



Information Technology@LSU

New Faculty Positions in Multiple Areas

This year, through Governor M. J. "Mike" Foster Jr.'s leadership, the Louisiana legislature approved \$22 million in new, recurring funding for a statewide Information Technology (I.T.) initiative to build research capacity and promote economic development and diversification throughout the state. Governor Foster proposed this initiative to complement Vision 20/20, the state's master plan for economic development, which calls for advancement in six key technology areas (www.lded.state.la.us/new/vision2020/contents.htm). Higher education has been identified as the driver for economic development in the I.T. arena and, as the state's flagship institution, Louisiana State University (LSU) has been charged with a leadership role, receiving \$7 million in recurring funds in the current budget year, to rise to more than \$9 million on July 1, 2002. LSU is working closely with four sister institutions—Louisiana Tech, the University of Louisiana at Lafayette, the University of New Orleans, and Southern University—that are also targeted for investment under the governor's initiative.

In connection with this initiative, LSU has established a **Center for Applied Information Technology & Learning (LSU CAPITAL)**. The objectives of this center are

- to better prepare LSU students to enter the modern, I.T.-intensive workplace;
- to focus more of LSU's research enterprises on I.T.-related fields of discovery; and
- to promote a more rapid deployment of new technologies into the marketplace.

LSU CAPITAL will provide the framework and infrastructure necessary to foster vibrant interactions among all faculty engaged in information technology research and teaching. New faculty, including some who will be appointed to endowed chairs and professorships, will be hired into several new "cluster" areas with the following research foci: core computing and communications, biological computing, materials science and engineering, and information systems. Efforts are under way to enhance the University's high-performance computing and communications infrastructure through the acquisition, for example, of a teraflop-class Linux cluster supercomputer. By 2006 between three and four dozen high-quality faculty hires will be made through LSU CAPITAL, beginning with the 2002-03 academic year.

Director of LSU CAPITAL

LSU is seeking applications for a permanent director of LSU CAPITAL. The successful candidate must have a Ph.D. and an established record of exceptional research and teaching in a subfield of information technology, such as one of the areas mentioned above. The director must understand how to interface well with the state's business community and how to transfer to the marketplace discoveries that are made through research in an academic environment. The director must have the ability to manage people within a large program; extremely strong organizational and communication skills; sound judgment; a desire to innovate; and a strong work ethic. Reporting to the Provost through the Vice Chancellor for Research, the director of LSU CAPITAL will lead efforts to hire exceptionally qualified faculty into new I.T. clusters, as described below, and will partner with the Vice Chancellor for Research in spearheading efforts to promote an entrepreneurial atmosphere throughout LSU's research enterprise.

Core Information Technologies

LSU seeks to hire outstanding tenure-track faculty with research and teaching expertise in the core areas of information technology. These include both theoretical and application aspects of, for example, high-performance computing; networking and tether-free communication systems; advanced data mining, storage, encryption, handling, and/or visualization; and the human-computer interface. LSU expects to make both junior and senior appointments in this area and will consider hiring an appropriately configured interdisciplinary group should the opportunity arise. The "core I.T." faculty cluster will sit at the center of LSU CAPITAL, providing transdisciplinary expertise to researchers in other I.T. clusters, such as those described below. In this spirit, selected faculty will hold joint appointments within LSU CAPITAL and one or more academic departments, as appropriate. These appointments may be through the Departments of Biological Sciences, Chemistry, Civil & Environmental Engineering, Computer Science, Electrical & Computer Engineering, Industrial & Manufacturing Systems Engineering, Information Systems & Decision Sciences, Mathematics, Mechanical Engineering, and others.

Biological Computing

Advances in transdisciplinary, I.T.-based research will profoundly influence the future of the biological sciences. LSU CAPITAL seeks to strengthen ongoing interdisciplinary efforts in biological computing and visualization by hiring outstanding tenure-track faculty with the mathematical and/or computational skills needed to advance genomics/bioinformatics at the genetic and evolutionary scale, and to advance physiological understanding of cellular signal transduction mechanisms at the cellular and molecular level, including macromolecular structure and interactions. Drug and vaccine design, biomaterials development, biosensors and intelligent biondiagnostics, and new algorithms to advance the interpretation of genomic/proteomic information are among areas of interest.

