spend this money within the state, thus creating the need for even more jobs.

As a result of expenditures on goods and services by the University, the overall economic impact of all of UAH's operations on the state of Alabama in FY 10 was **\$684.4 million** (\$297.6 million direct impact and \$386.8 million indirect).

Figure 1. Business Volume Impact of UAH (in millions)



In FY 09-10, UAH received \$43.1 million in appropriations from the state of Alabama. In order to put this state appropriation into context, for every \$1 appropriated by the state, UAH leverages this appropriation to generate an additional \$15.88 in the state's economy. UAH generates a significant economic impact in the Alabama economy relative to the amount of government support they receive.



STATE AND LOCAL GOVERNMENT REVENUE IMPACT

State and local government revenues attributable to the presence of UAH totaled \$35.0 million in FY 09-10 (\$3.6 million direct and \$31.4 million indirect).⁴ Furthermore, state and local governments throughout Alabama all received tax revenues that were University-related. Through its local spending, as well as its direct and indirect support of jobs, the presence of the University stabilizes and strengthens the local and statewide tax base. **UAH is an important part of the of state and local economy — generating revenue, jobs, and spending.**

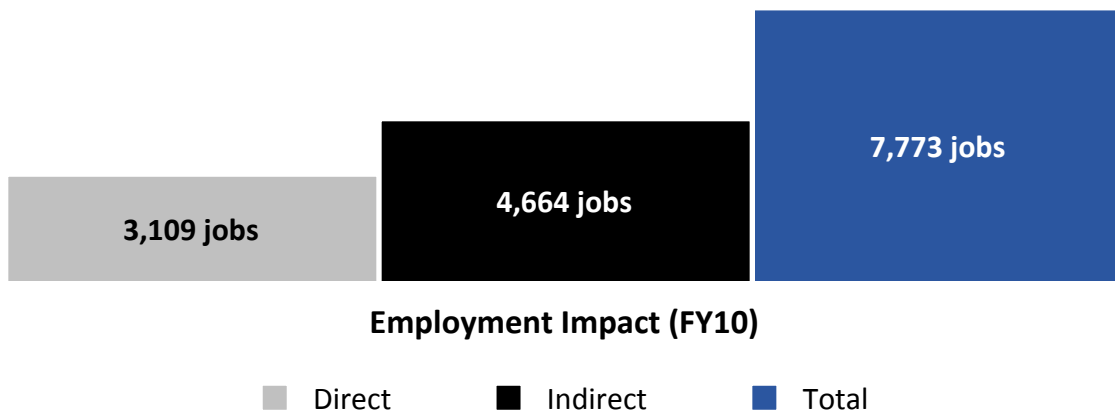
⁴ Direct taxes include: payroll, income tax, sales, property, and unemployment taxes.

UAH EMPLOYMENT IMPACT

Both directly and indirectly, UAH supported **7,773 jobs** in the state of Alabama. The University directly employed 3,731 faculty, staff, and students during FY 09-10.

These jobs include not only direct employment by the University but also indirect jobs created for supply and equipment vendors, contractors, and laborers for the construction and renovation of university facilities, and jobs created in the community at hotels, restaurants, and retail stores in support of UAH’s workforce and its visitors. These indirect jobs (4,664 jobs) are in support of more than 3,109 Alabama residents who are employed directly by the University. In addition, the population of the University community — and the workers who support that community — also create a need for additional employees in governmental and service facilities, such as schools and daycare facilities.

Figure 2. Employment Impact of UAH (jobs)



UAH RESEARCH ECONOMIC IMPACT





Research at The University of Alabama in Huntsville is more than the pursuit of basic knowledge — it is the application of that knowledge as we strive to enhance competitiveness by developing, applying, and transferring research into the marketplace to enhance the economic development of our state and nation.

Research has grown from \$65 million in 2008 to an anticipated \$82 million for 2010. In 2009, the university received its largest grant in history — \$78 million over five years. Research is conducted within the individual colleges or through 15 independent research centers,

laboratories, and institutes. Major interdisciplinary research thrusts include: applied optics; earth system science; information technology; management of science and technology; mechanical and aerospace engineering; modeling and simulation; nano devices; space plasmas and astrophysics; space propulsion; structural biology; systems engineering; and robotics.

