

STEM Journey IV Theme: NASA's Mission to Mars

March 4, 2017

STEM Journey IV, was organized by the Cape Cod & Islands Council, Boy Scouts of America; the Northeastern Section of the American Chemical Society; Sandwich STEM Academy and PID Analyzers, LLC, Our mission is to generate a continued interest in science and related fields for K-12 students. The event was held on Saturday, March 4, 2017 from 12:00 Noon to 4:00 PM at Sandwich High School/Sandwich STEM Academy.

The event was free and open to the public. In the morning, there were Merit Badge opportunities for Boy Scouts including the following: Digital Technology, Engineering, and Fingerprinting. Nine girl scouts and ten boy scouts signed up for the fingerprinting class given by the Barnstable County Sheriff's Office.

Dr. Roberson was introduced by Dr. Peter Dorhout, President-Elect of the American Chemical Society. Dr. Dorhout is Vice President for Research at Kansas State University Dr. Dorhout is an Eagle Scout and serves on the Executive Board of the Coronado Area Council.

Dr. Luke Roberson, Senior Research Scientist and payload engineer at NASA's Kennedy Space Center, Cape Canaveral, Florida was the keynote speaker. Dr. Roberson, 36, earned a B.S. (1999), a M.S. (2002), and a Ph.D. (2005) from Georgia Institute of Technology. He is deeply involved in the Mission to Mars and discussed many of the issues with the mission.

He said that it was impossible to carry all the materials needed for a round trip mission. Oxygen would have to be regenerated from the carbon dioxide exhaled by the astronauts. Water would have to be recycled and a water source would have to be found on Mars (possibly extracted from the soil). An underground lake was recently reported to be on Mars. Luke described the difficulties of growing plants in space but this is something that the astronauts have been doing for some time on the International Space Station. There are many technological problems that have to be solved before NASA's mission in the 2030's. There were more than 400 people attending Dr. Roberson's lecture at the Sandwich STEM Academy's auditorium.

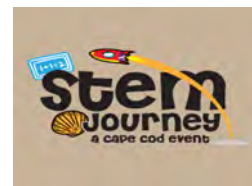
STEM Journey included more than 40 interactive displays by a variety of businesses and organizations related to STEM.

STEM J IV Organizers

Eben Franks	Chairman- STEM J.
Dr. Jack Driscoll	CCC BSA Executive Board, NESACS- PR Chair, PID Analyzers, STEM J.
Jennifer Maclachlan	NESACS PR, PID Analyzers, CPRC Chair American Chemical Society
Michael Riley	CCC Boy Scouts of America, Executive Director, STEM, J.
Gilbert Newton,	Sandwich STEM Academy, STEM J

STEM Journey IV: What was Included?

NASA talk was from 12:30PM-2PM. This is an ALL ages talk focusing on NASA's Mission to Mars and what got guest lecturer and NASA



Technology Expert, Dr. Luke Roberson interested in his STEM career field

MATE ROV underwater remotely operated vehicles interactive demonstration/competition in the pool at Sandwich High School from 12:30pm-3:30pm. Several aquatic themed exhibits will be co-located near the pool area.

Hands-On Science, Technology, Engineering & Math themed activities and demonstrations occurred from noon-4PM in the gym

Exhibitors included:

Cape Light Compact, Northeastern Section of the American Chemical Society (NESACS), Rhode Island Section of the American Chemical Society, Palladium Science Academy of NY, Teledyne Inc., Sandwich STEM Academy, National Marine Life Center, Frogmen Divers, Cambridge Science Festival's Science on the Street, Woods Hole Oceanographic Institution– Applied Ocean Physics and Engineering department, Marine Renewable Energy Collaborative, RC Flying Club of Cape Cod (Drones), Barnstable Amateur Radio Club, Barnstable County Sherriff, The Math Learning Center of Cape Cod, Whydah Pirate Museum, Wicked Cool Fun for Kids, UMASS Boston

STEM RESOURCES FOR EDUCATORS:

American Association of Chemistry Teachers (AACT), Cape Cod Museum of Natural History, American Association of Chemistry Teachers (AACT), American Industrial Hygiene Association, American Chemical Society

STEM RELATED GROUPS/MUSEUMS/CAMPS/PRE-SCHOOL PROGRAM:

Cape Cod Technology Council, Cape Cod Museum Trail, Cape Cod & Islands Council, Boy Scouts of America, The Hundred Acre School at Heritage Museums & Gardens

RECRUITERS FROM THE FOLLOWING COLLEGES/UNIVERSITIES:

Bristol Community College, Suffolk University, Benjamin Franklin Institute of Technology, Wentworth Institute of Technology, Cape Cod Community College, Massachusetts Maritime Academy, Wheaton College, U Mass Dartmouth, U Mass Boston, Bridgewater State University

Publicity for STEM Journey IV

<https://www.capecod.com/events/stem-journey-iv-nasas-mission-to-mars/>

<http://analyzersource.blogspot.com/2017/03/what-to-expect-if-you-are-attending.html>

<http://analyzersource.blogspot.com/2017/01/stem-journey-iv-mission-to-mars.html>

<http://www.sandwichk12.org/news/story-details/~post/stem-journey-iv-mission-to-mars-20170206>

<https://www.facebook.com/Sandwich-STEM-Academy-891599570946068/>

<https://www.nasa.gov/content/journey-to-mars-overview>

Cape Cod Broadcasting Media Interview & Science Outreach-Jennifer Maclachlan

[Expand the Reach of your Outreach Activities](#)

C&E News March 6, 2017, p 40

Sandwich TV- <https://vimeo.com/203127565>

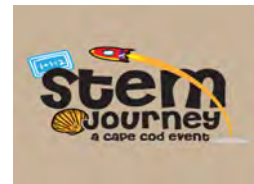
Podcast-

<https://m.youtube.com/watch?v=FNCJUnLZyno>

Summary

STEM Journey was our first event at Sandwich STEM Academy. This location provided all activities in one place which is an advantage on cold wintry days in New England in March. The auditorium, the pool for the Mate ROV, and the Gym for the 50+ exhibitors were on the first and second floors.

We had more than 800 excited parents and K-12 students at this event. We talked to several 5th grade students and asked what they were interested in the future and it was "Archeology", a number of scouts indicated a strong interest in



science (note that nearly 80% of the merit badges are STEM related), a number of students said that this was the “best STEM Journey ever”.

Public Relations Committee

Dr. Jack Driscoll, Chair

Jennifer Maclachlan, NESACS PR Committee

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Northeastern Section of the American Chemical Society.

PHOTOS



Sandwich School superintendent and STEM J organizers



Jen Maclachlan and Jack Driscoll at the Cape Cod Media radio interview



Jack, Jen, Speakers- “Peter Dorhout, Luke Roberson, Charlie Fenske”, & Gil Newton



Mate ROV Demo at the Sandwich High School pool

**SAVE THE DATE- STEM Journey V, March 3, 2018
 “Robotics in the 21 Century” @ Sandwich STEM Academy**