



July 26-Aug. 1, 2009

Professor Receives NSF Funding to Explore Alternative Energy Source

The National Science Foundation, or NSF, has awarded funding to Blaise Bourdin, an associate professor with the LSU Department of Mathematics and an adjunct faculty member with CCT for his proposal, “Applications of Variational Fracture: Enhanced Geothermal Systems.”

This proposal is funded through NSF funds stemming from the American Recovery and Reinvestment Act of 2009.

Enhanced geothermal systems are an alternative energy source in which heat is created when water circulates through artificially simulated fractures in rocks. Although intensely researched, enhanced geothermal systems are not widely used to produce energy.

Bourdin’s research in this proposal will examine the mechanisms scientists can use to create these artificial fractures and expand the use of geothermal systems, creating a clean, renewable, affordable and widely available energy source.

The group will combine mathematics, computational science and engineering research to better study these systems. The National Science Foundation funding will support the research of two undergraduate students and one graduate student for three years.

Using the University’s supercomputers and the resources of the Louisiana Optical Network Initiative, or LONI, Bourdin’s group will develop new models to create artificial fractures that produce energy. They will use supercomputers to get a more accurate idea of how this process works and conduct large-scale experiments to test their findings.

This project is the first step in what Bourdin intends to develop into a larger, multi-disciplinary research initiative at the CCT. Bourdin works with the Coast to Cosmos Focus Area at CCT, which looks at how high-performance computing can help scientists get a better understanding of physical processes in earth, space and the environment.

To see more details on Bourdin’s research, please visit <http://www.math.lsu.edu/~bourdin>.

Pats on the Back:

- Professor Thomas Sterling organized and chaired the third technical meeting of the National Science Foundation's Exascale Point Design Study, which took place July 15-18 at Sandia National Laboratory in Albuquerque, New Mexico. This work group, comprised of scientists and engineers from LSU, University of Southern California Information Sciences Institute, University of Illinois Urbana-Champaign, University of Delaware and Sandia National Laboratory, is addressing challenges to prepare worldwide scientific research for exascale supercomputers, which are capable of running a million trillion calculations per second.
- Professor Thomas Sterling was invited to participate in the 2nd meeting of the International Exascale Software Project, which involves collaboration among world experts in high-performance computing from Europe, Asia, and the United States. This meeting took place in late June in Gif-sur-Yvette, France.

CCT Welcomes:

- Michael Neilan, who received his Ph.D. this year from the University of Tennessee. He received the prestigious National Science Foundation Postdoctoral Research Fellowship, and he is joining the Computational Mathematics Group within the Core Computational Science Focus Area.

CCT in the News:

- CCT To Present at SIGGRAPH 2009
Source: HPC Wire
<http://www.hpcwire.com/industry/academia/CCT-to-Present-at-SIGGRAPH-2009-51792357.html>

Please Note:

- Future ALL CCT meetings for summer and the Fall 2009 semester will take place Aug. 26 (there will be a special presentation by LSU Intellectual Property at this meeting!), Sept. 23, Oct. 21, Nov. 11 and Dec. 16. All meetings are at 3 p.m. in Johnston 338 unless otherwise announced. Please make every effort to attend these important meetings.
- SIGGRAPH, the world's premiere conference on digital media, interactive technologies and computer graphics, is coming to New Orleans Aug. 3-7 at the Ernest N. Morial Convention Center. CCT will represent the University with a booth during the SIGGRAPH exhibition, Aug. 4-6, to highlight ongoing research in digital media. Stephen David Beck, Susan Ryan and Robert Kooima will give talks and presentations of their work during the speaker tracks at the conference. For more information, visit <http://www.siggraph.org/s2009>.
- IEEE Cluster 2009 will take place Aug. 31-Sept. 4 in New Orleans. Daniel S. Katz is general chair, and Thomas Sterling is program chair for Cluster 2009. More information about the conference is at <http://www.cluster2009.org>.

