

# Earth Probe Newsletter



An NSF funded Consortium for Materials Properties Research in Earth Sciences

<http://www.compres.us>

Vol.5 No.2 September, 2006, Stony Brook.

## COMPRES Fifth Annual Meeting Snowbird, Utah, 20-23 June 2006

Before the heat of summertime blew into Snowbird in Utah, the beautiful summer resort was invaded by enthusiastic participants of the fifth COMPRES Annual Meeting on June 20-23, 2006. Over a hundred scientists

and researchers from 46 institutions across the world gathered here discussing advances in experimental and theoretical mineral physics, cutting edge development in science and technology, and interdisciplinary collaborations between high pressure min-



eral physics and other Earth science disciplines.

The meeting featured multidisciplinary scientific keynote lectures, poster sessions, reports and future plans of COMPRES facilities and infrastructure

development projects. In addition, elections were held For new members of the Executive Committee, the Facility Committee and the Infrastructure Development Committee (see page 5 for

ANNUAL MEETING

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results of elections). A special session was devoted to discussion of the upcoming COMPRES renewal proposal. Harry Green, Chair of the Executive Committee reported on the process and progress of the renewal proposal preparation. Participants agreed that COMPRES has played a critical role in promoting the high-pressure mineral physics nationwide for a comprehensive understanding of the composition, structure and dynamics of the Earth's interior through community facility and infrastructure developments in the past four years. Capabilities of modern synchrotron and neutron have presented numerous opportunities for challenging high pressure experiments. ■



# Proposal for COMPRES 2007-2012 Renewal Submitted to NSF

Starting from an open forum at the 2005 annual meeting, followed by community solicitations for new or renewed initiatives for Infrastructure Development projects, Community Facilities Operations and Workshops, the proposal for COMPRES 2007-2012 renewal has been completed and submitted to NSF in August. The proposal was prepared by the COMPRES Executive Committee, Facilities Committee, Infrastructure Development Committee and COMPRES staff members on behalf of the 50 US member institutions of the Consortium. The proposal consists of three parts: A. Project Overview; B. Program Report; and C. Research Accomplishments.

Part A – Project Overview includes a summary of scientific highlights and technological advances in the first 4 years of COMPRES and the challenges for the next 5 years, an overview of the COMPRES Consortium, information on the member institutions and new faculty in mineral physics, management and organization, meetings and workshops, education and outreach activities, information technology and communications, and a list of publications.

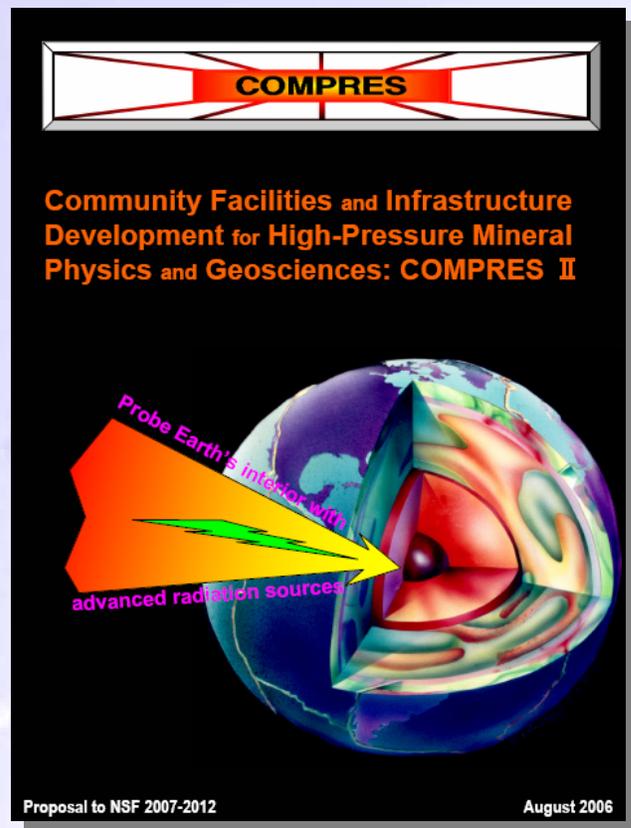
This part concludes with a presentation of the Program Plan and budget request for the next five years. The Budget Plan includes our estimates of the costs to carry out the activities that are summarized in the Project Overview and detailed in the Program Reports.

Serving as a guide to the overall proposal. Part A is heavily annotated with references to the location(s) of more detailed information provided elsewhere in the proposal.

Part B – Program Report consists of detailed progress reports on the Community Facilities operations and Infrastructure Development projects supported by COMPRES in the period 2002-2007 and proposed plans and detailed budgets for the period 2007-2012.

Part C – Research Accomplishments is a compilation of one-page summaries (One-Pagers) which report highlights of the scientific and technological achievements of students, staff and faculty researchers using COMPRES-supported facilities, data produced from COMPRES programs, and the infrastructure development projects supported by COMPRES in its first four years from 2002-2006.

COMPRES facilitates the operation of high-pressure beamlines for Earth Sciences at national synchrotron and neutron facilities, supports the development of new technologies for high-pressure research, and



The COMPRES 2007-2012 renewal proposal

advocates for science and educational programs to the various funding agencies.

The goal of COMPRES is to enable Earth Science researchers to conduct the next generation of highpressure science on world-class equipment and facilities. COMPRES does not fund research projects, rather it works to ensure that projects can be conducted. Individual research projects or collaborative research projects, such as the Grand Challenge, are formally independent from the COMPRES core grant; however they are intimately related intellectually as they give prime examples of the scientific problems that can be addressed using the facilities operated and the infrastructure developed by COMPRES.

COMPRES works to enhance the access to appropriate resources and infrastructure that exceed those available to the individual researcher. With a broad user base, this organization is facilitating the next generation of science.

