



HLC Accreditation 2020-2021

Evidence Document

Industry and Defense Programs

NIAR

NIAR Capabilities 2018

Additional information:

NATIONAL INSTITUTE FOR AVIATION RESEARCH

The National Institute for Aviation Research (NIAR) at Wichita State University provides research, testing, certification and training for aviation and manufacturing technologies. Established in 1985, NIAR has a \$70 million annual budget; a staff of 550; and 600,000 square feet of laboratory and office space in four locations across the city of Wichita, the Air Capital of the World.



NIAR's location is ideal considering Wichita's strong manufacturing and aerospace workforce.

- Wichita ranks #1 in manufacturing jobs as a percentage of all jobs.
- South Central Kansas is the most manufacturing-specialized region in the United States with 17.7 percent of regional jobs in manufacturing, more than half of which are engaged in making some of the world's most sophisticated aircraft.
- Wichita has the highest concentration of aerospace manufacturing employment in the nation.
- Wichita is ranked #3 nationally as an advanced industry hotspot
- Wichita ranks #1 in percentage of jobs involving STEM occupation
- Wichita ranks #3 among metros for highest concentration of engineers per 1,000 employees (22.4/1,000)

Because of NIAR's research efforts, Wichita State University ranks third among all U.S. universities in aeronautical R&D expenditures according to the National Science Foundation. WSU ranks first in industry funding for aeronautical expenditures.

AERO R&D EXPENDITURES

Source: National Science Foundation Higher Education Research and Development survey 2016



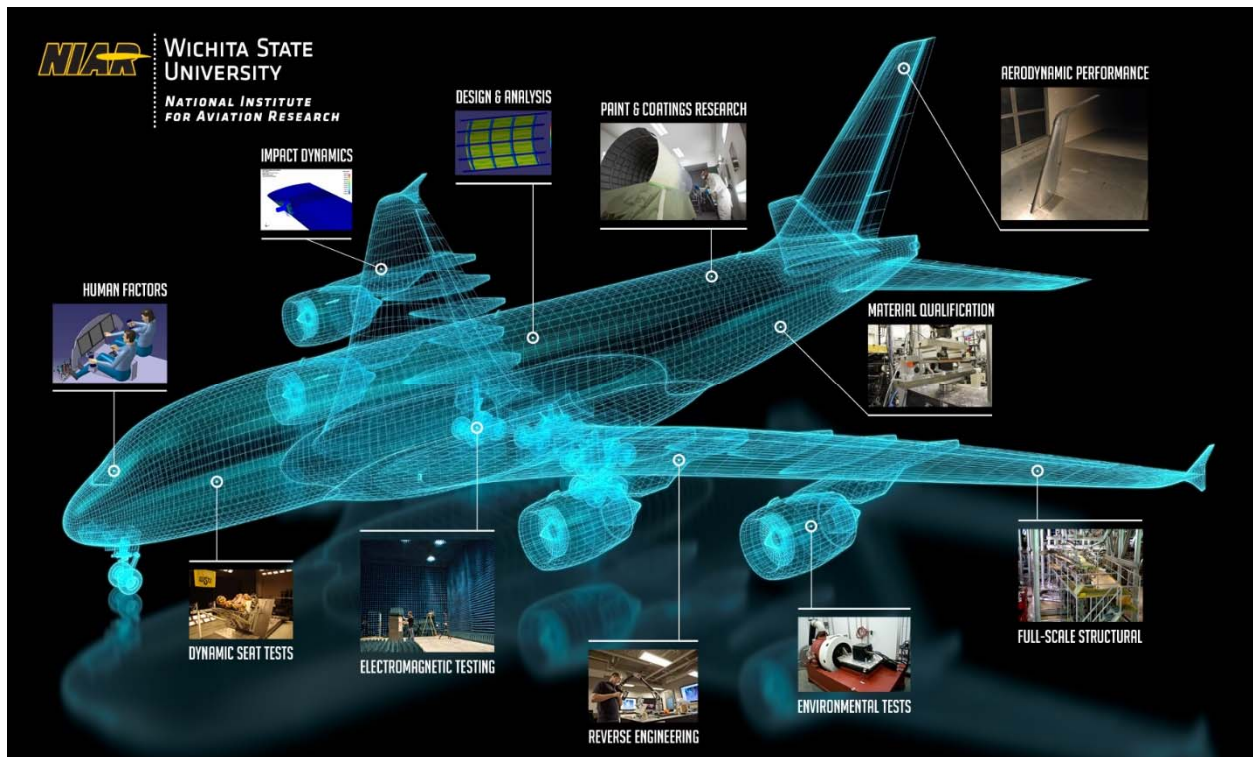
INDUSTRY FINANCED AERO R&D

Source: National Science Foundation Higher Education Research and Development survey 2016



