



Metropolitan State University of Denver Capability Statement

Institution: **Metropolitan State University of Denver**

DUNS No: 059094321

Cage Code: 3SPE4

NAICS ID(s): 611310

SIC: 822101

Federal EIN No: 84-0576459

Certificates, Registrations, Accreditations: **SACSCOC, CSWE; CACREP, ACBSP, NCATE; RFEFAC; ACEN; ACS**

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OVERVIEW

[Metropolitan State University of Denver](https://www.msudenver.edu) combines applied academic and teaching excellence in the heart of downtown Denver as an economic and industry pipeline. Since its founding in 1965 as an “opportunity school,” the University has offered a hands-on approach to meet workforce needs via its mission-driven, modified open-access admission.

MSU Denver is a comprehensive, urban economic engine for the metropolitan region, conferring in-demand baccalaureate and master’s degrees, along with certificates and custom study options. Enrolling more than 17,000 students and with an alumni network 100,000+ strong, it is also the top transfer destination in the state of Colorado.

A federally designated Hispanic Serving Institution, MSU Denver is among the most diverse institutions of higher education in the state: 50.3% of the student population are Students of Color (FA21), with 57.3% the first in their families to pursue higher education. The average student age is 25; more than 30% qualify for full-tuition assistance, and nearly 80% work full- or part-time while pursuing their education. 1,000+ military, veteran and dependent students also call MSU Denver home.

RESEARCH CAPABILITIES

Advanced Manufacturing (NAICS – 332710)

Mechanical: Additive manufacturing (polymer - Stratasys Fortus 900mc, metal - 3D Systems ProX 100), subtractive manufacturing (3-axis CNC - OKUMA Genos M560-V, 5-axis lathe - Tsugami S205-II), 3D modeling/design (SolidWorks, Fusion 360), cutting/engraving (laser - Boss HP2436, Epilog Fusion M2), metal forming (shear, brake, bender, roller), welding (mig, tig), pre-/post-processing (ultrasonic cleaner, finisher, powder coat, paint booth), measurement and test (optical comparator, CMM, 3D scanner, tension/compression, vibration)

Electrical: Equipment (power supplies/systems, oscilloscopes, function generators, digital multi-meters, global specialties), digital (computer engineering), communications

Software: Projects (artificial intelligence, data mining, database systems, cloud computing, computer vision), languages (Python; Docker; Java DNS; MDNS, TLS, and DOH; MongoDB; C++; R)

Cybersecurity (NAICS – 541519)

Cybersecurity Multi-Use Environment (C-MUTE): Atos SOC, simulation training (The Cyber Range), Project PISCES, Project CAMBRIDGE, Project WINDSOR

Cybersecurity Certification Clubs (C3): CompTIA authorized partner

NSA Center of Academic Excellence

Space Research and Technology (NAICS – 927110)

Mission Operation Center (MOC)

Astronautics Simulation Laboratory (ASL)
Satellite Engineering Laboratory (SEL)

Chemistry & Biochemistry

Spectrometry (**NAICS – 541715**): Bruker 300 MHz Nuclear Magnetic Resonance Spectrometer (NMR), Gas Chromatograph / Mass Spectrometer (GC-MS), Thermo Atomic Absorption Spectrophotometer, Agilent Liquid Chromatograph / Mass Spectrometer (LC-MS/MS), Elan 9000 Inductively Coupled Plasma Mass Spectrometer (ICP-MS)

Spectroscopy (**NAICS – 541715**): Thermo Smart Raman, FT/IR, Fluorimeter with polarizing filters, UV/Vis, Polarimeter and Polarizing Light Microscope, GloMax Luminometer

Separation / Purification (**NAICS – 541714, 541715**): Thermo Spectra HPLC, BioRad FPLC, Applied Biosystems genetic analyzer/capillary electrophoresis, Applied Biosystems DNA extraction machines

Other (**NAICS – 541714**): Differential Scanning Calorimeter, BioRad GelDoc Imager, Pine WaveNow Potentiostat, BioRad qPCR, Applied Biosystems qPCR

Hospitality Learning Center (NAICS – 541380)

TTB-certified testing laboratories and services (beer, hard seltzer and cider; wine and juice; distilled spirits; grain; microbiology [in conjunction with Microbial Domains LLC]; other services and consumables)

FACILITIES

[Advanced Manufacturing Sciences Institute](#) MSU Denver's Advanced Manufacturing Sciences Institute (AMSI) is at the forefront of the Fourth Industrial Revolution in America's manufacturing economy - the use of smarter, leaner factories to develop and produce innovative new products, materials, and techniques.

