



# TRANSFORM YOUR EXHIBIT HALL into a futuristic

space adventure that your visitors can play. As they journey through the exhibit, visitors plan their missions, learn about the concepts and technology — and apply that knowledge as they fly spaceships, pilot landers, and drive rovers.



# MISSION BRIEF

- LEARN STEM SUBJECTS THAT HELP YOU EXPLORE SPACE.
- BLAST OFF SEATED IN YOUR VERY OWN SPACE CAPSULE.
- MEET A REAL ROBOT.
- **UISIT** THE MOON, MARS, AND JUPITER.
- DRIVE A ROVER INTO THE DARKNESS OF A LUNAR CRATER.
- PILOT A LANDER INTO A CANYON ON MARS.
- EXPLORE THE ASTEROID BELT.
- SEE ACTUAL SPACESUITS.



Be the Astronaut is a world-class exhibit experience that teaches STEM based content via a fusion of physical exhibitry and state-of-the-art video game technology.

Scientifically verified by experts at NASA for accuracy and feasibility, the exhibit teaches visitors about the concepts, challenges, and excitement of spaceflight, through the use of touch-screen stations, artifacts, and interactive simulator pods built to look like space capsules.

Visitors will have their own crew of virtual content experts throughout every stage of the exhibit. These digital characters will help visitors learn what's needed to fly a spaceship, pilot a lander, and drive a surface rover — then will be there as visitors climb in the simulators to actually perform these feats, in a thrilling narrative adventure that spans the solar system.

In each space capsule, a massive 70" monitor serves as the 'windshield,' giving visitors a first-person view of their adventures. Touch-screens and an industrial-quality joystick put visitors in command. During missions, the entire cockpit comes alive with animated lighting effects, game visuals, and sounds that make visitors believe they ARE astronauts.

Special companion robots will move about the hall and interact with visitors.

The exhibit's modular design allows host exhibit staff to quickly and easily install any of our standard configurations, and affords endless possibilities to customize the exhibit for a perfect fit — in a single large hall or across multiple exhibit areas.

BE THE ASTRONAUT'S GOAL IS TO INSPIRE WHILE IT EDUCATES, AND TO CREATE A NEW KIND OF VISITOR EXPERIENCE.

I love this approach. It is new and will be better than a history-oriented exhibit at inspiring a new generation to look boldly to the future and to humanity's destiny to become a multi-planet species, both for survival and for fulfillment.

- DR. STEUEN P. SANDFORD, Member of the Be the Astronaut Advisory
Panel and Director of the Space Technology and Exploration Group, NASA.





is an expert in astronomy and geology. He has an informed approach and a sense of wonder about the cosmos and humans' place in it.



is an expert in mathematics and physics. At each 'NAV' station, she helps visitors understand and interactively experiment with the scientific principles behind spaceflight.



is an expert in technology and engineering, present at each 'SCI' station. He is optimistic, with a can-do attitude and a sense of wonder about human ingenuity. To his mind, engineering is the application of technology to solve a problem.

# CREW MEMBERS

BE THE

ASTRONAUT



USTORS will meet the crew, a cast of characters there to help them on their adventure. These virtual characters provide feedback and guidance as visitors move through the exhibit. Each character is there to put a human face on a specific educational goal of Be the Astronaut's STEM-based content.



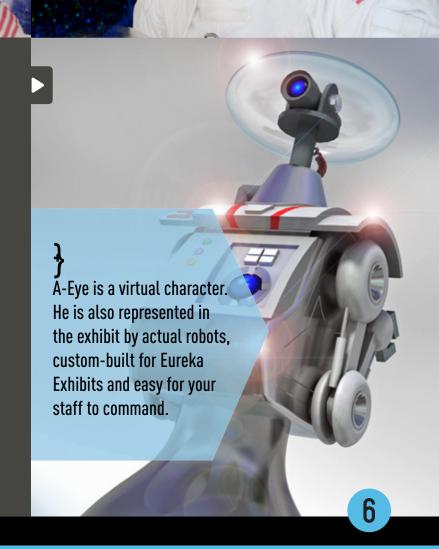


is an expert in biology and the effects of space on the human body. Her motto is, "Space is a dangerous place. My job is to keep you healthy and alive."



