



ANNUAL REPORT  
**2016**





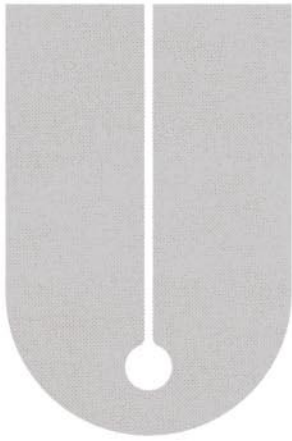


■ **ABOUT THE NAMES USED IN THIS REPORT** *The U.S. Naval Undersea Museum (USNUM) in Keyport, WA, shares a Director, Exhibit Fabricator, Exhibit and Graphic Designer, and an operating budget with our sister museum, the Puget Sound Navy Museum (PSNM), in Bremerton, WA. Externally and publicly, we are separate museums, with separate missions and identities, which operate independently. Internally, the umbrella name Navy Museums Northwest (NMNW) is sometimes used administratively to collectively refer to both museums.*

The museum strives to connect veterans, active-duty Sailors, and our national audience with the history, technology, and operations of the undersea Navy. Through artifacts, exhibits, and educational programs, we tell the stories of the exceptional people and cutting-edge technology that define the Navy's undersea communities.

For instance, museum visitors learn about the many skills of Navy divers through museum exhibits and programs. On the cover, divers with the Mobile Diving and Salvage Unit (MDSU) 2 use a lift bag system to move a sunken ship's propeller during an underwater lift.

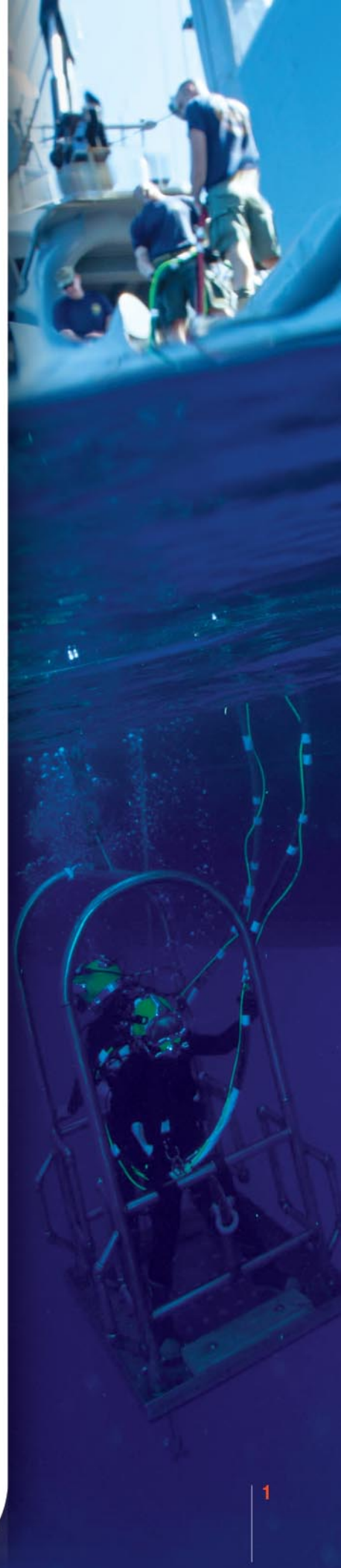




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## 2016 HIGHLIGHTS

- 74,834 in-person visits and 2.1 million online visits
- 198 artifacts exhibited
- 110 education programs with 7,629 participants
- 114 artifacts added to the collection
- More than 40,200 items in the collection
- 10 permanent, temporary, and online exhibits opened
- 339 Navy events for 20,122 Navy and civilian personnel
- 9 public programs for “*Deep Sea Week: Boomers*”
- 5,707 volunteer hours from 96 volunteers





## DEAR FRIENDS OF THE MUSEUM,



All around, 2016 was another very successful year for the U.S. Naval Undersea Museum! It was a period of continued growth and I would like to take this opportunity to appreciate and celebrate all that we have accomplished in the last year. This annual report provides a year-in-review, and I think you will agree that we are up to some great things.

