

COMPRES

COnsortium for Materials Properties Research in Earth
Sciences



Newsletter
October 2019

COMPRES Annual Meeting held on August 2-5, Big Sky, Montana



There were approximately 140 participants at this year's COMPRES Annual Meeting (group photo above). Highlights included keynote speakers, poster cameos, student-postdoc breakout session, reports from the COMPRES facilities. <http://compres.us/events/annual-meeting/2019/detailed-program00>

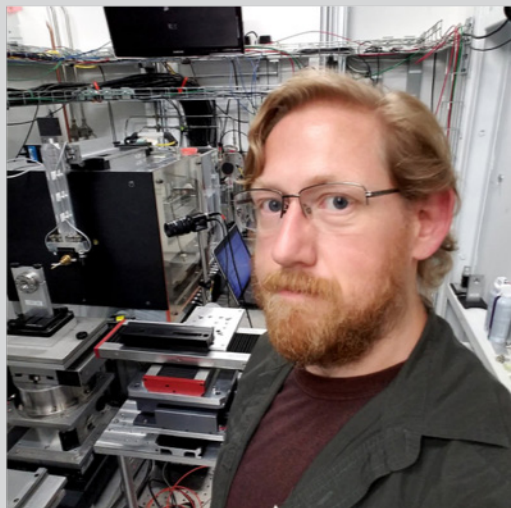


Top left to bottom right: Keynote speaker Heather Savage, participants Paul Raterron and Shun Karato, Keynote speaker Suzanne Smrekar, participant Dongzhou Zhang.



Annual Meeting Best Student Presentation Awards

There were four “best student presentation awards” at this year’s COMPRES annual meeting. Prizes were \$200 Amazon Gift Cards.



Ben Brugman

Michigan State University, PhD Student

“Strength, deformation and equation of state of tungsten carbide to 66 GPa”



Ryan Klein

NIST Center for Neutron Research, Post-Doc

“Nature and role of the magnetism in jarosite at extreme conditions”



Claire Zurkowski

University of Chicago, PhD Student

“Phase stability and thermal equations of state of Fe_3S and Fe_2S polymorphs to Earth’s core pressures and high temperatures”



Jason Ott

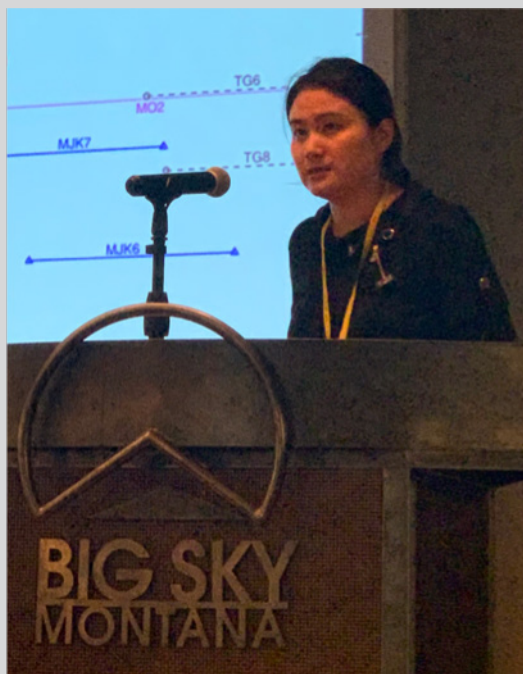
UC Santa Cruz, PhD Student

“Compression and metastability of the amphibole tremolite to high pressures and temperatures through Raman spectroscopy”

Some Annual Meeting Speakers



Miaki Ishii
(Harvard University)



Jin Zhang
(University of New Mexico)



Bora Kalkan
(UC Santa Cruz)



Tom Sharp
(Arizona State University)



Dongzhou Zhang
(University of Hawaii)

Some Annual Meeting Talk Titles



Shear wave velocity of iron under Earth's core conditions: Constraints from shock compression

Hong Yang

Department of Geological Sciences, Stanford University

Stanford SCHOOL OF EARTH, ENERGY & ENVIRONMENTAL SCIENCES



Density of Fe-Ni-C liquids at high pressures and implications to liquid cores of Earth and Moon

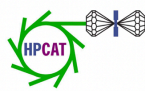
Feng Zhu¹, Xiaojing Lai^{1,2}, Yoshio Kono³, George Amulele¹, Zhicheng Jing⁴, Bin Chen¹

¹Hawai'i Institute of Geophysics and Planetology, University of Hawai'i at Mānoa, Honolulu, Hawai'i 96822, USA.

²Department of Earth Sciences, University of Hawai'i at Mānoa, Honolulu, Hawai'i 96822, USA.

³HPCAT, Advanced Photon Source, Argonne National Laboratory, Argonne, IL 60439, USA.

