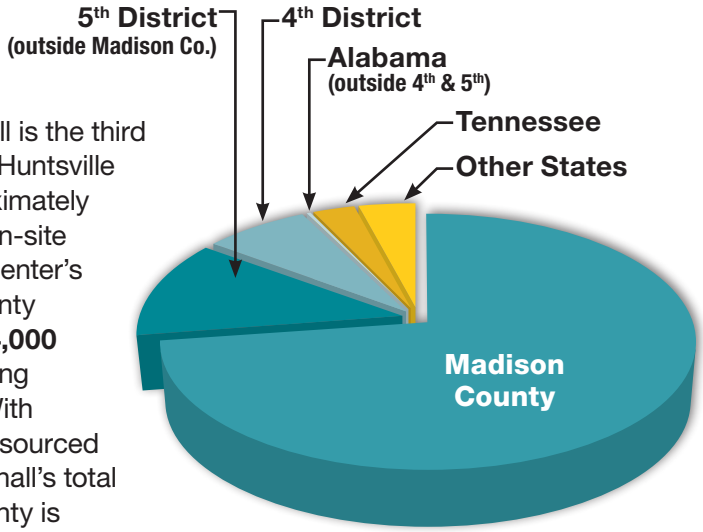
economic impact

Marshall's economic Impact

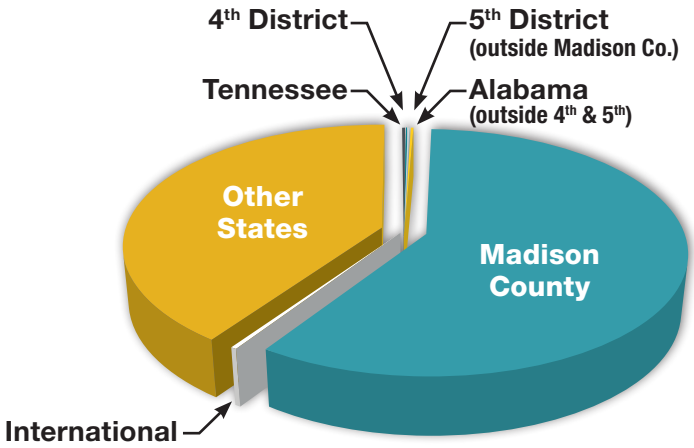
As Marshall Space Flight Center delivers on NASA's bold space missions, it infuses millions of dollars into research and development. This drives an innovation-based economy in Alabama and across the U.S. From the dollars flowing into institutions for research and higher education, to well-paying jobs in the aerospace and technology sectors, Marshall has a significant impact on the region and the nation.

Locally, Marshall is the third largest employer in the Huntsville metro area, with approximately 6,000 employees and on-site contract workers. The center's activity in Madison County generates more than **14,000 jobs** and a corresponding $1.1 billion in income. With $1.2 billion in contracts sourced within the county, Marshall's total impact in Madison County is **$2.5 billion**.



Marshall Employees and Associated Labor Income Totals $354 million.

Marshall Procurement Totals $1.9 billion.



In Alabama's 5th Congressional District,

Marshall is responsible for about **16,000 jobs** and contributing more than $62 million in state and local tax revenues annually. The total economic impact in the 5th District is **$2.8 billion**, with 43% resulting from SLS program activities.