# AND A-EYE

A-EYE is the exhibit's 'Artificial Intelligence Program.' This electronic copilot guides visitors from station to station, through the exhibit, and is there to provide instructions and tips, both on-screen and through vocal performance. A-Eye's goal is to ensure that all visitors — from expert gamers to absolute novices — have a fun and frustration-free educational experience that adjusts dynamically to their needs.



# THE MISSIONS MOON, MARS, ASTEROIDS & JUPITER

UISITORS to Be the Astronaut will explore the Moon, Mars, Jupiter, and the Asteroid Belt. They won't simply visit a fanciful approximation. They will be exploring spectacular, scientific re-creations built directly from NASA spaceprobe data.

Each locale transforms your exhibit hall into a massive diorama, miles across, which visitors can explore in a variety of futuristic spacecraft!

- Rocket up into space and view the Earth from orbit.

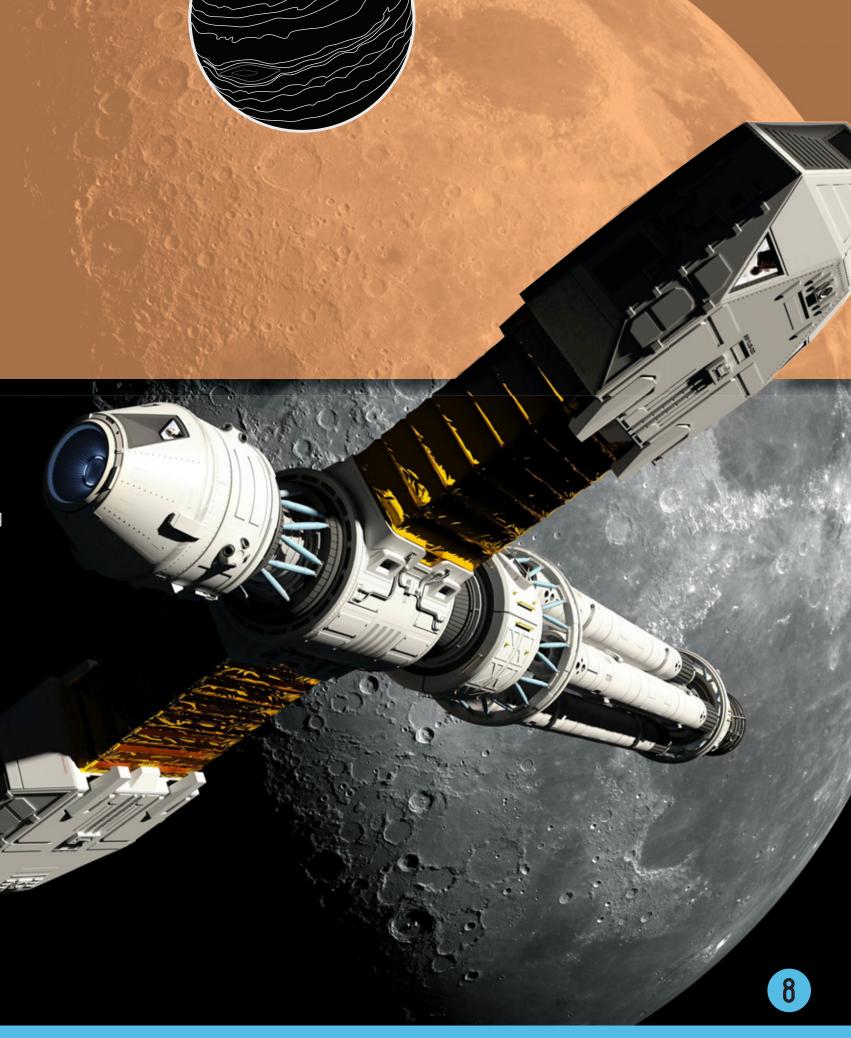
- Fly across the translunar gulf and orbit the Moon.
- Pilot a lander to the lunar surface.
- Drive a rover over actual Moon terrain, a 1:1 simulation of a crater region spanning over 29 miles, derived from the laser altimeter data collected by NASA's Lunar Reconnaissance Orbiter.

- **MARS** Fly across deep space.
  - Pilot a lander over the solar system's largest volcano.
  - Drive a rover over actual Mars terrain, a 1:1 simulation of the western end of a canyon wider than NorthAmerica, based on data from the Mars Reconnaissance Orbiter.