The U.S. Naval Undersea Museum (USNUM) is an institution where responsible stewardship, service to the public, and a culture of caring,

learning, innovation, and transparency are the measures of our impact on the U.S. Navy and the community in which we serve, and in the museum field to which we belong. Our stakeholders have taken note: we hosted more than 74,834 visits at our museum and 2.1 million online. Reflecting the museum's commitment to its audiences, we received a Certificate of Excellence from TripAdvisor for consistently high visitor ratings in 2016.

As we reflect on 2016, our nation and the world continue to experience challenging times. These times have reinforced the critical role that cultural institutions such as USNUM play in sharing the stories, both past and present, about the Navy's rich heritage and place on the world's stage. Our museum offers spaces and platforms to open dialogue and highlight human experiences that shape and inspire us as individuals, cultures, and communities. One such avenue to share these stories is through our exhibit program. The exhibits *Preserving Peace: The Navy's Strategic*





*Deterrence Program* and *Saving Submariners* share information about the people and events that drove technological advances in the development of ballistic missiles and submarine rescue and escape equipment. The museum hosted a series of events – Deep Sea Week – to coincide with the opening of these exhibits that fostered recollections of time spent serving on ballistic missile submarines and introduced new audiences to the program of strategic deterrence.

Our education program is another key avenue for relaying Navy history and technology to our community and fostering the public’s engagement with technological concepts. Throughout 2016, education programs, including Discover Engineering (“E”) Day and Navy STEM Days, continued to draw people to the museum to engage with the science and technology that allows the Navy to operate undersea. The participation of more than 7,600

students and families in these programs demonstrates the public’s interest in and appreciation of opportunities the museum provides for learning.

I look forward to 2017 knowing that the U.S. Naval Undersea Museum will continue to prosper with the strong support of the U.S. Navy, the public, the volunteer staff, and the Naval Undersea Museum Foundation. We are well positioned for the future, and with every new exhibit, program initiative, and outreach effort, we are furthering the mission of our museum. Thank you for your partnership and investment in our wonderful museum.

**ALL THE BEST,**

Lindy Doshier

*Director*





■ *During Navy STEM Days, students test their class-made remotely-operated vehicles (ROVs) for buoyancy, maneuverability, and speed in portable pools provided by PSNS & IMF*



# HIGH VELOCITY LEARNING

Applying the best concepts, techniques, and technologies to accelerate learning as individuals and families, the museum's educational programming explores the history and technology of the U.S. Navy's presence undersea. The programs inspire participants to explore the scientific, technological, engineering, art, and mathematical (STEAM) principles that form the foundation of the Navy's daily operations. Participation in the museum's programs and exhibits fosters an interest in and understanding of STEM principles that can influence a student's career choices and encourage a lifetime of learning.

## NAVY STEM DAYS

Navy STEM Days is an educational program resulting from collaboration between the museum, the Puget Sound Navy Museum, the Puget Sound Naval Shipyard and Intermediate Maintenance Facility (PSNS & IMF), and the Naval Undersea Warfare Center Division Keyport (NUWC Keyport). In its third year, the program brought more than 1,680 local 4<sup>th</sup>-6<sup>th</sup> graders to the museum to participate in STEM-based activities that align with



"THANK YOU SO MUCH FOR HOSTING OUR KIDS! THEY HAD A BLAST AND LEARNED SO MUCH. YOU, AND THE WHOLE MUSEUM, WERE FANTASTIC!"

**JULIE LORDON, TEACHER WITH BELLEVUE, WASHINGTON SCHOOL DISTRICT**



Common Core and Next Generation Science Standards. The successful collaboration resulted in the receipt of an award from Navy Region Northwest, Navy Community Service Program for Personal Excellence Partnership.

## **SUMMER STEAM AND SCIENCE SATURDAYS**

With families working together to solve challenges and explore new concepts, the Summer STEAM program slows “brain drain” between one grade level and the next by keeping students engaged in STEAM throughout the summer months. Science Saturdays take place during the school year, delivering interactive ways of discovering technology and putting lessons learned at school to use in the real world. These free public programs engaged more than 1,300 people over the course of 16 events in 2016.

