August 14- August 20, 2011

LSU Researchers Score Grant for Half a Million to Develop Offshore Oil Spill Risk Scenarios

A team of LSU researchers, lead by Mayank Tyagi, assistant professor of the LSU Department of Petroleum Engineering and the Center for Computation & Technology, has been awarded $539,928 from Shell for their three year project titled "Offshore Oil Spill Scenarios Development."

The Deepwater Horizon disaster made it incumbent on the offshore oil and gas community to evaluate the risks in all phases of offshore development and prepare reliable, fast response mechanisms to minimize the environmental, economic, and human health damage caused by such spill events.

This project will present an analysis of probable as well as potential events that could lead to accidental release of hydrocarbons into the deepwater environments. A set of community actions will also be developed that leverage and incorporate the principles of business preparedness, mitigation, and continuity to decrease the economic impact of a spill event.

"Our goal is to approximately quantify the risks and probabilities associated with a variety of potential leak source scenarios using the available data, identify areas where additional data are needed, and combine with a critical flow path analysis to determine different criteria for evaluating priority orders for intervention techniques," said Tyagi.

Other team members are Richard Hughes, John Smith, Steve Sears, and Darryl Bourgoyne from the LSU Department of Petroleum Engineering, and a complementary team led by Joseph Booth from LSU's Stephenson Disaster Management Institute (SDMI).

SDMI will assist with both the social sciences (community impact) as well as the business perspective (economic impact of both the disaster response and recovery aspects) of disasters and prepare a study of the impact of each of the proposed scenarios. The report will examine possible timelines, tools, and resources that can be deployed to more effectively manage the situation and minimize the health, economic, and social consequences of the various scenarios.

For more information on this or other research being done at the LSU Center for Computation & Technology, visit: http://www.cct.lsu.edu/home.

CCT Spotlight:

Theda Daniels-Race

Theda Daniels-Race, Associate Professor, is part of the Material World Focus Area at the CCT.

"My group uses traditional as well as more novel methods, such as conductive probe atomic force microscopy, to measure the electrical characteristics of nanoscale materials," said Theda. "With a background in compound semiconductor crystal growth, characterization, and device development, I tell my students that, 'I was nano long before nano became cool.' My core experimental work involves a wide range of collaborations with colleagues in chemistry, materials science, and physics, to name a few. However, I am cultivating expanded interests in curriculum development for nanoscience/nanotechnology, the impact of nanotechnology in developing countries, and the relationship between research, science policy, law, and the public perception of 'nano."

When asked why she does what she does, Theda said, "I've always loved science for as long as I can remember and decided that I wanted a Ph.D. when I was 5."

Theda is a native of New Orleans. She and her husband, Paul, have two sons, Kylan, 17, and Peyton, 9.

To unwind, Theda enjoys Yoga, cultural anthropology and traveling to the beach, when she has the time. She has recently picked up an interest in the Sci-Fi subgenera of Steampunk.

Theda has several favorite movies, which include, *2001: A Space Odyssey; Kung Fu Hustle; Fight Club; Kill Bill Volumes 1 and 2; Ultraviolet; Equilibrium*; and her latest favorite, *Inception*. She does not have a particular favorite author, but she is currently reading Pulitzer Prize winning reporter/author Janny Scott's biography of President Obama's mother, *A Singular Woman*. Theda doesn't have a favorite song, but she said, "I

am on the tail end of my alternative metal (a la Linkin Park) and just past the middle of my electronica (mainly Daft Punk) phases. Edward Norton, Christian Bale and Ann Bankroft are her favorite actors.

Theda believes she is pretty mundane, but quirky, and that she has a sense of humor when she's in the mood. She is also an old school Trekkie, but she has never had the chance to go to a convention. One item on her bucket list includes learning another language or two, at least conversationally.

Her prescription for life is, "Put God first, and the rest will follow."

CCT Welcomes:

- Christopher Davis joins Susanne Brenner's research group at the CCT as a postdoctoral researcher and is part of the VIGRE program, or Vertical Integration of Research and Education. The VIGRE postdoctoral program is supported by the NSF VIGRE program, the College of Science and the Center for Computation and Technology. VIGRE is one of the main parts of the NSF Enhancing the Mathematical Sciences Workforce in the 21st Century.

Pats on the back:

- Thomas Sterling received an award from NSF titled "CSR: Large: Collaborative Research: PXGL: Cyberinfrastructure for Scalable Graph Execution." The award is for $700,000 for four years.

- Mayank Tyagi was a Co-PI on an award received from Shell titled "Multiphase Gas Lift Testing and Design." The award is for $428,304 for three years.

- Thank you to everyone involved in the iOS App Boot Camp!

Please Note:

- The 2011 HPC User Satisfaction Survey is open for comment until August 31st. Anyone who uses high performance computing resources at LSU or LONI is invited to take a few minutes to complete the survey: http://www.hpc.lsu.edu/survey/public/survey.php?name=hpc_at_lsu_user_2011. Please help us understand your needs and future requirements.

- Prior approval is required for Special Meal Requests. Employees who make meal purchases without prior approvals may find that they must cover the cost of any monies spent for an unapproved event out of pocket. Dine-in restaurant meals are not allowed on LaCarte credit cards. Please contact Susie McGlone (susie@cct.lsu.edu) prior to any special meal with visitor(s) to file the appropriate request for approval.

Prior approval could take up to two weeks, so please plan accordingly.

- Please remember to send your news concerning grants, awards, conferences, or other pertinent information to CCT Event Coordinator Jennifer Fontenot at jennifer@cct.lsu.edu

- Follow CCT with social media to access photos and see news, events or updated information. These pages are public; you do not need an account to view the information.
    - Facebook group : LSU Center for Computation & Technology
    - Twitter : LSUCCT
    - YouTube channel : LSUCCT

Upcoming events:

August 15-19: Proven Algorithmic Techniques for Many-core Processors

Upcoming Grant Deadlines:
Note: Please check the CCT deadline Web site, since it is updated daily.