Research expenditures at UAH continue to grow while contributing to the academic mission and to the scientific literature. During the past five years, UAH researchers have performed over \$200 million in contracts and grants, supported 700 graduate students, received 11 patents and created almost \$1 million in licenses and royalty fees. These results have been possible because of the close partnership between the colleges and the research centers, and the collective ability to respond to the changing needs and priorities of our sponsoring agencies.

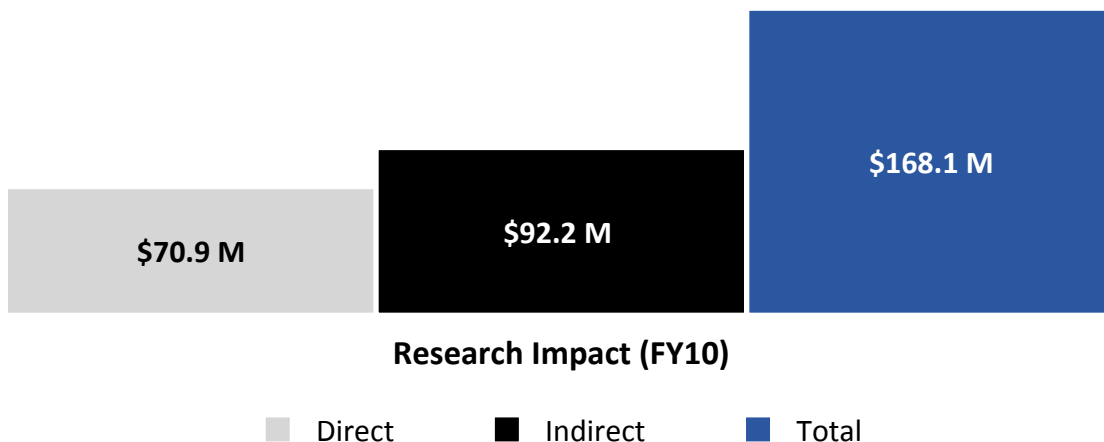
UAH has extensive partnerships with governmental agencies, including NASA's Marshall Space Flight Center, U.S. Army's Aviation and Missile Command, U.S. Army's Strategic Missile and Defense Command. However, UAH's partnerships extend beyond the bounds of governmental laboratories. UAH builds competitive alliances of technical focus that benefit all of our partners.

-  UAH has the largest research expenditures in the nation (more than \$83 million in 2009-10) compared to all other public universities of its size (approximately 7,700 students.) These expenditures rank UAH in the top 100 of the nation's public research universities.
-  UAH ranks second to Georgia Tech in annual research expenditures as a percentage of total budgetary expenditures when compared to the 31 universities in the Southern Universities Group.
-  Four UAH research disciplines rank in the top 50 in the nation in federal research funding, according to the National Science Foundation.
-  UAH's earth systems science program was in the top 10, atmospheric science was 19th in national funding, computer science at 20th, mechanical engineering at 26th, and electrical engineering at 49th.

- UAH is the first university in the United States to have Oak Ridge National Laboratory operate offices on a college campus. Oak Ridge has formal affiliations with 103 universities across the nation and around the world. Savannah River National Laboratory and the Y-12 National Security Complex also have campus offices.
- UAH is partnered with MIT, The Smithsonian Astrophysical Observatory, Los Alamos National Laboratory, NASA Marshall Space Flight Center, and the University of California-Berkeley to win part of a \$57 million scientific experiment on NASA's \$1 Billion Solar Probe Mission.
- UAH was among 17 research organizations and universities in the U.S. invited to join the National Systems Engineering Research Center created by the Department of Defense and National Security Agency.
- UAH consistently ranks among the top schools in the nation in NASA research funding to universities.
- UAH's College of Business was ranked in the top 10 in the U.S. by the National Science Foundation for contracts and grants.

