Draft Minutes for the 1596th meeting of the Geological Society of Washington
January 24th, 2024
Cosmos Club

President Doctor called the meeting to order at 20:03 ET.

Attendance
There were 48 attendees.

Minutes
The meeting began with the approval of the minutes from the previous meeting (1595th). The minutes of the 1595th meeting had been posted online and a Minute’s Minute was read aloud at the 1596th meeting.

Guests and New Members
Two new members were announced: Noah Fleischer and Cecilia Paprella (GWU).

Thirteen guests were introduced: Katherine Dahm, USGS; Afnan Khairullah, USGS; Rebecca Stokes, USGS; Wriju Chowdhury, Smithsonian; Jared Milton, State Department; Angela Cleri, Senate; Ricardo Torsi, NIST; Marissa Tousley DOE; Jenny Riker, USGS/USAID; Robby Goldman GSA/USGS; Emily Mixon, UW-Madison; Bonnie McDevitt, USGS; and Liz Hartmetz, GWU.

Announcements
Please check your spam folder for meeting announcements.

Obituaries
None.

Informal Communication
Dan Milton recounted the 671st meeting, in which Hugh Dinsmore Miser presented “Quartz-crystals in Arkansas.” Miser exerted a strong influence on the quartz crystal industry of the United States, and his talk remains relevant 75 years later with renewed interest in domestic supplies of critical minerals.

President Doctor presented an informal communication on the history of woman speakers at the society, beginning with Florence Bascom and Anna Jonas as the first two women speakers. Although women represent only 3% of total speakers, this meeting marks the eighth occasion with three woman speakers in one program.

Formal Program
The formal program commenced at 20:23 ET. President Dan Doctor introduced three speakers, Sarah Hall (AAAS Science & Technology Policy Fellow), Bonnie McDevitt (USGS), Rebecca Stokes (USGS).

Sarah Hall presented “(Un)Well stories: Private well water quality in coastal Maine.” Chronic low-dose exposure to arsenic, radon, and uranium in New England groundwater is linked to negative health outcomes. Rural private well owners, who rely on fractured bedrock and surficial deposit aquifers, face exposure. Despite state agency guidance, residents remain at risk. The “All About Arsenic” project collaborates with students, teachers, and scientists to expand water testing and education. Recent findings indicate that current well water guidelines in Maine may not adequately protect rural communities, emphasizing the need for better representation of unique well stories and addressing testing barriers.

Talk length: 22 minutes.

Questions were asked by Steve Shirey, Carnegie; Larry Meinert, USGS; Joe Canney, NRC; Victor Zabielski, NVCC; Liz Cottrell, Smithsonian; and Ved Lekic, UMD.

Bonnie McDevitt presented, “Radium mineral associations within abandoned mine drainage relevant to the future of critical mineral extraction.” Coal mine drainage (CMD) in Appalachia contains elevated levels of rare earth elements (REEs) and other critical minerals. These elements co-precipitate with iron, manganese, and aluminum oxyhydroxides in CMD treatment systems. Radium (Ra), a carcinogen, sorbs to river sediments impacted by CMD and treated oil and gas wastewater. A baseline assessment of Ra in CMD and associated solids is lacking. Research indicates that Ra concentrations are relatively low in CMD water but higher in solids, correlated with manganese content. Sequential leaching shows Ra retention in recalcitrant minerals, while REEs remain in the solids. Addressing Ra contamination and understanding REE associations are crucial for environmental and human health.
Talk length: 19 minutes.
Questions were asked by Mark Tyra, NIST; John Christoph, Smithsonian; Jane Hammarstrom, USGS; Graham Lederer, USGS; and Dan Doctor, USGS.

Rebecca Stokes presented, “The role of graphite in a changing energy landscape: a geological perspective.” Natural crystalline graphite plays a critical role in the U.S. economy due to its use as the primary anode material in Li-ion batteries, essential for the transition away from fossil fuels. The U.S. Geological Survey is researching the geologic occurrence of graphite deposits and their physicochemical properties. Despite its seemingly simple structure, crystalline graphite exhibits diverse physical and chemical characteristics, impacting battery anode performance. This presentation explores the importance of graphite in advanced technology and highlights surprising aspects like trace element chemistry and mineral textures in natural graphite
Talk length: 22 minutes.
Question were asked by George Helz, UMD; Mike Ackerson, Smithsonian; Joe Kanney, NRC; Jonathan Tucker, NAS; and Dan Doctor, USGS.

President Doctor adjourned the meeting at 21:48.

Respectfully submitted,
Graham Lederer