



Mechanical Engineering
Academy of Distinguished Alumni

Emily J. Nelson

Distinguished Mechanical Engineer, 2019

BSME, The University of Texas at Austin, 1998

Deputy Chief Flight Director
NASA

Emily Nelson was born in Okinawa, Japan and raised in Austin, Texas. The oldest of three children, her parents Russell and Brenda Nelson encouraged her love of learning from an early age. After graduating from the Science, Math and Computer Academy at L.B.J. High School, Emily attended The University of Texas at Austin with the plan to major in Math. After a few years of searching, which included a few semesters in the College of Fine Arts as a music major, Emily finally found her home in the Mechanical Engineering Department at UT, and knew she was in the right place when she enjoyed even her thermodynamics homework.

After graduation from UT, Emily moved to Houston to work for United Space Alliance (USA) in September of 1998 as an International Space Station (ISS) Thermal Operations and Resources Flight Controller (ThOR). As a ThOR, Emily had an active role in the assembly of the Space Station, working to build up the orbiting laboratory piece by piece over the course of 8 Space Shuttle missions and supporting day-to-day operations for 15 different astronaut crews that lived on the space station over a 9 year period. Emily's favorite area of study in Mechanical Engineering had been Thermodynamics, and working to build and operate active and passive thermal control systems on the Space Station was a dream come true.

In May of 2007, Emily was selected as a Flight Director and completed training in December of that year, becoming the 70th Flight Director and 10th Female Flight Director in NASA's history. Emily had the opportunity to support six Space Shuttle missions to the International Space Station in the Flight Director role. For two of those missions, she served as a liaison to the Japanese Flight Control Team in Tsukuba Japan, building on relationships grown as a ThOR, while developing the Japanese Experiment Module. Emily has led teams in

a variety of space missions, from Spacewalks to cargo vehicle rendezvous, from long-duration ISS missions to major Space Station system upgrades.

In her 12 years as a Flight Director, Emily has had the chance to work with teams at each member nation of the international partnership of the ISS, which has fostered a love of travel and exploration of diverse cultures. She blends this wanderlust with her enduring love of music to tour with a variety of choirs in a variety of locations, including a tour of Italy with the Longhorn Alumni Choir in the summer of 2019.

Each NASA Flight Director chooses a symbol/color to represent their team. Emily chose Peridot as the symbol for her flight control team because in addition to being a lovely stone, it's a gemstone known to be found in meteorites. This 'space' stone represents all of the extraordinary things, familiar and unfamiliar, we're bound to find as we pursue exploration further and further from our beautiful blue planet.

Emily is currently serving as Deputy Chief of the Flight Director Office and continues to support ISS operations in Mission Control Houston. In her 21 years at the Johnson Space Center, she has worked more than 12,000 hours in Mission Control, working with 241 crewmembers on the International Space Station, 71 crewmembers on various Space Shuttle missions, countless Flight Controllers, Flight Directors and members of Mission Control support teams. Because of those amazing experiences, Emily is more convinced than ever that truly great achievements are not accomplished by individuals, but by teams of passionate people pulling together toward a common goal. She looks forward to continuing the journey of space exploration with more incredible teams going forward.