The multidisciplinary Advanced Manufacturing Sciences (AMS) academic degree program is built on a foundation of theoretical and practical applications. Advanced-manufacturing industry subject-matter experts lead with expertise in subtractive manufacturing (CNC machining & inspection); additive manufacturing (including an opportunity to receive a Stratasys Certification); computer-aided design; quality assurance; soft skills, including critical thinking, problem solving, teamwork, leadership and communication; technical writing; math and basic electronic competencies; and computer skills, including manufacturing data protection.

AMS degree-program concentrations include aerospace, industrial design, mechanical engineering technology, and operations management. Individualized degree programs are aligned to Manufacturing USA institutes including 1) America Makes, 2) Advanced Robotics for Manufacturing, 3) The Institute for Advanced Composites Manufacturing Innovation, 4) The Cybersecurity Manufacturing Institute, 5) The Digital Manufacturing Institute.

[Aeronautics and Aerospace Systems Laboratories](#) (AAS Labs) housed in the [Department of Aviation and Aerospace Science](#) consist of nine state-of-the-art technology facilities for enhanced academic and applied knowledge mastery. The laboratories include the general aviation Robert K. Mock Flight Simulation Lab, the Astronautics Simulation Lab, the Satellite Engineering Lab, the Air Traffic Control Lab, the Jet Lab, the UAS/UAV Lab, the Aeronautics Simulation Lab, the Balloon Sat Lab, and the Aerospace Operations Lab.

The [Cybersecurity Center at MSU Denver](#) is an NSA Center of Academic Excellence and houses the Cybersecurity Multi-Use Training Environment (C-MUTE). The C-MUTE incorporates, a state-of-the-art Cyber Range, Project PISCES and a "Live" Security Operations Center (SOC) in partnership with Atos that collectively provides much needed hands-on training for students and institutional-industry partnerships. Project CAMBRIDGE provides cybersecurity consulting services for small to medium sized private and public sector customers; Project WINDSOR delivers 5-day intense, hands-on experiential cybersecurity training for private and public sector entities.

The [Health Institute at MSU Denver](#) is a one-of-a-kind initiative to reimagine health education and meet the current demand for highly skilled professionals in health, wellness, and mental and behavioral healthcare. Combining mentor-supported, health-related academics with real world, interdisciplinary experience and research with community practitioners and medical facilities, this collaboration across 10 University departments is advancing healthcare equity in Colorado by diversifying the workforce and cultivating a whole-person approach to wellness. Lab facilities include a

nursing/interdisciplinary simulation and skills lab, audiometric testing room, exercise science lab, client debriefing labs, and counseling observation rooms.

The [Hotel and Hospitality Learning Center](#) is a unique public/private partnership for the University's [School of Hospitality](#). MSU Denver and Sage Hospitality have built an on-campus, full-service, learning laboratory. The Center includes a sensory analysis lab for wine, beer, and spirits classes; a 72-seat commercial restaurant including five mixology stations; a 4,000-bottle wine and beer cellar management lab, high-tech food demonstration theaters, a tourism lab, and events lab. A partnership with the Siebel Institute ensures TTB-certified expertise and a world-class library of QA/QC lab services.

STEM Research is available in the fields of chemistry & biochemistry, biology, mathematics, physics, computer science, engineering, earth and atmospheric sciences, and environmental science.

The [Chemistry & Biochemistry Department](#) houses a wide-variety of research and industry-grade instrumentation, along with the expertise to offer consulting for protocol design or data analysis.

Other departmental research capabilities available/in development from:

[Department of Biology](#)

[Department of Mathematics and Statistics](#)

[Department of Physics](#)

[Department of Computer Science](#)

[Department of Engineering and Engineering Technology](#)

[Department of Earth and Atmospheric Sciences](#)

[Center for Advanced STEM Education](#)

Services Training in business management support is provided by the [College of Business](#) in a wide array of subfields including human resource management (from hiring and determining staffing patterns to employee development); marketing practices, including branding and new product development; and operations management.

SELECTED PAST PERFORMANCE

[Lockheed Martin ID/IQ](#)

The \$400,000 five-year Indefinite Delivery, Indefinite Quantity contract between MSU Denver and Lockheed Martin makes the University a subcontractor for the aerospace company, allowing students and faculty members from any discipline to provide requested services, expediting delivery timelines and maximizing efficiency. Initial work is focused on engineering and design in NASA-related projects, with future possible opportunities including the University's Advanced Manufacturing Sciences Institute, Event and Meeting Management students, and other collaboration across the College of Business and College of Letters, Arts and Sciences.

