Charter of the Louisiana State-Wide Consortium for Innovation in Materials and Manufacturing Core User Facilities (CIMM-CUF)

Vision

The CIMM-CUF will be a distributed, sustainable, and widely-available resource conduit for supporting research and workforce development in advanced manufacturing in Louisiana and the region.

Mission

- Provide access to sustainable, dedicated, state-of-the-art, experimental facilities for research and development in advanced manufacturing.
- Develop and establish sustainable advanced manufacturing training and education programs based on the CIMM-CUF material and human resources.
- Continuously incorporate new experimental facilities relevant to advanced manufacturing so as to make state-of-the-art resources available to academic, industrial, and government customers.

Description of the CIMM-CUF

The CIMM-CUF initially consists of existing experimental resource cost-recovery-center members, across the state of Louisiana. It is formulated as a conduit and a portal to experimental resources needed by academic, industry, or government users to support manufacturing related research and workforce development, with emphasis on advanced manufacturing.

Additional cost-recovery-centers may join the CIMM-CUF in the future, so long as they fulfill the following membership requirements:

- They are documented cost-recovery-centers with published user fee rates for use of resources and services.
- Their resources and services are openly available to users who is willing to pay the associated user fees. In situations where the instruments/services are highly specialized, it is understood that access may necessarily come in the form of a research collaboration with the relevant instrument scientists who have the requisite knowledge, expertise, and experience.
- The user fees charged to users from any Louisiana public institution of higher education shall be the internal rates offered to users of the institution in which the cost-recovery-center resides.
- They will participate and contribute to the education and outreach activities as mandated by the CIMM program, subject to any relevant user fees associated with services rendered for this purpose.
- They maintain, sustain and augment their experimental infrastructure and educational programs so that they are continuously and reliably available to users.
- They produce and provide an annual activity and fiscal report, documenting usage, revenue, and sustainability actions.

Inclusion of any relevant cost-recovery-center into the CIMM-CUF will require an application documenting the fulfillment of the membership requirements above. The application will be reviewed by the CIMM-CUF leadership team, who will make the final decision. Initial induction of a cost-recovery-center into the CIMM-CUF will include a one-year probationary period, so as to verify that the membership requirements are met.

CIMM-CUF Leadership Team

The CIMM-CUF Leadership Team will consist of representatives of the institutions who are a part of the CIMM program, augmented by representatives of non-CIMM institutions whose cost-recovery-centers are a part of the CIMM-CUF. Each institution will be represented by as many members as the number of their cost-recovery-centers contributing to the CIMM-CUF, preferably someone with major management responsibilities for these cost-recovery-centers.

CIMM-CUF Founding Members

The CIMM-CUF founding members are all documented and verified experimental resource cost-recovery-centers and fulfill the membership requirements. They are:

- LSU's Advanced Manufacturing and Machining Facility (AMMF): The AMMF has both an educational and research mission and incorporates microscale subtractive manufacturing machine tooling, macroscale CNC and traditional subtractive manufacturing machine tooling and auxiliary equipment. It also includes additive manufacturing machines for plastics and the selective laser melting (SLM) additive manufacturing machine for metals, acquired as a part of the CIMM program and leveraging additional state funds.
- LSU's Materials Manufacturing, Testing, and Evaluation Facility (MMTEF): The MMTEF incorporates commercial and custom materials synthesis, testing, and evaluation equipment and instrumentation. These include a commercial arc melting system for alloy ingot synthesis, and a custom designed and constructed inductively-coupled-plasma (ICP) assisted physical vapor deposition/chemical vapor deposition (PVD/CVD) system. Mechanical testing equipment under the MMTEF include several hydraulically-driven uniaxial mechanical testing systems, together with accessories, such as extensometers and bending jigs, as well as ultrasonic non-destructive evaluation equipment. Acquisitions implemented as a part of the CIMM program, including a powder synthesis system, and upgraded PVD/CVD systems will be incorporated into the MMTEF.
- Louisiana Tech's Institute for Micromanufacturing (IfM). IfM includes 48,000 ft^2 of laboratory space (including 5,000 ft^2 of modular clean-room space). The IfM houses a range of experimental equipment for nanofabrication, measurement, and characterization well suited to the mission of CIMM and specific STT1 and STT2 milestones. Advanced heat exchanger and gas chromatograph work will be specifically supported among other CIMM efforts.
- LSU's Shared Instrumentation Facility (SIF): The LSU SIF houses a broad spectrum of multi-user materials characterization and microscopy instrumentation and services. Its assets include Focused Ion Beam (FIB) microscopy and nanomachining, Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM), X-ray Diffractometry (XRD), SQUID Magnetometry, and X-ray photoelectron spectroscopy (XPS) instruments, as well as various optical microscopy instruments.