

## NORTHERN LIFE

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BY KEITH LACEY

Highly sophisticated, advanced mining technology will play an essential role in one company's dream to settle the first humans on the red planet.

Joseph Palaia, vice-president of operations and research and development for Massachusetts-based [4Frontiers.com](http://4Frontiers.com), said his company has plans to build the first manned headquarters for humans on Mars and the plan, if everything falls into place, would see it happen within 15 years.

Palaia was one of 110 delegates attending the Northern Centre for Advanced Technology (NORCAT)'s Third Annual Planetary and Terrestrial Mining Sciences Symposium (PTMSS), which started Sunday and wraps up today at Cambrian College.

The purpose of the conference is to promote a closer relationship between the space and mining sectors and to allow mining experts to network with space scientists and engineers, share knowledge and foster collaboration.

Palaia, 26, who will complete his master's degree from the renowned Massachusetts Institute of Technology (MIT) Friday, said many citizens and scientists question his company's ambitions, but that doesn't concern him or his partners.

"We're pretty excited about what we're trying to accomplish here...we definitely feel Mars can support life, industry and agriculture," he told the conference.

By applying proper science and technology, raising enough funds and believing in a dream, 4Frontiers believes it can build a habitat where a dozen people can live on Mars within two decades, said Palaia.

An eight-month feasibility study convinced he and his partners their dream could become reality.

The challenges will be immense, but can be conquered with advanced technology and engineering, such as tackling issues such as radiation shielding, gravitational pull and transporting goods, services and humans safely, he said.

He must convince a lot of important people to invest in his company and that's why research and development is so crucial, he said.

The use of mining technology and having humans and robots work closely together are all part of the master plan, he said.

The initial proposed "Hillside Settlement" on Mars would include the use of nuclear reactors, mining, manufacturing, and construction equipment, control systems, robots and automation systems and greenhouses to grow food, all which would allow human habitation in a safe environment, he said.

Mars already has sufficient water supplies, he said.

Tackling the issue of transporting all of the necessary equipment and science in an affordable manner will present one of the greatest challenges, he said.

"I would really like to see this happen in my lifetime," he said. "We need to share the dream, sell the dream and engineer the dream."

Some experts don't believe humans living on Mars is realistic, but Palaia and his partners don't agree.

"At first glance, when I meet people off the street, they say it's insane, crazy and impossible, while others believe we're wasting our time and others absolutely love what we're trying to do," he said. "We believe the science and technology is there to make our dream become reality."

For more information, visit [www.4Frontiers.com](http://www.4Frontiers.com).

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