DEEP SPACE

- Navigate space curved by the gravitational force of the planets.
- Survive the hazards of radiation in space.
- Fly time-lapsed missions at actual scale and gain an appreciation of the vast distances between worlds.

- ASTEROID BELT AND JUPITER Fly across deep space and refuel in flight.
  - Pilot a lander to the surface of Ceres, the largest body in the Asteroid Belt.
  - Drive a rover across Ceres' icy surface.
  - See the incredible composition of Jupiter's storm-filled atmosphere.



THE SPACECRAFT These space vehicles are scientifically plausible and are designed to be fun and educational. Each vehicle or activity embodies a particular element necessary for human spaceflight – such as propulsion, life support, resources storage, energy, and navigation. All spacecraft in Be the Astronaut were designed with assistance and oversight from NASA's Langley Research Facility.

#### THE INTERPLANETARY SPACESHIP

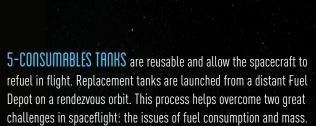
Take flight and experience deep space as you pilot between worlds. This spaceship becomes your transport to education and adventure.

1-COMMAND MODULE matches the physical shape of the exhibit's simulator cockpits. This is where the pilots fly the craft.

**2-HABITATION MODULES** form the primary living and working quarters for the crew. They contain everything from laboratories to sleeping quarters, hydroponics bays to bathrooms.

**3-CENTRIFUGE ARMS** spin to create artificial gravity. They can be retracted during tricky maneuvers or dangerous solar storms to protect the crew from risk or from exposure to radiation.

**4-ROBOT MANIPULATOR ARM** is used to grapple needed fuel tanks and berth them into fuel cradles, much like the International Space Station uses its robot arm to grapple re-supply capsules.



**6-MANEUVERING THRUSTERS** enable the spacecraft to change its attitude in space, and thereby change the direction its main engine will fire

**7-PROPULSION RING** contains the power source and advanced rocket technologies currently under development, that will one day send spacecraft to Mars in as little as 30 days.



#### THE LANDER

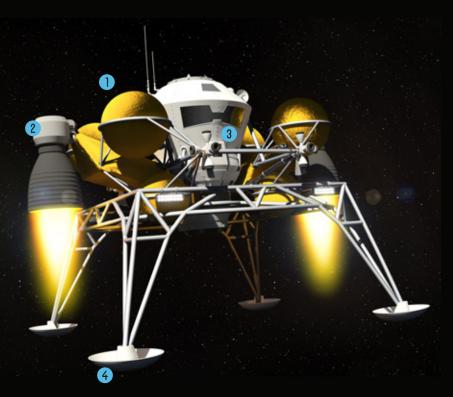
Descend to the surface of three different worlds, each built from NASA laser altimeter data. These missions demonstrate not only the challenges of spaceflight but also the principles of Newtonian physics.

1-CONSUMABLE TANKS are refueled in orbit and on the surface, allowing the vehicle to save weight by carrying just enough fuel for one ascent or one descent.

**2-TWIN ENGINES** based on advanced concepts from NASA are positioned high on the craft to reduce dust dispersion upon landing and to allow rovers to dock with the underside airlock.

**3-MANEUVERING THRUSTERS** enable the spacecraft to change its attitude in space, and thereby change the direction its twin engines will fire.

**4-LANDING LEGS** return to orbit with the rest of the vehicle, rather than being jettisoned like those of the Apollo Lunar Module, making this lander entirely reusable.



#### THE ROVER

Drive on 1:1 scientific re-creations of the Moon, Mars, and an asteroid — in a next-generation rover, created with the help of scientists who designed NASA's Curiosity Mars rover.

**1-AIRLOCKS** allow astronauts to enter the vehicle from a lander or a surface base, without need for spacesuits.

**2-PRESSURIZED CREW CABIN** shelters astronauts from the extremes of heat, cold, and radiation present on the surfaces of other worlds.

