

COMPRES

CONsortium for Materials Properties Research in
Earth Sciences



Newsletter
July 2020

COMPRES 2020 Virtual Annual Meeting Aug 14

Because of the COVID-19 pandemic, the 2020 COMPRES Annual Meeting will be held virtually on Zoom, Friday, August 14, 2020. <http://compres.unm.edu/events/annual-meeting/2020/2020-compres-annual-meeting-general-information>

There will be no registration fee, however all participants must register by July 29, 2020 to be invited to the Zoom meeting. To register go to <http://compres.unm.edu/form/registration-2020-virtual-meeting>

The meeting will be all day Friday (9 AM – 5 PM MDT). We will have two parallel sessions totaling 40 Contributed Talks, each talk will be 12 minutes in length, including Q&A. There will also be Facilities Projects Reports, the Annual COMPRES Business Meeting with election results, and a Student/Postdoc Breakout Session.

Themes for the Contributed Talk Sessions

“Iron Workers Convention” Session Chair - Tom Sharp, Arizona State University

“Out of This World: From Meteorites to Exoplanets” Session Chair - Tom Duffy, Princeton University

“Advances in High-Pressure Techniques” Session Chair - JJ Dong, Harvard University

“Lower Mantle” Session Chair - Tom Duffy, Princeton University

“Water, Water Everywhere” Session Chair - JJ Dong, Harvard University

“Putting the Squeeze on Minerals” Session Chair - Dan Shim, Arizona State University

“Shocking Developments” Session Chair - Tom Sharp, Arizona State University

“Upper Mantle” Session Chair - Dan Shim, Arizona State University

The Detailed Program can be found at http://compres.unm.edu/sites/default/files/meetings/documents/DetailedProgram2020_Linked.pdf

Please contact Beth Ha (beth3ha@unm.edu) or Gloria Statom (gstatom@unm.edu) for any questions.

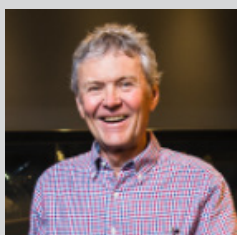
COMPRES 2020 Virtual Keynote Talk Aug 20

Because of the limited 1-day duration of the 2020 COMPRES Virtual Annual Meeting we will instead be hosting several standalone Virtual Keynote Talks this year, starting on Thursday, August 20, at 12 noon to 1 PM (MDT) on Zoom. Invitations will be sent out on the COMPRES list or request from Beth Ha (beth3ha@unm.edu).

We are excited to announce that our first Virtual Keynote Talk will be given by Peter Driscoll (Earth and Planets Laboratory, Carnegie Institution for Science). Title: “Earth’s Inner Core Age and Paleomagnetic Expression”.



Abstract: The age of Earth’s enigmatic inner core (IC) is unknown with estimates ranging from 500 Myr to the age of the Earth itself. In this talk we review how the IC is thought to have formed and why such a range of age estimates persists. Given its inaccessibility, we discuss how the nucleation and continual growth of the IC may have influenced convection in the outer core and its observable paleomagnetic expression at Earth’s surface. We highlight numerical dynamo models driven by a whole-planet thermal evolution model that show the geodynamo could have transitioned from a multipolar to dipolar regime around 1.7 Ga, then to a weak-field dynamo around 1.0 Ga, and finally to a strong-field dipole following IC nucleation around 650 Ma that is maintained to the present day. Recent paleomagnetic observations from the Neoproterozoic are consistent with a weak non-dipolar dynamo, supporting the possibility of a young IC. Finally, we discuss several core material properties that are likely to have a first-order effect on the magnetic evolution of the Earth, including the magnitude and depth-dependence of the thermal conductivity.



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