

Enterprise In Space Is Changing Science Fiction Into Science Fact

BY CHRISTOPHER BRYAN JONES



Shawn Case is the founder of Enterprise in Space.

From the publication of Jules Verne's *From Earth to the Moon* in 1865 to last autumn's hit film *Interstellar*, exploring beyond Earth has been one of the most constant themes in science fiction. Despite the excitement and fascination it stirs in us all, it is only science fact for a select few. Shouldn't everyone be able to reach beyond the Earth?

Enterprise in Space (EIS), founded by Shawn Case, is a project of the National Space Society and all are invited to participate. It aims to bring space to everyone with the goal to design, build, fly, and return to Earth by 2019 an orbiter named NSS Enterprise. With education as its primary focus, the satellite will carry more than 100 fully funded student experiments. Through the NSS Enterprise orbiter, EIS pays homage to all the famous ships, in fact or in fiction, bearing the name Enterprise, while engaging and inspiring the next generation of explorers.

Support for this initiative comes from the son of Star Trek creator Gene Roddenberry himself, Eugene "Rod" Roddenberry. Rod says, "My father would applaud Enterprise in Space, and I am pleased to do so on his behalf. He was always so proud that Star Trek inspired many people to pursue careers in space exploration,

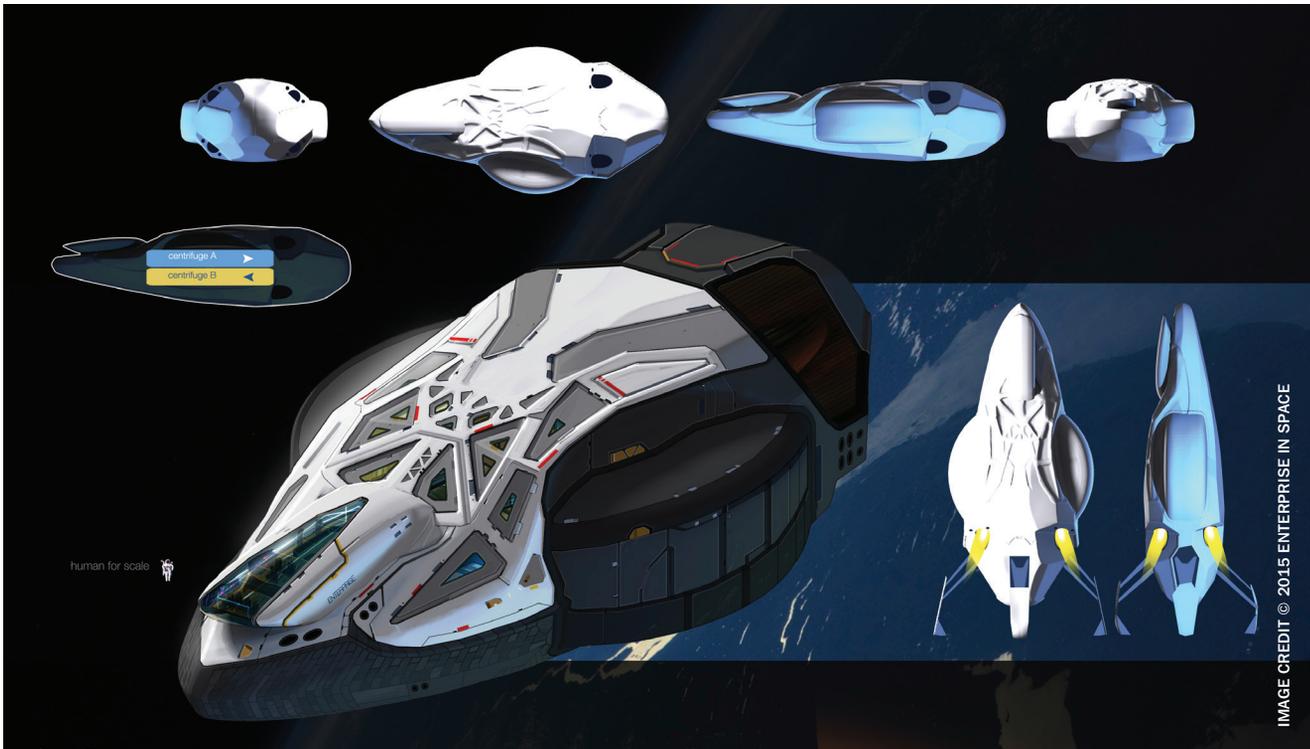
and that many of these scientists and engineers are now focusing on inspiring the next generation is thrilling and a wonderful legacy for the Star Trek community."

Taking Wing: Changing Science Fiction into Fact

However, the tribute goes much further than the initial Star Trek inspiration and the name of the orbiter. The EIS project is also a tribute to all the many great visionaries of science and science fiction: from visionaries of the past like Robert Goddard, Mary Sherman Morgan, and Wernher von Braun, to Burt Rutan and Elon Musk, some of the 'NewSpace' visionaries of today. These science fact visionaries were themselves inspired by science fiction visionaries like Gerard K. O'Neill, Dorothy Catherine "DC" Fontana, Arthur C. Clarke, and Robert A. Heinlein.

Because science fiction has pushed forward the dream of space travel, EIS is now ready to change a science fiction vision into a science fact reality through the selection of its own visionary spacecraft design. To foster wide-ranging global involvement in the project, during the months of October and November 2014, EIS held a science fiction inspired design competition at which anyone with a vision for the orbiter could enter their design.