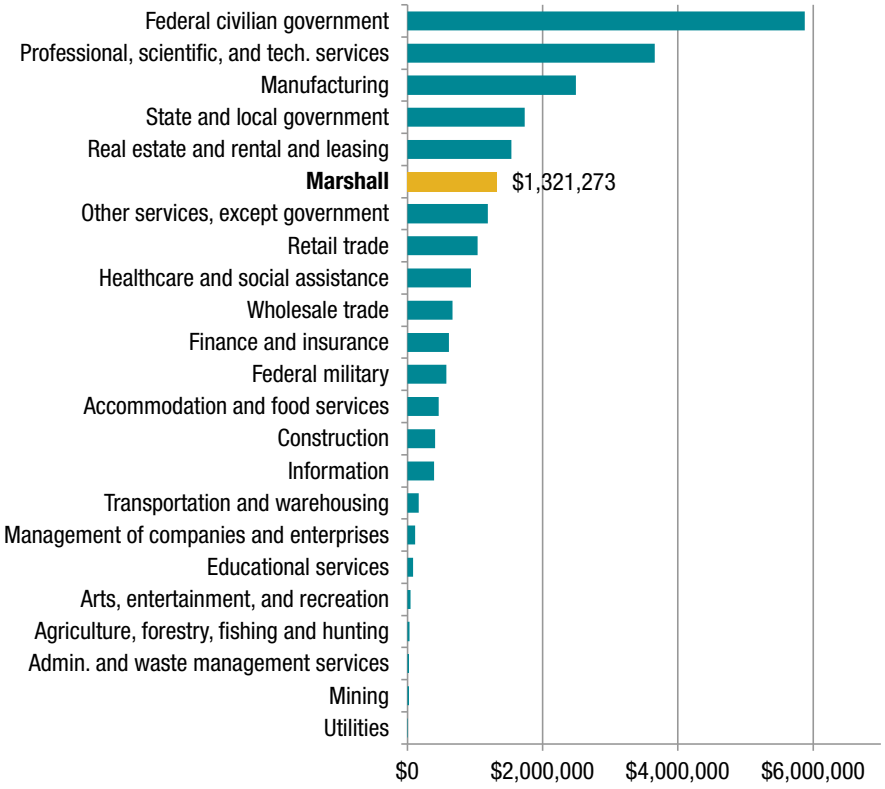
In Alabama's 4th Congressional District,

Marshall accounts for **319 jobs**, approximately $30 million in labor income, and $1.3 million of state and local tax revenues each year. The total economic impact in the state's 4th District is **$132.2 million**.

Marshall's output in comparison to top industry sectors

In 2013, Madison County's gross product was $22 billion. With more than $1.3 billion of local value added, Marshall constituted **6% of Madison County's gross product** in that year. This chart shows how Marshall's value added would rank among the major economic sectors in Madison County in 2013 according to gross product. Marshall's share of gross product ranks among the top ten sectors and exceeds the share of many important sectors including retail trade, healthcare, and finance and insurance.

Marshall Value Added Compared to the Gross Product of Major Economic Industry Sectors in Madison County (thousands)



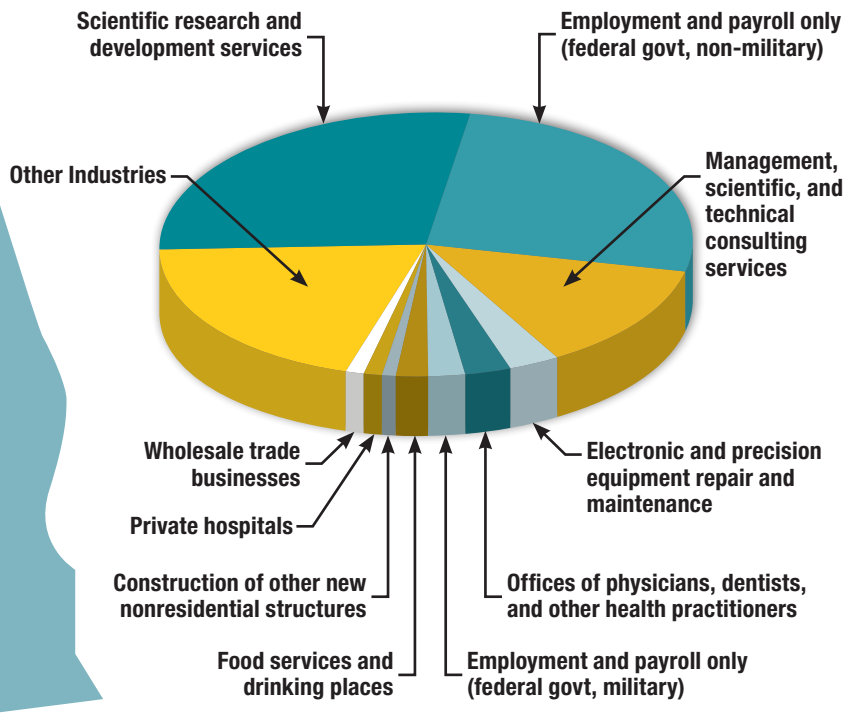
*The economic impact analysis presented here is based on research conducted by the University of Illinois – Chicago: The Nathalie P. Voorhees Center for Neighborhood and Community Improvement:

