CAVS is an interdisciplinary center. It provides engineering, research, development, and technology transfer teams focused on complex problems.

Computational Engineering Program

Computational Engineering (CmE) is a unique interdisciplinary program offering MS and PhD degrees through the Bagley College of Engineering at Mississippi State University (MSU). The CmE program accepts students with undergraduate and graduate degrees in engineering, mathematics, computer science, or the physical sciences.

Mississippi State University is a comprehensive, doctoral-degree-granting university offering to a diverse and capable student body a wide range of opportunities and challenges for learning and growth; to the world of knowledge, vigorous and expanding contributions in research, discovery, and application; and to the State and its people in every region, a variety of expert services. Mississippi State University is designated as a Doctoral/Extensive institution by the Carnegie Foundation for the Advancement of Teaching.

The High Performance Computing Collaboratory is a coalition of member centers and groups that share a common core objective of advancing the state-of-the-art in computational science and engineering using high performance computing; a common approach to research that embraces a multi-disciplinary, team-oriented concept; and a commitment to a full partnership between education, research, and service.

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CFD Mission
To serve Mississippi and the nation through research and development associated with multidisciplinary simulations and their application to the analysis and design of complex systems.

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Core Competencies
- Solution algorithms
- Mesh generation and geometry modeling
- Multiphysics frameworks
- Chemically reacting flow
- Multiphase flow
- Turbulence modeling
- Biofluid dynamics – modeling and simulation
- Fluid-structure interaction
- Multidisciplinary optimization and design
- Rotating machinery
- Uncertainty analysis
- Visualization and analysis of simulation data

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