UAH annually attracts millions of dollars to the state in government- and industry-sponsored research and projects. UAH's \$78.8 million dollars in sponsored research translates into a significant economic impact. **The current economic impact of UAH's research engine is \$168.1 million (\$70.9 million direct and \$92.2 million indirect).**

Figure 3. Economic Impact of UAH Research (in millions)



The University's research operations make tangible and quantifiable economic contributions. Along with creating jobs for research staff and support personnel, UAH scientists are contributing to new product development and technology commercialization. Knowledge and technology transfers have helped to start commercial ventures that promote entrepreneurship, economic development, and job creation.

University-based research has proved to have a substantial and measurable effect on business formation and economic development. Research performed by Adam Jaffe at Harvard found that "...a state that improves its university research system will increase local innovation both by attracting industrial R&D and augmenting its productivity."

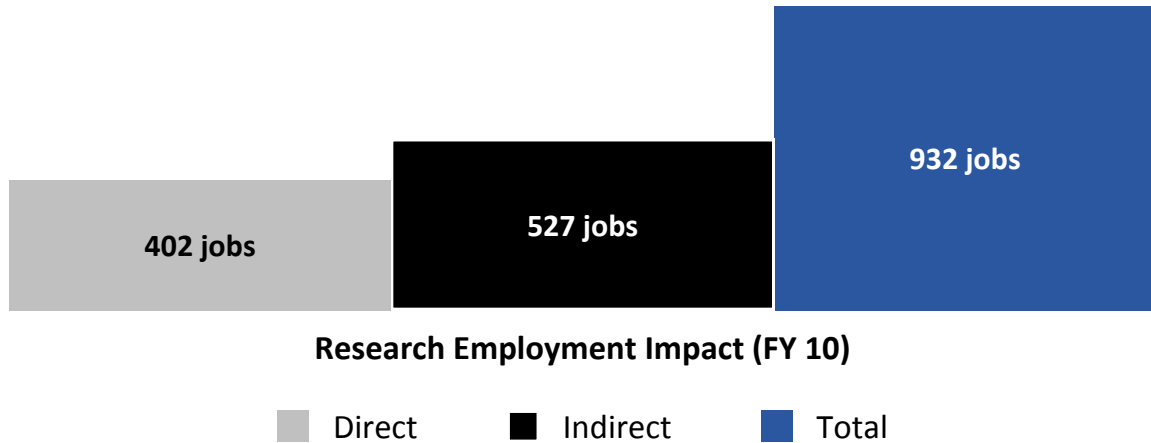
Source: Jaffe, Adam B., "Real Effects of Academic Research," American Economic Review, March 1991, pp. 957-970.

UAH RESEARCH EMPLOYMENT IMPACT

In FY 09-10, the \$78.8 million that the University received for sponsored research and other sponsored programs supported 932 jobs. These jobs included not only direct employment by the University of research professionals (405 direct jobs), but also indirect jobs created for supply and equipment vendors, contractors, and laborers for the construction and renovation of laboratory facilities, administrators and managers who support the research infrastructure, and jobs created in the community by the disposable income of the scientific workforce.

If the University continues to grow its strong faculty base, it will continue to attract, and consequently spend, increasingly higher levels of research dollars, and the number of jobs supported will continue to grow.

Figure 4. Employment Impact of UAH Research (in jobs)



RESEARCH COMMERCIALIZATION



Since 2005, UAH has received over \$19.0 million in royalty income from technologies developed at the University. Numerous Alabama companies have been created as a result of research conducted at the University. The list of companies below are all based in the state of Alabama and employ a total of 59 people.

TerraSpace	Gene Capture
iXpressGenes, Inc	Stronghold Defense
Alamanda Polymers	Dawn Research
Halo Monitoring	Rogue IP
InQ Biosystems	Synergia
Morcam, Inc	AT Biosciences
Southern Cord	Decision Innovation

UAH COMMUNITY BENEFITS

UAH has for decades partnered with the city of Huntsville to improve education, healthcare, and quality of life throughout the community and state. Every individual school within UAH is engaged in important service programs, and service-learning is deeply engrained across UAH's curricula. UAH also remains the economic engine of Huntsville and the state of Alabama.