Across Alabama,

the total employment impact from Marshall's activities is nearly **20,000 jobs**. Marshall's total economic impact on the state is **$3.3 billion**. This impact is greater than the economic output of the entire agricultural industry, including the hunting and fishing industries.

In terms of labor income, Marshall's impact in Alabama was strongest in the technical industries, including Scientific R&D; Management, Scientific and Technical Consulting Services; and Electronic and Precision Equipment. Besides science and technology areas, the medical industry is the most impacted, with more than $46 million flowing into physician offices and private hospitals across the state.

Ten Most Impacted Industries by Labor Income in Alabama



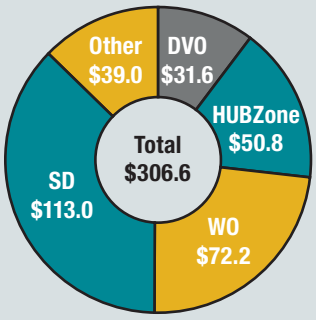
The industry most impacted by labor income in Alabama is Scientific R&D. As of 2011, the average employee compensation in this industry was more than $72,000. That is 170% of the average compensation across Alabama.

Tennessee

is home to 80 Marshall civil service employees. Combined with contracting activity in the state, Marshall supports about **170 jobs** and $13.4 million in labor income in Tennessee annually, generating nearly $589,000 in state and local tax revenues. The total economic impact in Tennessee for FY13 was **$34.7 million**.

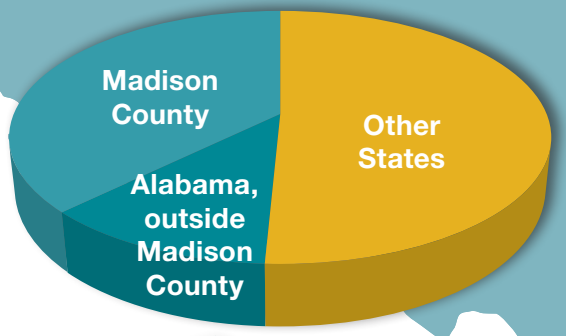
FY13 Small Business Contracts Distribution

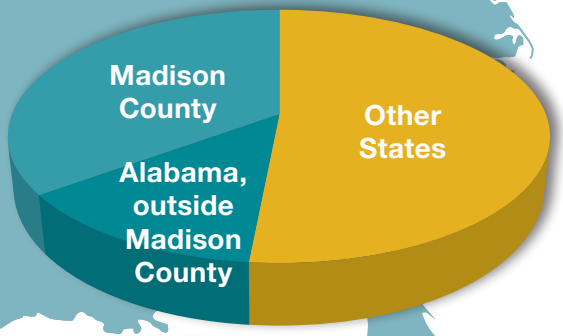
Nationally, Marshall supports small business with more than $306 million in contracts:



Across the nation, for every civil service job at Marshall, nearly 14.2 full-time-equivalent jobs are generated, totaling more than **40,000 jobs**. The center generates an estimated $808 million in federal, state, and local tax revenues annually, and has a total economic impact of **$6.73 billion**.