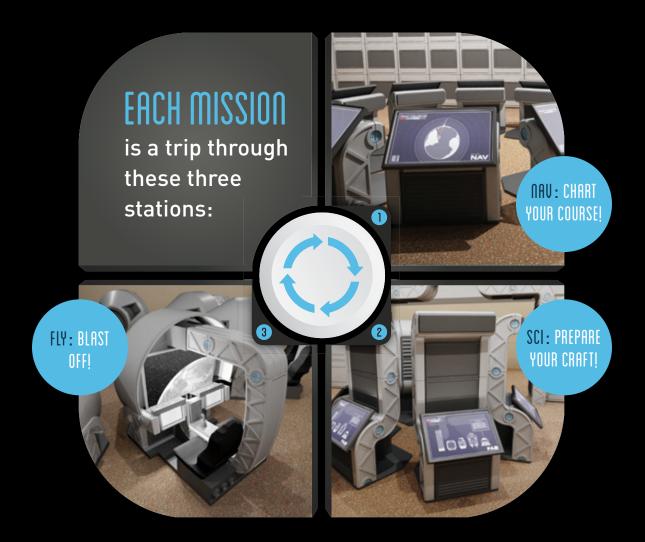
**3-WHEELS AND SUSPENSION** based on NASA's next-generation rover designs have full articulation and are driven by electric motors.







# BETHE ASTRONAU is designed to create flow across the museum floor. Each mission — like the launch into Earth orbit or the landing on Mars — is one cycle through three visually distinct station-types: the NAV module, the SCI module, then the FLY module.



**UISITORS** must complete the first two stations before they can climb in the third station — the simulator — to fly the mission. When visitors complete one cycle, they start on the next.

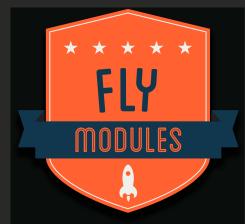
It will take multiple cycles to complete the storyline and experience all available missions in the exhibit, but a sense of achievement is imparted after each cycle.

A magnetic 'Astronaut ID' card tracks visitors' progress, allowing them to proceed through the exhibit's adventure at their own pace — and even over multiple visits.



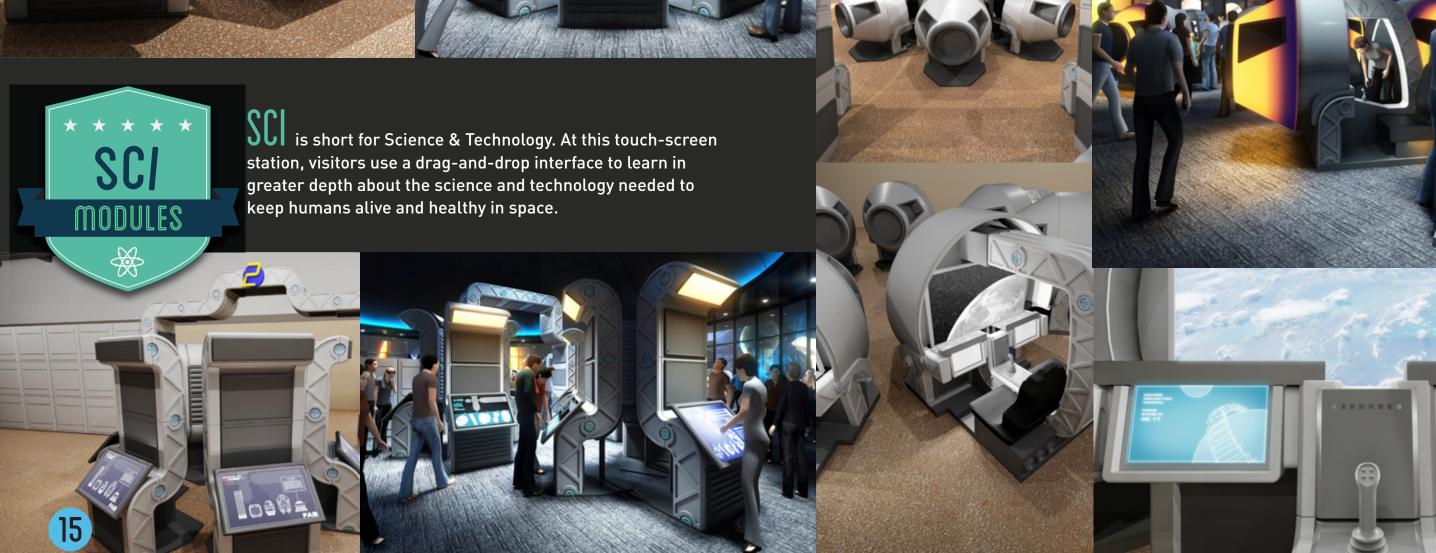


is short for Celestial Navigation. At this touch-screen station, visitors use 2D gameplay to learn basic principles of physics (e.g., energy and motion) and concepts about the workings of the universe on a macro scale.



is the spectacular capstone to each mission. It highlights the feats of math and engineering that enable humans to travel into space. Seated before a massive 70" monitor, touch-screens, and an industrial-quality joystick, visitors fly the spacecraft they outfitted along the flight path they designed.