In December 2014, the design entries were presented for public voting and underwent a professional judging process. A panel of judges from the fields of aerospace,



Ship designs from all over the world are being considered to bear the name NSS Enterprise. This is one of the more popular designs. It was created by Stanley Von Medvey of California.

including Jim Plaxco, Fred Becker, Tobias Richter, Andrew Probert, Jon Ramer, Steve Neill, and Dominic DePasquale, were evaluating the designs as this publication goes to press. The winning design selection will be based on aesthetics, suitability for achieving the mission goal, attention to detail, and imagination. The winning design to bear the name NSS Enterprise can be found at the Enterprise In Space website. This design will then be converted from a conceptual design into an actual spacecraft destined to fly in 2019.

Once selected, a team of aerospace engineers led by 23-year NASA veteran Fred Becker will be developing hardware and software designs to create the actual ship. Once design is complete, bids from companies interested in building the NSS Enterprise will be requested with construction beginning later this year.

New Horizons: It All Begins With Education

Certainly Star Trek is a leading inspiration for the project, however, the “Enterprise” in Enterprise in Space refers not only to what is perhaps the most famous ship name ever, but also to our endeavor to open up space to people of all walks of life through space enterprise. While humans do live and work in space today, the opportunity to do so is currently open to a select few. For most people in these early years of the 21st century, human presence in space still appears to be as unique and distant as it did when Apollo 11 touched down on the Moon in 1969.

Yet, space is our future, and today’s children, today’s students, must learn to see space as something inherently accessible rather than something that lies beyond reach. EIS opens up a wider world to students by advancing education through in-flight experiments. Students at all levels—kindergarten through university—can design experiments for the mission. More than 100 such experiments will be selected from around the world for installation aboard the NSS Enterprise.

Best of all, there will be no flight cost to the students for having their experiments carried into orbit. In this way, EIS creates one of the most accessible connections between students on Earth and the promise of space we’ve ever seen.

Space Education: Picking up STEAM

Science (S) and technology (T) are perhaps the first two things the general public thinks of when it comes to space exploration. Along with these are engineering (E) and the mathematics (M) that makes it all possible. These fields encompass the acronym STEM, the four subjects that are typically at the core of what drives innovation in such technical areas. As our civilization continues to move toward the stars, however, all aspects of our culture must increasingly play a role.

Recognizing this, EIS is adding all fields of the arts (A) to the mix and making STEAM (Science, Technology, Engineering, Arts, and Mathematics) a major emphasis of the project.

The STEAM concept originated with Georgette Yakman in 2006 and has been championed by Rhode Island School of Design President John Maeda. STEAM represents the path to a prosperous future in the eyes of EIS.

Led by 32-year veteran teacher, NASA JPL Solar System ambassador, and two-time National Space Educator Award-winner Lynne F. Zielinski, EIS will develop STEAM-based curriculum that extends far beyond the orbiter itself. Bringing this further still, Zielinski wants to encourage and engage students with interests in music, history, law, language, and all subject areas to join in humanity's destiny of living and working in space.

"Most students believe that you have to be on a math or science track to work on space projects, but this isn't true," says Zielinski. "The true picture is that people from all walks of life contribute through a team effort to make spaceflight happen. All anyone needs to do is find a place in the space arena where their skills can be applied."

In addition, EIS will include prestigious educator opportunities like the Enterprise Educator Emissary program. In this program, educators will participate in specialized training and instruction programs, communicate with top educators from around the world, attend annual International Space Development Conferences, and have access to cutting-edge space education materials and online professional development.

To Space and Back: The Mission

The tasks of designing experiments and a ship are exciting, but this is only the beginning of EIS and the involvement of designers, engineers, and especially students and supporters. Rather than simply designing experiments and shipping them off to EIS, students will have the opportunity to assist in the installation of their winning designs, and everyone involved in the project will be invited to the launch. Those who choose to support the project by becoming virtual crew members will have their name flown on board the NSS Enterprise and shown with the orbiter after the project concludes.

Upon returning from space and making history, the NSS Enterprise will travel on an international tour that will involve community and educational activities, extending the core objectives of the project far beyond the orbiter's actual time in space. After the world tour, the orbiter will be placed in a major museum, giving credit to all those who made it happen. Even this, however, is not an end, as the experience gained by students and the technologies tested will continue to pay dividends as we journey toward a future amongst the stars.

Welcome Aboard: How to Support the Project

EIS has already attracted an active team of dozens of accountants, actors, artists, astronauts, astronomers,



Students here are shown building an experiment that flew aboard the space shuttle. Students similarly will build more than 100 experiments for EIS to fly on the NSS Enterprise orbiter.

business people, educators, engineers, programmers, science fiction fans, and scientists. They are all excited about the prospects of being the first to participate in the first science fiction space mission.

One of the most wonderful things about EIS is the way that it brings together people from all around the globe, from all walks of life, together for the cause of space education and the advancement of space technologies. Any student can submit an experiment proposal, anyone can share in some aspect of the project by becoming a volunteer, and anyone who wants to donate to become a virtual crew member can do so at enterpriseinspace.org.

As Buzz Aldrin, the second man to set foot on the Moon, says of EIS, "My name has been to space and back. Now, it's your turn. Rendezvous with me and support the Enterprise In Space project. Help make history all over again."

NSS thanks the EIS leadership team: Shawn Case, Fred Becker, Frances Delluttri, Buck Field, Alice Hoffman, Tanya Luken, Kate Meredith, Larry Nemecek, Bruce Pittman, Joe Redfield, Johnny Steverson, Susan York, Lynne Zielinski, and the many advisors.

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