The renewal proposal is available for review online in a PDF format at the COMPRES website: <http://www.compres.us>. ■

# President's Message

*Bob Liebermann*

We are proud of the awards and honors recently bestowed on members of the COMPRES community. These include:

Wendy Mao was selected to be the recipient of the 2006 Rosalind Franklin Young Investigator Award of the APS. She received this award at a ceremony at the Argonne National Laboratory during the Annual APS Users meeting in early May.

We were very pleased to learn that two members of the extended COMPRES family were elected to the U. S. National Academy of Sciences in April 2006: Jill Banfield of the University of California at Berkeley and Donald Forsyth of Brown University.

During the Goldschmidt Conference in Melbourne, Australia in August, James Badro was awarded the Houtermans Medal of the European Association for Geochemistry.

On 9-11 April, the Facilities Committee attended the Annual Meeting of SNAP [Spallation Neutrons at Pressure] at the SNS [Spallation Neutron Source] in Oak Ridge. Harry Green and I also attended this meeting, which included both technological progress reports and new science using neutron sources. Plans for COMPRES-supported activities exploiting this new neutron facility were discussed.

In the April 2006 issue of *Physics Today*, there is a splendid article written by Rus Hemley on "Erskine Williamson, Extreme Conditions, and the Birth of Mineral Physics." It is adapted from a lecture that Rus presented at the ceremonial opening of the new building housing the Center for Science at Extreme Conditions in Edinburgh, Scotland. (see page 6 for more details)

On 14 April, I participated in a *Journée Scientifique* in memory of Olivier Jaoul, who died in November 2005. The international symposium was convened by Jannick Ingrin and Frédéric Bézina at the *Laboratoire d'études des Mécanismes de Transfert en Géologie* of the Université Paul Sabatier in Toulouse, France. Bill Durham and I represented the U. S. All presentations were in French and Durham's was superb.

A Workshop on the Synergy of 21<sup>st</sup> Century High-Pressure Science and Technology was held at the APS

on 28 April to 1 May. It was convened by Hockwang Mao, Guoyin Shen, Wolfgang Sturhahn, Yanbin Wang and Russell Hemley and locally organized by Haozhe Liu, Veronica O'Connor and Michael Lerche. Details may found by following the link on the COMPRES Home Page. This workshop attracted more than 112 scientists and 20 graduate students and postdocs and was co-sponsored by COMPRES, CDAC, and HPCAT.

Harry Green and I represented COMPRES at the NSF/DOE Site Visit to GSECARS on May 17, 2006 at the APS, at the invitation of David Lambert [NSF] and Nicholas Woodward [DOE]. Mark Rivers and I spoke on the cooperative working relationship that has developed over the past four years, since the start of the COMPRES Cooperative Agreement with the NSF.

We welcome three new U.S. institutions and four foreign affiliates to membership in COMPRES (See page 12 for detailed list). These additions bring the total membership to 50 U. S. institutions and 27 foreign affiliates, quite a remarkable increase from the original 18 U. S. institutions who submitted the first COMPRES proposal in August 2001, with 0 foreign affiliates.

On June 5-6, I attended a Workshop on "Future Frontiers in High-Pressure Science with Energy Recovery Linac [ERL] X-ray Beams" at the Cornell High Energy Synchrotron Source [CHESS]. This was one of six workshops at CHESS this summer exploring the science enabled by the new ERL facilities being developed at Cornell with the support of the NSF.

Highlight of the month of June was the Fifth Annual Meeting of COMPRES held on June 20-23 at the Snowbird Alpine Village in Snowbird, Utah at over 8,000 ft, breaking the altitude record of the 2004 meeting at Lake Tahoe. More than 102 active participants attended plus guests and families.

Our thanks to the Program Committee [Quentin Williams, Chair; Jennifer Jackson, and Abby Kavner] for planning such a stimulating program in this special site.

*(continued on page 4)*

## President's message *(cont'd)*

On 25-30 June, I attended the Gordon Research Conference on High Pressure at the University of New England in Biddeford, Maine. This biennial meeting was first held in 1955, so the meeting this year is approximately the 50<sup>th</sup> anniversary conference and the first in more than 40 years NOT to be held at the Kimball Union Academy in Meriden, New Hampshire.

The conference included many outstanding invited talks, of which 9 [36%] were by mineral physicists:

David Stevenson  
Guy Masters,  
Guoyin Shen  
Thomas Ahrens  
Martin Wilding  
Isabelle Daniel  
Sebastien Merkel  
Li Li  
John Parise

More than 100 people attended this Gordon Conference, of which 33 were from the COMPRES community.

Of special significance for our field of mineral physics and the COMPRES community was the selection of Li Li from Stony Brook University to receive the 2006 Alvin Van Valkenburg Award. Names for the co-inventor of the diamond-anvil cell, this award is given every two years to someone young or new to the field and showing great promise.

COMPRES renewal proposal to the NSF for funding in 2007-2012

Much of the past six months has been occupied with preparation of the NSF proposal to request renewed funding for COMPRES in the period 2007-2012 [what we now call the COMPRES II era], with intense activity for both the Executive Committee and the Central Office.

On 22 August 2006, the proposal was finalized and submitted to the NSF via FastLane. It requests funding at the level of \$17,945,244 for the five year period.

We thank Ann Lattimore, Administrative Coordinator for COMPRES, for her extraordinary efforts in preparing this proposal, with key assistance from Jiuhua Chen, Samantha Lin, and Michael Vaughan.

Special thanks to Glenn Richard who designed and formatted all of the One Pagers in Part C which illustrate the remarkable scientific and technological accomplishments during COMPRES I.

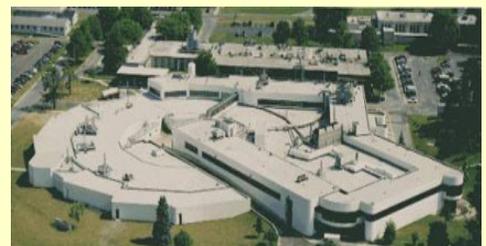
The full proposal is now installed on the COMPRES website.

