Q&A

- **Attendee:** In the category of unknown unknowns, what about silicone-based organisms?
    - **Alvin Smith:** Right now, we are partnering with industry and looking to come up with silicone-based organisms or using reverse engineering. We can come up with the unknown unknown, but can we effectively have data to show that we have sterilized those? That is where the gaps are. Where do we use our analogues? We must start somewhere. If we start with the theoretical too soon, we get to a point where we cannot even fly the mission. The unknown unknown will always be, so we want to make sure we have effective containment.
- **Attendee:** Have you thought about the sterilization techniques you will use on the Martian samples and if they alter the samples?
    - **Alvin Smith:** Absolutely, and that is a critical component. Our first priority is our safety and containment. The secondary is science. We also want to protect the integrity of the samples, so there are heat boundaries. At the end of the day, we are working with our geologists and other scientists to determine that if samples are altered, we can still get some science.
- **U.S. EPA:** Have you thought about looking at thermophilic organisms as surrogates?
    - **Alvin Smith:** Yes.
- **TIAX LLC:** Are you looking at this just in isolation (e.g., what is happening at the Jet Propulsion Laboratory, or JPL)? Are you looking ahead at things that might be intercepted in space?
    - **Alvin Smith:** JPL houses the Mars program office. It is a NASA mission, so even though it is at JPL, we are not leading the push on this. We have seen that there is more terrestrial science we can do here instead of on the lunar surface. We are always balancing between contamination and science. If we can contain them, we want to bring them here instead of intercepting them.