

Examples of Resources Available through V-Quad Partners

- Jackson State University
- Mississippi State University
- The University of Mississippi
- The University of Southern Mississippi
 - Innovate Mississippi
- Mississippi Development Authority
- Mississippi Small Business Development Center



Center for Innovation and Entrepreneurship

The **Jackson State University's Center for Innovation and Entrepreneurship** is focused on creativity, collaboration, and building a community where users can learn, experiment with new tools/concepts, develop skills, and become innovators and designers. The Center provides opportunities for experiential learning to help increase student engagement, empowerment, and content learning, as well as foster the development of 21st century skills. The Center allows researchers to ideate, create, and innovate collaboratively from multi-disciplinary perspectives and approaches. The Center is designed to foster a culture of innovation and entrepreneurship that will help drive economic prosperity through business development, mentorship and coaching, technology transfer and commercialization, and university-industry partnerships. The Center is equipped with 3-D printers, a Virtual Reality Academy, a production room, meeting rooms, training facility, and more.

National Science Foundation's I-Corps Program

The JSU I-Corps Site is designed to provide the infrastructure, advice, resources, networking opportunities, entrepreneurial training, and modest funding to support faculty and students interested in exploring the translation of academic research into commercial tools, products, and services. The I-Corps Site broadens the participation of underrepresented minorities in STEM. The program teaches the Lean Startup Methodology, infused with technology transfer best practices.

Women Business Center at JSU

The Women's Business Center @JSU is dedicated to promoting economic growth in the City of Jackson, Hinds County, Mississippi, by providing business services to women seeking federal contracting dollars as WOSB and EDWOSB. The center will offer confidential one-on-one counseling, low-cost training, networking, and free workshops, technical assistance, and mentoring to women entrepreneurs on numerous business development topics, including business startup, financial reporting, and procurement. The Women's Business Center @JSU will help small businesses owned, controlled, and operated by women to compete for these federal contracts.

Interdisciplinary Center for Nanotoxicity

The interdisciplinary group of researchers work include different aspects of the development and production of nano materials and investigations of their toxicity. Current projects include the modeling and production of toxicity and physical properties of nano materials; selecting green nano materials for environmental remediation and renewable energy applications; nano material-based surface energy probe (NSET) for detection of toxic heavy nano metal ions from environment.

Technology Transfer and Commercialization

JSU has the capability to facilitate the development, disclosure and protection of intellectual property; develop, coordinate and conduct training on IP policies and technology transfer best practices; facilitate the licensing and commercialization process; facilitate contractual and teaming agreements in the best interest of startups; and provide market assessments.



With more than \$260 million in research and development expenditures, **Mississippi State University** continues to rank among the top public research institutions in the country. Relevant partnerships and research opportunities with the National Oceanic and Atmospheric Administration; NASA; the National Science Foundation; U.S. Departments of Agriculture, Defense, Energy, and Homeland Security will potentially benefit V-Quad teams.

Thad Cochran Research, Technology and Economic Development Park

The 272-acre **Thad Cochran Research, Technology and Economic Development Park** is home to more than 1,700 employees and tenants that include private businesses, government offices and robust research centers and institutes. The park represents over \$200 million in infrastructure and private capital investments. The research park is home to the **High Performance Computing Collaboratory** which boasts the fifth-fastest academic supercomputer in the U.S. and the Center for Advanced Vehicular Systems.

Center for Entrepreneurship and Outreach

MSU's **Center for Entrepreneurship and Outreach** is located in the heart of the campus and strives to help students, faculty, and staff at MSU start and grow successful companies. The Center supports over 100 student start-up teams every year and aggressively seeks to unify, grow, and foster a culture of entrepreneurship in the local community and throughout the state.

Unmanned Aerial Systems (UAS) Capabilities

In addition to serving as the lead university for the Federal Aviation Administration's Center of Excellence for UAS, MSU's Raspet Flight Research Laboratory is designated as the FAA's UAS Safety Research Facility, placing the research center at the helm of studying and developing safety and certification standards as UAS become increasingly integrated in the U.S. airspace.

