



RESEARCH2REALITY

Shining a light on research & innovation.

'We Look Inwards To See If Something's Out There'

An interview with **Barbara Sherwood Lollar**, Geochemist
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What we take a look at here is water in all of its forms in the subsurface of the planet. So in the near-subsurface that might mean drinking water: drinking water quality, drinking water remediation, if that water quality has been compromised by contamination. And then on the other end of the spectrum we look at systems way, way deep into the Earth, even two and three kilometers deep, where we're looking at the way in which other forms of life, and in particular naturally occurring microorganisms, are living in the waters deep within this planet, in terms of what that might tell us about how we might go about investigating whether life ever arose anywhere elsewhere in the solar system. We look inwards to understand if something is out there.

How does your research relate to space exploration?

The field of astrobiology right now is in an extraordinary phase. When you think about the information that's come back, for instance, from the Rover explorations of Mars, when you think as well about the kind of information that has come back from the discovery of exoplanets, we have massively increased our understanding of how much real estate there is out there: new planets, new moons. How do we use what we can understand about the subsurface of this planet to then inform how we would go about looking at Mars, Europa, Enceladus, some of the other planets and moons in the solar system.

TODAY'S RESEARCH. TOMORROW'S REALITY.



Understanding both the physical and chemical implications of that, for the origin and evolution, not just of the solar system but the universe, and then thinking about what that might mean in terms of whether or not there are any signs of past life out there, or even present life, means that we are at a real sweet spot in terms of this question of space exploration, and a very, very exciting time to be living in.

