

Day 1: Tuesday, August 31st

Time (CDT)	Title	Speaker	Institution
10:00	Welcome	Vitali Prakapenka	The University of Chicago
10:10	Progress towards a new organization for synchrotron-based geoscience research	Thomas Duffy	Princeton University
NSF supported GSECARS and COMPRES DAC programs Session chair: Stella Chariton (The University of Chicago)			
10:20	DAC program at GSECARS: A Unique Probe into the Deep Earth	Vitali Prakapenka	The University of Chicago
10:50	High Pressure Research at the ALS: Recent Developments and Opportunities	Quentin Williams	University of California Santa Cruz
11:20	Partnership for eXtreme Xtallography (PX ²): frontier extreme conditions research facility at GSECARS	Przemyslaw Dera	University of Hawaii
11:50	Nuclear Resonant Scattering at the APS-U era: What does it mean for geosciences and high pressure research?	Ercan Alp and Barbara Lavina	The Advanced Photon Source at Argonne National Laboratory
12:20	Synchrotron Radiation and Geoscience: From Terahertz to Gigayears	Russell Hemley	University of Illinois at Chicago
12:50	Lunch		
Other synchrotron facilities for high pressure research Session chair: Dominique Laniel (University of Bayreuth)			
13:10	Earth science research at PETRA III and VI: Making optimal use of x-ray properties of 3rd and future 4th generation light sources.	Hans-Peter Liermann	Petra III, Germany
13:30	New opportunities for high pressure science at the new beamline ID27 on the ESRF extremely brilliant source	Mohamed Mezouar	ESRF, France
13:50	New high-pressure techniques for the study of Earth and planetary materials at the PSICHE beamline, synchrotron SOLEIL	Nicolas Guignot	SOLEIL, France
14:10	Current status and future plans of BL04B1/Spring-8	Yuji Higo	Spring-8, Japan
14:30	High Pressure Collaborative Access Team (HPCAT) facility at APS – Current and Future Direction	Nenad Velisavljevic and HPCAT staff	HPCAT, Argonne National Laboratory
14:50	Coffee break		
15:00	Community Facility Support: Synchrotron-based analytical capabilities advancing Earth and Environmental Sciences research and training	Russ Kelz	The National Science Foundation
NSF supported GSECARS and COMPRES LVP programs Session chair: Tony Yu (The University of Chicago)			
15:20	COMPRES LVP Program	Donald Weidner	Stony Brook University
15:50	LVP facilities at GSECARS	Yanbin Wang	The University of Chicago
16:20	Large multi-anvil press possibilities in the US and connections with synchrotrons	Kurt Leinenweber	Arizona State University
16:50	APS-U: New Opportunities for High Pressure Earth Science	Mark Rivers	The University of Chicago
17:10	Current and future opportunities for non-ambient condition Earth Science experiments at the ALS	Martin Kunz	The Advanced Light Source at Lawrence Berkeley National Laboratory
17:30-18:00	Open discussion	Moderators: Vitali Prakapenka and Quentin Williams	

