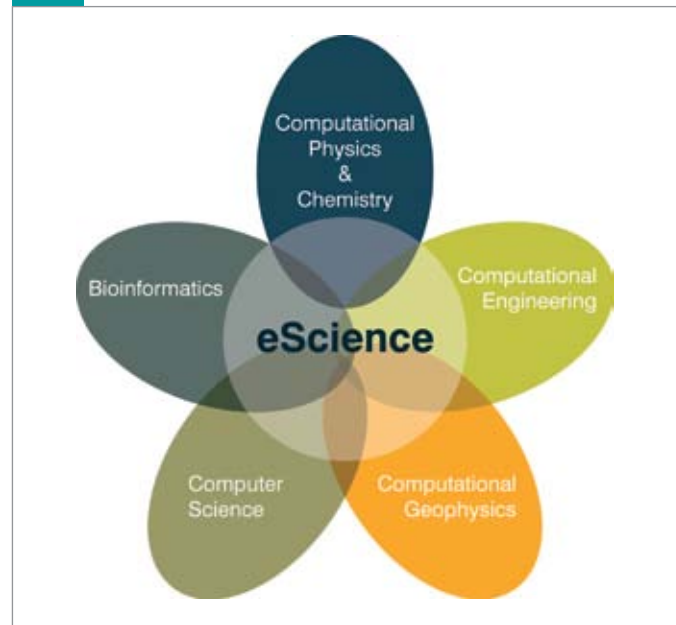# CENTER FOR COMPUTATIONAL SCIENCE AND ENGINEERING – CECC

The Center for Computational Science and Engineering (CECC) aims to develop and apply advanced computational modeling techniques to solve problems at the frontier of computational engineering and sciences and to promote substantial advancements in technological innovation, education and dissemination of knowledge in the broader area of eScience.

The Center brings together highly qualified scientists from the institutes of Biology, Computer Science, Physics, Mathematics, Chemistry, and School of Mechanical Engineering at UNICAMP, as well as distinguished scientists from the universities of Texas and Yale (United States), Graz (Austria), and Buenos Aires (Argentina). The Center finds its unifying scientific focus in the field of computational modeling and high-performance computing.

It is expected that the Center will be able to address and solve a variety of problems at the forefront of science, including nanomaterials; complex biomolecular systems of interest to human health and bioenergy; bioinformatics; particulate materials, porous and continuum media; and computational geophysics. All of these scientific areas involve the development of advanced techniques in parallelism extraction, multi-core architectures and management of big data. The Center is expected to implement a selective program to attract well-qualified students and post-doctoral researchers to work at CECC and to maintain an active agenda of international scientific cooperation.

Is part of the mission of CECC to promote and create a means for stronger interactions between academia and industry and the dissemination of knowledge and education. The Center will harbor a Science Education and Dissemination unit, which will be responsible for organizing and implementing activities based on the development of eLearning materials directed toward teachers and students of the Brazilian public school system.

The eScience Center at UNICAMP will constitute a world-class interdisciplinary research center dedicated to the development and application of advanced high-performance computer simulations, modeling, bid data management and massive computation in general to a variety of problems ranging from geophysics to molecular sciences

Science Education and Dissemination unit will also implement a program to promote greater visibility of the Center's research activities. In particular, the organization of a strong program of seminars, courses, and summer schools dedicated to various aspects of computational modeling and computer science. The Center will also harbor a Technology Transfer division that is expected to interact closely with the University's Innovation Agency (Inova) to create opportunities for transferring new technologies and methodologies developed by the Center to industry, government, and the general population. Through its Technology Transfer core, the Center will promote increased networking between its researchers and industry. Its data infrastructure will be developed to support cooperation among the Center's researchers, foster cooperation with other scientists, and disseminate the Center's scientific and educational achievements.

Host Institution

State University of Campinas (UNICAMP)

Associated Institutions

Texas University, United States
Yale University, United States
University of Buenos Aires, Argentina
Graz University, Austria
Biocelere Agroindustrial Ltda. (BIOCELERE)

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