



Intrepid

ADVANCEMENTS

AN EXCLUSIVE NEWSLETTER FOR MUSEUM SUPPORTERS



For more information, please contact the Office of Institutional Advancement at 646-381-5201 or support@intrepidmuseum.org

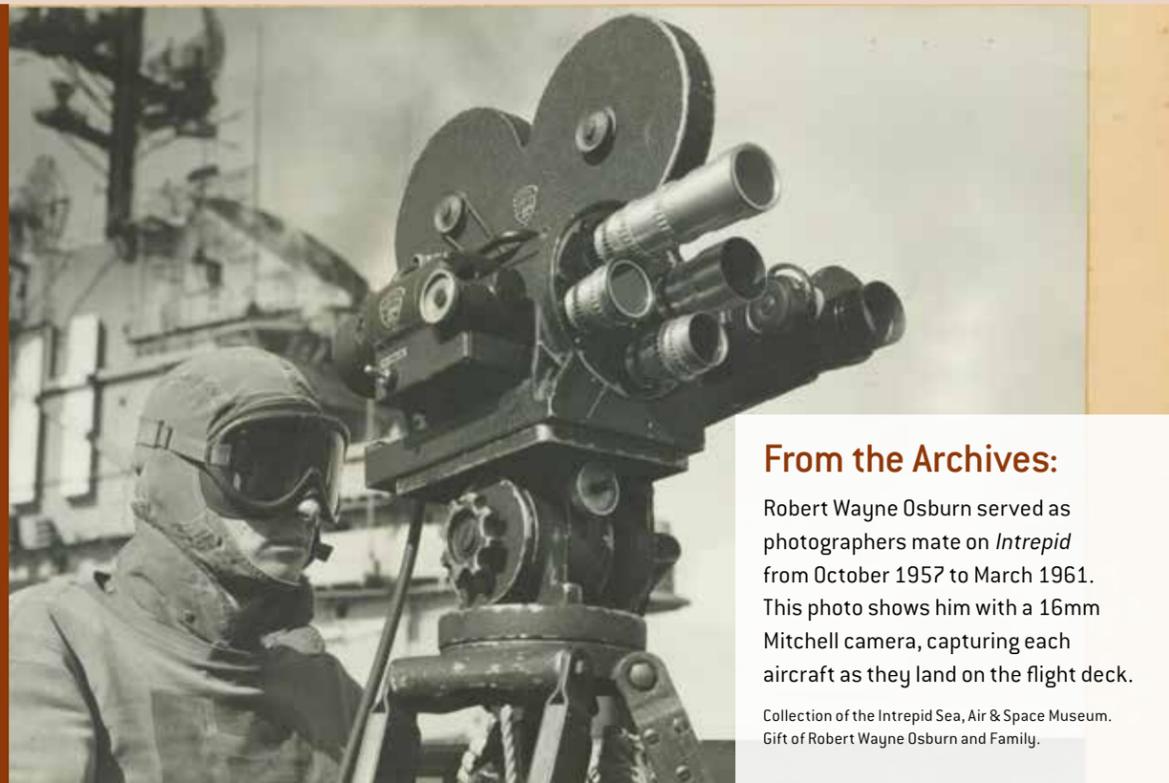
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From the Archives:

Robert Wayne Osburn served as photographers mate on *Intrepid* from October 1957 to March 1961. This photo shows him with a 16mm Mitchell camera, capturing each aircraft as they land on the flight deck.

Collection of the Intrepid Sea, Air & Space Museum. Gift of Robert Wayne Osburn and Family.



Mike Massimino, shown here with the Hubble Space Telescope during his second spacewalk on the *Atlantis* STS-125 mission. Photo credit: NASA.



Kris Brown, Mike Massimino, Buzz Aldrin and Susan Marenoff-Zausner commemorating the 45th anniversary of Apollo 11 at Space & Science Festival.



The Hubble Space Telescope in orbit. Photo credit: NASA.