UAH's total impact on the state of Alabama goes far beyond the annual economic impact presented earlier in this report. Tripp Umbach estimates that **UAH faculty, staff, and students who received their education and training at UAH generate more than \$12.9 million annually in charitable donations and volunteer services.** These benefits (in addition to the \$684.4 million annual impact) include:

-  In 2010, UAH faculty, staff, and students donated \$2.9 million to local charitable organizations.
-  UAH faculty, staff, and students provide a generous amount of hours in volunteer services. The economic value of such services is estimated at nearly \$10.0 million.⁵

⁵ Tripp Umbach has conducted survey research at many other universities where students, faculty, and staff provide estimates on spending patterns, including information on the number of volunteer hours and charitable donations in which they provide. Tripp Umbach utilized this research to make conservative assumptions about UAH's volunteerism and charitable giving. Tripp Umbach used a conservative assumption of \$20.10 per hour to calculate the value of volunteer services. This amount was originally calculated independently by the Points of Light Foundation.

Appendices

APPENDIX A: DEFINITION OF TERMS

Study Year	Fiscal Year 2009-2010 (FY 09-10)
Total Economic Impact	The total economic impact of an institution includes both the direct impact and the indirect impact generated in the economy as a result of the institution. Direct impact includes items such as institutional spending, employee spending, and spending by visitors to the institution. Indirect impact, also known as the multiplier effect, includes the re-spending of dollars within the local economy.
Total Business Volume	Total sales receipts generated within a given geographic area (state of Alabama). Business volume includes wholesale, retail, and service sector spending, as well as value added in the manufacturing process.
Multiplier Effect	The multiplier effect is the additional economic impact created as a result of the institution's direct economic impact. Local companies that provide goods and services to an institution increase their purchasing by creating a multiplier.
Direct Tax Payments	Direct tax payments made by an institution to a unit of government.
Indirect Tax Payments	Government revenue that is collected by governmental units in addition to those paid direct by an institution, including taxes paid directly by employees of the institution, visitors to the institution, and vendors who sell products to the institution.
Direct Employment	Total part-time and full-time employees at UAH (jobs).
Indirect Employment	Indirect employment is the additional jobs created as a result of the institution's economic impact. Local companies that provide goods and services to an institution increase their number of employees as purchasing increases, thus creating an employment multiplier.

APPENDIX B: METHODOLOGY

Impact on State Business Volume and Government Revenue

Businesses operating within Alabama in the wholesale, retail, service, and manufacturing sectors benefit from the direct expenditures of the institution and its faculty, staff, students, and visitors on goods and services. In addition, many of these “direct” expenditures are re-circulated in the economy as recipients of the first-round of income re-spend a portion of this income with other businesses and individuals within the state. This re-spending is termed the “multiplier” or “indirect” effect.

This economic impact analysis measures the effect of both direct and indirect business volume and government revenue impacts. The methodology employed in the calculation of these impacts is derived from the standard set of impact research tools developed by the American Council on Education (ACE) for the measurement of college and university economic impact.⁶ The ACE-based methodology is well-established, having been used in hundreds of impact studies throughout the United States. Tripp Umbach has previously used the same methodology in Pennsylvania in a multi-campus university study of the impacts of medical schools.⁷