On 27 August to 1 September, I attended the 16<sup>th</sup> Annual Goldschmidt Conference in Melbourne, Australia. Many of the keynote talks were presented by members of the COMPRES community, including Paul Asimow, James Badro, Simon Clark, Peter Eng, Eiji Ohtani, and Michael Walter. While in Australia, I also visited the Australian National University in Canberra as part of our collaborative research program with the laboratory of Ian Jackson. ■

## NSF Panel Site Visit for COMPRES Renewal Proposal



On Thursday, November 30, 2006, the Instrumentation and Facilities Panel [led by David Lambert and Russell Kelz] will make a Site Visit to COMPRES at the Brookhaven National Laboratory, where COMPRES supports the operation of the high-pressure community beamlines X17B2, X17B3, X17C and U2A at the National Synchrotron Light Source.



## COMPRES Committee Member Updates:

**Executive Committee:** The Executive Committee comprises the Chairperson, the Vice Chairperson, the President, and two additional members each elected by the Electorate. The responsibilities of the Executive Committee include coordination of activities, meetings, and workshops, educational and outreach programs, and coordination with the Grand Challenge programs. At all meetings of the Executive Committee, the presence of a simple majority of its members then in office shall constitute a quorum for the transaction of business.

- Harry Green, **Chair** (2004-2007) (951) 827-4505 ([hgreen@mail.ucr.edu](mailto:hgreen@mail.ucr.edu)) 2004-2007
- Jay Bass, (217) 333-1018 [website](#) ([bass@hercules.geology.uiuc.edu](mailto:bass@hercules.geology.uiuc.edu)) 2006-2009
- Michael Brown (206) 616-6058 ([brown@ess.washington.edu](mailto:brown@ess.washington.edu)) 2005-2008
- Donald Weidner, (631) 632-8211 ([dweidner@sunysb.edu](mailto:dweidner@sunysb.edu)) 2004-2007
- Quentin Williams, **Vice Chair** (831) 459-3132 ([quentw@rupture.ucsc.edu](mailto:quentw@rupture.ucsc.edu)) 2004-2007
- Mark Rivers, **Chair of Facilities Committee** - non-voting advisor (630) 252-0422 ([rivers@cars.uchicago.edu](mailto:rivers@cars.uchicago.edu))
- Nancy Ross, **Chair of Infrastructure Development Committee** - non-voting advisor (540) 231-6356 ([nross@vt.edu](mailto:nross@vt.edu))

**Facilities Committee:** This committee oversees the community facility program. It will evaluate the effectiveness of the service delivered by the community facilities. It will coordinate between facilities (such as between beamlines) so as to maximize the community's effectiveness in using these facilities. This committee will consider the community's needs and recommend changes in the levels of support of all possible community facilities. It will formulate policies for evaluation of user proposals for accessing COMPRES community facilities.

- Mark Rivers, **Chair** (2005-2007) (630-252-0422) ([rivers@cars.uchicago.edu](mailto:rivers@cars.uchicago.edu)) 2005-2008

- Charles Lesher ( 530) 752-9779 ([lesher@geology.ucdavis.edu](mailto:lesher@geology.ucdavis.edu)) 2006-2009
- William Durham (925) 422-7046 ([durham1@llnl.gov](mailto:durham1@llnl.gov)) 2005-2008
- Abby Kavner (310)-206-3675 ([akavner@igpp.ucla.edu](mailto:akavner@igpp.ucla.edu)) 2004-2007
- Wendy Panero ( [panero.1@osu.edu](mailto:panero.1@osu.edu) ) 2006-2009

### Infrastructure Development Committee:

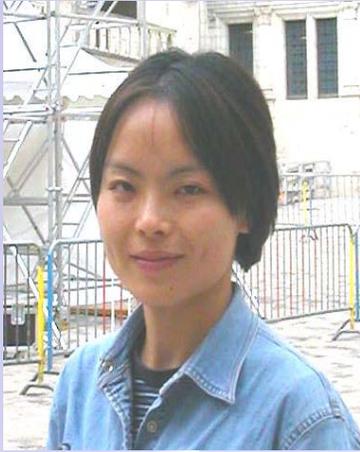
This committee is formed review infrastructure development projects that are supported by the Organization. It has the responsibility to assure that these projects serve the needs of the community. The committee will recommend whether a project should continue or not, and what changes are needed to better meet the needs of the community. It will also evaluate proposals by the community for new development projects and make recommendations concerning funding. Membership:

- Nancy Ross **Chair** (2006-2008) (540-231-6356) ([nross@vt.edu](mailto:nross@vt.edu)) 2006-2009
- Pamela Burnley (404-463-9551) ([burnley@gsu.edu](mailto:burnley@gsu.edu)) 2005-2008
- Russell Hemley (202) 478-8951 ([hemley@gl.ciw.edu](mailto:hemley@gl.ciw.edu)) 2005-2008
- Thomas Sharp (480)965-3071 ([Tom.Sharp@asu.edu](mailto:Tom.Sharp@asu.edu)) 2006-2009
- Sang-Heon Dan Shim ([sangshim@MIT.EDU](mailto:sangshim@MIT.EDU)) 2004-2007



The 5<sup>th</sup> COMPRES annual meeting site at Snowbird, Utah

## 2006 Alvin Van Valkenburg Award to Li Li of Stony Brook University



Stony Brook, NY — Li Li, a research scientist in the Mineral Physics Institute, Stony Brook, has won the 2006 Alvin Van Valkenburg Award for her work in mineral physics. This award is given every second year in the name of re-

nown physicist Alvin Van Valkenburg, co-inventor of the diamond anvil cell, to honor a young scientist who uses high pressure in his or her scientific research. Li was presented the award at the June 24, 2006 awards ceremony during the biannual Gordon Conference on “Research at High Pressure” in Biddeford, Maine. Li gave an invited talk at the conference on her work on high pressure rheology.