Day 2: Wednesday, September 1st

Time (CDT)	Title	Speaker	Institution
10:00	Introduction	Quentin Williams	University of California Santa Cruz
10:05	Impediments to progress in our understanding of the dynamics and evolution of planetary interior	Bruce Buffet	UC Berkeley
Crystallography at extremes Session chair: Claire Zurkowski (Carnegie Institution for Science)			
10:40	Quantitative mineral physics and geochemistry of deep Earth and planetary interiors	Leonid Dubrovinsky	BGI, Germany
11:10	Axial and radial diffraction studies of Mg ₂ SiO ₄ and Fe-Si(-Ni) alloys	Rebecca Fischer	Harvard University
11:40	An integrated approach to advance our understanding of the Earth's core	Yingwei Fei,	Carnegie Institution for Science
12:10	Laser heated diamond anvil cell and synchrotron radiation to investigate planetary interiors. The example of the Fe-Si-C ternary system	Francesca Miozzi	Carnegie Institution for Science
12:40	Lunch		
13:00	How can synchrotron facilities support experimental petrology for the deep mantle and core	Susannah Dorfman	Michigan State University
13:30–13:50	Open discussion	Moderators: Andrew Campbell and Thomas Duffy	
14:00	Introduction	Thomas Duffy	Princeton University
14:05	Synchrotron in-situ experiments and their relevance to mantle rheology and earthquakes	Shun-Icho Karato	Yale University
Rheology at extremes Session chair: Anat Shahar (Carnegie Institution for Science)			
14:40	In-situ texture and stress characterization in earth materials	Lowell Miyagi	University of Utah
15:10	Effects of foliation orientation on melt interconnectivity and rock viscosity during syndeformational partial melting	Caleb Holyoke	University of Akron
15:40	In-Situ Measurements of Deforming Materials: Synchrotron X-Ray Diffraction and Radiography combined with Ultrasonic Interferometry	Taryn Traylor and Pamela Burnley	University of Nevada
16:10	Synchrotron High-Pressure Deformation Applications To Answer Some Of Earth Sciences Outstanding Questions	Jennifer Girard	Yale University
16:40	Introduction	Yanbin Wang	The University of Chicago
16:45	Recent Developments in In-situ Rock Deformation Research	Wenlu Zhu	University of Maryland
17:20-18:00	Open discussion	Moderators: Susannah Dorfman and Donald Weidner	

Day 3: Thursday, September 2nd

Time (CDT)	Title	Speaker	Institution
Elastic properties and spectroscopy Session chair: Bin Chen (University of Hawaii at Manoa)			
10:00	Perspective for Brillouin Scattering in Earth Sciences	Zhu Mao	U of Sci.&Techn., China
10:30	Study of the thermo-elastic properties of hydrated wadsleyite (β -Mg ₂ SiO ₄) by ultrasonic Interferometry with synchrotron X-radiation	Gabriel Gwanmesia	Delaware State University
11:00	Constraining the large temperature and composition variations in the Mantle Transition Zone	Jin Zhang	University of New Mexico
11:30	Understanding planetary dynamos by synchrotron X-ray and laser spectroscopic techniques	Jung-Fu "Afu" Lin	University of Texas at Austin
12:00	Integrative deep Earth science through advances in x-ray spectroscopy	Jennifer Jackson	California Institute of Technology
12:30	Applications of synchrotron Mössbauer spectroscopy in high pressure research	Wenli Bi	The University of Alabama
13:00	Open discussion	Moderators: Anat Shahar and Jin Zhang	
13:20	Lunch		
13:30	Introduction	Donald Weidner	SUNY, Stony Brook
13:35	Computational mineral physics: challenges and opportunities ahead	Renata Wentzcovitch	Columbia University
Earth's deep interior Session chair: Susannah Dorfman (Michigan State University)			
14:10	Structural and electronic transitions in liquid FeO	Guillaume Morard	Institut des Sciences de la Terre, France
14:40	Structure, composition, and transport properties of deep planetary materials at extreme pressure and temperature	Alex Goncharov	Carnegie Institution for Science
15:10	Hydrogen Reaction with Rocks and Metals in the Deep Interiors of Earth and Planets	Dan Shim	Arizona State University
15:40	Synchrotron and XFEL studies of Earth's deep interior	Wendy Mao	Stanford University
16:10	Light-source diffraction studies of geologic materials under dynamic loading	Sally June Tracy	Carnegie Institution for Science
16:40	Activities and capabilities in neutron sciences at ORNL	Christopher Tulk	ORNL
17:00	Overview of Lightsources.org and prize award	Silvana Westbury	Lightsources.org
17:15	Open discussion	Moderators: Vitali/Yanbin/Stella	The University of Chicago
18:00	Adjourn		