Total Economic Impact Distribution





$6.7 billion

40,000+ jobs

The Michoud Assembly Facility is located in New Orleans East and is managed by Marshall. Michoud's 832 acres and **3.8 million square feet** of infrastructure incorporates rail access, close proximity to Interstate highways, and a deep-water port with access to the Mississippi River and the Gulf of Mexico. The facility also contains one of the world's largest manufacturing plants with 43 acres under one roof.

NASA has used this facility to manufacture the Apollo program's Saturn rockets, the external tanks that boosted the space shuttle's 135 flights, and is now used for building elements of the Space Launch System.

Space not currently in use by NASA is leased out under management by Jacobs Technology to tenants such as the following:

- U.S. Department of Agriculture's National Finance Center
- U.S. Coast Guard Integrated Support Command
- Department of Defense Contract Auditing Agency and Contract management Agency
- Lockheed Martin Corporation
- Boeing Space Operations
- Blade Dynamics

The total impacts from NASA and the activities of firms operating at Michoud in 2010 may be viewed as a representative estimate of Michoud's annual recurring impacts on business sales, household earnings, jobs and taxes.

NASA spending in Louisiana

- $1 billion since 2009; $95 million in FY 2013*
- NASA's Michoud Assembly Facility brings 3,600 jobs to the New Orleans area.

*Source: NASA Acquisition Internet Service (NAIS) data

SLS impact

Space launch System

Designed in Alabama, **Built** Around the Nation, **Headed** Toward Mars

Marshall manages the Space Launch System (SLS), an entirely new capability for taking humans and science missions beyond Earth orbit. Marshall and the SLS program support tens of thousands of jobs, creating a significant economic impact to the full spectrum of industries from manufacturing to food service.

Headed Toward Mars

NASA's SLS is an advanced launch vehicle for a new era of exploration beyond Earth's orbit. The world's most powerful rocket, SLS will launch astronauts on missions into deep space and eventually to Mars, while providing an unrivaled capability for robotic scientific missions and other payloads. With the tenets of safety, affordability, and sustainability in mind, NASA is building the versatile SLS to carry the Orion spacecraft, as well as important cargo, equipment, and science experiments.

Within only two years of the official announcement of the SLS architecture, NASA completed the preliminary design of the Space Launch System and moved into production of the vehicle. The program continues to make rapid progress toward being ready for its first launch in 2017.

With unparalleled payload mass and volume capability and unmatched energy to speed robotic missions through space, SLS will be the most powerful rocket in history and is designed to be flexible and evolvable, to meet a variety of crew and cargo mission needs.

Economic Impact

Nationwide

- The total economic impact of the SLS Program is **$4.29 billion invested** across the nation.
- For every SLS job, at least a corresponding **26 full-time-equivalent jobs** are supported in the U.S. economy.
- SLS generates more than **25,000 jobs nationwide**, and contributes nearly half a billion dollars in tax revenues throughout the U.S. annually.
- Approximately **60% of all Marshall impacts** on the national level are due to the SLS program.

Alabama

- Across Alabama, more than **8,600 jobs** result from the SLS Program.
- The total impact of the SLS Program in Alabama is nearly **$1.4 billion**.

Designed at Marshall

The Space Launch System Program Office based at Marshall is implementing innovative solutions to deliver a powerful, versatile, and capable new rocket for exploration in a way that is affordable for the nation. With a streamlined management structure, an architecture designed to leverage proven systems, and hands-on efforts to push the envelope in manufacturing, the Program continues to look for ways to make the most of the nation's investment in this vehicle.