Li received her PhD from Stony Brook in 2003 (Dissertation: *Rheology of olivine at mantle pressure*, Advisor: Donald J. Weidner, see Recent PhDs column of the *COMPRES Newsletter* Vol. 2 No. 4). She has conducted pioneering research in the field of high pressure rheology where she has

been investigating the effect of pressure on the flow characteristics of olivine and other mantle minerals. Her results, that olivine flow is relatively insensitive to pressure, has major implications on the flow structure of the Earth’s upper mantle and sets boundary conditions for the origin of deep focus earthquakes.

Li, as a visiting scientist at the University College London, combined density functional theory and molecular dynamics to model thermoelastic properties of mantle minerals. She is continuing research both in the lab and in the computer in her current position at Stony Brook.

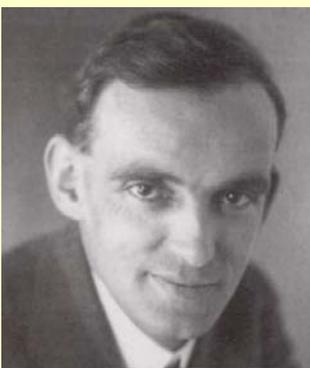


Dr. Li working at the X17B2 beamline of the NSLS

AWARD

## Erskine Williamson, Extreme Conditions, and the Birth of Mineral Physics

— The article in *Physics Today* by Rus Hemley



**A series of papers published between 1916 and 1923 broke new ground in materials research and laid the foundation for modern studies of planetary interiors.**

This splendid article written by Rus Hemley on “Erskine Williamson, Extreme Conditions, and the Birth of Mineral Physics.” appeared in the April 2006 issue of *Physics Today* (page 50-56). Rus presented a lecture at the ceremonial opening of the new building housing the Center for Science at Extreme Conditions, named the Erskine Williamson Building in honor of the pioneering work

of this Scotsman, in Edinburgh, Scotland. In his lecture, Rus summarized the significant contribution of Williamson to the formation of mineral physics in early 20<sup>th</sup> century. This paper is a printed version of his lecture. Students of geophysics and mineral physics will surely know Williamson from the familiar Williamson-Adams” or “Adams-Williamson” equation via which one can calculate the density profile within the Earth using the measured sound velocities from seismology.

PUBLICATION



# Recent PhDs

## Sytle Medicia Antao, Ph.D. 2006

Department of Geosciences, Stony Brook University

Dissertation: ***In Situ* Measurements of Cation Disorder in Dolomite and Some Spinel at High Pressures and High Temperatures: Effect on Elasticity and Stability**



This study has shown experimentally that cation disorder has significant effects on the stability and elasticity of lower crustal and mantle minerals. In particular, cation disorder causes a significant change in sound velocities in magnesioferrite. Some members of the spinel-group (magnesioferrite,  $\text{MgFe}_2\text{O}_4$ ; qandilite,  $\text{TiMg}_2\text{O}_4$ ; and  $\text{GeMg}_2\text{O}_4$ ) and dolomite were selected for detailed investigations because they were expected to show significant changes in order-disorder with pressure and temperature, and this is now confirmed. In this study, state-of-the-art experimental capabilities were used to obtain good *in situ* structural and ultrasonic data under high-*PT* conditions. The present study shows that cations in spinels and dolomite-type minerals disordered as *T* is increased. Inverse spinels with 2-3 cation charges tend to become more ordered with increasing *P* at constant *T*.

The present study has investigated cation disorder in magnesioferrite,  $\text{MgFe}_2\text{O}_4$ ; qandilite,  $\text{TiMg}_2\text{O}_4$ ; and  $\text{GeMg}_2\text{O}_4$  at room *P* and high *T*. Unlike qandilite and  $\text{GeMg}_2\text{O}_4$ , magnesioferrite shows considerable disorder up to about 1250 K. Qandilite breaks down to  $\text{MgO}$  and  $\text{MgTiO}_3$  at 1250 K. Pressure enhances cation ordering in magnesioferrite. These results were used in both O'Neill and Navrotsky (1983) and Landau thermodynamic models for equilibrium cation ordering with *P* and *T*. Both models fit

the present experimental data equally well. Elasticity data on magnesioferrite indicate that acoustic anomalies are associated with cation and magnetic disordering processes. Increasing cation disorder lowers the sound velocity in magnesioferrite.

Dolomite,  $\text{CaMg}(\text{CO}_3)_2$ , structure contains alternating planes of  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$  cations, and these cations can be disordered with *P* and *T*. The most important aim in this part of the study is to test whether the stability of dolomite arises from cation disordering. The present study has experimentally confirmed that the stability of dolomite arises from cation disordering, which was thermodynamically modeled using a new modified Bragg-William model. Generally, cation disordering significantly affects mineral properties.

### Statement:

*It was a wonderful experience for me to work with several faculty members within the Geoscience Department and the Mineral Physics Institute at Stony Brook University, where I was introduced to experimental work under high pressures and high temperatures. I thank my Ph. D. advisor, John Parise, as well as several other collaborators (Bob Liebermann, Jiuhua Chen, Baosheng Li, Jennifer Kung) whose help was invaluable to my work. I was fortunate to visit synchrotron and neutron sources in USA and France, as well as work on elasticity measurements at high temperatures with Ian Jackson at the Australian National University. I am currently a post-doctoral research associate with Brian Toby in the X-ray Science Division at the Advanced Photon Source (APS). I also assist in commissioning a synchrotron X-ray powder diffraction beamline (11-BM) at APS. My research interests are in structure determinations at local and average scales using X-ray and neutron sources, under conditions of high pressures and high temperatures. I am also continuing my work involving in situ simultaneous measurements of structure and elastic properties in materials at high pressures and high temperatures.*

— Sytle Antao





This is my last Neutron Corner contribution because I am starting a new position as Assistant Professor in the Department of Physics at the Private University (*i.e.* Prince Sultan University) in Riyadh, Saudi Arabia on September 1st.