## **DEEP SEA WEEK**

Deep Sea Week, a new annual program held by the museum, focused on ballistic missile submarines, which are known by the nickname “boomers,” and their role in the



county’s strategic deterrence program. The week’s events included a distinguished speakers panel featuring Rear Admiral John Tammen, Jr., Commander, Submarine Group 9; a community Story Swap; education programs for children and families; curator-led exhibit tours of the new exhibit *Preserving Peace*; and reflection days. Deep Sea Week provided visitors engaging opportunities to learn first-hand from the Navy leaders and veterans about the important role strategic deterrence plays in the U.S. Navy’s heritage and operations.





## DISCOVER “E” DAY

In its 18<sup>th</sup> year, National Engineers Discover “E” Day drew more than 370 children and families to the museum for a single marathon day of engineering learning experiments. Participants engaged in nine different hands-on activities, including designing paper rockets, building catapults, and programming robots. Naval Reserve personnel, civilians from the PSNS & IMF and NUWC Keyport, and museum volunteers staffed activity stations. Discover “E” Day continues to grow as a highly successful annual event for the museum.

## FIELD TRIPS AND TOUR GROUPS

Field trips to the museum reinforce what students are learning in the classroom and introduce real-world applications of textbook concepts. Group visits to the museum provide the opportunity for families, friends, colleagues, or classmates to take in information and discuss it together following the museum visit, enriching the experience. More than 1,000 students and group members participated in museum-led field trips or guided museum tours.



■ *The museum’s education programs inspire participants to explore the scientific, technological, engineering, art, and mathematical (STEAM) principles that form the foundation of the Navy’s daily operations. Here, Discover “E” Day participants explore the basics of robotics by piecing together pre-programmed “sense” and “action” cubes to accomplish robotic engineering challenges.*



■ Museum staff develop 3-D designs of new museum exhibits, in this case the Preserving Peace exhibit, to plan for visitor-artifact interactions, graphics placement, and production workflows.





# UNDERSTANDING NAVY HISTORY

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The museum's exhibits are windows into the history – the “how we got to where we are” – of the U.S. Navy undersea. By visiting our exhibits and interacting with physical artifacts and complex concepts, visitors learn about key events and advances in Navy history and technology.

In 2016, two new exhibits – curated, designed, and built entirely in-house – opened in the submarine gallery. The opening of the exhibits in August transformed the 3,300-square foot gallery into one of the museum's strongest interpretive areas with interactive exhibit components, emotionally powerful artifacts, and strong graphics. We also expanded our exhibit offerings in other ways, including a new artifact spotlight program and additional online exhibits.



“AS WE GET UNDERWAY, WE MUST FIRST UNDERSTAND OUR HISTORY - HOW WE GOT TO WHERE WE ARE.”

**ADMIRAL JOHN M. RICHARDSON, CHIEF OF NAVAL OPERATIONS, IN “A DESIGN FOR MAINTAINING MARITIME SUPERIORITY” (2016)**





## ***PRESERVING PEACE: THE NAVY'S STRATEGIC DETERRENCE PROGRAM*** OPENED AUGUST 19

Ballistic missile submarines have patrolled the world's oceans with ballistic missiles since 1960, deterring nuclear war by their very presence. This exhibit traces the storied history of the U.S. Navy's strategic deterrence program, exploring how the Cold War spurred and shaped sea-based nuclear deterrence, how deterrence strategy works, and why it remains important in today's world. The centerpiece of the exhibit is the payload section of a Trident I (C4) missile, which imparts a lasting impression on the museum visitor. Other key components of the exhibit include videos of missile launches, interviews with ballistic missile submariners, a missile fire control panel, and a STEM education kiosk that includes a missile launch scenario allowing the player to experiment with trajectory and launch speed to reach a target.

## ***SAVING SUBMARINERS: SUBMARINE RESCUE AND ESCAPE*** OPENED AUGUST 19

How does the Navy save submariners should disaster strike? The exhibit *Saving Submariners* looks at the evolution of submarine rescue and escape in the U.S. Navy from the establishment of the Submarine Force in 1900 to the state-of-the-art rescue system in use today. A submarine rescue chamber, Momsen lung, Steinke hood, and full-body escape suit bring the subject to life for the visitor, while a timeline of major submarine rescues and escapes puts all of the gear into context. A special focus on Charles Momsen shows how one person with initiative and courage can make a tremendous difference in the world.

