

Draft Minutes for the 1575<sup>th</sup> meeting of the Geological Society of Washington  
February 23, 2022  
John Wesley Powell Auditorium, Cosmos Club, Washington, D.C.

President Larry Meinert called the meeting to order at 20:03 EST.

#### Attendance

There were 57 attendees, 22 in-person and 35 on Zoom.

#### Minutes

The meeting began with the approval of the minutes from the previous meeting (1574<sup>th</sup>). The minutes of the 1574<sup>th</sup> meeting had been posted online and a Minute's Minute was read aloud at the 1575<sup>th</sup> meeting. No corrections were noted, and the minutes were accepted.

#### New Members and Guests

No new members were introduced.

Two guests introduced themselves: Kopal Jha (NASA, GSFC) and Emily Callahan (UMD, CRESST II).

#### Announcements

No announcements were made.

#### Informal Communication

There were no informal communications.

#### Obituaries

There were no obituaries.

#### Formal Program

The formal program commenced at 20:07 EST and consisted of three speakers: Dr. Juliana Troch (Smithsonian National Museum of Natural History), Dr. Maya Wei-Haas (National Geographic) and Dr. Jacqueline Lungmus (Smithsonian National Museum of Natural History).

Juliana Troch presented "Tracing Fluids in Magmatic Systems: Alkali Trace Element Diffusion (Li, Rb, Cs) in Silicic Melts as a Function of Water Content." Troch established that water plays a key role in magmatic systems, as the presence or absence of an exsolved fluid phase controls the size, frequency and style of volcanic eruptions. However, determining if and when a magmatic system was fluid-saturated prior to eruption, and how much of this fluid was lost during degassing is extremely challenging due to the volatile nature of fluids and gases, leaving little trace in the rock record. Troch said that linking partitioning and diffusion data for variably fluid-mobile elements to three-phase compaction models of magma reservoirs is a promising new tool to trace fluid exsolution in these systems, but relies on well-calibrated experimental data. As one puzzle piece in this approach, Troch presented experimentally-derived diffusion relationships for the alkali trace elements Li, Rb and Cs as a function of variable water content in the melt. Troch reported that results suggest that a 4-weight percent increase in water correlates with one to two orders of magnitude faster diffusivities, providing insights into diffusion mechanisms for these elements, as well as fluid-melt equilibration timescales in silicic magmatic systems. *Talk Length: 20'20"*

Questions were asked by: Ved Lekić (UMD), Richard Walker (UMD), Mong-Han Huang (UMD), Larry Meinert (Economic Geology & CSM) and Francesca Miozzi (Carnegie Institution).

Maya Wei-Haas presented “Behind the Scenes of Daily News at National Geographic.” Wei introduced her topic by noting that the creation of popular science stories can sometimes seem like a black box: insert an interesting study and out pops a polished (or sometimes not-so-polished) story. Wei-Haas dove into what happens between these two steps—and how sometimes things go wrong. She said that the relationship between scientists and reporters can be confusing if you don’t know what to expect. She walked through the reporting process, including how she finds sources, conducts interviews, crafts story angles, and more. She also shared basic tips for scientists working with journalists so that when the next media request comes in, everyone is ready to talk all things science. *Talk Length: 22’40”*

Questions were asked by: Ved Lekić (UMD), Mong-Han Huang (UMD), Jon Arthur (AGI) and Larry Meinert (Economic Geology & CSM).

Jacqueline Lungmus presented “The Original Arms-Race: Derived Forelimb Ecologies in the Ancient Forerunners of Mammals.” Lungmus opened by pointing out that mammals have managed to fill every conceivable ecological niche on planet Earth and are noteworthy in large part because of their incredible diversity in form and lifestyle. They can swim, fly, run, burrow, and everything in between. However, mammals are the only living members of the larger clade Synapsida, which has a fossil record spanning 320 million years. She said that by looking directly at fossil evidence, researchers can elucidate how much of this variation is truly unique to Mammalia, and pinpoint when this astounding breadth of form and functional originated. Recent work has shown that aspects of this diversity can be traced back into the fossil forerunners of mammals, providing examples of a unique evolutionary story that is much longer than previously appreciated. Lungmus concluded by noting that exploring the deep fossil history of Synapsida and their ancestors is critical for understanding the broader evolutionary story of mammals. *Talk Length: 20’24”*

Questions were asked by: Mong-Han Huang (UMD), Victor Zabielski (NVCC), Mark Tyra (NIST), Larry Meinert (Economic Geology & CSM) and Gabriela Farfan (NMNH).

President Meinert announced that the next meeting on March 23<sup>rd</sup> is currently set as in-person. All attendees are required to show proof of vaccination. He then adjourned the 1575<sup>th</sup> meeting at 21:55 EST.

Respectfully submitted,

Beth Doyle