

Schedule of Theme Colloquia
Thursday, 20 June 2019
Morning Program

8:20-8:25 am: Welcome from Mickey Gunter, 2019 MSA President

8:25-8:30 am: Welcome from the organizers

8:30-9:30 am: Sustainable Development and Use of Mineral Resources

- Gordon Brown (Stanford University): The environmental legacy of mercury, gold, and asbestos mining: Evaluation of long-term impacts
- Michael Hochella (Virginia Tech): Newly discovered environmental impacts of mineral resource utilization: Direct and indirect incidental nanomaterials
- Moderator: Georges Calas (Université Pierre et Marie Curie)

9:30-10:30 am: Linking Metal (Bio)geochemical Cycling from the Atomic to the Landscape Scale

- David Singer (Kent State University): From atoms to mountains: New frontiers in X-ray science
- Michael Schindler (Laurentian University): Nano-mineralogy: A new dimension to understand the fate of metal(loid)s in the environment
- Moderator: Patricia Maurice (Notre Dame University)

10:30-11:00 am: Coffee and snacks

11:00-Noon: A Second Golden Age for Metamorphic Petrology

- Ross Angel (University of Pavia): The importance of physics to thermobarometric research
- Lucie Tajcmanová (Universität Heidelberg): What's Next? Exploring the future of metamorphic geology
- Moderator: Sarah Penniston-Dorland (University of Maryland)

Noon-12:10 pm: Photo on Carnegie Steps

12:10 pm - 1:00 pm: Lunch

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Afternoon Program

1:00-2:00 pm: Advances in Mineral Analysis: What Improvements Will We See in the Chemical and Isotopic Analysis of Minerals?

- Michael Wiedenbeck (DGFZ-Potsdam): SIMS and related technologies: Where they stand, where they are headed, and where things need to go
- Simon Jackson (Geological Survey of Canada): LA-ICPMS mineral analysis: Prospects for development and improved integration with other technologies
- Moderator: Paul Sylvester (Texas Technical University)

2:00-3:00 pm: Unraveling the Roots of Continents: From Paleo-island Arc to Mature Continental Crust on Earth

- Othmar Müntener (Université de Lausanne): Lower crust formation and differentiation constrained by field studies and experimental petrology
- Roberta Rudnick (UC Santa Barbara): Earth's continents through time
- Moderator: Mattia Pistone (Université de Lausanne)

3:00-3:30 pm: Coffee and snacks

3:30-4:30 pm: Mineral Inclusions in Diamonds from the Deep Earth

- Fabrizio Nestola (University of Padua): In-situ, ambient analysis of diamond-captured mantle transition zone and lower mantle minerals
- D Graham Pearson (University of Alberta): The diamond record of plate tectonic recycling of H, C, N, and B
- Moderator: Steven Shirey (Carnegie Institution for Science)

4:30-5:30 pm: Museum Mineral Collections in the next 100 years

- Kim Tait (Royal Ontario Museum): Making mineral collections relevant in the 21st Century
- Aaron Celestian (Natural History Museum of Los Angeles County): Unlocking the collections: Making minerals accessible in the next 100 years
- The GIA Distinguished Moderator: Jeffrey Post (National Museum of Natural History)

5:30-6:15 pm: Wine and beer

7:00-10:00 pm: Evening reception at the National Museum of Natural History
Sponsored by GIA

Schedule of Theme Colloquia
Friday, 21 June 2019
Morning Program

8:20-8:30 am: Welcome

8:30-9:30 am: Synchrotron-based Studies of High-Pressure Mineral Behavior

- Przemyslaw Dera (University of Hawaii): Putting the squeeze on silicate chains: Unusual coordination states accompanying the densification of pyroxenes and amphiboles
- Jin Zhang (University of New Mexico): Elastic anisotropy and phase transitions in the Earth's upper mantle
- Moderator: Carl Agee (University of New Mexico)

9:30-10:30 am: Mineralogy Beyond the Boundaries of Earth: Advances in the Mineralogy of Mars

- Elizabeth Rampe (Johnson Space Center): New perspectives of ancient Mars: Mineral diversity and crystal chemistry at Gale crater, Mars from the CheMin X-ray diffractometer
- Harry McSween (University of Tennessee, Knoxville): The mineralogy of Mars from rocks in hand
- Moderator: Douglas Ming (Johnson Space Center)

10:30-11:00 am: Coffee and snacks

11:00-Noon: The Future of Data-Driven Discovery in Mineralogy, Crystallography, and Petrology

- Shaunna Morrison (Carnegie Institution for Science): The future of data-driven discovery in mineralogy and crystallography
- Simone Runyon (University of Wyoming): The future of data-driven discovery in petrology and geochemistry
- The Rob Lavinsky Distinguished Moderator: Robert M. Hazen (Carnegie Institution for Science)

Noon-12:10 pm: Materials of the Universe (MotU) Initiative

- Alexandra Navrotsky (UC Davis and Arizona State University)

12:10-1:00 pm: Lunch

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1:00-2:00 pm: Applied Mineralogy as a Tool to Research the Provenance and Technology of Ancient Ceramics

- Michael Tite (Oxford University): The mineralogy of opaque ceramic glazes: Development in the Islamic world and Europe from the 7th to the 16th centuries CE
- Gilberto Artioli (University of Padova): Modern mineralogy and ancient pots: The archaeometry of ceramics
- Moderators: Pamela Vandiver (University of Arizona) and Robert Heimann (Technische Universität Bergakademie Freiberg)

2:00-3:00 pm: Scientific Characterization of High-Value Gemstones

- Wuyi Wang (Gemological Institute of America): Challenges in the identification of synthetic diamonds
- Mandy Krebs (Gemological Institute of America): Determining the provenance of colored gemstones
- Moderator: Thomas Moses (Gemological Institute of America)

3:00-3:30 pm: Coffee and snacks

3:30-4:30 pm: The Societal Relevance of Apatite

- The C2/m Mineralogy Distinguished Speaker John Hughes (University of Vermont): The geological and agricultural significance of calcium phosphate apatite
- Jill Dill Pasteris (Washington University in St. Louis): Biomineralization and biomaterials: Apatite and the human body
- Moderator: John Rakovan (Miami University of Ohio)

4:30-5:30 pm: Minerals and Industry: Evaluating the Real Impacts of Mineral Dusts on Human Health

- Ann Wylie (University of Maryland): What makes an amphibole “asbestos”? History and status of regulatory issues dealing with amphiboles
- Matthew Sanchez (R J Lee Group): Mineral misidentification in connection to potential hazards of mineral dusts
- Moderator: Jessica Elzea Kogel (National Institute for Occupational Safety and Health)

5:30-6:30 pm: Wine and beer