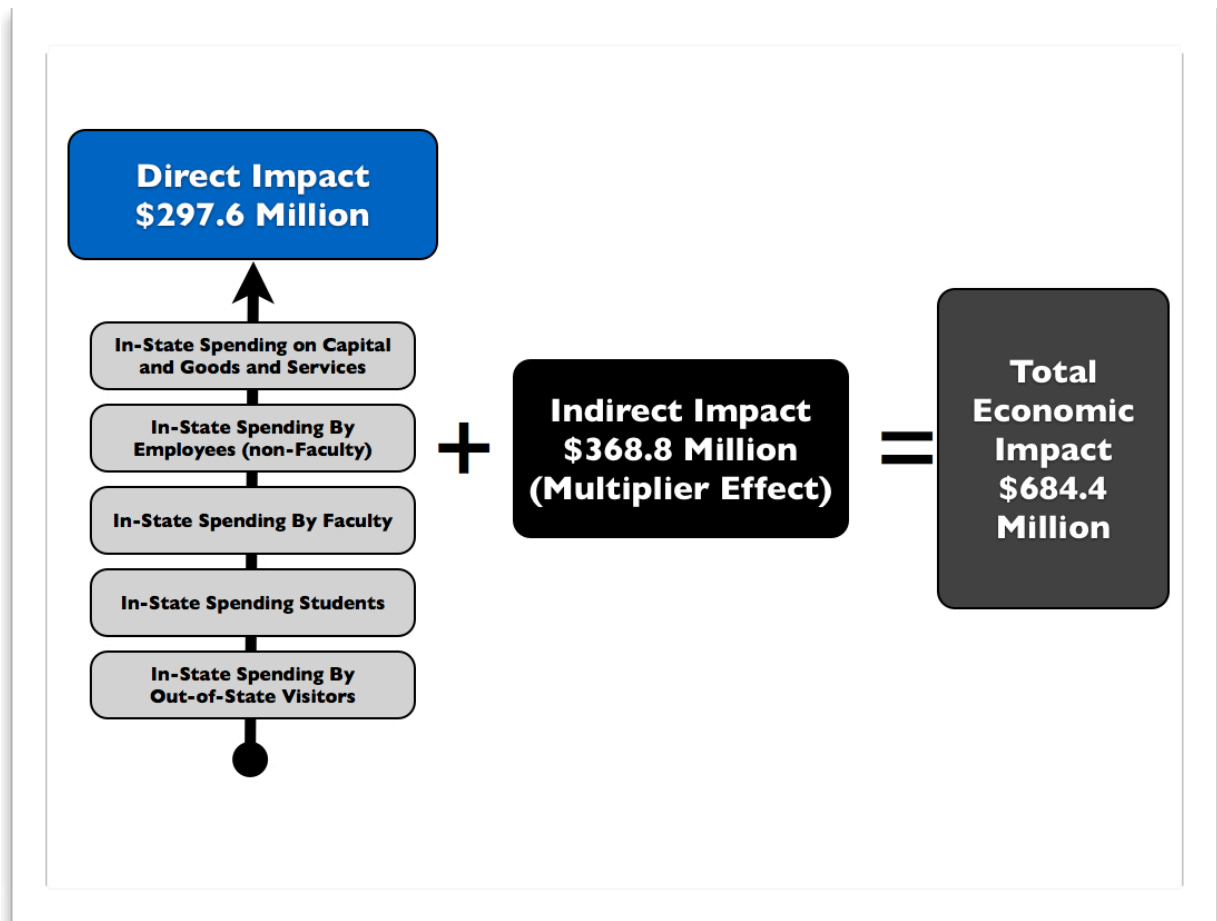
The ACE methodology employs linear cash-flow modeling to track the flow of institution-originated funds through a delineated spatial area.⁸ For the UAH impact analysis, computerized spreadsheet models were developed for the University as a whole and for each of the locations of the University, with the models measuring impact on the state economy

⁶ Caffrey, John and Isaacs, Herbert, “Estimating the Impact of a College or University on the Local Economy,” American Council on Education, 1971.

⁷ Tripp Umbach & Associates, Inc., “The Economic Impact of Medical Centers of Excellence on the State Of Pennsylvania.” Harrisburg, Pennsylvania The Economic Development Partnership Taskforce on Medical Centers of Excellence, 1995. Pennsylvania academic medical centers sponsoring the study included the Allegheny Health Education and Research Foundation (AHERF: incorporating Hahnemann University and the Medical College of Pennsylvania), Penn State Hershey Medical Center, the University of Pennsylvania Health System, University of Pittsburgh Medical Center, Thomas Jefferson University, and Temple University.

⁸ The ACE methodology is highly adaptable to different geographic scales. It is suitable for measuring impact on neighborhoods, municipalities, counties, states, regions, or nations.

and government revenues. The figure below shows the general components of the impact models used for the UAH study.



By using this economic impact model, the Tripp Umbach research team has been able to provide UAH with a detailed quantification of the total direct and indirect impact of the University on the economy of Alabama. The impact models provide measures of business volume and state government revenues allocable to the University, together with breakouts of the individual categories of spending that comprise the total impact (e.g., institutional capital spending, student spending, faculty spending, etc.).