US Department of Education Office of Postsecondary Education: Developing Hispanic-Serving Institutions Program: SpaceTech Scholars: Aerospace and Engineering Entry-level Technicians Workforce Development Program

To address the demonstrated need for aerospace and engineering technicians in Colorado (and the United States at large), as well as the lack of diversity in this industry, SpaceTech Scholars will increase the recruitment, retention, graduation and career placement rates of Hispanic and other underrepresented students (i.e., minority, low-income, first-generation, female) as entry-level technicians in the domains of aerospace and engineering. These goals will be obtained through the development of a linked learning community, which includes: (1) the creation of a clear aerospace/engineer technician pathway, (2) dual-enrollment opportunities for high school youth interested in this field of work, (3) exposure to engineering/aerospace opportunities and diverse professionals in these fields for students, starting in middle/high school and (4) comprehensive support systems for MSU Denver students who enroll in this new career pathway. PI: Dr. Jeffery Forrest.

Industry 4.0 Center of Excellence at Auraria – The State of Colorado's Office of Economic Development and International Trade awarded \$135,000 as part of the Advanced Industries Collaborative Infrastructure Grant to establish an Industry 4.0 Center of Excellence (COE) at Auraria. This COE will be open to the public, allowing a firsthand view of the present – and future – of digital manufacturing. One of the facility's biggest advantages is its centralized location and in-place infrastructure. Located in downtown Denver, the Auraria campus is situated in a hub of entertainment, commercial and residential space, integrating advanced

technology into industry and community and serving both. The result is an applied facility, both for the curious as well as for those seeking training in the sector.

The COE will provide hands-on training and experience to students while helping companies aggregate meaningful data used to improve production and manufacturing efficiency. This approach allows students to gain hands-on, relevant and real-world experiences while supporting the growth and transformation of Colorado manufacturers. The founding partners, Metropolitan State University of Denver, University of Colorado Denver and Community College of Denver, have been recognized as Hispanic Serving Institutions, and have a strong focus to provide support to underserved communities.

Cybersecurity Education Diversity Initiative

NCAE-C C.E.D.I. Grant Sub Investigator Dr. Jeffrey London and CO-Sub Investigator Dr. Steven Beaty received a \$149,570 subcontract from the National Centers of Academic Excellence in Cybersecurity, which is funded by the Department of Defense. They aim to encourage publicly funded cybersecurity programs in Colorado, including those at two- and four-year institutions of higher education, to apply for Centers of Academic Excellence designations. The Cybersecurity Education Diversity Initiative (CEDI) supports Minority Serving Institutions (i.e., community colleges, colleges, and universities) in their efforts to become CAE-designated institutions. MSU Denver is the only Mountain West HSI to join the national CEDI initiative, and just one of nine institutions nationwide. CEDI is housed at the Division of Applied Sciences in MSU Denver's College of Health and Applied Sciences.

National Science Foundation STEM BUILDing

STEM scholars at Metropolitan State University of Denver will begin to benefit from a \$1 million Building Identity Leading to Diversity (BUILD) grant in June. The funds come from the National Science Foundation and are dedicated to bolstering minority students' STEM access and opportunities at MSU Denver and Community College of Denver through May 2025. Providing comprehensive support customized to the needs of underserved populations is a shared goal of MSU Denver and CCD, which are Hispanic-Serving Institutions. Two new collaborations enabled by the BUILD grant include summer bridge programming and an inter-institutional "Foundation of STEM Research" course. Hsiu-Ping Liu, Ph.D., is the grant's principal investigator and director of the University's [Center for Advanced STEM Education](#)

NREL joint appointment

Principal Investigator (PI) Megan Lazorski received a \$27,478 subcontract from the U.S. Department of Energy to promote research and education in the Chemistry and Nanoscience Center and facilitate engagement between the National Renewable Energy Laboratory (NREL) and MSU Denver faculty and students. The NREL-Joint Appointment will address relationship building, cooperation, collaboration, and dialogue between the joint appointee and NREL scientists and staff. Housed in the College of Letters, Arts and Sciences, the program will allow Dr. Lazorski to work on photocatalysis development, microwave spectroscopy techniques, and transient electron paramagnetic resonance spectroscopy.

More awards and information available from MSU Denver's [Office of Sponsored Research and Programs](#).