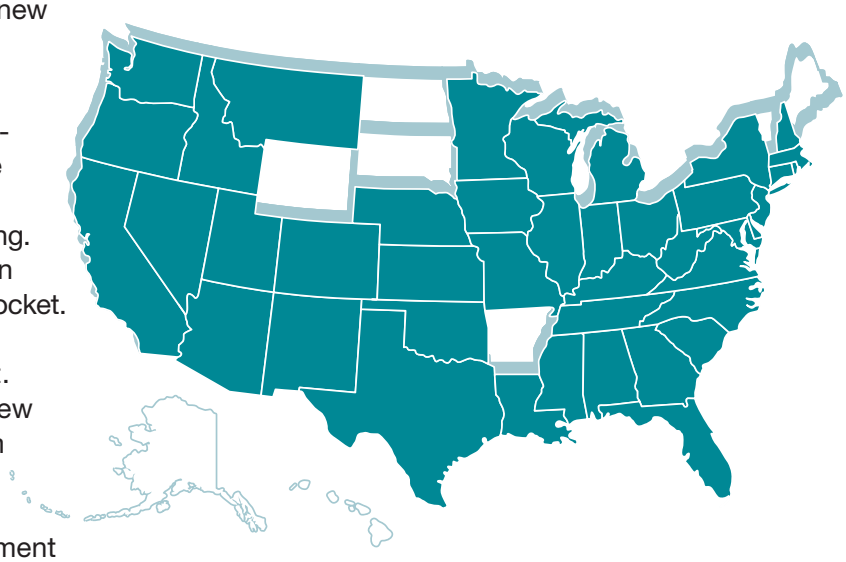
3-D Printed Rocket Injector Prepped for Hot Fire Test

Building Expertise for Orion and SLS Flight Hardware

Built Around the Nation

The Space Launch System represents a vital new national capability, and the work of a nation is involved in creating it.

- SLS is being supported by four prime contractors with decades of experience in the aerospace industry – Aerojet Rocketdyne, ATK, Boeing, and Teledyne Brown Engineering.
- Currently, more than 500 subcontractors in 42 states are engaged in the building of the rocket.
- Every NASA center has contributed to the Space Launch System development effort.
- Following a clean Preliminary Design Review in 2013, the Program has now moved from the formulation phase to implementation.
- The Space Launch System Program now has hardware representing every major element of the vehicle.



SLS Core Stage at Michoud Assembly Facility

A-1 Test Stand Prepares for RS-25 Rocket Engine Testing

Smoke Flow Visualization for SLS

SLS Boosters Centered on Qualification Test

community

Attracting community Expertise

Marshall is a major economic development asset and technology magnet for the southeast. The center draws numerous private-sector technology companies to the area, creating thousands of high-paying jobs and attracting the talented people needed to fill them. Marshall's economic impact reaches across North Alabama and the nation.

Redstone Arsenal

Marshall's close proximity to the Army's space and missile defense hub at Redstone is ideal for sharing resources and working partnerships in space vehicle and propulsion technologies. For more than 50 years, Redstone has been the heart of the Army's rocket and missile programs. The combined expertise of these Army agencies with NASA creates a unique environment to support our nation's space endeavors.

Redstone Arsenal—home to:

- U.S. Army Aviation and Missile Command (AMCOM),
- Space and Missile Defense Command (SMDC),
- numerous program executive offices (PEO),
- and major components of the Defense Intelligence Agency and the Missile Defense Agency.

Cummings Research Park

Located adjacent to Marshall's home on Redstone is one of the world's leading science and technology business parks, Cummings Research Park. CRP is a model for transforming research into business success. The park incorporates a vibrant mixture of Fortune 500 companies, local and international high-tech enterprises, U.S. space and defense agencies, a thriving business incubator, and competitive higher-education institutions.