Former Astronaut Lands at the Intrepid Museum

The Intrepid Museum is thrilled to announce that Michael (Mike) J. Massimino, an engineer and former NASA astronaut, has joined the staff as Senior Advisor, Space Programs. While the contributions of *Intrepid's* role as a recovery vessel for the Gemini and Mercury space missions in the 1960s have long been an important part of the legacy we convey through exhibitions and programming, the arrival of the space shuttle *Enterprise* in 2012 gave the Museum the opportunity to more deeply engage in educating visitors and students about the wonder and technology of space exploration.

Over his 18-year career with NASA, Mike served in numerous capacities and is a veteran of two space flights, both of which serviced the Hubble Space Telescope, including the historic final repair mission in 2009. He has logged a total of 571 hours and 47 minutes in space, and a cumulative total of 30 hours and 4 minutes of spacewalking in four spacewalks.

Mike has participated in the Museum's annual Space & Science Festival since 2012, and now, in this new role, is advising staff about space-related exhibitions and programming. He co-curated the upcoming *HUBBLE@25* exhibition, which celebrates NASA's Hubble Space Telescope, and consulted on the associated programming that will bring to life the incredible stories of the technology and research achievements of Hubble.

Emphasizing the importance of sharing the story of Hubble with the public, Mike says, "Hubble is the greatest scientific instrument ever built—an amazing engineering achievement. Its laser is so powerful that if it were placed at the top of the Empire State Building, it could focus on the tip of the Washington Monument. Hubble has the ability to unlock the secrets of the universe."

A native New Yorker, Mike attended high school in Franklin Square, received a BS in industrial engineering from Columbia University, followed by an MS in mechanical engineering, an MS in technology and public policy and a PhD in mechanical engineering from MIT. Since leaving NASA this summer, Mike has relocated to New York City and also serves as Professor of Mechanical Engineering at Columbia University.

Museum staff members are incredibly thrilled to be working with Mike. About his new position, he says, "Working with the Intrepid Museum is an opportunity for me to share the experiences I've had as part of the space program for eighteen years. I was lucky to work with such a great team of people throughout my career at NASA, and I like the team at the Museum, their respect for veterans, as well as the mission to educate people about space and aviation. I'm looking forward to being involved . . . and it's great to come to work on an aircraft carrier!"

Intrepid Museum's 3D Design Curricula

This past summer, the Intrepid Museum had the unique opportunity to introduce 3D modeling to the students of Camp Intrepid, GOALS for Girls and the New York City Department of Education's STEM STARS camp. Children from 9 to 15 years old learned about *Intrepid's* role in the early space program and were challenged to think about what lies ahead for space exploration by creating a habitat suitable to sustain life on Mars.

After analyzing the Mars environment and comparing it to Earth's through data from

Mars Rover experiments, campers quickly discovered living on Mars would require some problem solving. With a lack of vegetation, liquid water or protection from the sun, and temperatures plummeting to minus 100°F on a summer night, the students would need to consider elements like solar panels, water tanks and greenhouses to make their habitats sustainable.

Campers sketched out their ideas and then moved into the Museum's new computer lab to create a 3D computer model of their

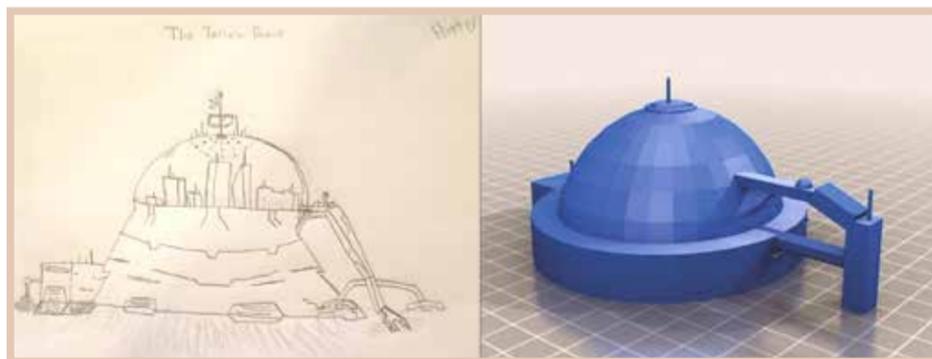
habitat using a CAD (computer-aided design) program called Tinkercad. The computer lab is a tremendous resource for the Museum's Education Department, housing eleven desktop computers and seven 3D printers. Each camper had the opportunity to see their designs come to life via 3D printing and were able to take their creations home at the end of the summer.