Please note the following deadlines for this conference:

Poster camera-ready deadline: July 31

Paper camera-ready deadline: July 31

- **Call for Student Participation in Cluster 2009:** The conference has received an award from the National Science Foundation to support student participation by covering advance student registration fees and providing \$200 per student toward lodging for up to 75 students. Students will be selected generally on a first-come, first-served basis, with some preference given for student authors of papers or posters. Students who wish to participate in Cluster 2009 can seek approval for this support by sending a single email to d.katz@ieee.org, with the subject "Cluster 2009 Student Support," and provide contact information and information about any authorship of material being submitted to the conference. Students also must attach a letter from their advisor/professor explaining how this program will advance the student's career. For more information on Cluster 2009, please visit <http://www.cluster2009.org>.

- Deadline open for SC09, Nov. 14-20 in Portland, Oregon:

STUDENT VOLUNTEERS/BROADER ENGAGEMENT

Applications Due: Monday, August 3, 2009

Notification: Monday, September 7, 2009

- Registration is now open for the Supercomputing 2009 Education Program at the conference in Portland, which will take place Nov. 14-17. The Education Program helps educators and students learn more about computational science topics and gives educators ideas to bring these topics into their classrooms. The program is open to undergraduate faculty, undergraduate and graduate students, and high school teachers. To register or for more information, please visit <http://computationalscience.org/sc09>.
- Please feel free to suggest nominees, including yourself, for the SC 09 Education Program Awards: <http://sc09.sc-education.org/opportunities/index.php>. Contact Kristen Sunde at ksunde@cct.lsu.edu if you need assistance with this process. Award categories are:
 - The Dr. Mary Ellen Verona Computational Science Teacher Leader Award is open to those who demonstrate computational science leadership and education, either in a formal classroom setting or in an afterschool program. Deadline to apply is Saturday, Aug. 1, 2009.
 - The Undergraduate Computational Engineering and Sciences (UCES) Award, hosted by the Krell Institute, is open for undergraduate faculty who have developed computational science curricula. Deadline to apply is Saturday, August 1, 2009.

- The Dr. Robert M. Panoff Student Award for Explorations in Science Through Computation is open to high school, undergraduate, and graduate students exploring science made possible through computation. Deadline to apply is Monday, August 31, 2009.
- The SC09 Student Contest Program is accepting team registrations. This is a competitive programming event, where teams consisting of no more than five students will be given eight to 12 problems from various scientific problem domain areas. The competition will take place Monday, Nov. 16 at the SC09 conference in Portland, Oregon. Awards will be announced on Tuesday, November 18 at an SC09 Education Program plenary session. Register your team today, http://sc09.sc-education.org/conference/studentcomp_signup.php. Deadline to register is Thursday, October 1, 2009.
- Please remember to send your news concerning grants, awards, conferences, or other pertinent information that should be communicated to CCT to PR Manager Kristen Sunde at ksunde@cct.lsu.edu.

Upcoming Grant Deadlines:

Note: Please see the CCT deadline Web site, as many NSF deadlines are listed here: <http://www.cct.lsu.edu/about/grants/deadlines/events.php>

- Information and Intelligent Systems (IIS): Core Programs
August 30 2009 10:00 am
At Most \$ 3,000,000.00 available
http://www.nsf.gov/pubs/2009/nsf09557/nsf09557.htm?govDel=USNSF_25
- Computing and Communication Foundations (CCF): Core Programs
August 30 2009 10:00 am
At Most \$ 3,000,000.00 available
http://www.nsf.gov/pubs/2009/nsf09555/nsf09555.htm?govDel=USNSF_25
- CISE Cross-Cutting Programs: FY 2010
August 30 2009 10:00 am
At Least \$ 3,000,000.00 available
http://www.nsf.gov/pubs/2009/nsf09558/nsf09558.htm?govDel=USNSF_25