### Proposal deadlines:

Upcoming proposal deadlines at the LLB, PSI and are October 1<sup>st</sup> and November 15<sup>th</sup>, 2006, respectively.

### Neutron news:

- The SNS delivered its first neutrons on April 28, 2006! <[http://www.sns.gov/projectinfo/sns\\_success.shtml](http://www.sns.gov/projectinfo/sns_success.shtml)>.
- The National Science Foundation has awarded \$12M to the California Institute of Technology for computer software to analyze neutron-scattering experiments <<http://www.azom.com/details.asp?newsID=5897>>.
- The MSA short course on "Neutron Scattering in Earth Sciences" will be held on December 7-8, 2006. Details can be found on [www.minsocam.org/MSA/SC/Neutron\\_descrptn.html](http://www.minsocam.org/MSA/SC/Neutron_descrptn.html).
- Construction of the 2<sup>nd</sup> target station of ISIS began in July 2003 and first neutron production is scheduled for June 2007. Seven state-of-the-art neutron instruments will be available to make use of the high flux of long-wavelength, low-energy neutrons when the experimental programme begins in 2008. <<http://ts-2.isis.rl.ac.uk/>>.

On a final note, an international team of scientists has just announced the long-awaited results of the quest for the most sensitive measurements ever of sub-atomic particles: why the Universe contains the matter that we're made of? Theories attempting to explain the creation of matter in the aftermath of the Big Bang now have to be tuned up - or even thrown out <[http://www.ill.fr/index\\_ill.html](http://www.ill.fr/index_ill.html)>. Read the interesting article "Neutron vision" a FOCUS story entitled "superman can't see through lead with his x-ray vision, but if he could see with neutrons he'd do better" published on Physical Review Focus - American Physical Society (APS) by David Lindley <<http://focus.aps.org/story/v17/st20>>. The article summarizes the scientific paper published in Physical Review Letters "Neutron Phase Imaging and Tomography. Researchers showed that magnetic fluctuations are key to a universal mechanism for pairing electrons and enabling resistance-free passage of electric current in

high-temperature superconductors <[http://www.nist.gov/public\\_affairs/releases/magnetism\\_key.html](http://www.nist.gov/public_affairs/releases/magnetism_key.html)>. Scientists observed solitary vibrations in uranium <[http://www.lanl.gov/news/index.php?fuseaction=home.story&story\\_id=8158](http://www.lanl.gov/news/index.php?fuseaction=home.story&story_id=8158)>. Scientists working at ISIS, the world-leading pulsed neutron source at the CCLRC Rutherford Appleton Laboratory in Oxfordshire, have discovered two previously unknown forms of ice, frozen at temperatures of around -160°C <[http://www.isis.rl.ac.uk/aboutIsis/index.htm?content\\_area=/aboutIsis/news2006\\_03\\_2.htm&side\\_nav=/aboutIsis/aboutisisSideNav.htm&](http://www.isis.rl.ac.uk/aboutIsis/index.htm?content_area=/aboutIsis/news2006_03_2.htm&side_nav=/aboutIsis/aboutisisSideNav.htm&)>. IPNS' success paved way to newest neutron source for materials research <[http://www.anl.gov/Media\\_Center/News/2006/IPNS060421.html](http://www.anl.gov/Media_Center/News/2006/IPNS060421.html)>.

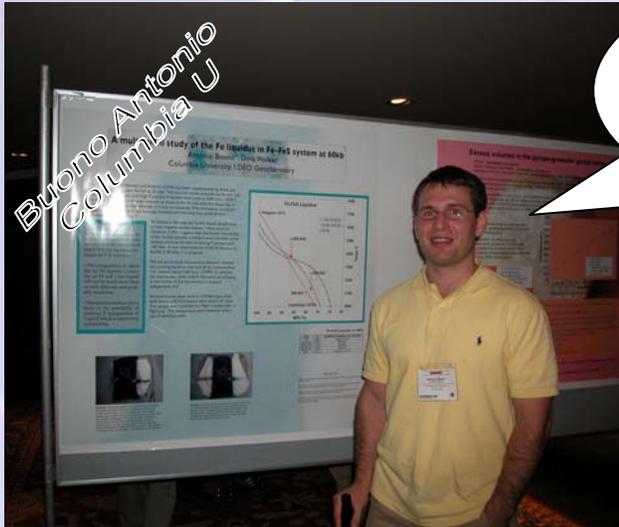
*A word of appreciation from the Newsletter Editor: It was a great pleasure to work with Dr. Husin Sitepu on the Neutron Corner column in the Newsletter, not only because of his excellent editorial work but his pleasant personality and enthusiastic attitude of work. We wish him the best of luck at his new position in Saudi Arabia.* — Jihua Chen