Building off this success, the Museum took 3D printing to Summer Counts, one of the Museum's off-site programs hosted by the New York Public Library Muhlenberg branch. Summer Counts, the Museum's first ever math club for teens, strives to use historic artifacts to demonstrate the fundamentals of aeronautics and spacecraft design and the mathematics of engineering.

As a culminating project, the teens of Summer Counts created their very own 3D spacecraft models. During the design process, students applied their knowledge from the six-week program down to the finest detail—the location of the solar panels, the capacity of the fuel tanks and the surface area of the tires. The designs were then printed by Museum staff using the lab's Cube 2 printers and presented to the students during their last session.

The Education team at the Museum strives to enhance students' learning beyond the classroom by providing a diverse 3D design curricula inspired by the Museum's connections to sea, air and space. 3D design has great potential to advance on-site and off-site education with the implementation of new lessons and more prototyping. This exciting new technology is just the beginning of an effort to bring programs that foster hands-on design-thinking and problem-solving to all Museum audiences.

These education programs are supported with funds from the Velaj Foundation, The New York Community Trust, Motorola Solutions Foundation and Con Edison. If you are interested in learning more about the Museum's education programs, please visit intrepidmuseum.org/education.aspx.



Museum camper's sketch of a Mars habitat (left) and its 3D computer model (right), designed using Tinkercad.



2 Museum campers present their final Mars habitat models, printed on Cube 2 printers.

HUBBLE@25 will be on view in the Space Shuttle Pavilion from October 23, 2014, until September 2015.

HUBBLE@25

EXHIBITION

The launch of the Hubble Space Telescope aboard space shuttle *Discovery* on April 24, 1990, marks the most significant advancement in astronomy since Galileo built the first telescope that observed the sky more than 400 years ago. Since then, the Hubble Space Telescope's extraordinary glimpses of deep space have revolutionized astronomy and transformed the way we view our place in the universe.

HUBBLE@25, the first temporary exhibition in the Space Shuttle Pavilion, runs from October 2014 to September 2015. The exhibition celebrates Hubble's technological feats and years of unparalleled scientific achievements against a backdrop of the telescope's magnificent astronomical images. Showcasing original artifacts from Hubble servicing missions and artistic behind-the-scenes photography from the telescope's career, *HUBBLE@25* illustrates the story of NASA's quest for a space-based astronomical observatory and honors the astronauts, scientists and engineers who have contributed to the discoveries made possible by this magnificent telescope.

Through a series of immersive environments, visitors will have the rare

opportunity to experience the greatness of the telescope: an audio-visual environment allows visitors to observe how astronauts train to spacewalk in a large swimming pool called the Neutral Buoyancy Lab, an interactive display explores how Hubble's instruments and sensors "see" the universe and a projection-based experience demonstrates the process by which astronomers from all over the world compete for valuable observation time. The original artifacts on display include the actual tools, specifically designed for the hostile conditions of space, which were used to repair the orbiting telescope.

While the exhibition showcases the science gleaned from the Hubble Space Telescope, it also highlights the concurrent advancements in technology and engineering that for decades have propelled Hubble far beyond its original expectations. In this light, *HUBBLE@25* incorporates select images by photographer Michael Soluri, who was granted unrestricted access in 2009 by NASA to photograph the crew of STS-125 during their training for Servicing Mission 4, the fifth and final mission to the Hubble Space Telescope. His photography captures both the human elements of



Edwin Hubble's basketball, from his days at the University of Chicago, was flown into space by John Grunsfeld onboard *Atlantis* STS-125. On view in *HUBBLE@25*. Photo credit: NASA.

exploration and the unique hardware necessary for spaceflight.

