

Biography of Joseph Eugene Palaia, IV

Joseph Eugene Palaia, IV was born in Philadelphia, PA on October 10, 1979. His parents, Beverly Sue Palaia and Joseph Palaia, III presently reside in his childhood home in Voorhees, NJ. Beverly is a high school art teacher in the nearby town of Gloucester City, and Joseph is a civil engineer with Greeley & Hansen Engineers in Philadelphia, PA. Joseph Palaia, IV has two younger brothers, Charles and Steven.

Joseph was raised in the towns of Sicklerville, Atco, and finally Voorhees, NJ. He showed an early interest in science and space exploration, and attended Space Camp in Huntsville, Alabama in 1991. He participated in Cub Scouts and Boy Scouts of America. Many good experiences in Boy Scout Troop 48, located in Berlin, NJ, led to an appreciation of the great outdoors and a yearn for adventure. He received the Troop 48 Walter Kowalewski Memorial Award (1997). His Boy Scout experiences culminated with attainment of the rank of Eagle Scout (1997). His Eagle Scout service project aided the local American Legion post, and he soon was selected for and attended the American Legion New Jersey Boys State (1997).

As a senior student at Eastern Regional High School in Voorhees, NJ, Joe founded a robotics team to compete in the FIRST (For Inspiration & Recognition of Science & Technology) National Robotics Competition. He recruited students from the AP Physics class, raised \$4,000 for the regional entry fee, and found a corporate sponsor who provided engineering support services and a facility in which to construct the robot. His team came in 8th out of 40 teams in the regional competition. Joseph and the team then went on to raise another \$10,000, allowing them to participate in the national competition.

Joseph was accepted to the Albert Dorman Honors College of New Jersey Institute of Technology, which provided a four year undergraduate scholarship. He attended classes at the Mt Laurel branch campus between 1998 and 2002, when he obtained his Bachelors of Science Magna Cum Laude in Electrical Engineering. He also received the Edward Bloustein Distinguished Scholarship (1998) and the New Jersey Institute of Chemists Distinguished Award (1999). During this time, Joseph continued his participation with the Eastern High School Robotics Team, serving as a mentor. He also aided in the formation of a NJIT Hybrid Electric Vehicle team.

From May 2000 through September 2002 Joseph held an internship at Advanced Energy Industries, Inc. in Voorhees, NJ. There he gained skills designing and constructing radio frequency power amplifiers. His work involved creation of a power supply for a MIT research project, the Plasmatron – plasma fuel reformer.

Joseph was married to Melissa Blom in September 2002. In October 2002, Joseph and Melissa moved to Cambridge, MA where Joseph began a research assistanceship in the MIT Plasma Science and Fusion Center. There he continued work on the Plasmatron project, providing electrical engineering support. He was accepted to the Nuclear

Engineering Department of MIT and began classes in February 2003. Joseph and Melissa moved from Cambridge to Framingham, MA in August 2003.

In Spring 2004, Joseph attended an MIT reactor design class, taught by Professor Andrew Kadak, which investigated nuclear reactors for Mars missions. He applied his interest and knowledge in Mars exploration to aid the group in their reactor designs. The group published a report of this work, "Mission to Mars: How to Get There and Back with Nuclear Energy," in the MIT Center for Advanced Nuclear Studies in September 2004. Also, Joseph and several members of the student team traveled to Washington, D.C. to present the team's findings to NASA Project Prometheus staff and Naval Reactors.

In June of 2004, Joseph joined several other scientists and engineers to engage in a pre-design study of the first permanent settlement on Mars. This effort, the Mars Homestead Project, was undertaken as part of the nonprofit Mars Foundation. Joseph served as the technical lead for the nuclear and electrical disciplines, generating and refining design concepts during the 8 month study. He also took on a leadership role, helping to shape the direction of this organization. He attended a number of space activist conferences including those of the Mars Society, the National Space Society, and the Space Frontier Foundation, presenting the results of the design study. In July 2005 he was coauthor of a paper on this work, "A Permanent Settlement on Mars: The Architecture of the Mars Homestead Project," which was published at the 35th International Conference on Environmental Systems.

In September 2005, Joseph co-founded a space commerce company, the 4Frontiers Corporation. This new company seeks to design, fund, build and operate the first permanent settlement on Mars, and to pursue in the economic development of the inner solar system. Joseph has served as Vice President of Operations and R&D for 4Frontiers since the company's inception.

In October of 2005, Joseph attended the Space Generation Congress and International Astronautical Congress in Fukuoka, Japan. There he received the Peter Diamandis Leadership Award in recognition of his contributions to the work of the Space Generation.

During the fall of 2005 and the Spring of 2006, Joseph served as a research assistant at the MIT Space Propulsion Laboratory. This work led to his thesis, entitled, "Empirical Aspects of a Mini-Helicon Plasma Thruster Experiment." Joseph was awarded a master's degree in Nuclear Science and Engineering from MIT in June, 2006.

In October of 2006, Joseph once more attended the Space Generation Congress and International Astronautical Congress, this time in Valencia, Spain.

Following graduation from MIT, Joseph became a full time employee of the 4Frontiers Corporation. Along with various other duties, he served in an organizational and leadership role during 4Frontiers Generation II Mars Settlement Design Effort in 2006 and 2007.

In January of 2007, Joseph and Melissa relocated to Hudson, Florida, where they presently reside. Joseph is based out of 4Frontiers new corporate office in New Port Richey, FL.