

Working Together

Public, private groups team up for disaster management • *Christine Payton*

A NEW INSTITUTE AT THE UNIVERSITY of Louisiana at Lafayette is tackling disaster management full force.

The National Incident Management Systems and Advanced Technologies (NIMSAT) Institute is set to empower national, state and local incident managers during catastrophic times.

After witnessing the effects of hurricanes Katrina and Rita in 2005 and other disasters that followed, NIMSAT leaders knew questions about management, homeland security, private sector supply chains and critical infrastructures needed to be addressed.

“At the foundations of NIMSAT are efforts to enhance the understanding of threats and vulnerabilities to the nation’s critical infrastructure and improve the resiliency of private sector supply chains that fuel the national economy,” said Dr. Ramesh Kolluru, NIMSAT’s executive director.

“NIMSAT will do this by processing and analyzing data using supercomputing and visualization technologies. The Institute is built on the expertise of researchers from UL Lafayette’s Colleges of Business Administration, Science, Liberal Arts and Engineering, along with those of its national partners.”

These national-scale partners include James Lee Witt Associates – a part of GlobalOptions Group, WalMart, SGI, Priority 5, CISCO, Tulane University,

San Diego State University and many others. At NIMSAT’s core is a partnership between the public, private and governmental sectors leading to cross-cultural

collaborations that could fundamentally impact the way the nation manages disasters – regardless of their cause.

“NIMSAT is a key public-private partnership working to prepare us for the next disaster that strikes, be it natural or manmade. Its state-of-the-art technology provides the kind of testing we need to simulate disasters and smartly direct the response of government and the private sector,” said U.S. Sen. Mary Landrieu. “I am proud that Lafayette is the home for this institute – bringing together the best

and brightest to bolster our homeland security. I will continue to work to ensure UL Lafayette and NIMSAT have the funding they need to continue their success.”

By leveraging the expertise of its 20 public and private sector partners from across 10 states, NIMSAT is pursuing an all-hazards approach to homeland security and disaster lifecycle. Plans are to conduct research, develop applications, prepare the next generation workforce of homeland security and provide operational and decision support to enhance the nation’s

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SENATOR MARY LANDRIEU

ability to manage incidents on any governmental level.

NIMSAT will tap into supercomputing systems across the nation, including the Louisiana Optical Network Initiative (LONI) and the National LambdaRail (NLR).

In addition, the Institute has formed a partnership with the Louisiana Immersive Technologies Enterprise (LITE) at UL Lafayette. The facility is one of the world’s most advanced technology resources for industry, government and research. LITE’s supercomputers – 160-processor SGI Altix 4700 – feature 4.1 trillion bytes and can compute and visualize complex disaster models, data and scenarios.

“Public-private partnerships are essential in facing many of the challenges in preparing for disaster. NIMSAT will be vital in the creation of these partnerships,” said James Lee Witt, chief executive officer of James Lee Witt Associates, one of the Institute’s partners. “NIMSAT will bring together stakeholders and encourage the real-time coordination needed during a crisis to improve situational awareness and make good decisions.”

NIMSAT seeks to contribute to the mission of saving human lives, strengthening the private-sector supply chains that drive the national economy and providing the nation’s critical infrastructure and key resources that support the economy and everyday life. ■

NIMSAT’s National Level Partnerships (Unified by the National Lambda Rail)



ACADEMIC INSTITUTIONS:

1. University of Louisiana at Lafayette
2. Louisiana State University (LSU/Ag Center)
3. Tulane University
4. San Diego State University (SDSU)
5. University of California, San Diego (UCSD)
6. UC, Santa Barbara (UCSB)
7. Texas A&M University System (TAMU)
8. Arkansas Tech University (ATU)
9. Mississippi State University (MSU)
10. University of Alabama (UA)

ORGANIZATIONS/PRIVATE SECTOR PARTNERS:

11. Louisiana Immersive Technologies Enterprise (LITE)
12. National Center for Atmospheric Research (NCAR)
13. James Lee Witt Associates (JLWA)
14. Priority 5
15. Idaho National Lab (INL)
16. SGI, Inc.
17. CISCO, Inc.
18. Wal-Mart
19. Rextag Strategies Corp.

Latest Addition

Picard Center will focus on making children's lives better

THE CECIL J. PICARD CENTER for Child Development will bring together several groups who share a common goal: improving Louisiana by meeting the needs of its children.

It's under construction in University Research Park, adjacent to the Louisiana Immersive Technologies Enterprise on East Devalcourt Street.

Named in honor of Louisiana's superintendent of education from 1996-2007, the 40,000-square-foot building is expected to be completed within two years at a cost of about \$7.2 million.