Employment Impact

The research reported here measures the direct employment impact of the University. In addition, the research quantifies the indirect employment generated at in-state businesses by expenditures emanating from the university. An employment multiplier of 2.5 was generated

by Tripp Umbach for the UAH project. The multiplier for UAH is comparatively higher due to the large amount of out-of state visitors and research grants and the impact of out-of-state students and their visitors.

Data Sources

As noted above, this research project closely follows the ACE methodology for the performance of impact analysis for a higher education institution. The methodology requires that a university supply detailed information related to expenditure levels and geographic location of expenditures, together with staffing and other related economic information. The main sources of data used in the UAH economic impact study were:

Data Supplied by UAH: The majority of information required for the analysis was provided to Tripp Umbach by UAH directly. Tripp Umbach developed a customized data collection form which was distributed to each respective department for completion and analysis.

Secondary-Sourced Data: Census data from the economic census, together with Bureau of Labor Statistics information, were required for completion of the models. Tripp Umbach gathered budgetary information from UAH to facilitate the modeling of government revenue impacts allocable to the University. To complete the economic impact models, Tripp Umbach used student, faculty, and staff spending data from primary data and assumptions from other studies completed for similar universities and other recent projects throughout the country.

APPENDIX C: STATE OF ALABAMA ECONOMY OVERVIEW

The state has heavily invested in aerospace, education, health care, and banking, and various heavy industries, including automobile manufacturing, mineral extraction, steel production and fabrication. Alabama's agricultural outputs include poultry and eggs, cattle plant nursery items, peanuts, cotton, grains such as corn and sorghum, vegetables, milk, soybeans, and peaches. Alabama's industrial outputs include iron and steel products (including cast-iron and steel pipe); paper, lumber, and wood products; mining (mostly coal); plastic products; cars and trucks; and apparel. Also, Alabama produces aerospace and electronic products in the Huntsville area where the NASA George C. Marshall Space Flight Center and the U.S. Army Aviation and Missile Command are located (headquartered at Redstone Arsenal).

Located at the southern edge of the Appalachian Mountains, Huntsville is a national center of aerospace and high technology research and development. It is home to NASA's Marshall Space Flight Center, and major U.S. Army research and development centers at Redstone Arsenal including the U.S. Army Aviation and Missile Command (AMCOM), and the U.S. Army Space and Missile Defense Command (SMDC). UAHuntsville is the anchor tenant in Cummings Research Park, the second largest research park in the United States and home to more than 225 high technology and research companies.

Much of the growth in the industrial sector of the economy was due to Alabama's rapidly expanding automotive manufacturing industry. Since 1993, the automobile industry has generated more than 67,800 new jobs in the state. Alabama currently ranks fourth in the nation in automobile output.

Comparisons to Other Industry Segments in State of Alabama

According to an analysis completed by the U.S. Bureau of Labor and Statistics published in December 2010, the top three employment clusters in the state of Alabama are: 1) government, 2) trade, transportation, and utilities, and 3) manufacturing.⁹ The table below profiles the employment numbers by job type in the state of Alabama.

