

Reaping the unexpected dividends of space exploration

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One of the great things about scientific research is that we often make discoveries we were never planning to make — with far-reaching applications that we never planned. After all, we don't know what we don't know, until we do.

Since the earliest days of scientific exploration, we can chart a persistent pattern of big discoveries with important consequences. One of the most famous is antibiotics. In 1928, a biologist found mold growing on his petri dishes of bacteria colonies. While trying to save his experiment, he noticed that bacteria wasn't growing around the mold. The result was the development of penicillin, which fundamentally changed how we treat infections and is credited with saving as many as 200 million lives since its widespread introduction in the 1940s.

Space science has likewise yielded unexpected discoveries and unintended applications — some at Los Alamos National Laboratory.

For example, in the early 1960s, Los Alamos developed technology for detecting space-based nuclear detonations when the United States signed the Limited Test Ban Treaty of 1963 that prohibited countries from testing nuclear weapons from the ground to space.

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