## **ARTIFACT SPOTLIGHT PROGRAM**

The Artifact Spotlight program shares highly significant artifacts in our collection with visitors. Exhibiting these stand-alone artifacts makes their stories more poignant. Sediment from USS





Scorpion's resting site and the welding helmet of the Navy's first female deep-sea diver, Hull Technician 2<sup>nd</sup> Class Donna Tobias, were among the nine artifacts under the spotlight in 2016. Corresponding blog posts and images brought the stories to the museum's online visitors.

## ONLINE FEATURES

In an ongoing effort to make museum resources more accessible to non-local audiences, staff developed two online exhibits and curated a new "Featured Artifacts" webpage. *Navy Undersea Pioneers* profiles 34 innovators and trailblazers who made significant contributions to the Navy's undersea communities, while *Saving Submariners* is an online version of the new exhibit about the history of submarine rescue and escape. The 26 "Featured Artifacts" include several not on exhibit, providing even greater access to the museum's significant resources.



■ Visitors learn about key events and advances in Navy history and technology when visiting the museum's exhibits. Here, a family interacts with the new *Preserving Peace: The Navy's Strategic Deterrence Program* exhibit.



■ Mystic (DSRV 1), on exhibit outside the museum, provided rapid-response submarine rescue capability to the U.S. Navy from 1977 to 2008.







# PRESERVING NAVY HISTORY

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## PRESERVING NAVY HISTORY

Museums derive their identities and products — education programs and exhibits — from their artifacts. In order for artifacts to be available for use in exhibits and research inquiries, they must be physically and intellectually cared for year-round. This care ensures the artifacts are physically able to withstand the pressures of exhibition now and into the future and enough data about the artifacts exists to make them valuable beyond their material worth.

## SIGNIFICANT ACQUISITIONS

In 2016, we added 114 new objects to the collection, expanding our holdings in the areas of submarine technology, undersea weapons, and deep submergence history. Notable acquisitions included:

*A ONE-OF-A-KIND DEEP-SEA CREATURE* recovered from a 5,000-foot dive by DSRV *Mystic*. The organism's provenance and physiology offer an interesting opportunity to interpret the deep-ocean environment.

"WE ALWAYS HAVE A GREAT TIME. THE KIDS LOVE IT. ESPECIALLY WHILE THEIR DAD IS AT SEA."

**ASHLEY, VISITOR FROM KINGSTON, WASHINGTON**





**A MOMSEN LUNG**, the world's first successful submarine escape device, donated in pristine condition.

**A STRATEGIC DETERRENCE PATROL PIN** documenting an astounding 32 patrols made by one individual, retired Lt. Cmdr. Floyd Rinehold, during 30 years of serving on ballistic missile submarines.