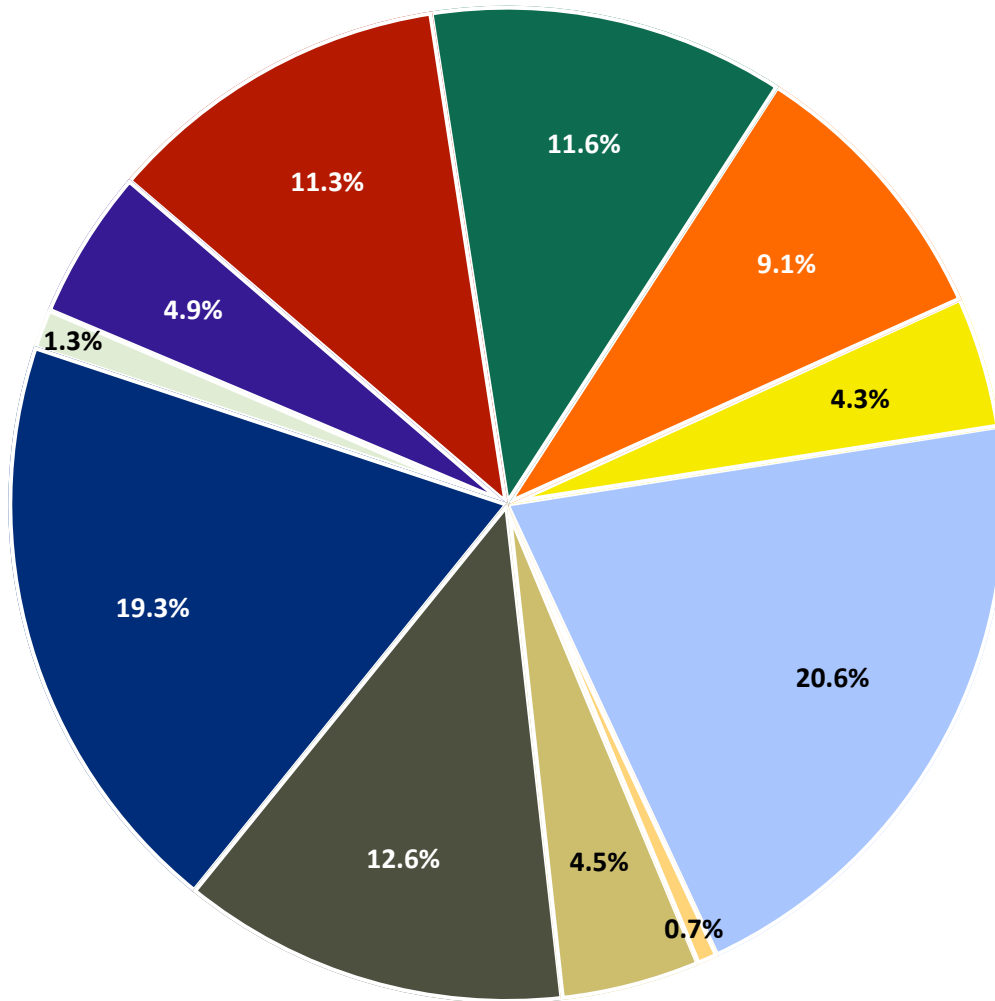
Alabama State Economy (December 2010)	
Labor Force Data*	
Civilian Labor Force	2,114,700
Employment	1,921,500
Unemployment	193,200
Unemployment Rate	9.1%
Non-Farm Wage and Salary Employment**	
Total Non-Farm	1,866.0
Mining and Logging	12.2
Construction	84.1
Manufacturing	235.0
Trade, Transportation, and Utilities	359.7
Information	23.8
Financial Activities	91.3
Professional & Business Services	210.4
Education & Health Services	216.2
Leisure & Hospitality	169.9
Other Services	79.5
Government	383.9
<i>*Number of persons, in thousands, seasonally adjusted.</i>	
<i>**Number of jobs, in thousands, seasonally adjusted.</i>	

⁹ Source: Bureau of Labor and Statistics, December 2010.

The graphic below depicts the percentage of jobs by sector in the state of Alabama.

- Mining + Logging
- Trade, Transportation + Utilities
- Professional + Business Services
- Other Services
- Construction
- Information
- Education + Health Services
- Government
- Manufacturing
- Financial Activities
- Leisure + Hospitality

Percentage of Jobs by Sector in the State of Alabama, December 2010



APPENDIX D: FAQs REGARDING ECONOMIC IMPACT ASSESSMENT

What is economic impact?

Economic impact begins when an organization spends money. Economic impact studies measure the direct economic impact of an organization's spending plus additional indirect spending in the economy as a result of direct spending. Economic impact has nothing to do with dollars collected by institutions, their profitability, or even their sustainability, because all operating organizations have a positive economic impact when they spend money and attract spending from outside sources.

In this report, direct economic impact measures the dollars that are generated within the state of Alabama due to the presence of the UAH. This includes not only spending on goods and services with a variety of vendors within the state, and the spending of its staff and visitors, but also the business volume generated by businesses within Alabama that benefit from UAH's spending. It is important to remember that not all dollars spent by a university remain in its home state. Dollars that "leak" out of the state in the form of purchases from out-of-state vendors are not included in the university's economic impact on the state.