CRP Key Industries

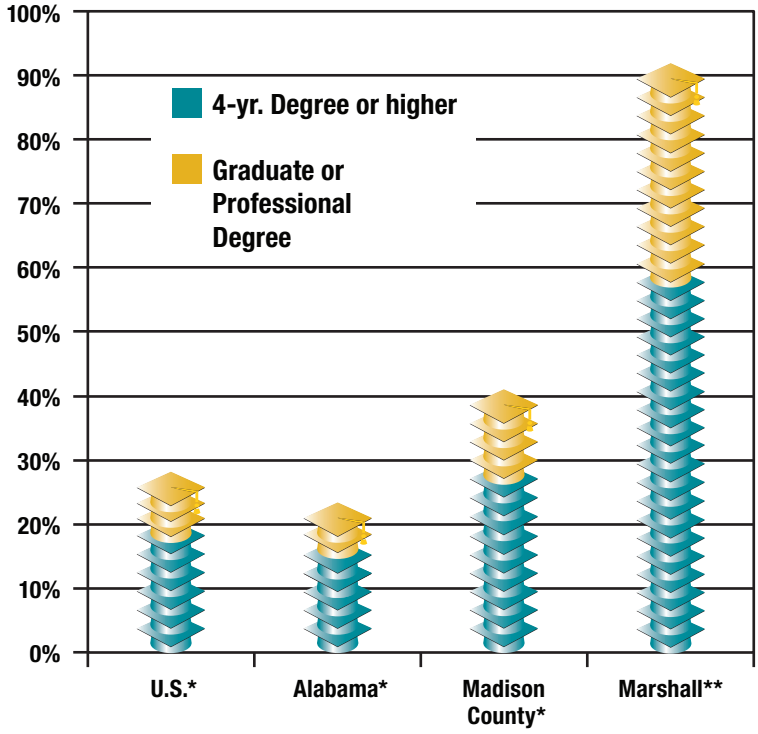
- Aerospace & Defense
- Computers & Electronics
- Engineering & Government Services
- Hardware & Software Development
- Information Technology
- Life Sciences & Biotechnology
- Modeling & Simulation
- Research & Development

CRP BUSINESS by the numbers

4th largest > **2nd largest** > **300+ companies** > **29,000+ People** > **1.3% of Alabama's Total Employment**

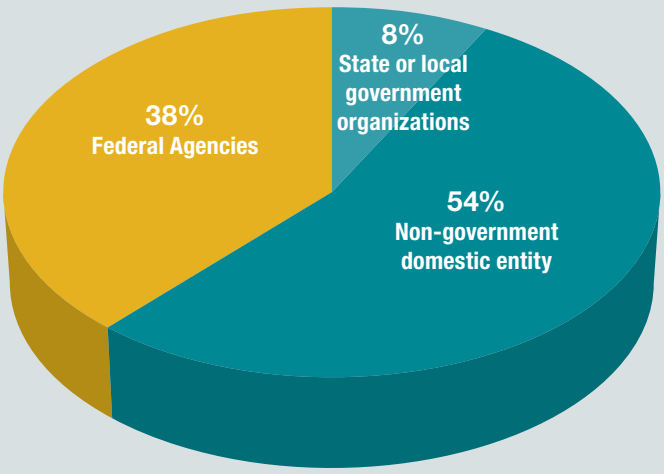
Marshall is a Smart Place to Work

Marshall's influence on area education levels is significant. The highly technical skills employed at NASA require a well-educated workforce of both civil service employees and contractors. More than **91%** of the center's civil service employees hold a bachelor's degree or higher. Of those, 27% have a master's degree and 7.75% hold a doctorate degree.



* Education level from the Census data (ACS est.) (age 15+). "Graduate or Professional Degree" includes designations such as RN, LPN, DMV, etc.
** Marshall education levels from MSFC Office of Human Capital. "Graduate or Professional Degree" at Marshall represents a Masters or PhD.

Space Act Agreements

(SAAs) are a primary method NASA uses for partnering with the external community. Through the SAA, Marshall makes its facilities, services, knowledge and skills available to industry, universities and other government agencies. These agreements represent a vast array of opportunities for the external community to utilize the center's unique resources, including laboratories and test facilities, research and development, analytical capabilities, and technical expertise. Likewise, SAAs enable Marshall to access technologies from partner organizations to help meet NASA's overall missions.

Marshall currently has 240 Space Act Agreements in progress.