⁴Department of Earth and Space Sciences, Southern University of Science and Technology, Shenzhen, Guangdong 518055, China



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MICHIGAN STATE UNIVERSITY

2019 COMPRES



The fate of MgCO₃ and CaCO₃ subducted into Earth's lower mantle

Mingda Lv, Susannah M. Dorfman

James Badro, Stephan Borensztajn, Eran Greenberg, Vitali B. Prakapenka



GeoSoilEnviroCARS



EAR-1751664

DEEP CARBON OBSERVATORY

Consequences of giant impacts

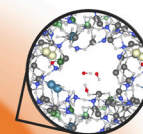
Miki Nakajima

Department of Earth and Environmental Sciences
Department of Physics and Astronomy



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Carbon Chemistry in the Proto-Lunar Disk and Early Earth's Magma Ocean



Natalia V. Solomatova¹
Razvan Caracas¹
Craig E. Manning²

¹CNRS, Laboratory of Geology, UMR 5276, ENS de Lyon, France

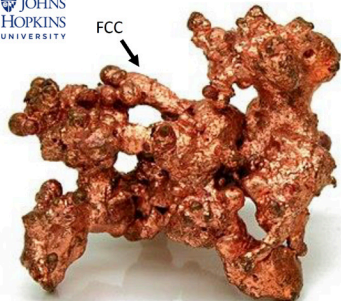
²Earth, Planetary and Space Sciences, University of California, Los Angeles, USA



IMPACT



FCC



Copper phase determination to 290 GPa using laser-shock compression

Melissa Sims
Johns Hopkins University
COMPRES 2019

Deformation at all scales: The microstructural basis for plate tectonics

Phil Skemer
Washington University in St. Louis

COMPRES Annual Meeting
August 4th, 2019

With contributions from: Dave Bercowski, Caroline Bollinger, Helene Couvy, Andy Cross, Jolien Linckens, & Elvira Mulyukova



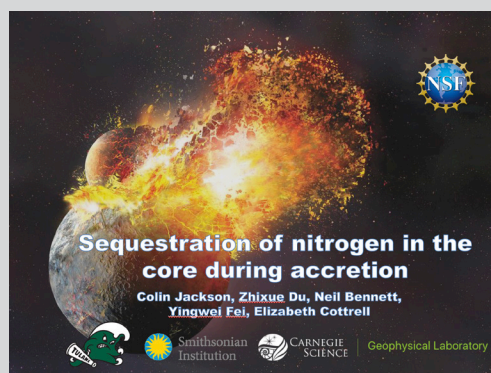
Potential Impact of Icosahedral Short Range Ordering on Transport Properties of Liquid Fe-Alloys at the Core Conditions

Reynold E. Silber¹, Richard A. Secco², Wenjun Yong², Joshua A. H. Littleton²

¹Department of Geology and Geophysics, Yale University, New Haven CT, USA

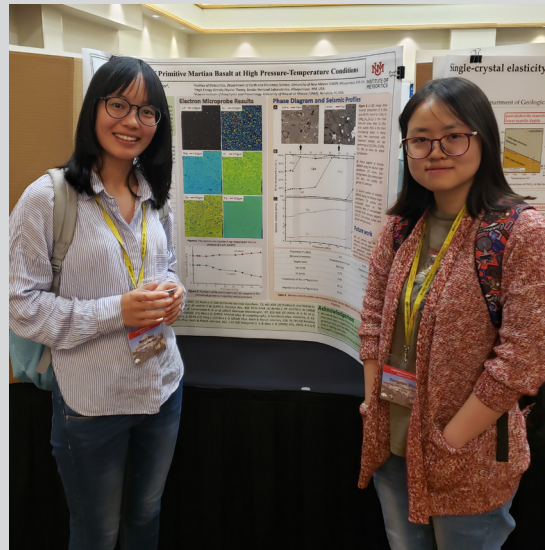
²Department of Earth Sciences, University of Western Ontario, London, Ontario, Canada, N6A 3B7