Advanced Vehicles Research

The **Center for Advanced Vehicular Systems (CAVS)** at MSU works closely with the state's automotive manufacturing industry, and is also an international leader in autonomous systems, mobility systems and advanced materials research and development. CAVS houses the Off-Road Proving Ground as a part of the center's research developing autonomous solutions for non-urban environments.

Geosystems Research Institute (GRI)

Geosystems Research Institute (GRI) provides nationally recognized capabilities in remote sensing computational technologies, visualization techniques, agriculture and natural resource management, and the transition of these into operational agency research, planning, and decision-support programs.

Paul B. Jacob High Voltage Laboratory

MSU's **Paul B. Jacob High Voltage Laboratory** is the largest university operated high voltage laboratory in North America, enabling full-scale evaluation of large equipment with impulses up to 3000 kV and 1000 kV AC-voltage. This multi-purpose high voltage facility is designed to meet the evaluation needs of the industry and provides the necessary environment for academic research in high voltage engineering. As an integral part of our national high voltage technology structure, the laboratory serves as a means of strengthening the U.S. position in this specialized technical area.

Institute for Clean Energy Technology

MSU's **Institute for Clean Energy Technology** was first established in 1979 to support the U.S. Department of Energy's magnetohydrodynamic power program and has historically operated as an engineering measurement and instrumentation laboratory. ICET has concentrated its efforts on HEPA filter testing and on the development of radiological mapping technologies. Most recently, ICET has established a Nuclear Quality Assurance Program (NQA-1) to better meet the needs of the nuclear power industry. Institute facilities include a department for machining and welding, a high-bay laboratory holding six industrial-scale HEPA filter test stands, and additional laboratories equipped for the safe testing of radioactive materials.

Food and Fisheries

MSU is considered an international leader in aquaculture and fisheries which are playing an increasingly important role in addressing global food security. In addition to leading the Feed the Future Innovation Lab for Fish, funded by the U.S. Agency for International Development, MSU is playing a key role in developing a Food and Agriculture Organization of the United

Nations (FAO) program to improve aquaculture biosecurity in developing countries all the while supporting local growers close to home.

MSU ranks in the top five percent nationally for agricultural sciences and natural resources research and development, a position it has held for approximately two decades. Faculty and staff at MSU are working to advance the agriculture industry in Mississippi and pioneering research that will help feed a growing global population. Building on more than 140 years of agricultural research accomplishments, the university remains at the forefront of the field as researchers harness the power of cutting-edge technology such as supercomputers and unmanned aircraft systems to drive innovation in Mississippi's leading industry.

The **Mississippi Agricultural and Forestry Experiment Station's** 16 branch locations serve all regions of the state. Research addresses issues important and relevant to Mississippi farmers, industry, communities and families. MAFES discoveries improve plant, animal, and food production systems to enhance commodity production and conserve the environment for the benefit of all people.



THE UNIVERSITY of
MISSISSIPPI

The Insight Park Innovation Hub seeks to nurture young companies, helping them to survive and grow during the start-up phase when they are most vulnerable. The Hub provides hands-on assistance in areas of development, research, marketing, legal matters, and more. By offering access to equipment, flexible leases and expandable space, The Innovation Hub provides the support that is critical for new businesses to start on the right foot and thrive.

Center for Graphene Research and Innovation

The **Center for Graphene Research and Innovation** focuses on bridging the gap between university-based science and discovery and industry-led innovations and applications for graphene, a form of carbon made of a single layer of atoms. First isolated and described by scientists in 2004, the material is incredibly strong and flexible, and its conductivity lends it to a broad range of applications ranging from manufacturing to electronics to medicine.

Transactional Law Clinic

Students along with faculty assist low-income entrepreneurs and non-profit organizations to foster economic development, increase access to capital, and promote job growth.