The complex will house the university's:

- Center for Innovative Learning and Assessment Technologies;
- Educational Counseling unit;
- Educational Foundation and Leadership Department;
- Center for Gifted Education; and
- Department of Psychology.

The new facility will also include:

- the Loyd J. Rockhold Distance Education Conference Center;
- a research library; and
- a data and technology analysis unit.

The Cecil J. Picard Center for Child Development was established in 2005 at UL Lafayette after five years of development. Now in temporary offices in O.K. Allen Hall, it employs about 20 evaluation and research professionals who concentrate on issues such as early childhood and k-12 education, health and lifelong learning.

The center's staff is probably best known for evaluating programs, such as LA 4, the state's early childhood education initiative, and Reading First, which is intended to help schools improve children's reading achievement by using scientifically proven instruction methods.

National collaborations include work with the RAND Corporation to

track schools' short-term and long-term assistance to children displaced by Hurricanes Katrina and Rita in 2005.

As the center expands the scope of its work, it will focus on tracking children's educational progress in Louisiana from birth to age 25.

"We are well on our way to becoming the national model for child development centers," said Dr. Billy Stokes, the center's director. "With the access to data we currently have, we are undoubtedly the best resource for educational information in Louisiana."

The center's financial support has included donations by Loyd J. Rockhold and the Special Children's Foundation, and includes:

- the Loyd J. Rockhold Endowed Chair
- the Paula Chavers Rockhold Eminent Scholar Endowed Chair in Child Development;



Cecil J. Picard

- the Special Children's Endowed Professorship; and

- a \$2 million donation earmarked for building the facility. The center also receives support from the Cecil Picard Endowment through the Community Foundation of Acadiana.

Then-Gov. Kathleen Blanco spoke at a groundbreaking ceremony in December. "I

can think of no better way to cement Cecil Picard's legacy than to continue the groundbreaking work he began with early childhood education," she said.

Picard had the third-longest tenure of a state superintendent of education in Louisiana and was the catalyst for many nationally recognized educational initiatives.

He was a teacher, coach and principal in Vermilion Parish and later served in the Louisiana House of Representatives and Louisiana Senate. ■

 ccd-web.louisiana.edu



Construction of the Cecil J. Picard Center began in December.

Engineers Study Alternative Energy

A \$1 MILLION SATURN diesel turbine generator has given biofuel research at UL Lafayette a boost.

It was donated to the College of Engineering by Solar Turbines in Lafayette. The company, which is owned by Caterpillar, has corporate headquarters in San Diego.

"The new equipment positions UL Lafayette's engineering program with a developmental capability not found at many colleges. It will be used in conjunction with other donated

equipment to form the cornerstone for a fast-growing alternative energy research focus within the College of Engineering," said Dr. William Emblom, an assistant professor of mechanical engineering.

The new equipment will be used by several faculty members who are working with area industries to make Acadiana a leader in



This Saturn diesel turbine generator can power about 700 homes.

energy management. For example, they are studying the use of biodiesel, a renewable fuel made from vegetable oil, to power the turbine generator. Their goal is to assess economic and technical benefits derived through the use of biodiesel.

"Other related work includes the use of the solar turbine and generator system in conjunction with the Combined Heating and Power Process," Emblom said. "The CHP process is being used by companies across the nation to reduce energy

costs by first generating electricity and then using the waste heat to provide cooling or heating for buildings and other applications."

The turbine generator is capable of producing enough electricity to power about 700 homes. Along with an electrical generator, it's permanently mounted inside a tractor-trailer that is fully transportable.

FISH DNA MAY YIELD VALUABLE CLUES

DOES THE DNA of the electric fish hold secrets that could someday advance the treatment of human spinal cord injuries?

Dr. James Albert, an assistant professor of biology at UL Lafayette, is intrigued by the possibility. The eel-like, electric fish may also help scientists develop bio-

fish frequently bite off the tails of this species; the electric fishes have responded by growing back what has been removed.

"You can cut off the back third of the body and they will regenerate everything, including the spinal cord," Albert stated in *Nature News* in February.

If scientists can figure out which genes are responsible for an organism's ability to generate electricity, the information might also be useful in the treatment of medical conditions such as Parkinson's disease, epilepsy and muscular dystrophy.

Albert and some colleagues have started genome sequencing of the electric fish to try to get the information they need. "Sequencing gives you the pieces of the puzzle. But you have to sequence it 10 times over and then do a lot of analysis of the data to put the puzzle back together," he said. A proposal to sequence the whole genome of the *Electrophorus electricus* is being reviewed by the Department of Energy's Joint Genome Institute.



Electrophorus electricus

batteries that could repair and replace themselves.

South American electric fishes, found only in the Amazon Basin, hold so much promise because they have an exceptional ability to regenerate. Electro-sensing cat-

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