The entire cockpit comes alive with animated lighting effects, game visuals, and sounds that make visitors believe they ARE astronauts. The exhibit employs multiple copies of each station-type. Quantities are determined by the size of the particular installation.



# MODULAR DESIGN

# IT'S LIKE LEGO

FOR MUSEUM EXHIBITS

THESE ARE YOUR BUILDING BLOCKS:



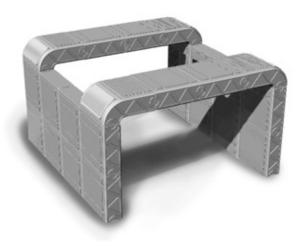


**BE THE ASTRONAUT** is scalable to meet your space and budget needs. Eureka Exhibit's unique modular building system allows you to construct one of our pre-designed floorplans — or to create one of your own.

The modular parts fit together easily, and are lightweight and durable. With them, you can build a myriad of exciting structures.

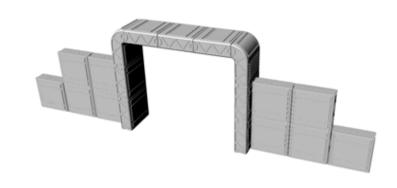
Configure the exhibit with different shapes and theatrical elements to fully transform your exhibit hall into the glowing technological hub of tomorrow's era of spaceflight!

These theatrical partitions, stations, and archways are only some of the structures that can be built. They are made exclusively with J and I form modular components.



TUNNEL

**Components:** 20 I forms + 4 J forms



GATE 1
 WITH THEATRICAL PARTITIONS

**Components:** 17 I forms + 2 J forms



AIRLOCK GATE

**Components:** 2 MDF doors + 7 I forms + 2 J forms



**Components:** 

1 3D printed moonscape + 2 J forms



# ADDITIONAL EXHIBIT ELEMENTS

TRADITIONAL physical exhibitry — including space suits, artifacts, memorabilia, signage, and telepresence robots — provides an engaging experience for young children, the technology inexperienced, beginning gamers, and expert video game jockeys alike.

Depending on configuration, additional elements will include the following:

TELEPRESENCE ROBOTS Real robots controlled by your staff provide exciting visitor interaction and photo opportunities. They can also help with technical assistance, guest lectures, and museum marketing.

- Safe and easy to use.
- Turn-key operation.
- Outfitted with edge and obstacle detection systems.
- No special training to pilot them.

**ARTIFACTS** Actual artifacts from the history of space exploration provide invaluable touchstones for visitors.

- Meteorites.
- Replica spacecraft, like a NASA Mercury Capsule.
- Apollo Space Race memorabilia, including flown items, signed artwork, and flight medallions.
- Soviet space program memorabilia including space hardware and medals.
- A re-production of Voyager's 'The Sounds of Earth' golden record.

3D PRINTING Future space missions will use -D printers to create spare parts and needed materials from 'in-situ' resources on the Moon, Ceres, and Mars.

-See a modern 3D printer and the objects it can produce.







SPACE SUITS Full-size space suits provide an exciting educational experience and wonderful photo opportunities.

- Apollo A7LB lunar space suit replica, made with real 24k gold visor and actual Beta' cloth - just like the originals.
- NASA Mark VII Moon-Mars suit replica.
- Soviet Cosmonaut high-altitude pressure suit.
- Chinese Taikonaut training pressure helmet.

TOYS The youngest and oldest visitors will be delighted by a display of historic toys that illustrate the different stages of a space mission, from launch to landing.

- Early toys from the turn of the 20th century.
- Tin toys from the 1950s.
- Space Race-infused toys from the 1960s.

MISSION CONTROL SCREENS Projected imagery gives you the feeling of being in NASA mission control with its giant screens and readouts.