Materials Science & Engineering

New discoveries and applications in materials design and technology have been essential components of the rapid advances in electronics and biomedical and information technology driving the modern economy. In particular, the design and characterization of new materials provides for the development of smaller, faster, and higher performance components. Understanding of materials properties enables more effective means of developing processing techniques in the I.T. arena. We

are seeking exceptional faculty whose scholarly interests will enhance and deliver additional technological advances. These joint appointments will be made between LSU CAPITAL and appropriate academic units, including the biological sciences, chemical engineering, chemistry, civil engineering, computer science, electrical and computer engineering, mathematics, mechanical engineering, physics and astronomy, and others. Initial hires will augment interdisciplinary strengths in microelectromechanical systems and nanostructured materials. Expertise in micro/nanoscaled materials, macromolecular studies, advanced fabrication techniques, and designed processing will facilitate microdevice research. Research in materials design, modeling and simulation, and engineering—including work on dual phase microcomposites, superconductors, and processing materials to create novel microdevices for biological, environmental, medical, and sensing/actuation applications—are of particular interest.

Information Systems

Advances in computing hardware, software, telecommunications, and related services have spawned fundamental changes in the marketplace and in the very nature of competition itself. Within a given business enterprise, the impact of information technology upon business processes and practices has been pervasive.

LSU CAPITAL seeks faculty to augment ongoing research efforts that focus on the efficient deployment and use of information systems in organizations, as well as the ways in which advances in information technology, particularly the Internet and electronic commerce, are creating sweeping changes in the way people live and work. Through these positions we expect to strengthen the interdepartmental information systems program in the E. J. Ourso College of Business Administration and develop a strong synergy between this program and other core areas of I.T. research, such as computer science, computer engineering, industrial engineering, and mathematics. We expect to make appointments at all levels of tenure-track faculty, including three endowed chairs and a number of endowed professorships, in a variety of fields, including information technology strategy, management of technology, enterprise resource planning, supply chain management, knowledge management and information retrieval, financial information systems, electronic commerce, and collaborative technologies and virtual teamwork.

The University

LSU is classified as a Doctoral/Research-Extensive University by the Carnegie Foundation, and is also one of only 25 universities nationwide designated as both a land-grant and a sea-grant university. LSU is the flagship research university in Louisiana's public system of post-secondary education. LSU currently (fall 2001) enrolls more than 31,000 students. In 2000-2001, LSU awarded more than 5,300 degrees, including more than 4,000 bachelor's degrees, nearly 1,000 master's degrees, 264 doctorates (Ph.D. and Doctor of Musical Arts), and 79 doctorates in veterinary medicine. Baton Rouge, located on the Mississippi River 70 miles north of New Orleans, is the state capital and the geographical center of South Louisiana's famed cultural, historical, and recreational attractions.

LSU is moving quickly with high levels of focus to advance in key areas. On the undergraduate level, LSU has transformed what was an open admissions university only 13 years ago into an increasingly selective institution. In 1988 the six-year graduation rate was 39 percent; it is currently 58 percent, having just recorded a rise of four percentage points over the previous year. LSU is implementing a residential college system for its undergraduates, including a new I.T.-immersive residential college that will open in fall 2002.

On the graduate level, LSU offers nationally competitive programs across the full disciplinary spectrum of the sciences, social sciences, arts, and humanities. The University has identified 12 programs as its "foundations of excellence"—and has allocated some \$20 million to those priority programs in the last three years. Typical among the "foundations of excellence" is the Department of Chemistry that has for several years been the nation's leading producer of African American Ph.D.s in chemistry and that, according to the October 29 issue of *Chemical and Engineering News*, ranked eighth in the nation in 1999 among all universities, private and public, in expenditures on chemical research equipment. Other "foundations of excellence" programs of central importance to the research foci of the information technology initiative are in information systems and decision sciences, chemical engineering, biological sciences, mathematics, and physics and astronomy. LSU also boasts a variety of exceptional research facilities, including a synchrotron light source (the Center for Advanced Microstructures & Devices) that supports research in materials science and engineering and in the biological sciences (for example, with a beamline dedicated to protein crystallography). Learn more about LSU at the University's website, www.lsu.edu.

How to Apply

The new faculty positions, including the directorship of LSU CAPITAL, will be available July 1, 2002. While the University expects to fill positions through LSU CAPITAL over the course of several years, review of applications will begin immediately, on a rolling basis. LSU seeks inquiries, nominations, and applications (the latter with a statement describing the candidate's research and teaching, a *curriculum vitae*, and the names, addresses, telephone numbers, and e-mail addresses of five references). Please direct all correspondence to Professor Joel Tohline, Interim Director, LSU CAPITAL, c/o the Office of Research & Graduate Studies, David Boyd Hall, LSU, Baton Rouge, Louisiana 70803; telephone 225/578-5833; fax 578-5983; e-mail tohline@lsu.edu.

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