The imperative for safe tailings dams was highlighted in 2014 and 2015 after two, significant, catastrophic failures of large tailings dams at mines in Canada and Brazil. Nevertheless, in 2019, another large tailings dam failure in Brazil was captured in a dramatic video, cost hundreds of lives and devastated mine facilities and the downstream community. On-going efforts by national and international organizations such as ASDSO, USSD, CDA, ICOLD, GBA, SME and ICMM were reinforced and joined by other international bodies to increase the standard of care and reduce the risks from tailings dam failures. Incident investigations and advances in engineering yielded new understanding of technical parameters contributing to tailings dam incidents. Universities introduced new programs focused on mine waste and tailings management. This presentation will review recent developments on tailings dam safety and regulation in the United States, Canada and the world.

A virtual round table will consist of representatives of key industries and organizations discussing recent developments in the world of tailings dams including technological challenges, regulations, governance, technical guidance, policy development and education.

Charles Cobb will introduce the guests and moderate the discussion of recent developments in tailings dam safety including the tailings dam update to the Model State Dam Safety Program (FEMA 316) by ASDSO and many other initiatives in the United States, Canada and the world to move toward the goal of “zero tailings dam failures.”

Mike Henderson will represent the consulting engineer’s world and discuss technological advancements in the wake of significant tailings dam failures in Canada and Brazil that provide new understanding of liquefaction potential of sediment deposits and flow behavior in tailings dam failure analysis.

Amanda Adams chairs the Tailings Dam Committee for the United States Society on Dams and will discuss webinars and workshops on tailings dam technology based on select conference proceedings of the USSD; other USSD publications pending in 2020 and 2021; and, the USSD Tailings Dam Committee partnership with ASDSO’s Tailings Dam Regulatory Committee to propose development of technical guidelines to supplement the publications of the National Dam Safety Program.

Harvey McLeod chairs the Tailings Dams and Waste Lagoons Committee for the International Commission on Large Dams. Established in 1928, ICOLD is well known for publishing classic standards such as Bulletin 153 Sustainable Design and Post Closure Performance of Tailings Dams and hot off the
press Bulletin 181 Tailings Dam Design Technology Update. Harvey will discuss the new bulletin on tailings dam technical guidance developed by ICOLD and other news from around the world.

Andy Small is leading the Mining Dams Committee for the Canadian Dam Association and will discuss work in progress addressing technical issues including factor of safety guidance with ICOLD, challenges with landform closure configurations and flowable/non-flowable characterizations, tailings dam breach guidelines and hazard potential classification considerations, as well as the recent adoption of environmental consequence classification guidelines.

Kim Morrison is leading the new Tailings & Mine Waste Management Committee at the Society for Mining, Metallurgy & Exploration in a bold approach to tailings management by developing textbook level guidance on technical issues related to tailings management. SME will be including tailings content in all future conference programs and select presentations from recent conferences will be developed into webinars. A tailings “portal” is being developed to provide reference information. Kim was Chair of the Tailings Engineer of Record Task Force for the Geoprofessional Business Association which developed recently published guidelines for engineers responsible for tailings dam design and operation.

Speaking of responsibilities, while Tamara Johndrow is holding down her day job, she is also chair of the International Commission on Mining & Metals Tailings Guidance Subgroup who is writing the ICMM Tailings Management: Good Practice Guide. The Guide will support implementation of the recently published Global Industry Standard on Tailings Management and is addressing improved engineering practices for tailings management, including use of the “performance based, risk informed, safe design, construction and closure” approach advocated by the world renowned Dr. Norbert Morgenstern. The objective of ICMM’s Guide, together with the co-convened Standard developed by the independent Global Tailings Review Expert Panel, is to prevent catastrophic failures of tailings facilities.

Speaking of world renowned experts, Professor Dirk Van Zyl of the University of British Columbia’s Norman B. Keevil Institute of Mining Engineering was on that panel and joins the round table with the best kind of news about the tailings and mine waste certificate now in the curriculum at UBC, opening opportunities for students, and a report on the new Standard released by the Global Tailings Review in August, 2020.

And most importantly, distinguished Professor Priscilla Nelson of the Colorado School of Mines will bring more of the best news of recent developments in the academic world to cultivate new students and share knowledge through the newly formed Tailings Center of Excellence. The Colorado School of Mines, University of Arizona and Colorado State University team is ramping up for new opportunities in the world of tailings research, education, and careers. In case you missed it, the press release from Mines is at https://www.minesnewsroom.com/news/colorado-school-mines-develop-mine-tailings-center-excellence-csu-university-arizona