The exhibition, which is supported by the Bodman Foundation, is co-curated by Eric Boehm, Curator of Aviation and Michael J. Massimino, former NASA astronaut and Intrepid Museum Senior Advisor, Space Programs.

PUBLIC AND EDUCATION PROGRAMS

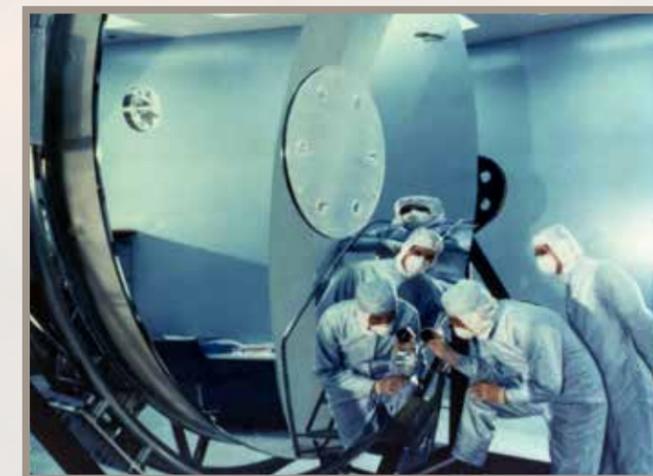
HUBBLE@25 public programming kicks-off with *Last Mission to Hubble* on Wednesday, November 12. Moderated by journalist and former ABC news anchor Charlie Gibson (who interviewed the STS-125 crew while they were aboard *Atlantis* in 2009), this program will re-unite mission commander

Continued on page 4



"Mystic Mountain," observed by Hubble in 2010, captures the chaotic activity atop a pillar of gas and dust three light-years tall. On view in *HUBBLE@25*.

Photo credit: NASA, ESA, and M. Livio and the Hubble 20th Anniversary Team.



A photo from the exhibition: Perkin-Elmer's technicians inspect Hubble's primary mirror in 1984.

Photo Credit: NASA.

HUBBLE@25 Continued from page 3.

Scott D. Altman, pilot Gregory C. Johnson and mission specialists John Grunsfeld, Michael J. Massimino, Megan McArthur Behnken and Michael T. Good to discuss the mission's remarkable achievements.

On Wednesday, December 10, the Museum hosts photographer Michael Soluri in conversation with science journalist Miles O'Brien for an exclusive journey behind the scenes at NASA during preparations for the STS-125 mission. *Infinite Worlds*, Soluri's new collection of stunning photographs and accompanying essays, captures often unseen astronauts, and unsung technicians, administrators and ground crew who completed the final servicing mission of the Hubble Space Telescope.

The culminating 25th anniversary program is *Hubble and Our Altered Universe* on April 30, 2015. Leading scientists will discuss Hubble's most important scientific discoveries, from the surprising discovery of an accelerating universe, to the ability to map dark matter and the first measurements of

the chemical makeup of an exoplanet's atmosphere. Moderator Ira Flatow, host of *Science Friday*® on PRI, Public Radio International, will lead the discussion.

HUBBLE@25 also includes a wide variety of educational programs for students, teachers and their families. Students will study the science and historical context of the Hubble program as well as the contributions it has made to our understanding of the universe. Professional development courses for educators, in partnership with the Space Telescope Science Institute, will provide opportunities for teachers to engage in space science learning that will, in turn, contribute to classroom educational experiences for



In this photo by Michael Robert Soluri, technicians assist an astronaut during preparations for STS-125. A selection of Michael's photographs are on view in *HUBBLE@25*.

thousands of students. Programs designed specifically for children and adults with developmental disabilities will encourage families to work together to solve puzzles and problems based on the challenges NASA faced with the telescope.

PROJECT ENTERPRISE
BE A PART OF HISTORY

Through Project Enterprise, the Intrepid Museum seeks to inspire the next generation of engineers, researchers, scientists and explorers through educational and public programming that honors our pioneers and celebrates the history and future of space exploration.

Sponsor a Star today and your tribute will shine on in the Space Shuttle Pavilion.

