



July 24- July 30, 2011

LSU Team to Improve Models for Deepwater Well Flow Rate Prediction

A team of LSU professors, led by Christopher D. White, associate professor of the Department of Petroleum Engineering and the Center for Computation & Technology (CCT), is researching ways to improve modeling capabilities to better characterize, predict, and analyze pressure and rate behavior in deepwater wells.

The researchers were awarded a grant from Shell for \$300,000 over the course of three years for the project, "High-Rate Flow in Gravel Packed Wells: Completion Characterization and Pressure Transient Behavior."

"Characterization, prediction, and analysis of pressure and rate behavior in deeper wells presents many challenges," said White. "Flow geometry in completions may be complex, especially for gravel-packed wells; flow may be non-Darcy; and layering, skins, and boundaries may interact such that pressure-rate transients are difficult to interpret consistently."

"The goal of the research is to improve modeling capabilities by characterizing samples of reservoirs and completion materials by x-ray tomography, conventional core analysis, and capillary pressure measurements; and lab measurements of permeability and inertial parameters. Flow modeling will assess the impact of completion and reservoir properties on single and multiphase pressure behavior. Field observations of anomalous pressure behavior will be analyzed using the methods developed in this project," said White.

Other participants include fellow CCT faculty member Mayank Tyagi, assistant professor of the Department of Petroleum Engineering; Karsten Thompson, professor of LSU Department of Chemical Engineering; Stephen Sears, professional-in-residence in LSU Department of Petroleum Engineering; and Clint Willson, associate professor of the Department of Civil and Environmental Engineering.

The team's specialties include microtomography, petrography, reservoir engineering, image analysis, and computational fluid dynamics.

The project will use imaging resources at the Center for Advanced Microstructures & Devices (CAMD), and Argonne National Lab, and is especially relevant to oil and gas development in the U. S. Gulf of Mexico.

For more information on this research or other computational modeling activities, <http://www.cct.lsu.edu/home>.

CCT Spotlight:

Joohyun Kim



Joohyun Kim is an IT Consultant, and is part of the CyD group at the CCT. Some of Joohyun's current research projects include the Louisiana Biomedical Research Network (LBRN) Bioinformatics, Biostatistics, and Comp. Biology (BBC) core, Science Gateway development for Life Science Applications, and research collaboration and support for Next-Generation Sequencing data analytics and structural bioinformatics.

Seoul, (South) Korea is Joohyun's hometown. He is married and has a 12-year-old daughter and a 10-year-old son. In his free time, he enjoys playing tennis and talking with his children.

Joohyun has a broad range of interests on gadget and computation except activities with Social Networking Sites. Joohyun's favorite place to vacations is Vermont, in the fall. He is multilingual, fluent in Korean, Japanese and English, and hope hopes to add Spanish to the list soon.

Pats on the back:

- Thanks to everyone involved in the Alice in Computation Land Camp last week!

CCT in the News:

AWM-SIAM Sonia Kovalevsky Lecture

Source: [SIAM](#)

Please Note:

- Everyone is invited to attend the Groundbreaking Ceremony for the Louisiana Digital Media Center on Wednesday, July 27th at 11:00 am. The groundbreaking will take place at the site for the LDMC, at south campus next to the LETC I building. The LDMC will be CCT's new home, shared with the EA North American Test Center. The groundbreaking is a historical event for LSU, as this will be the first time that both University and corporate entities will share a campus building.
- The LSU Center for Computation & Technology will host for the first time the LSU iOS Application Boot Camp August 1-12 (10 day camp; not including weekends) on the LSU Campus. This new educational experience offers LSU undergraduates the opportunity to gain knowledge while enhancing their entrepreneurial spirit. Participants will work in groups to create their own operating App and have it loaded on their personal device by end of camp. Registration fee is \$300. For more info and to register, visit <http://www.cct.lsu.edu/iosbootcamp>
- CCT is sponsoring a 1-day workshop on CUDA programming. This workshop should be of interest to anyone interested in developing programs to run on GPGPUs. It will be offered on July 28th from 9am - 5pm in 338 Johnston. If you are interested, please register on the HPC Training page at: <http://www.hpc.lsu.edu/training/index.php>. Schedule and a registration link are near the bottom of the page.
- LSU CCT will host an onsite computational science courses being offered by the [Virtual School of Computational Science and Engineering](http://www.vscse.org/). The course is "Proven Algorithmic Techniques for Many-core Processors" (August 15-19). Graduate students, post-docs and professionals from academia, government and industry can gain the skills they need to leverage the power of cutting-edge computational resources at these courses, which are being offered for a \$100 per-course fee. The course is one week long. For more information, visit <http://www.vscse.org/>.
- 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.
- Applications for the [SC11](http://sc11.supercomputing.org/) Student Volunteer Program are open and close on August 12, 2011. Undergraduate and graduate students are encouraged to apply as volunteers to help with the administration of the conference. In exchange for volunteering, they will receive complimentary conference registration, housing, and most meals. In addition, limited support will be provided for transportation expenses (such as airfare) for international students and students from groups that traditionally have been underrepresented in HPC. For more information visit <http://sc11.supercomputing.org/?pg=studvol.html> or email student-vols@info.supercomputing.org.

- 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, especially now that state funds are under a spending freeze. 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:

May 30- July 29: [NSF Research Experience for Undergraduates](#)

July 23- 27: [Workshop of Density Functional Theory](#)

July 31- Aug 6: [Computational Thinking from a Parallel Perspective](#)

August 1- 12: [iOS Boot Camp for LSU Undergraduates](#)

August 9-11: [SIGGRAPH](#) (Booth #841), Vancouver, Canada

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.