NIAR LABORATORIES/RESEARCH AREAS:

- Additive Manufacturing
- Advanced Coatings
- Advanced Manufacturing
- Aging Aircraft/Sustainability
- Ballistics and Impact Dynamics
- CAD/CAM
- Composites and advanced materials
- Crash Dynamics
- Emerging Technologies
- Environmental & Electromagnetic Test
- Full-Scale Structural Test
- Mechanical Test
- Nondestructive Test/Oil Analysis
- Reverse Engineering
- Robotics & Automation
- Virtual Engineering & Flight
- Virtual Reality
- Walter H. Beech Wind Tunnel



Working under nondisclosure agreements, NIAR laboratories provide services to federal agencies, aviation industry clients and other manufacturing industry clients. Some of our clients include Airbus, Boeing, Beechcraft, Bombardier Learjet, Cessna, Dassault, Gulfstream, Honda Aircraft Company, Lockheed Martin, Spirit AeroSystems, the U.S. Department of Defense, the Federal Aviation Administration and NASA.

NIAR also runs several centers and initiatives that are strategically aligned with the institute's capabilities and mission including:

- National Center for Advanced Materials Performance (NCAMP)**
 The National Center for Advanced Materials Performance (NCAMP) is designed to provide the nation's commercial and military aviation industry with a center for the validation and quality assurance of composites and advanced materials. Both the FAA and EASA accept composites specification and design values developed using the NCAMP process. NCAMP works with the FAA, DoD and industry partners to qualify material systems and populate a shared materials database that can be viewed publicly. www.niar.wichita.edu/ncamp
- Composite Materials Handbook-17 (CMH-17)**
 The CMH-17 organization, administered by Wichita State University, provides information and guidance necessary to design and fabricate end items from composite materials. Its primary purpose is the standardization of engineering data development methodologies related to testing, data reduction, and data reporting of property data for current and emerging composite materials.
- FAA Center of Excellence for Composites and Advanced Materials (CECAM)**
 CECAM is an FAA-sponsored consortium of universities competent in advanced materials research. CECAM is led by Wichita State University, which interacts directly with the FAA to support its advanced materials safety programs. www.niar.wichita.edu/cecam
- FAA Center of Excellence for UAS Research**
 Wichita State University is a member of the Federal Aviation Administration Center of Excellence for Unmanned Aircraft Systems, which was awarded by the U.S. Department of Transportation in Washington in May 2015. www.assureuas.org.

ABOUT WICHITA STATE UNIVERSITY

The mission of Wichita State University is to be an essential educational, cultural and economic driver for Kansas and the greater public good. At Wichita State University, we value seizing opportunities; success for all stakeholders; diversity of culture, thought and experience; adaptive approaches; teamwork and positive risk-taking. Our primary goals emphasize applied learning; interdisciplinary curricula; diversity; and the discovery, creation and transfer of new knowledge.



INNOVATION CAMPUS AT WICHITA STATE

Situated on 120 acres, Wichita State's Innovation Campus is an interconnected community of **partnership buildings** where organizations establish operations and reap the rewards of the university's vast resources including:

- Laboratories** that give students access to real-world applications and the training needed to effortlessly assimilate into the workforce
- Community makerspace** that gives both students and non-students alike access to the technology and services that helps facilitate product development
- Mixed-use areas** that provide everyone with a place to eat, sleep, play, shop and share

Innovation Campus partners include Airbus; Boston Consulting Group; Dassault Systèmes; GoCreate, A Koch Collaborative; Hexagon Manufacturing Intelligence; Meritrust Credit Union; Spirit AeroSystems; Starbucks; Wichita/Sedgwick County Law Enforcement Training Center and Youth Entrepreneurs. Additional locations are available for development on Innovation Campus as indicated in blue below.