To donate, visit the kiosks in the Space Shuttle Pavilion or intrepidmuseum.org/shuttle or call 646-381-5274.

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DEDICATE A SEAT
COMMEMORATE A SPECIAL CONTRIBUTION

Honor an American military service person's contribution to our nation through the Seats of Honor theater seat naming program. To visitors and future generations, these seat inscriptions will serve as a continual reminder of the importance of duty, sacrifice and of your hero's individual service.

Dedication ceremonies occur on Memorial Day and Veterans Day. For more information visit www.seatsof Honor.org or call 646-381-5271.



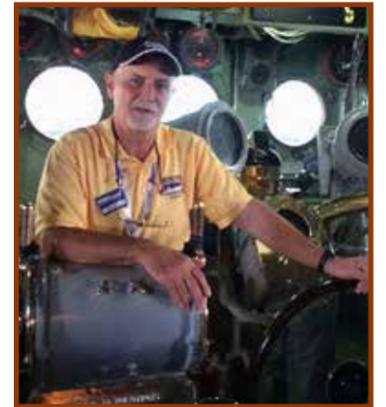
VOLUNTEER HIGHLIGHT: Richard Cortez

Everyone can relate to the bittersweet feeling of returning to a place that was once familiar. Some things are completely different, some exactly the same, and others take on new meaning, whether the place is a school, a hometown or even an aircraft carrier.

Such was the feeling that characterized Museum volunteer Richard Cortez's return to *Intrepid*, 23 years after serving as quartermaster and master helmsman during the Vietnam War. "It was exhilarating to be back and show the ship to my kids. It was also a bit melancholy. I remembered the ship as a man-o-war, and when I came back it was a museum." In 2013, Richard returned to *Intrepid* as a volunteer, taking the helm once again at the captain's bridge.

"Returning to the ship, this time as a volunteer, was the right thing to do."

There's no doubt that the task and scene are much different this time around, but one thing seems to remain constant—the living history that is felt all throughout the Museum. "The ship is a piece of history and people are willing to share their own history with us," he remarks of the visitors he greets. You can now find Richard on Sundays speaking to school groups, exchanging "sea stories" with other Navy vets or listening to the remembrance of a visitor's loved one who once served our country. Of all his duties as a Museum volunteer, he finds working with the Museum's education team—interacting with children and their parents and



Richard Cortez on *Intrepid's* bridge.

describing what it was like to live and work on the ship—one of the most rewarding parts of what he calls his second tour of duty aboard the "Fighting I."

Are you interested in volunteering at the Intrepid Museum? Contact our Volunteer Hotline at 646-381-5058 or email us at volunteers@intrepidmuseum.org.

FORMER CREW MEMBER HIGHLIGHT: Robert L. Owens

When visitors to the Intrepid Museum walk through the tight quarters of the submarine *Growler*, it can be hard to fathom spending more than a few hours aboard the vessel, let alone an entire 90-day patrol. That was the reality for the more than 400 men who served on *Growler* between 1958 and 1964, and there are few more familiar with submariner life than former *Growler* Commanding Officer Robert (Bob) L. Owens.

Bob was born in Sanger, California, in 1924. His submarine career began during World War II when he was drafted into the enlisted service. As fate would have it, in 1944, he was ferried from California to Hawaii aboard USS *Intrepid* to meet his first submarine, USS *Tinosa*. He made six war patrols in the Pacific Ocean, including Operation Barney, where nine submarines spent more than 30 days deep in the Sea of Japan raiding enemy ships. After the war, Bob went to school on the GI Bill, and earned his degree in geology. He completed reserve officer training and was called back to active service during the Korean War.



Robert L. Owens aboard USS *Grayback*, *Growler's* sister ship, in 1959.

Over the next few years, Bob became involved with the Regulus missile program. During the Cold War, the United States and Soviet Union were engaged in a nuclear arms race. *Growler* was designed to carry and launch Regulus I nuclear cruise missiles with the mission of hiding in the Pacific Ocean near Russia. If the United States were attacked, *Growler* would be there, ready to retaliate. At the time, there were only five submarines capable of carrying out this mission. Bob first spent time on USS *Grayback*, *Growler's* sister ship, then was transferred to *Growler* as Executive Officer before becoming Commanding Officer in 1963.