XLerator Network

XLerator Network works closely with and leverages other NIH programs, including Research Evaluation and Commercialization Hubs (REACH), NIGMS IDeA Networks of Biomedical Research Excellence (INBRE), Centers of Biomedical Research Excellence (COBRE), and Institutional Development Award Program Infrastructure for Clinical and Translational Research (IDeA-CTR), with efforts that can identify and specifically assist academic investigators by providing knowledge, development of business skills, networking, and business strategies that can result in more successful SBIR and STTR applications and new startups. Resources provided through the network, which includes Jackson State University as well, include:

- Subject Matter Experts
- Executives on Roster (XOR)
- Assessment & Roadmap
- Capital Access Tools
- Marketplace Tool
- Proposal Reviewer

The Center for Innovation and Entrepreneurship (CIE)

CIE supports students across campus in their entrepreneurial endeavors. The CIE was established in 2014 to inspire students to create innovative businesses through excellent teaching & research, exceptional service and exciting competitions & events. Over the years the center has advised and mentored hundreds of students, awarded more than \$110,000 in cash prizes and helped establish over 50 student-led ventures.

Haley Barbour Center for Manufacturing Excellence

The **Haley Barbour Center for Manufacturing Excellence (CME)** has a mission to develop servant-leaders for the manufacturing industry through innovative educational programs, extension services, and economic development initiatives. The philosophy of lean manufacturing is embedded in every aspect of CME. The LEED-certified facility includes a 12,000-square-foot manufacturing floor where students learn the importance of safety in the industrial environment, the value of teamwork, and how to turn their ideas into tangible

products. CME provides many enriching opportunities beyond the classroom with industry partners through internships, co-ops, and experiential learning courses. The accomplished faculty and instructional team possess many years of academic and manufacturing experience. This space includes more than 70 pieces of manufacturing machinery including:

- Water jet cutting technology and CNC mills
- Welding stations and wire EDM machines
- Commercial 3D printers
- Manual metal working machines
- Paint booth and powder coating booth

National Center for Natural Products Research

The internationally renowned **National Center for Natural Products Research** was founded in 1995 to research, develop and commercialize potentially useful natural products. Based at the University of Mississippi School of Pharmacy, NCNPR collaborates with academia, government and the pharmaceutical and agrochemical industries to create natural products that can be used to improve human health and agriculture as crops, pharmaceuticals, dietary supplements and agrochemicals.

National Center for Physical Acoustics

The **National Center for Physical Acoustics** (NCPA) serves as the Physical Acoustics Archives for the Acoustical Society of America and coordinates the biennial Physical Acoustics Summer School. NCPA maintains basic and applied research programs in many areas of physical acoustics; provides coordination of major, multi-university research programs in the United States; serves as an advocate for physicals acoustics to federal agencies and other organizations; provides significant educational opportunities for students and postdocs; and provides direct research assistance to investigators throughout the world.

Gulf of Mexico Hydrates Research Consortium

The **Gulf of Mexico Hydrates Research Consortium** (GoMHRC) was organized in 1999 to consolidate both laboratory and field efforts in gas hydrates research in the Gulf of Mexico. The GoMHRC was established at and is administered by the University of Mississippi, through the Center for Marine Resources and Environmental Technology (CMRET). The primary objective of the GoMHRC is the design and emplacement of a seafloor observatory in the northern Gulf of Mexico to characterize and monitor activity in an area where gas hydrates are known to be present at, or just below, the sea-floor. Members of the GoMHRC include researchers,

engineers, and technicians from universities, federal government agencies, and private companies.



