Tom Nolan

Earth Scientist, NASA Jet Propulsion Laboratory

Bringing the "Wow! I Didn't Know That!" of NASA Earth Science to both formal and informal education is Tom's passion and privilege. Eternally curious, his mom taught him to stop and notice nature all around, revel in the birdsongs, and to be awed by the majesty of the sea. These early lessons have grown into a wild career of fascinating adventure. Tom's degree in Marine Biology and Oceanography presented him with the opportunity to train dolphins, conduct research on killer whales, spend many months at USC's marine laboratory on Catalina Island and many more months on research cruises in French Polynesia, the Hawaiian Islands, the Aleutian Islands, and the waters off California and Mexico. He joined the Jet Propulsion Laboratory (JPL) 20 years ago because satellite oceanography revolutionized the science of El Nino and global climate science. And only at an extraordinary place like JPL could this lead to yet another wonderful adventure, that of "Satellite Jockey." Tom has commanded four instruments on multiple spacecraft, launched three instruments and, for a few years, he was the first person to download and see the images that came from the Opportunity Rover on Mars. Tom is a member of the JPL Speakers Bureau and has participated in various events across the U.S.A. and has also lectured in Australia, Malaysia, French Polynesia and Morocco. He has three children and has lived in California, Alaska and New Mexico.

Lecture:

From Earth-bound to a Space-faring People

"This 'out of this world' talk reviews the strategies, and challenges, of freeing ourselves from the bondage of Earth's gravity and exploring out into the unknown."

https://www.nasa.gov/audience/forstudents/k-4/home/F_Tom_Nolan_Adventure_K_4.html

Shannon McConnell

Solar System Outreach Specialist, NASA Jet Propulsion Laboratory

Shannon has been introducing students to the excitement of space exploration since 1998. She has led the Galileo Outreach Team, the Cassini Formal Education Team, and the Deep Space Network Education and Public Outreach Office. Before her work in outreach and education, Shannon worked mission planning and design for the Cassini Spacecraft, Sequence design and execution for the Galileo Mission, and Data Analysis for the Magellan Mission. Shannon also spent 1993-1994 working payload operations for 2 Space Shuttle Flights managed by JPL.

Shannon holds bachelors and master's degrees in Astronomy and Environmental Engineering from the University of Southern California as well as being a Committee Chair for the Pasadena Tournament of Roses. Her professional affiliations include membership in the National Association of Interpretation, National Science Teachers Association, and National Council for the Teachers of Mathematics. Shannon is also a current member of the Board of Trustees for Don Bosco Technical Institute in Rosemead, California. Shannon has travelled to 50 countries on all 7 continents and is always on the lookout for a new adventure. Shannon lives in Altadena, California."

Lecture:

From Earth to the Edge of the Solar System Space Communications

How do scientists and engineers control spacecraft billions of miles from Earth? NASA's Deep Space Network is a global network of antennas supporting two-way radio communications with spacecraft from a multitude of different countries flying throughout our solar system. Learn about how Spain and Australia work side-by-side with NASA engineers in California to stay in contact with our fleet of robotic spacecraft. Together, the Deep Space Network and NASA is keeping the universe connected."

"Goldstone Apple Valley Radio Telescope Project – Real Science, Real Learning" Bringing Authentic Science into Your Classroom

The Goldstone Apple Valley Radio Telescope Project (**GAVRT**) trains educators on the basics of radio astronomy, technical topics pertinent to the project's science observation campaigns, and telescope operations. Once trained, educators schedule time on the radio telescope for their class to collect data on a strong radio source. Current sources of study include Jupiter, Black Holes, and SETI. "

https://www.jpl.nasa.gov/news/news.php?feature=4047

Deb Brice

Marine Science Educator, San Marcos Unified School District

Debra Brice has been a Marine Science educator for more than 25 years. She has taught primary through university level classes in STEM sciences in San Diego, California, Alaska and Mexico. She currently instructs 229 students in physics, chemistry, atmospheric and marine science. She has worked with NASA, NOAA (National Atmospheric and Oceanic Administration), National Science Foundation, Scripps Institution of Oceanography and other national science research institutions. She has won awards for science education including Shell Outstanding Science Educator, AMGEN Science Educator, San Diego Teacher of the Year, Toyota Tapestry and Maritime Alliance Marine Educator. With a bachelor's in Biology, a masters in Geophysics and a teaching credential, along with experience working as an environmental scientist before becoming an educator, she brings real world science experience and passion into her teaching.

Mrs. Brice has worked with the San Diego Science Alliance, a non- profit consortium of leaders from business, K-12 education, higher education, and scientific institutions committed to enhancing science literacy in K-12 education with innovative programs and resources. She wrote and directed a STEM program for the San Diego Natural History Museum and has been working with the Office of Naval Research and Scripps Institution of Oceanography on a STEM program in Marine Science for the last decade. She is on the Board of the San Diego Science Educators Association, a professional association dedicated to improving and promoting science education as affiliates of the California Science Teachers Association (CSTA) and the National Science Teachers Association (NSTA). She has conducted programs and presentations at national and international Science conferences in STEM Education and Science Collaboration between students and researchers.

Lecture:

Science Exploration in Extreme Environments

At sea and in space, when you travel to a galaxy far, far away.... what should you bring?