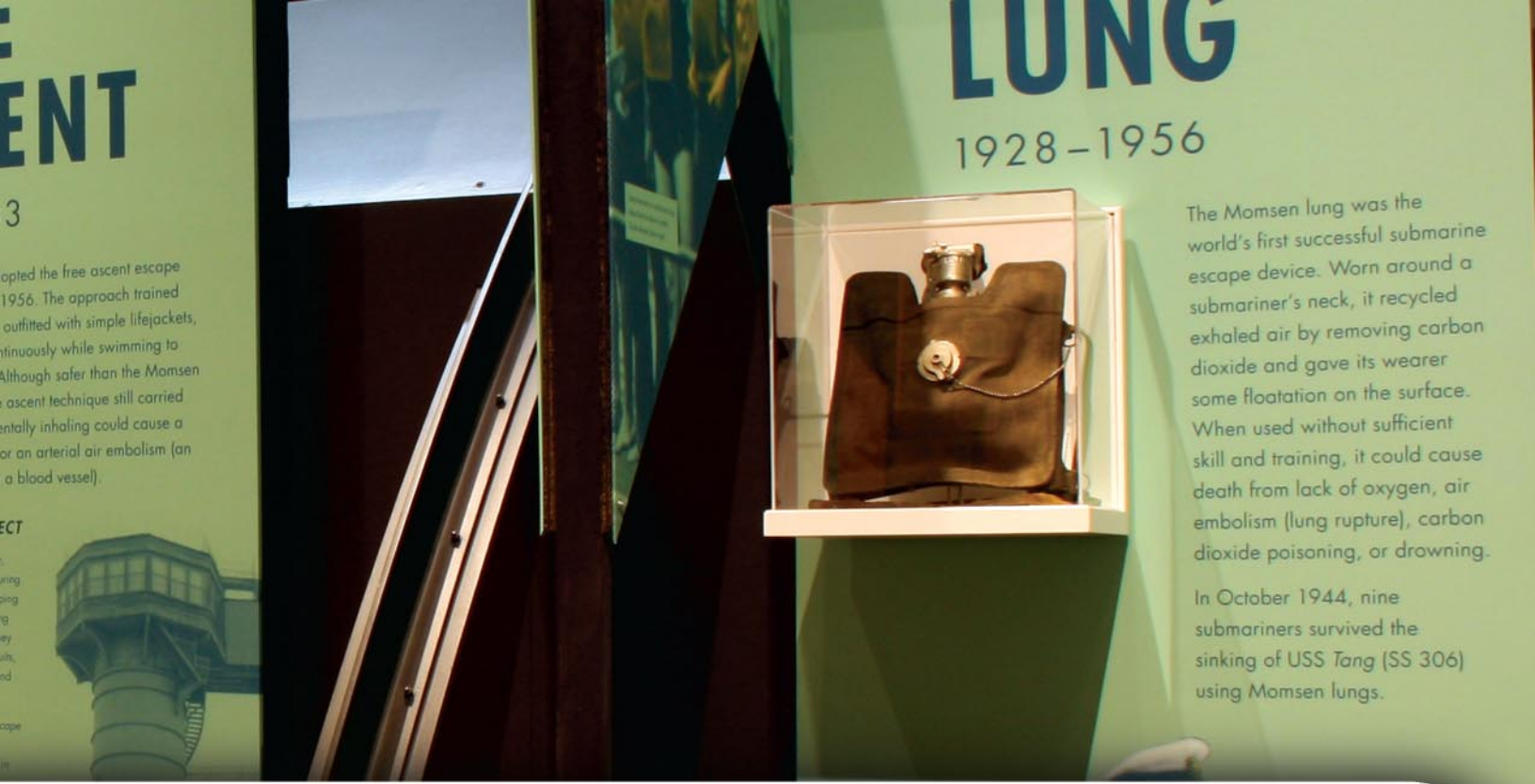
## 100 PERCENT ARTIFACT INVENTORY

Professional museum practice dictates that a wall-to-wall inventory of collections shall occur at regular intervals. In 2016, we conducted this 100 percent inventory of our artifacts to verify all information is current and all artifacts are accounted for. This effort supported the Naval History and Heritage Command goal of inventories conducted at every official U.S. Navy museum nationwide.

## LOAN PROGRAM

Providing access to museum artifacts by lending them to organizations across the U.S. allows a broader audience to engage with naval history and technology. In 2016, the museum had 49 artifacts on loan to 29 organizations, including museums and veterans groups, reaching more than 1.9 million visitors.





# LUNG

1928-1956

The Momsen lung was the world's first successful submarine escape device. Worn around a submariner's neck, it recycled exhaled air by removing carbon dioxide and gave its wearer some floatation on the surface. When used without sufficient skill and training, it could cause death from lack of oxygen, air embolism (lung rupture), carbon dioxide poisoning, or drowning.

In October 1944, nine submariners survived the sinking of USS Tang (SS 306) using Momsen lungs.

