

A 21st Century S.T.E.A.M.E.DTM Academy creating experiential edutainment, simulation-based learning, and VRAR astronautics for training NextGen Analog Astronauts, Visioneers, Innovators and Astropreneurs

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Abstract

Space exploration and new discoveries of the Universe is important for Humanity. Education, public outreach and space-related programs that offer experiential, hands-on learning that is *ACTIVE, INTERACTIVE* and exciting versus the more traditional method of passive learning is now the new paradigm of learning for engaging students and the public about human spaceflight. To-date, we have successfully developed a new paradigm for learning in a 21st Century Academy and expanding the fields within current S.T.E.A.M to our unique “Let’s Get S.T.E.A.M.E.D.TM” curriculum.

A 21st Century Academy

Our programs integrate Exponential technologies (“E”) and engage participants in *simulation-based learning* in immersive Digitized (“D”) platforms via the VR and AR “*DIGITAL ASTRONAUT*” training sims. Currently, Mars Academy USA has developed unique real-time, experiential educational training programs for students, researchers, professionals and citizen scientists who are interested about Space exploration and settlement on off-worlds planets or celestial bodies, such as, Moon, Mars and Asteroids. The academy opens the opportunity for participants to engage in innovations and exponential technologies by joining “mini mission crews” and working in small interdisciplinary teams culminating into analog astronaut simulation expedition. The experience allows participants to engage in a fully immersive sim mission as “digital avatar astronauts” in a virtual world through VR and AR platforms or “in-person” as analog astronauts in a mission to Mars or Moon.

Simulations and workshops

We will present our simulation training programs and profile some cutting-edge innovations, novel concepts, experimental technologies during past,

present and proposed future analog astronaut simulation missions. We will feature unique, creative ideas and innovative technologies to enable space exploration, discuss feasibility biomedical projects, robotics and rover studies for Medical Extra-Vehicular-Activities (MEVA) for planetary surface exploration, training “*Astropreneurs*”, portable solar powered 3D Printer for space telesurgery, optimizing human performance and crew interactions by integrating virtual reality and integrative medicine, i.e, yoga and mindfulness meditation protocols to address mental health & wellness in space, develop psychological countermeasures, and expand *Let’s Get S.T.E.A.M.E.DTM* for public outreach.

Conclusion

The mission of the academy is to innovate, create and test capabilities related to enabling future human missions to Mars and future settlement on the red planet. Our vision is to inspire, empower, educate and engage Next Gen analog astronauts and space explorers, to challenge our human limitations, to overcome our fears and boldly reach out into the vast darkness of our Universe to become a multi-planetary species.



Figure Inserts: Mars Academy USA STEAMED workshops & astronautics simulation programs