When asked about life aboard *Growler*, Bob said, "We had a job to do. We felt that if the order came down, we would not hesitate. We were there to protect all of our loved ones back home." Bob made two 90-day patrols on *Growler*, thankfully without incident, and finally helped decommission *Growler* in 1964.

After leaving *Growler*, Bob continued to use his expertise in the area of strategic defense working at the Pentagon. He was appointed as a submarine expert and advisor to the Joint Chiefs of Staff during the famous Strategic Arms Limitation Talks (SALT) with the Soviet Union in 1970.

At 90 years old, Bob is enjoying his retirement with his wife, Kay, in California. In September, Museum staff traveled to a reunion of *Growler* former crew members in Reno, Nevada, where they had the opportunity to record a number of oral histories, including Bob's. His unique insight into a tense period in American history will be invaluable in teaching Museum visitors about the significance of *Growler* and the vessel's role in the Cold War.

Are you a former crew member or relative? We want to hear from you! Please contact Matthew Costantino at 646-381-5271 or mcostantino@intrepidmuseum.org.

DONOR HIGHLIGHT: Travis Patton

Growing up in Virginia Beach, VA, the U.S. Navy was always part of Travis Patton's life. The skies of his childhood were filled with planes flying from the nearby Naval Air Station Oceana where his father, Tom Patton, was once posted. Tom was a decorated naval aviator who flew from *Intrepid* in 1966 with VA-176, and he shared many stories with his son about dogfights over Vietnam, where Tom's squadron was pitted against superior

aircraft time and time again. Travis learned about the bonds formed between his father's squadron and the connection that the squadron had to *Intrepid*.

Travis went on to pursue a degree in accounting from the College of William and Mary, and is now a partner with PricewaterhouseCoopers LLP in Washington, D.C., where he resides with his husband Jeff. Whenever he isn't working, he is reading books on history—especially military history, always eager to learn about the Cold War and the Vietnam War, and the role that pilots like his father had in the conflict.

In the fall of 2014, Travis's father Tom began working with the Museum on a project focused on the Vietnam experience aboard *Intrepid* funded by the National Endowment of the



LJ1G Tom Patton (in his VA-176 hat) and fellow crew members celebrating 91,000 – 96,000 arrested landings aboard *Intrepid* on June 13, 1966.



Travis Patton with The Museum's Skyraider.

“By supporting the Museum, I know that my dad’s story will live on.”

Humanities. Tragically, before the project was completed, Tom and his wife Teresa lost their lives in a car accident. Knowing what an impact Tom's service had on his life, Travis knew that he wanted to honor his father's legacy, and memorialize Teresa, by supporting the Museum in some way.

Travis visited the Museum for the first time last spring, tracing his father's footsteps on the flight deck of *Intrepid*. He quickly spotted the Museum's latest aircraft acquisition—a Skyraider—the same type of aircraft his father once flew. Before leaving for D.C., Travis decided to support the restoration and interpretation of the aircraft, which includes gathering oral histories from others who flew Skyraiders.

“My dad had so many stories to tell from his time in the Navy, and I know there were so many more that I'll never get a chance to hear. The work that the Museum does to preserve these moments of American history is vitally important—from recording oral histories, to giving tours to schoolchildren or restoring aircraft. The Museum is so much more than machinery and metal. It's the human element—the stories—that make the Museum unique.”

Upcoming Events

HUBBLE@25

October 23, 2014–September 2015

Members Preview on Wednesday, October 22 from 5:30pm to 9:00pm.

Commemorating the 25th anniversary of the launch of the Hubble Space Telescope.

ASTRONOMY NIGHTS

Friday, October 24 & Saturday, December 20 7:30pm–10:30pm

Local astronomers will be on hand with high-powered telescopes to help you navigate the night sky and answer questions about astronomy and star-gazing.

OPERATION SLUMBER

Saturday, October 25

Spend the night aboard *Intrepid*. Members receive a discount on registration.