### Meetings & Workshops

- MSA Short Course Neutron Scattering in Earth Sciences (December 7-8, 2006, Emeryville, CA, USA).  
<[http://www.minsocam.org/MSA/SC/Neutron\\_descrptn.html](http://www.minsocam.org/MSA/SC/Neutron_descrptn.html)>.
- Imaging and Neutrons 2006 (October 23-25, 2006, Spallation Neutron Source, Oak Ridge National Laboratory, Oak Ridge, TN)  
<<http://www.sns.gov/workshops/ian2006/>>.
- Hercules Special Course: Structural Genomics (October 8-13, 2006, Grenoble, France).  
<<http://www.esrf.fr/NewsAndEvents/Conference/HSC/HSC2>>.
- Hercules Special Course: Surfaces, Interfaces and Nanostructures (October 8-13, 2006, Grenoble, France).  
<<http://www.esrf.fr/NewsAndEvents/Conference/HSC/HSC3>>.
- International Workshop on Applications of Advanced Monte Carlo Simulations in Neutron Scattering (October 2-4, 2006, Paul Scherrer Institut, Villigen, Switzerland).  
<<http://lns00.psi.ch/mcworkshop/>>.
- Sixth International Workshop on Polarised Neutrons in Condensed Matter Investigations (September 25-28, 2006, Berlin, Germany).  
<<http://www.hmi.de/bense/pncmi2006/>>.
- Fourth International Workshop on Sample Environment at Neutron Scattering Facilities (September 6-8, 2006, Argonne National Laboratory, Argonne, IL).  
<<http://www.pns.anl.gov/ngs/ancillary/sew2006.html>>.
- International Summer School on Neutron Techniques in Molecular Magnetism (August 31-September 9, 2006, University of Zaragoza, Jaca, Spain).  
<<http://www.unizar.es/magmanet/summerschool/>>.
- Advances in Neutron, Synchrotron Radiation,  $\mu$ SR and NMR Researches - Complementary Probes for Magnetism (August 28-30, 2006, Tokai, Ibaraki, Japan). <<http://nsl.issp.u-tokyo.ac.jp/qubs2006/index.html>>.
- National School of Neutron and X-ray Scattering (August 13-27, 2006, Argonne National Laboratory, Illinois, USA).  
<<http://www.dep.anl.gov/nx/>>.

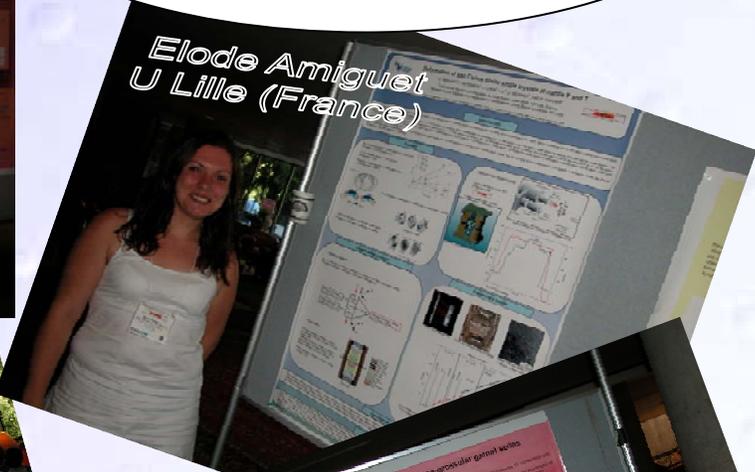
# Students at the COMPRES Annual Meeting

COMPRES Annual Meetings have served as not only a platform for promoting interdisciplinary discussions among mineral physics and other Earth science disciplines, geochemistry, seismology, petrology and geodynamics, but an exciting stage for a young generation of scientists to branch out into broader horizons, interact with a range of multidisciplines, and practice their skills of communication. At the 5<sup>th</sup> annual meeting, a number of graduate students were supported to attend the meeting from different institutions of the country and abroad. The following snapshots flash on some moments of memorables.



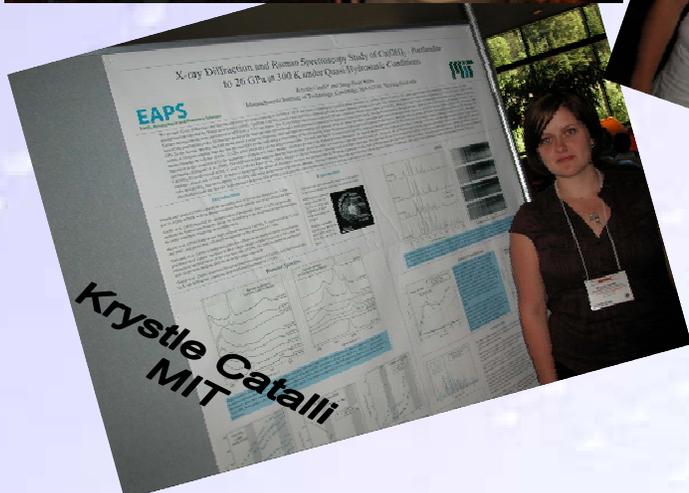
Buono Antonio  
Columbia U

I thought the meeting was particularly useful for me since this is my first year in the high-pressure field and the meeting provided an overview of what facilities are available and what work is currently being done.



Elode Amiguet  
U Lille (France)