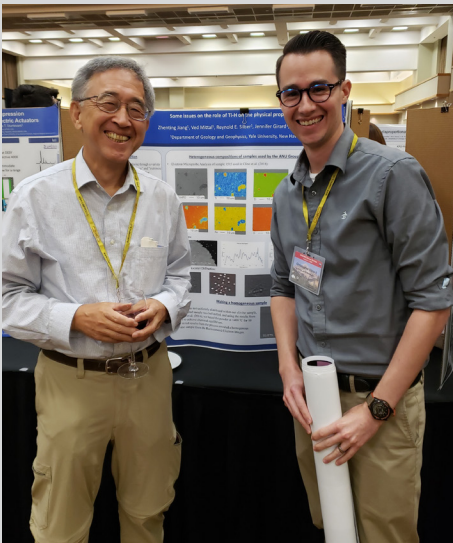
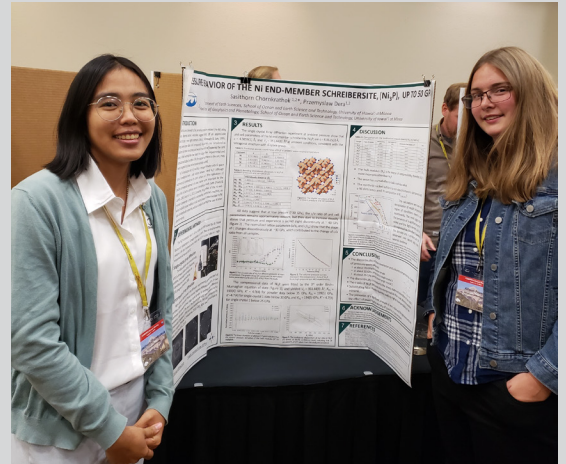
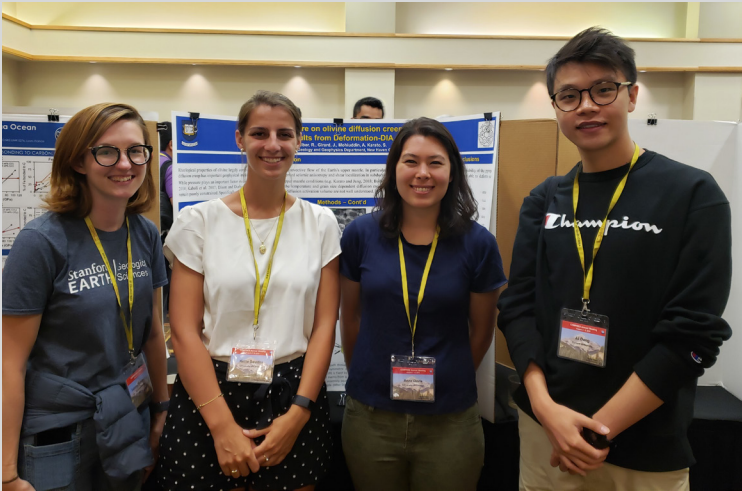
COMPRES Conference
2 - 5 Aug. 2019
Big Sky Resort, Montana, USA





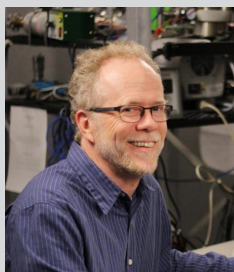
Some COMPRES Annual Meeting Attendees





Some COMPRES Annual Meeting Attendees

Newly Elected COMPRES Committee Members



Tom Sharp
Arizona State University
Member, Executive
Committee [2019-2022]



Heather Watson
Union College
Member, Executive
Committee [2019-2022]



Alisha Clark
University of Colorado
Member, Facilities
Committee [2019-2022]



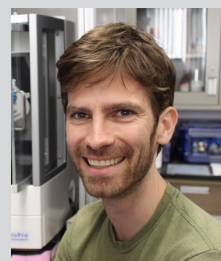
June Wicks
Johns Hopkins University
Member, Facilities
Committee [2019-2022]



Bethany Chidester
UC Davis
Member, EOID Committee
[2019-2022]



Megan Duncan
Virginia Tech
Member, EOID Committee
[2019-2022]



Zach Gabelle
Geophysical Lab
Member, EOID Committee
[2019-2022]



Lars Hansen
University of Minnesota
Member, EOID Committee
[2019-2022]

Outgoing COMPRES Committee Members



Baosheng Li
Stony Brook University
Member, Executive
Committee [2016-2019]



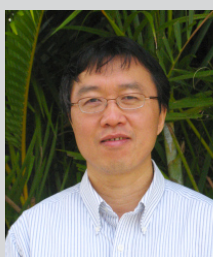
Jackie Li
University of Michigan
Member, Executive
Committee [2016-2019]



Anne Pommier
UC San Diego, Scripps
Member, Facilities
Committee [2016-2019]



Ariana Gleason
LANL/Stanford University
Member, Facilities
Committee [2016-2019]



Jiuhua Chen
Florida International University
Member, EOID Committee
[2016-2019]



Gabriel Gwanmesia
Delaware State University
Member, EOID Committee
[2016-2019]



Joe Smyth
University of Colorado
Member, EOID Committee
[2016-2019]



Rebecca Fischer
Harvard University



Jin Zhang
University of New Mexico

COMPRES, the Consortium for Materials Properties Research in Earth Sciences announces the speakers for its 2019-2020 Distinguished Lecture series in the field of Mineral Physics. The talks feature topics that emphasize the exciting high-pressure geoscience research being conducted within the COMPRES community and its significance for understanding fundamental Earth and planetary processes. The primary target audience for these lectures is undergraduates in departments of geology and related sciences at non-PhD granting institutions, but applications from all academic institutions in the U.S. are welcome. <http://compres.us/events/lecture-series/distinguished-lecturer-series-2019-2020>

We are pleased to announce that the COMPRES Distinguished Lecturers for 2019-2020 are Rebecca Fischer of Harvard University and Jin Zhang of The University of New Mexico.

COMPRES will fund all travel costs for the speaker, including transportation, accommodation and meals. There is no cost to the hosting institution.

The host colleges or universities will be expected to arrange the talks and provide local logistical support. If your institution is interested in requesting a visit, please send your request to Carl Agee, President of COMPRES [agee@unm.edu] with a copy to Beth Ha [beth3ha@unm.edu].



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