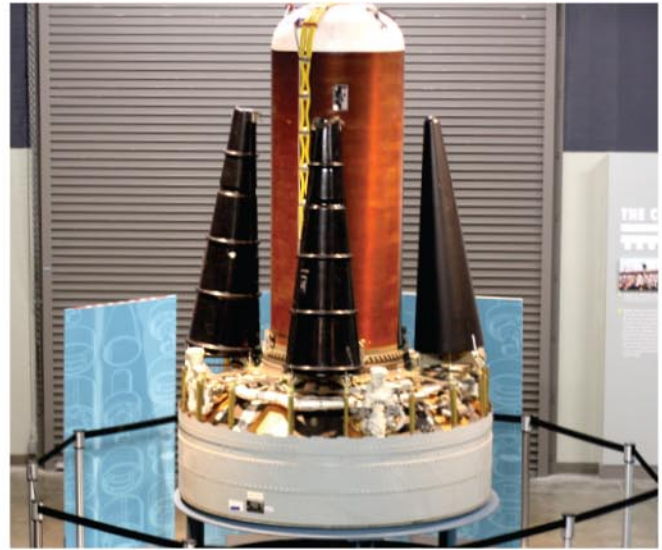
## RESEARCH

As a public institution, part of the museum's mission is to assist with research inquiries. Curatorial staff fielded more than 100 historical and artifact questions in 2016, including:

**SUBMARINE DEVELOPMENT SQUADRON 5**, seeking photographs of its operations and assets to create a command history display. Museum staff provided more than 200.

**MUSEUM SHIP USS PAMPANITO (SS 383)**, requesting technical information about the MK 18 torpedo to assist with the restoration of one.

**THE FLEET AIR WING 7 MUSEUM** at Dunkeswell, Devon, England, looking for images of and technical documentation about the U.S. Navy's MK 24 mine. We have one of the few surviving examples in the world.



■ Caring for artifacts as large as Trident I (C4) missile and as small as a submarine warfare insignia (image on opposite page) is an ongoing commitment requiring dedication of staff and resources.





# OPERATIONAL EXCELLENCE

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## MUSEUM RECOGNITION

- The museum received national attention on two separate television shows: CNN's "Declassified" and Travel Channel's "Mysteries at the Museum." Museum artifacts Navy submersible *Trieste II* (DSV 1) and a deep submergence hydrophone were highlighted in the episodes.
- The collaboration between U.S. Naval Undersea Museum, Puget Sound Navy Museum, PSNS & IMF, and NUWC Keyport on the Navy STEM Days program was recognized by Navy Region Northwest with a Navy Community Service Program Award for Personal Excellence Partnership.
- TripAdvisor awarded the museum a Certificate of Excellence for the third year in a row. The award is given to organizations that receive consistently outstanding reviews by TripAdvisor travelers.



## MUSEUM ADVISORY COMMITTEE

A Museum Advisory Committee, comprised of museum stakeholders, convened in 2016. The role of the committee is to provide recommendations for the vision and future of the museum. Attendees of the inaugural committee meeting were:

**REAR ADMIRAL JOHN TAMMEN, JR.**,  
Commander, Submarine Group 9, chair

**DONALD CHALUPKA**,  
representative of the  
Naval Undersea Museum Foundation

**COMMANDER CARLOS CINTRON**,  
Executive Officer, Naval Undersea  
Warfare Division Keyport

**COMMANDER TIGER PITTMAN**,  
Deputy Commodore, Commander,  
Submarine Development Squadron 5

**CAPTAIN MARK SCHMALL**,  
Commodore, Submarine Squadron 17

**CAPTAIN THOMAS ZWOLFER**,  
Chief of Staff, Navy Region Northwest

## STAFF AND VOLUNTEER AWARDS

**JARROD GAHR**, Historic Naval Ships Association  
Henry A. Vадnais Award

**CHARLES GUNDERSEN**, Historic Naval Ships  
Association Henry A. Vадnais Award

See pages 24-25 for a list of volunteer awards  
based on hours contributed to the museum



■ *Deep-sea creature recovered  
from a 5,000-foot dive by  
DSRV Mystic.*





## STRENGTHENING THE NAVY

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The museum is proud to support Navy commands, sailors, civilians, and families by providing physical space and intellectual resources at the museum for important ceremonies (retirement, change of command, promotion, commissioning) and for trainings and meetings. In 2016, the museum hosted more than 20,000 people for 339 such events. Free use of the facility for the Navy to conduct its business promotes fleet and mission readiness.





