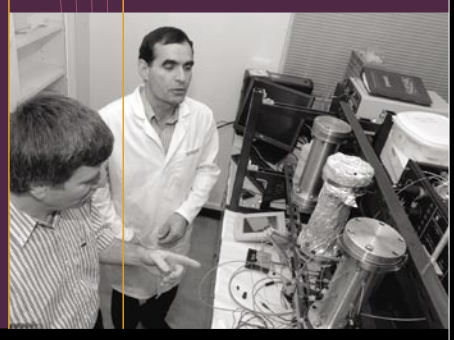


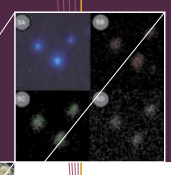
DEEP IMPACTS

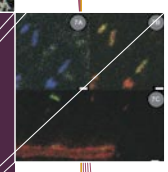
OSU SUBSURFACE BIOSPHERE INITIATIVE

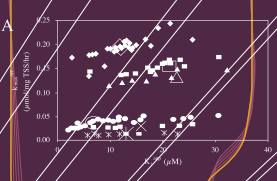
Many of Earth's biggest problems—toxic waste cleanup, global warming, and groundwater contamination—can be solved by enlisting some of the Planet's tiniest organisms:

microbes that live in the soil, mud, and rock beneath our feet. Scientists now believe the total weight of these subsurface microorganisms could equal that of all plant and animal life on the surface. And the overall impact these small creatures have on global cycles adds up to be much larger than ever imagined.

These microbes, found living in some of the most inhospitable places on Earth, have vast implications for everything from oil deposits and agriculture to water resources and medicine. They might even hold the key to life on Mars and other planets.





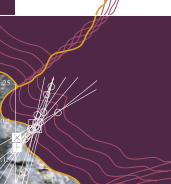


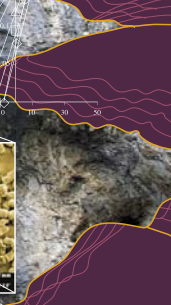
Oregon State University oceanographers discovered bacteria living in volcanic rock 4,000 feet deep in the Earth's crust, an environment that could be analogous to the Martian landscape.

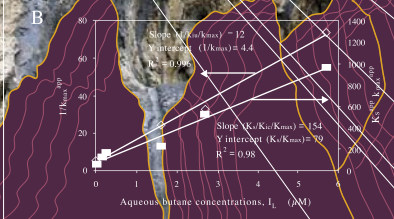
OSU microbiologists discovered that certain bacteria have the ability to transform toxic contaminants into harmless byproducts. And OSU engineers are tapping a type of microbe to stop the flow of underground plumes of nuclear waste.

Building on this OSU expertise in microbiology, forestry, engineering, oceanography, and other areas, this research initiative creates a collaborative Center of Excellence for Subsurface Biosphere Education and Research on the OSU campus. This center is a nexus for the rapidly growing subsurface research enterprise at OSU, attracting research funding, new faculty, and standout students.

OSU's subsurface biosphere research is already leading to breakthrough discoveries that positively impact nitrogen cycles on forest floors, nanomaterials production, wastewater treatment, and much more. As OSU researchers learn more about the tiny organisms living inside the Earth, the potential to improve life for those living on its surface will grow only larger.







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For more information on this project and other strategic initiatives at OSU, visit: oregonstate.edu/leadership/strategicplan/initiatives.html

Oregon State UNIVERSITY

OSU STRATEGIC INITIATIVES ADVANCING LEARNING, RESEARCH, & OUTREACH