The Innovation and Commercialization Park

The **University of Southern Mississippi** Innovation and Commercialization Park is a technology-based innovation ecosystem designed for scaling technological developments from concept to commercialization. Boasting a dynamic community of academics, researchers, entrepreneurs, privately-held, and publicly-traded companies, The Innovation Park is an ideal location for companies striving to gain or maintain leading positions in their markets. The **Accelerator** housed within the **Park** offers:

- o 65,000 total square feet with 15,000 square feet shared resources
- o 20 laboratories
- o 26 private offices and 35 cubicle spaces
- o Located 4 miles from the USM campus in Hattiesburg

Mississippi Polymer Institute

MPI cultivates business growth and participation in advanced-materials markets. MPI's non-profit industrial outreach organization prioritizes the customers' needs and provides an environment that assists the entire advanced-material ecosystem. MPI's problem-solving capabilities are available at the product conceptualization phase through post-commercialization troubleshooting. Technical services include polymer synthesis, resin compounding-extrusion-molding, composite manufacturing techniques, CAD modeling, laser scanning, 3-D printing, reverse engineering, and ISO 17025 accredited testing and analysis.

Gulf Blue Initiative

This initiative – Gulf Blue – is poised to bring “Big Ideas Out of the Blue” capitalizing on the region’s geography and maritime resources and positioning the Mississippi Gulf Coast to lead the development of world-changing innovation. Gulf Blue pools the knowledge of research scientists, federal agencies, industry partners and entrepreneurs to further develop the region as a global leader in ocean- and maritime-related technologies.

Trent Lott National Center for Economic Development and Entrepreneurship

The center works with public entities, nonprofit organizations, businesses and individuals to plan and implement activities designed to generate jobs and income. usm.edu/tlnc

The Thad Cochran Marine Aquaculture Center (TCMAC) in Ocean Springs, MS

TCMAC provides access critical infrastructure and subject matter experts to help alleviate the bottlenecks that constrain the production of marine species and promote sustainable marine aquaculture.

The Marine Research Center (MRC) at the Port of Gulfport, Mississippi

The MRC was built in 2018 to meet the demands of a growing regional maritime technology workforce. The MRC provides access to classroom, technology and prototype/fabrication laboratories, and water-based testing, including 20’x 8’ x 7.5’ deep test tank.

<http://www.usm.edu/ocean>

Gulf Coast Geospatial Center (GCGC)

GCGC provides the foundation for regional geospatial modeling along the Gulf of Mexico coast. This project continues enhancements of the National Spatial Reference System adjacent to the northern Gulf of Mexico coastline through:

- Real-Time-Network corrected GPS solutions
- Accurate 3D positions by extending Global Navigation Satellite System data
- Big data collection, storage, and analytics for spatial modeling and solutions
- Point cloud collection, quality assurance and control of geo-datasets
- Image alchemy, processing, and cartographic solutions
- Geodetic liaisons to municipal and state agencies
- Education and outreach



Innovate Mississippi uses a rigorous entrepreneurial assessment tool. It contains evaluations to measure a project’s entrepreneurial, risk, venture, and business plan “readiness.”

Used in conjunction with the Mississippi Angel Investor Network, Mississippi Executive Talent Exchange, and the Entrepreneurial Service Providers Database, our assessment tool helps Innovate Mississippi guide Mississippi entrepreneurs as they follow the path to growing successful businesses.

Innovate Mississippi focuses on innovation-based companies with innovative products, processes, materials or business models. We generally do not work with companies in retail services, oil and gas exploration and production franchisees, real estate development, management and investment companies. However, firms will not be disqualified because their customers are in such industries.

Mississippi Seed Fund

The Mississippi Seed Fund is managed by Innovate Mississippi. Innovate Mississippi provides high-tech, startup companies with access to pre-seed financing, early-stage risk capital and product development capital to stimulate and accelerate the development of high-performance, technology-based business ventures in Mississippi. The Seed Fund consists of the Proof of Concept, Research and Development, and New Technology Business programs.

MS-FAST Program

The MS-FAST Program, led by Innovate Mississippi, aims to increase the number of SBIR and STTR proposals from small businesses in Mississippi leading to an increase in the number of SBIR/STTR awards. The program is supported in part by a grant from the U.S. Small Business Administration (SBA) via its [FAST partnership program SBIR](#) and [STTR](#) are highly competitive programs that encourage small business to explore their technological potential and provide the incentive to profit from commercialization opportunities. See the [MS-Fast site](#) for more info.