## **NAVY COMMANDS SUPPORTED IN 2016 INCLUDED:**

Commander, Navy Region Northwest  
Commander, Pacific Fleet Human Resources  
Office Northwest  
Commander, Submarine Group 9  
Commander, Submarine Squadron 19  
Commander Submarine Development  
Squadron 5  
Submarine Squadron 17  
Naval Base Kitsap  
Naval Facilities Engineering Command Northwest  
NAVSUP Fleet Logistics Center, Puget Sound  
Naval Operations Support Center Kitsap  
Naval Hospital Bremerton  
Naval Sea Systems Command  
Naval Submarine Support Center, Bangor  
Naval Undersea Warfare Center Division Keyport  
NAVSUP Fleet Logistics Center Puget Sound  
Navy Band Northwest  
Navy Region Northwest  
Navy Region Northwest Fire  
and Emergency Services  
Office of Civilian Human Resources, Silverdale  
Operations Center  
Puget Sound Naval Shipyard & Intermediate

Maintenance Facility  
Region Legal Service Office Northwest  
Strategic Weapons Facility Pacific, Bangor  
Transient Personnel Unit, Puget Sound  
Trident Training Facility, Bangor  
USS *Alabama* (SSBN 731)  
USS *City of Corpus Christi* (SSN 705)  
USS *Henry M. Jackson* (SSBN 730)  
USS *Jimmy Carter* (SSN 23)  
USS *Kentucky* (SSBN 737)  
USS *Maine* (SSBN 741)  
USS *Michigan* (SSGN 727)  
USS *Nebraska* (SSBN 739)  
USS *Nevada* (SSBN 733)  
USS *Nimitz* (CVN 68)  
USS *Ohio* (SSGN 726)  
USS *Seawolf* (SSN 21)

## **OTHER ORGANIZATIONS SUPPORTED:**

Brandman University (Navy College)  
Naval Submarine League  
Navy College Office Kitsap  
Southern Illinois University (Navy College)  
U.S. Navy League Sea Cadets  
Vincennes University (Navy College)





■ *A volunteer museum attendant provides a guided tour of iconic artifacts on exhibit at the museum, starting with Mystic, to a group of deaf visitors.*



# VOLUNTEER ENGAGEMENT

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## CONTRIBUTIONS

The museum is fortunate to work with knowledgeable and dedicated volunteers who do a stellar job serving as the public face of the museum as they welcome and greet visitors, conduct guided tours, attend the store, process collections, facilitate educational programs, build and install exhibits, and provide administrative support. Museum visitors highly rate their experiences at the museum not only because of the interesting exhibit content but also because of their engaging interactions with museum volunteers. In 2016, the museum's 96 volunteers contributed more than 5,707 hours to the museum, ensuring the achievement of the museum's mission to interpret naval undersea history, science, and operations for the benefit of the people of the United States.

"OUR EXPERIENCE AT THE MUSEUM WAS GREATLY ENHANCED BY THE TOUR THAT ONE OF THE DOCENTS GAVE US. HE WAS IN THE SUBMARINE SERVICE FOR 20 YEARS, AND HIS ANECDOTES AND KNOWLEDGE MADE OUR VISIT A REAL TREAT."

**ROBERT, VISITOR FROM LAWRENCE, KANSAS**





**THANK YOU TO THE FOLLOWING  
PEOPLE WHO VOLUNTEERED  
THEIR TIME AND ENERGY AT  
THE MUSEUM DURING 2016:**



- |                       |                    |
|-----------------------|--------------------|
| Betsy Abdeen          | Kim Callender*     |
| Susan Ach             | Don Chalupka       |
| Addie Albro           | Brittany Chasteen  |
| John Alcantra         | Delores Contreras* |
| David Anderson*       | Tim Cullen         |
| Doug Anderson*        | Glen Curtis        |
| Libby Anderson        | Steven Kyle Denton |
| Samuel Anderson       | Cathy Devine       |
| Christopher T. Bailey | Drake DeWall       |
| Sharon Baker          | Nick Evans         |
| Leslie Banigan        | Harry Gilger*      |
| Daniel Batman*        | Steven Grether*    |
| Andrew Berry          | Melissa Grundt*    |
| Thomas Bogaard        | Charles Gundersen+ |
| Andrea Buckel         | Rick Gunderson     |
| Hoyt Burrows          | Nikki Haas*        |