- Educational imagery.
- A 'Board of Achievements' that highlights visitor accomplishments within your museum and in relation to other museums hosting the exhibit.

SIGNS Signage provides depth and detail, about our solar system and how to keep humans healthy in space.

- -The rocky inner planets and the outer gas giants.
- -The asteroids and their potential value to the human exploration of space.
- -The hazards of radiation.
- -The topography of the Moon, realized in 3D panels.

# HOST RESOURCES

Eureka Exhibits strives to provide all our clients with a complete package of media and support resources. Hosts have access to a website containing a wide range of assets. These include everything from photos, promotional videos, and sample advertising concepts, to content videos, staff manuals, and educator guides.

Eureka can provide easy setup and teardown instructions and on-site assistance, as needed. During the run of the exhibit, Eureka will provide 24-hour technical support. The telepresence robots will allow Eureka to give expert help on-site if required.

The unique modular nature of Be the Astronaut is customizable to all exhibit halls — large and small — and allows for the integration of host-created content and signage.

# STAFF - WEARABLE SPACE SUITS AND TELEPRESENCE ROBOTS ARE AVAILABLE FOR PROMOTIONAL EVENTS ON OR OFF MUSEUM GROUNDS.







# THE BE THE ASTRONAUT companion

iPad app will update to promote the exhibit at each host venue. This app is designed as a companion piece to the exhibition, in order to give audiences a chance to continue their learning experience after leaving the museum — and to draw in new visitors as well.



# FAQ

# O: WHO IS THE INTENDED AUDIENCE AND WHAT

**WILL THEY LEARN?** A: The primary intended audience for Be the Astronaut is K-8 and their caregivers. This first-of-its-kind exhibit, combining traditional exhibit elements with sophisticated computer simulation, has been developed with the advice and oversight of our distinguished panel of advisors. It was built from the ground up to teach the core principles of space exploration, via an interactive personal learning experience.



### Q: WILL THIS EXHIBIT FIT OUR HALL? A: Be the Astronaut is

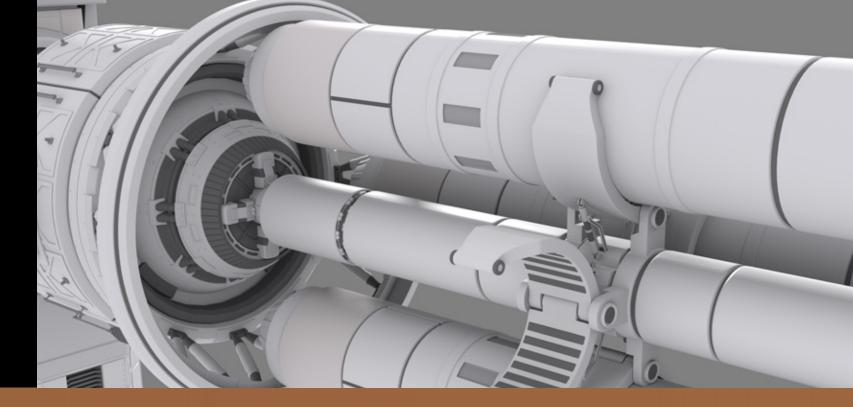
scalable to meet your space and budget needs. Eureka's unique modular building system allows you to construct one of our pre-designed floorplans — or to create one of your own. The parts fit together easily, and are lightweight and durable.

## Q: WON'T VISITORS JUST GO STRAIGHT TO

**THE SIMULATOR FLY STATION?** A: They can't. To increase flow across the museum floor, the exhibit is designed as a cycle. Visitors will complete a NAV station then a SCI station before the magnetic card that tracks their progress will allow them to visit a FLY station. It is the capstone of each cycle.

### Q: WILL THE ROBOTS BE DIFFICULT TO USE OR

**TAX OUR STAFF?** A: Our telepresence robots are safe and easy to use. Edge and obstacle detection systems prevent them from bumping into anyone or anything. No special training is needed to pilot them — even the newest volunteer should be able to control one with ease. Several of our advisors have agreed to do guest lectures for host museums via Be the Astronaut telepresence robots. This unique and exciting system will allow for a variety of experts in the field to give presentations at your museum for little or no cost. Eureka Exhibits can even use the robots to assist you in any maintenance and troubleshooting that may arise.