COMPRES ANNUAL MEETING

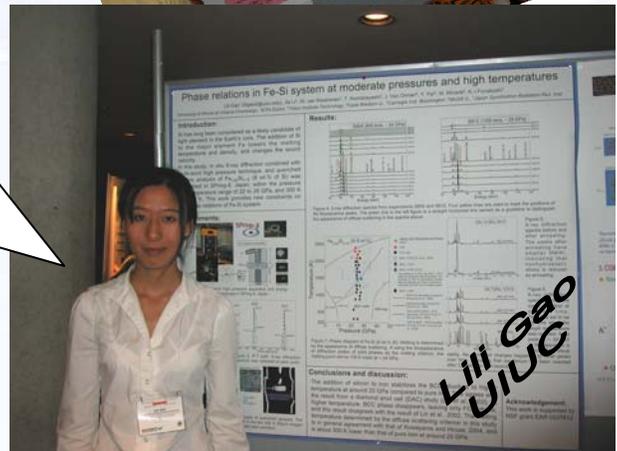


Krystle Catali  
MIT



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Columbia U

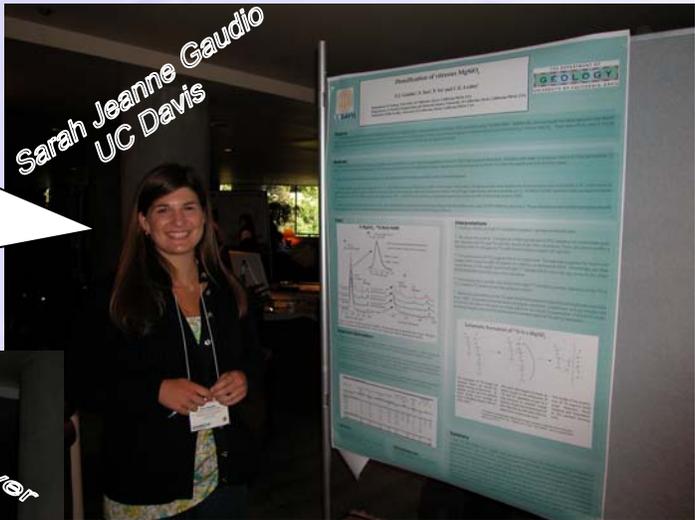
This was my first time attending COMPRES meeting. It was a great meeting. Those talks about techniques in different universities and institutes were very interesting and very beneficial, especially to me, who was about to finish the second-year's study. The meeting was also very well-organized. The website was easy to use, and offered almost all information I need, even about traveling. The location was great, and people at the meeting and the hotel were all super nice. Over all, it was an interesting, exciting and fun meeting!



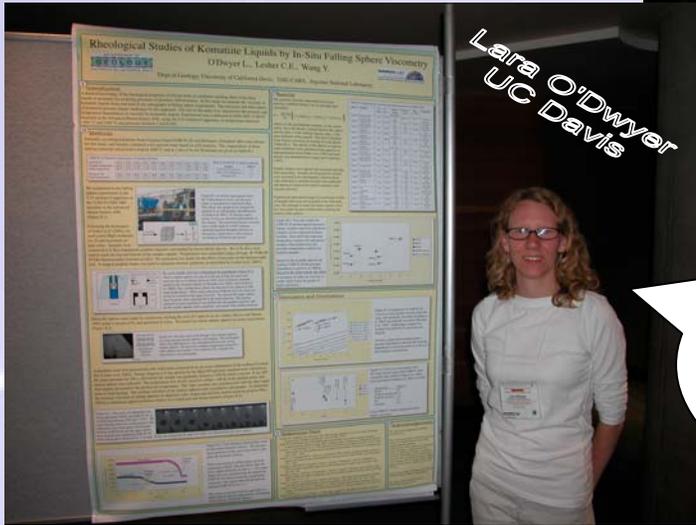
Lili Gao  
UIUC

# COMPRES 5th Annual Meeting

The COMPRES meeting in Snowbird provided a great opportunity for us students to observe discussions regarding the future of high-pressure research in the U.S. It was really interesting to hear about the exciting projects currently underway at beam lines across the country.



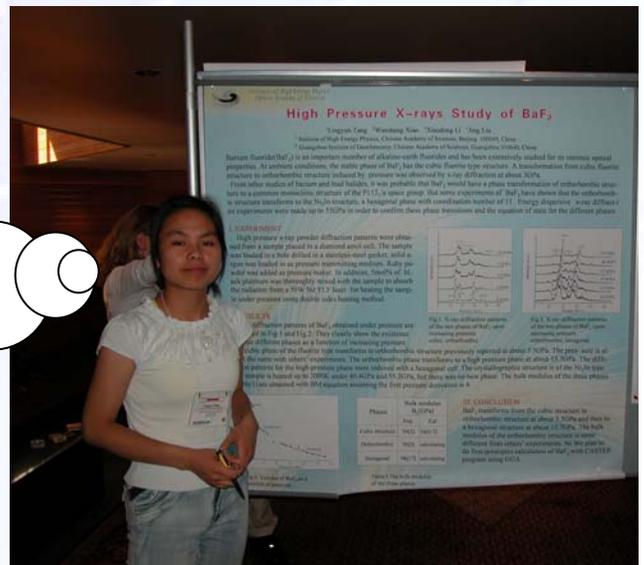
Sarah Jeanne Gaudio  
UC Davis



Lara O'Dwyer  
UC Davis

Against the beautiful backdrop of Snowbird I enjoyed some interesting talks, posters and discussions. The meeting was a great platform for sharing research, making new friends and catching up with old ones too.

It was my first time to attending such a meeting. I was some nervous when I arrived. But soon I found everybody in the meeting were very nice. This made me feel much better and I was very enjoying the meeting. Many of the reports in the meeting were interesting. The atmosphere of the meeting was easy and communicative. I was excited to talk to everybody. I knew many of them and made friends with some of them. It was a great thing for me. In a word, I like the meeting very much. Thank everyone that organized the meeting.

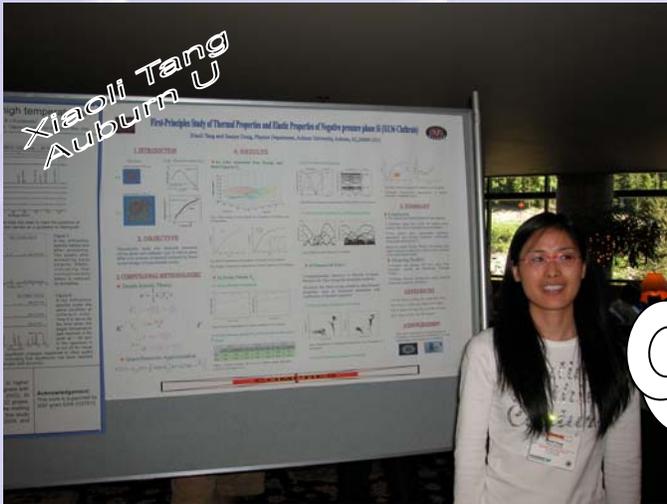


Lingyun Tang  
Institute of High Energy Physics (China)