The Entrepreneur Center

The Entrepreneur Center @ Mississippi Development Authority is striving to build an entrepreneurial ecosystem within the state that promotes organic entrepreneurial and innovative development, and attracts innovative start-up companies from outside the state. Key components include program assessment, budget development, implementation oversight, outcome monitoring and target evaluation.

TEC's stated mission is to become the hub of entrepreneurship and serve as the conduit to coordinate and enhance Mississippi's entrepreneurial spirit. Coordinating the most influential stakeholders in the state (economic development groups, academic institutions, federal and state agencies, and existing entrepreneurs) TEC continues to work with each entity in a 'best entrepreneurial practices' model. By streamlining the process and developing an ecosystem rubric with the cooperation of our diverse partners, The Entrepreneur Center espouses to help connect entrepreneurs and small business with the proper service entities across the state faster and more efficiently.

Since implementing this new initiative, The Entrepreneur Center has been highly successful in changing the conversation to include advanced technology development in Mississippi. Our state is open to technology intensive emerging businesses while making people aware of the amazing capabilities of our research universities, including the University of Mississippi Medical Center and the military laboratories in Vicksburg and the Mississippi Gulf Coast.

Energy and Natural Resources Division

The **Energy and Natural Resources Division (ENRD)** at the Mississippi Development Authority serves as the state energy office and has a four-pillar strategy which focuses on 1) promoting Mississippi as a leader in all types of energy development, 2) preparing a 21st century energy workforce, 3) expanding energy efficiency, and 4) enhancing energy security.

ENRD's purpose is to support economic growth in Mississippi that leads to increased energy production in an efficient and environmentally sustainable manner while maintaining safety, reliability and affordability for all its citizens.

ENRD works closely with the United States Department of Energy (US-DOE). This will allow ENRD to connect V-Quad companies with various entrepreneurship development resources available through the US-DOE and other preeminent national organizations.

[IncubateEnergy Network](#)

The IncubateEnergy Network is accelerating the transition to a sustainable economy through multilateral coordination of incubator resources supporting entrepreneurs focused on clean energy innovation and deployment. This consortium of clean energy focused incubators has supported more than 500 companies to date and has a significant pipeline.

[Power Connector Network](#)

The U.S. Department of Energy's National Renewable Energy Laboratory (NREL) administers the American-Made Challenges that is supported six organizations known as Power Connectors. These organizations work alongside NREL to build a sustainable network of experts to support competitors, grow private funding instruments, and develop long-term plans for the program. They also host demonstration days, bringing together competitors and panels of judges, potential customers and investors, key stakeholders, and other industry leaders that can help competitors advance their solutions.

[Lab Partnering Service and Solutions Exchange](#)

DOE's Office of Technology Transfer's (OTT) Solutions Exchange program connects you with DOE's National Labs to crowdsource ideas and help drive your innovation forward.

[Incubating Market-Propelled Entrepreneurial-Mindset at the Labs and Beyond \(IMPEL+\)](#)

IMPEL⁺, *Incubating Market-Propelled Entrepreneurial-Mindset at the Labs and Beyond*, is a program funded by U.S. Department of Energy's Building Technologies Office (BTO), and implemented by the Lawrence Berkeley National Laboratory (Berkeley Lab).

The IMPEL⁺ vision is to integrate market-oriented skillsets with advanced scientific thinking of National Lab scientists, academics, researchers, entrepreneurs, and small businesses. The goal is to focus early stage buildings innovations and programs on market gaps, and catalyze them towards public and private sector engagement and impact. This program seeks to bridge gaps between upstream R&D and market needs.



The **Mississippi Small Business Centers** provide mentoring and business consulting services to a diverse range of businesses.

MSBDC assists businesses in:

- developing and updating business plans
- creating marketing strategies
- identifying and accessing sources of capital
- improving managerial skills
- analyzing financial records
- refining other business services as required