The total economic impact in this analysis includes the "multiplier" of spending from companies that do business with UAH. Support businesses may include lodging establishments, restaurants, construction firms, vendors, temporary agencies, etc. Spending multipliers attempt to estimate the ripple effect in the state economy where the spending occurs. For example: Spending by UAH with local vendors provides these vendors with additional dollars that they re-spend in the local economy, causing a "multiplier effect."

What multipliers were used in this study?

Tripp Umbach uses economic impact (also referred to as business volume impact) multipliers recommended by the American Council on Education. The indirect impacts represent the re-spending which takes place in the study areas. The multipliers utilized in this study are based upon research conducted by Caffrey and Isaacs in 1971, and are appropriate for major research universities.

Economic Impact Multipliers: State business volume multiplier = 2.3.

What methodology was used in this study?

The methodology employed in the calculation of the impact of UAH was derived from the standard set of impact research tools developed by the American Council on Education (ACE) for the measurement of college and university economic impact. The ACE-based methodology is well-established, having been used in hundreds of impact studies throughout the United States. The ACE methodology employs linear cash-flow modeling to track the flow of institution-originated funds through a delineated spatial area.

What is employment impact?

Employment impact measures the direct employment (staff, faculty, administration) plus additional employment created in the economy as a result of the economic impact of UAH.

Indirect employment impact refers to other employees throughout the region that exist because of UAH's economic impact. In other words, jobs related to the population — city services (police, fire), employees at local hotels and restaurants, clerks at local retail establishments, residents employed by vendors used by UAH.

The approximate ratio of direct to indirect state employment for UAH is 1 to 2.5. This is a much stronger ratio than other industries, which is typically 1 indirect job for every 1 direct job.

How is the tourism impact of an institution measured?

Universities are by nature major tourism destinations. Students, faculty, and staff visit universities on a regular basis for conferences and meetings. Parents and friends visit students frequently and the general public travels to universities for sporting events, concerts, and cultural events. The economic impact models created by Tripp Umbach for UAH calculate the net impact of spending within the state of Alabama from visitors from outside of the state. The tourism impact of a major university represents hundreds of millions of dollars annually in the flow of “fresh” dollars, dollars attracted from out-of-state, into the state's economy. The models do not include spending by visitors within Alabama who travel to UAH.

What is the difference between direct and indirect taxes?

Direct tax dollars include sales taxes and net corporate income taxes paid directly by the institution to the state, while indirect taxes include taxes paid to the state by vendors that do business with UAH.

Is this a one-time impact or does the impact repeat each year?

The results presented in the UAH economic impact study are generated on an annual basis. The economic impact in future years can either be higher or lower based on number of students, capital expansion, increases in external research, and/or state appropriations.

What types of economic impacts are typically presented in a comprehensive economic impact report?

There are three standard measures that institutions use when measuring and communicating their economic impact:

1. Direct spending: How many direct dollars spent annually by the university, its employees, and its visitors that remain in the state of Alabama.
2. Indirect spending: How many direct dollars are spent annually by businesses that receive money from UAH within the state of Alabama.

What are Tripp Umbach's qualifications to perform an economic impact study for UAH?

Tripp Umbach is the national leader in providing economic impact analysis to leading health care organizations, universities, and academic medical centers. We have completed more than 150 economic impact studies over the past 20 years for clients such as The Pennsylvania State University, The Ohio State University, The University of Iowa, The University of Minnesota, The University of Washington, Mayo Clinic Rochester, Cleveland Clinic, University of Florida Shands HealthCare, the University of North Carolina Hospitals, the University of Pennsylvania Medical Center, the University of Pittsburgh Medical Center, and the Ohio State University Medical Center.

Tripp Umbach recently finished the fourth national study of all 125 medical schools and 400 teaching hospital affiliates for the Association of American Medical Colleges. Tripp Umbach

has completed statewide studies for multiple institutions in Ohio, New York, Pennsylvania, Virginia, South Carolina, Wisconsin, and Minnesota. Finally, our firm has completed economic impact studies at the metropolitan level in Boston, Pittsburgh, Philadelphia, and Chicago.