FAMILY DAY

Saturday, November 8

Join us between 1pm and 2:30pm for hands-on demonstrations and educational activities.

VETERANS DAY

Tuesday, November 11, 3:00pm

Honor our heroes at our annual Veterans Day ceremony on the Museum's pier.

LAST MISSION TO HUBBLE

Wednesday, November 12, 6:30pm

Charlie Gibson moderates a discussion among crew members of the final mission to Hubble. Museum Members receive a discount on tickets. Members of the Anchor Society are invited to attend a private cocktail reception following the program.

MEMBERS OPEN HOUSE & INFINITE WORLDS BOOK DISCUSSION

Wednesday, December 10, 5:30pm–9:00pm

Bring friends and family to explore the Museum after-hours at this free annual members event, which includes guided tours and behind-the-scenes visits to the Collections Storage facility. Photographer Michael Soluri and science journalist Miles O'Brien will discuss Soluri's new book, *Infinite Worlds*. To RSVP, call 646-381-5030.

KIDS WEEK

February 14–February 22, 2015

Join us for our annual celebration and enjoy Broadway performances, learn about the history of *Intrepid* and take part in educational demonstrations.

Visit our website at intrepidmuseum.org to learn more about these and other upcoming events.

IN THEIR OWN WORDS: Yashoma (Yoshi) Boodhan

This new series conveys the experiences of students enrolled in the Museum's education programs, in their own words.

Two years ago as a freshman in high school, I was uncertain about what to pursue in life. I always loved math and science—it was something that just came naturally. During my freshman year, my science research teacher shared a flier for Camp GOALS for Girls at the Intrepid Museum. I decided to apply for the camp, and I got in. Throughout the six-week camp, I got to meet amazing women with careers in science and the unforgettable staff at the Museum. I enjoyed exploring the different sciences and having fun at the same time.

Before I knew it, six weeks had passed and it was time to leave. Fortunately, the Museum hosts reunions for GOALS alumni, and I was able to remain involved. Later in the year, I was accepted into the Museum's Leadership Institute for Today and Tomorrow (LIFTT) program. It was a program that helped develop my leadership and presentation skills, and it improved my ability to communicate with others and collaborate on group projects. I was also a part of the Junior



Yoshi Boodhan on *Intrepid's* flight deck.

Navigators program for GOALS alumni, where I gained experience working with the public and learned more about the Museum. It was a lot of work to take on both programs, but I felt grateful to be a part of something so amazing. After both programs concluded, I was accepted as a paid Intrepid Explorer intern for the summer.

As an Intrepid Explorer, I worked in the Museum doing demonstrations for the public. I also helped prepare for events like Space & Science Festival and teacher professional development programs. It was incredible to be doing something I enjoyed while gaining work experience at the same time. As I look back,

“I learned that I set my own limits, whether those limits are mental or physical. I remember thinking to myself, if others can do it, then I can too.”

I can see how privileged I have been to be a part of the Museum for so long.

As a result of my journey at the Museum, I want to take on a career in science that will benefit society in some way. My experience has given me many skills—I am more confident in my ability to succeed and be a leader in my community, and I have a newfound interest in history and astronomy. The knowledge and experience I gained are irreplaceable and so were the individuals I worked with. I now plan to strive for a college education with a focus on chemical engineering. Above all, I want to continue my journey at the Museum as an employee or a volunteer—because I can't imagine life without the Intrepid Museum now!

ANCHOR SOCIETY



Become a founding member of the Anchor Society, the Museum's new patron program. Anchor Society members enjoy VIP access to the Museum and exclusive benefits that are tailored to the interests of you and your family.

To learn more, visit intrepidmuseum.org/AnchorSociety.aspx call 646.381.5279.

BECOME A MEMBER!

MUSEUM MEMBERS ENJOY:

- Free priority admission to the Museum all year
- Discounts on tickets and advance notice of public programs
- Invitations to members-only events like the Members Open House, exhibition previews and much more!

To join, visit intrepidmuseum.org/Membership.aspx or call 646-391-5030.