# **Q:** CAN I GET THE SIMULATION TO PLAY AT HOME A: Be the Astronaut is designed for the museum environment — to give museums a new weapon to compete with the myriad of entertainment options available to modern families and children. The simulations run on custom designed computer rigs. The greatest interactive space experience ever made is not from Hollywood and not on XboxOne, WiiU, or Playstation4 — it's at your museum. The Be the Astronaut Companion iPad app extends the adventure, as a complement but not as competition to the museum

**Q: WILL THIS EXHIBIT TAX OUR MAINTENANCE OR EXHIBITS STAFF?** A: No. Be the Astronaut is designed to be a completely turn-key experience. Aside from powering down the stations at the end of the day, all of the exhibit elements will function automatically. Updates, as in the case of new scientific discoveries added to the simulation, are performed automatically and without the need for museum staff involvement. In the unlikely event of failure, back-up computer cores for the FLY space capsule and other interactive stations will be provided and

can be swapped with the defective unit in approximately 10-15 minutes.

O: WILL THERE BE QUEUING ISSUES? A: No. Each of the stations (NAV, SCI, FLY) is fully interactive

experience. A portion of the app proceeds is shared with host facilities!

and engaging. With 40+ simultaneous users of interactive elements and many more users of traditional exhibits, signs, and artifacts, the exhibit will entertain even the largest of crowds.



# ADUISORY PANEL



rity at the highest level. Be the Astronaut has been developed with the ongoing collaboration of our distinguished advisory panel. We sought advisors within related fields who care about humanity's future in space and who would like to help inspire visitors.

#### DR. STEUEN P. SANDFORD

Director of the Space Technology & Exploration Group, NASA Langley Research Center

#### DANIEL D. MAZANEK

Senior Space Systems Engineer, NASA Langley Research Center

### ALICIA DWYER CIANCIOLO

Aerospace Engineer, NASA Langley Research Center. Member of the Entry, Descent and Landing Team - Mars Curiosity Rover

### DR. CHARLES BEHRE

Chief Engineer & Lead Scientist, Excelis-ITT, GPS Navigation & Satellite Systems

### DAUID S. PORTREE

Science Journalist, WIRED Magazine

#### HARDY SPIRE

Senior Producer CNN

### DR. JOHN HUTCHINSON

Director of the Structure & Motion Lab, University of London

#### KATHLEEN KELLY

Managing Director, Digital Delivery, Ogilvy & Mather

#### JOSH KESSLER

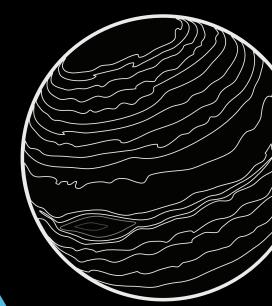
Project Manager, COSI-Columbus

### DR. EDWIN Z. CRUES

Simulation and Graphics branch (ER7) of the Software, Robotics and Simulation Division (ER), NASA Johnson Space Center Engineering Directorate.

The exhibit designers have wisely been extremely serious about two critical issues in science education: portraying scientific evidence accurately, and taking advantage of the opportunity to address where that evidence remains ambiguous. I wish more exhibits were this fun and honest.

- DR. JOHN HUTCHINSON, Director, Structure & Motion Lab, University of London



# EUREKA EXHIBITS AND BE THE DINOSAUR

Eureka's Be the Dinosaur — the smash hit traveling exhibit — is a scientific re-creation of the world of 65 million years ago. It is both a museum exhibit and an exciting video game. This groundbreaking exhibition has been a resounding success, and has already been seen extitutions as COSL U.S. Space and Booket Contar, and degree of other

by over a million visitors and hosted by such institutions as COSI, U.S. Space and Rocket Center, and dozens of other institutions across the U.S. and Canada.

The quality of the design, ease of use, and overall content make Be the Dinosaur one of the best exhibits we have had in 31 years at MASM. It was a huge success for our museum. We had a 9% increase in attendance over the previous summer while many other museums in our state experienced a drop in attendance over the same timeframe.

- ANDY MARQUART, Executive Director, Mid-America Science Museum



LEARN MORE ABOUT OUR PREVIOUS EXHIBIT AT

# EUREKAEXHIBITS.COM

For more information, please contact us at (908) 644-3477 or info@eurekaexhibits.com.