Underwater Robots: designing a robot for innerspace and outerspace using biomimcry. A very "Crabby" job!

http://footsteps.ucsd.edu In the Footsteps of Roger Revelle

Rachel Zimmerman Brachman

Senior Outreach Specialist, NASA Jet Propulsion Laboratory

Rachel Zimmerman Brachman has worked at NASA's Jet Propulsion Laboratory (JPL) on various Education and Public Outreach projects since 2003. She was a senior outreach specialist for the Cassini mission to Saturn for over a decade and ran NASA's international Cassini Scientist for a Day essay contest for middle and high school students from 2006-2017. Currently she is the outreach lead for Radioisotope Power Systems (the power technology that enables NASA's spacecraft to explore the outer planets in our solar system) as well as JPL's project manager for Project PANOPTES, a project in which members of the public build backyard telescopes to observe transiting exoplanets. Rachel has also worked on Education and Public Outreach for two NASA Astrobiology Institutes: the Astrobiology of Icy Worlds project and the Titan as a Prebiotic Chemical System project. Born in Canada, Rachel has a bachelor's degree in physics from Brandeis University in Massachusetts, and a Master of Space Studies from the International Space University in Strasbourg, France. Prior to joining JPL, Rachel worked at NASA's Ames Research Centre, the Canadian Space Agency, The Planetary Society, and the California Institute of Technology. She has received international recognition for her innovations in the field of assistive technology for people with disabilities. She is a founding member of the Space Generation Forum, and co-founder of the Women in Science Club at Brandeis University and the Association for the Development of Aerospace Medicine at McGill University in Montreal. She has been a member of the Women Inventors Networking Society and is currently a member of the National Science Teachers Association. She is past president and current conference chair of Science Education for Students with Disabilities.

Lecture

What's it Like to Be an Astronaut?

Learn about space physiology and medicine. What happens to the human body when an astronaut goes to space? Could we handle long duration missions to Mars? Why or why not?

NASA in your Pocket - Learn how to use NASA's Spacecraft 3D app to see NASA's rockets, spacecraft, orbiters, and landers

Ben Brachman

High School Student, La Canada High School

Ben Brachman loves space. Ben participated in science fairs at Sherman Oaks Elementary School, Walter Reed Middle School, and the Los Angeles County Science Fair. Ben attended Astrocamp in Idyllwild, California and has written essays for NASA's Cassini Scientist for a Day essay contest.

An active Boy Scout, Ben currently holds the rank of Life Scout. He has earned over thirty merit badges including Astronomy, Robotics, and Space Exploration, and he is working on his final few badges required to earn the rank of Eagle Scout.

Ben attended a Space Shuttle launch in Florida when he was two years old, and most recently, he helped lead a workshop about NASA's Eyes on the Solar System at the California Science Teachers Association conference in 2018. Ben loves to teach peers and adults how to use NASA's Spacecraft 3D app, and he has a wealth of knowledge to share about how NASA explores space with robots and humans.

Lecture:

NASA's Eyes on the Solar System Bring planets, moons, comets, asteroids, and NASA spacecraft to your home or classroom using this free online tool from NASA.

NASA in your Pocket - Learn how to use NASA's Spacecraft 3D app to see NASA's rockets, spacecraft, orbiters, and landers

Christine Fuller

Mechanical Engineer, former NASA Jet Propulsion Laboratory

Christine Fuller is a mechanical engineer specializing in robotics and mechantronics. During five years at JPL she tested gecko adhesive grippers on the zero-g flight, a rock-climbing robot in lava tubes, and an underwater robot beneath the sea-ice in Alaska. Now she is working at Amazon's Lab126 on emerging technologies.

Lecture:

Adventures in Robotics and Mechatronics

Mechanical engineering is everywhere and it's amazing! I'll share my experiences from education, to field testing in Alaska, to injection moulding factories in China and answer your questions.

Dr. Mike Malaska

Astrobiologist, NASA Jet Propulsion Laboratory

Dr. Michael Malaska is a scientist in the Planetary Ices Group at NASA/JPL. He obtained his undergraduate degree in chemistry from MIT, his PhD in chemistry from UC Berkeley, and performed postdoctoral research in neurochemistry at Mayo Clinic Jacksonville in Florida. After a 20-year career in the pharmaceutical industry inventing new medicines, images of Titan's alien surface sent down by the Cassini spacecraft ignited his passion in planetary science. He went from being an interested amateur, to a volunteer researcher, and ultimately changed his career to planetary science and astrobiology. His current research program combines laboratory simulation, spacecraft remote sensing, and field geology to explore and understand Saturn's moon Titan, in particular the enigmatic labyrinth terrains. He has done field work in North Carolina, the Mojave Desert and Salton Sea in California, the Greenland Ice Sheet, and an extremophile sulfide cave in southern Mexico. He is also the Deputy Principal Investigator (DPI) of the NASA Astrobiological Institute node "Titan as a Hydrocarbon World."

Lecture:

Astrobiology and the Search for Alien life

"Are there other planets with life in our Solar System? What is needed for life to start and survive? Where should we look? Mars, the Ocean Worlds of Europa, Enceladus, and Titan? This presentation will take a virtual tour of some extreme environments and extreme life on Earth, and then examine some weird and wonderful places where life might exist on other planets in our Solar System and beyond."