COMPRES ANNUAL MEETING

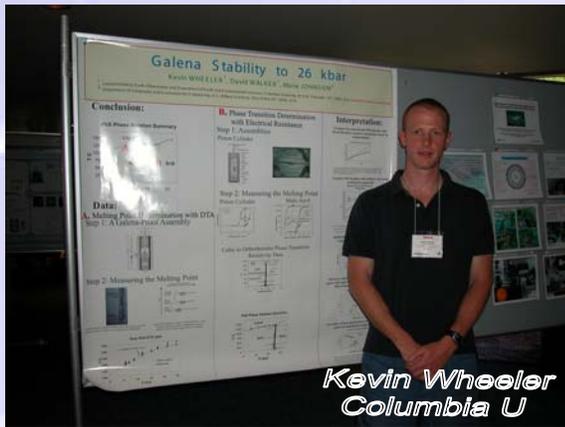
# COMPRES 5th Annual Meeting

COMPRES ANNUAL MEETING



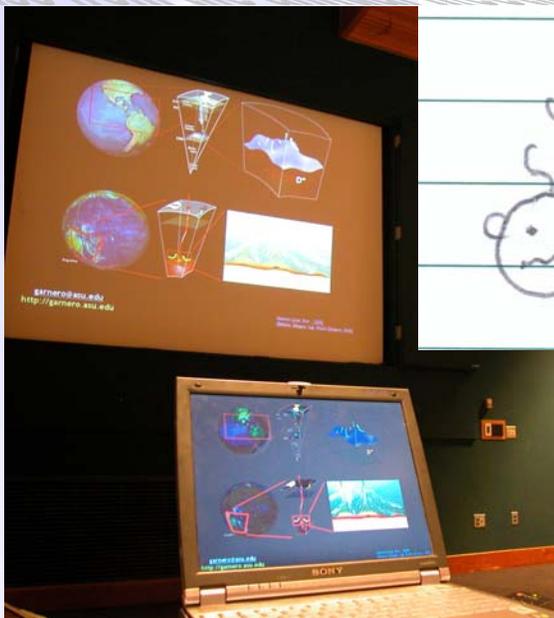
Xiaoli Tang  
Auburn U

*It was my first time to attend the COMPRES annual meeting, and I enjoyed it. I am a solid state physics student. I am so glad to see that a lot of solid state theories have been applied to mineral physics and geophysics. Presentations and posters presented in the meeting enlarged my view of physics applications. Meanwhile, it was a great opportunity for me to finally meet and have conversations with many experts whose name I only saw in the paper before, which is very exciting.*



Kevin Wheeler  
Columbia U

## Also from the annual meeting



Discussions at the meeting struck sparks out of attendees; an anonymous audience expressed his/her idea in a unique fashion.  
— found on site by Helene



# COMPRES Membership

## New Institutional Members

### U. S. member institutions

University of California at San Diego  
 Elector: Sofia Akber-Knutson  
 Alternate Elector: Guy Masters

University of Vermont  
 Elector: Tracy Rushmer

Northwestern University  
 Elector: Steve Jacobsen  
 Alternate Elector: Craig Bina

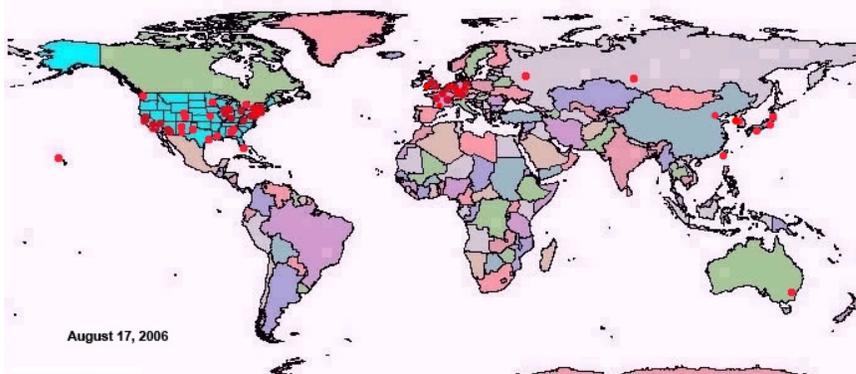
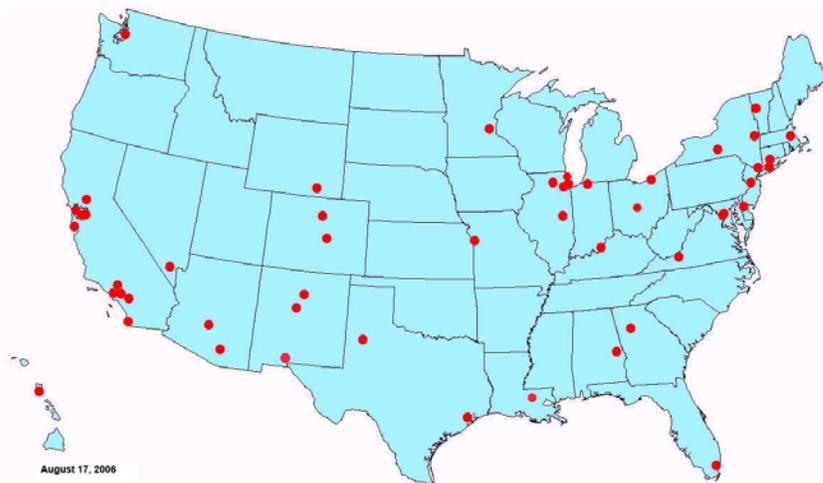
### Foreign affiliates

Universite Paul Sabatier (Toulouse, France)  
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Seoul National University (Korea)  
 Representative: Haemyeong Jung

Universitat Frankfurt am Main  
 Representative: Björn Winkler

University of Wales at Aberystwyth  
 Representative: Martin Wilding



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