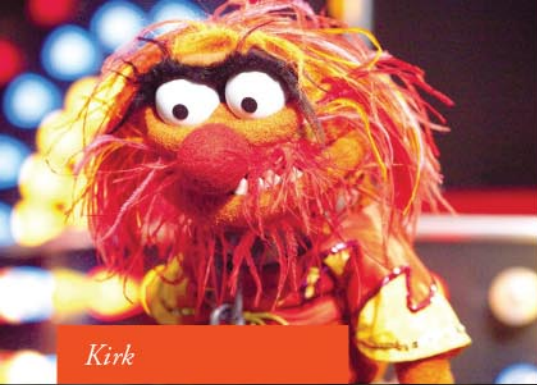


Norm Haas	Sydney McManus*	Bruce Riggins*	Bonnie Thomas
Kevin Habener	Estelle McNeice	Fred Roecker*	Michael Tindal
William Hayes	Larry Meehan	Susan Roecker*	Donald Tjossem*
Taura Helms	Cole Morton	Ellen Schroeder	Vivian Tucker
Tom Heman*	Ted Newman	Rachel Smith	Jerome Turner
Darlene Iskra	Helene Norman	Larry Snyder*	Trinitie Vance
Joyce Johnson*	Tanya Parypa	Patrick Steeger	Kevin Veach
Ashley Jones	Robert Paul*	Sarah Steffen	Blaine Vister
Kimberly Jones	Michael Peterson*	Serenity Steward	Cathy Wedelstaedt*
Brian Kenward	Jan Pietras	John Stieber	Bobbi West
Jay Kothman	Michelle Plasse	James Strycharski*	Roy Wilson
Robert Latham	Scott Poe	Tony Sultan	
Sarah Lawson	Alan Pyle	William Swope*	
David Ledbetter+	Alyssae Remigio	Kevin Syltebo	
Paul Lucas*	Bill Ridley	Louann Terry	
Linda Mariner	Trish Ridley	Mary Jo Tharp	

+ Silver Presidential Volunteer Service Award Recipient (250+ hours per year)

\* Bronze Presidential Volunteer Service Award Recipient (100+ hours per year)





Kirk



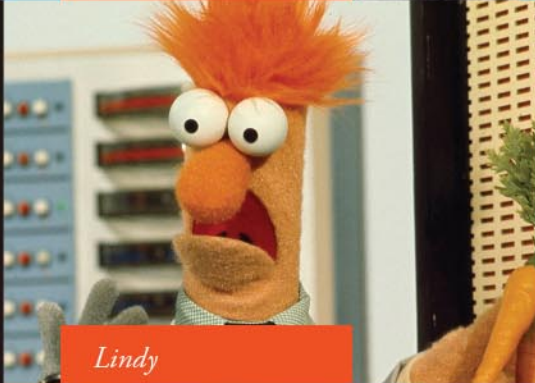
Lorraine



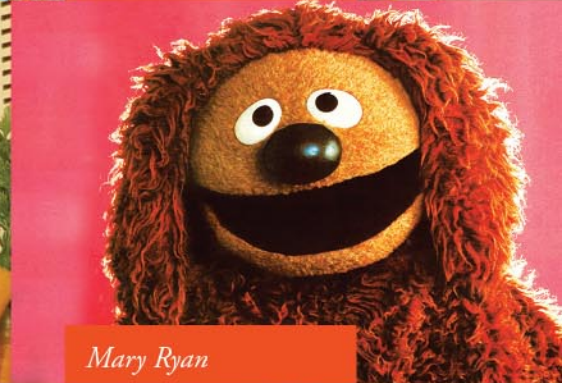
Jarrood



Mary Rogers



Lindy



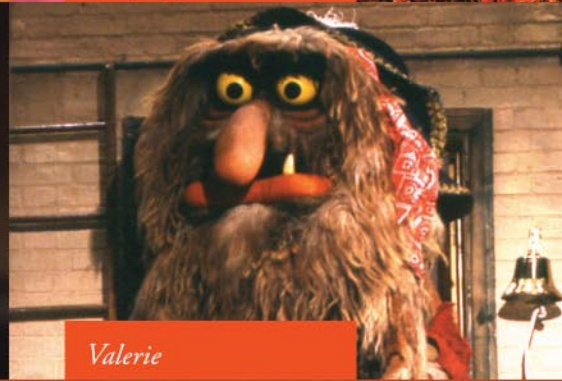
Mary Ryan



Steve



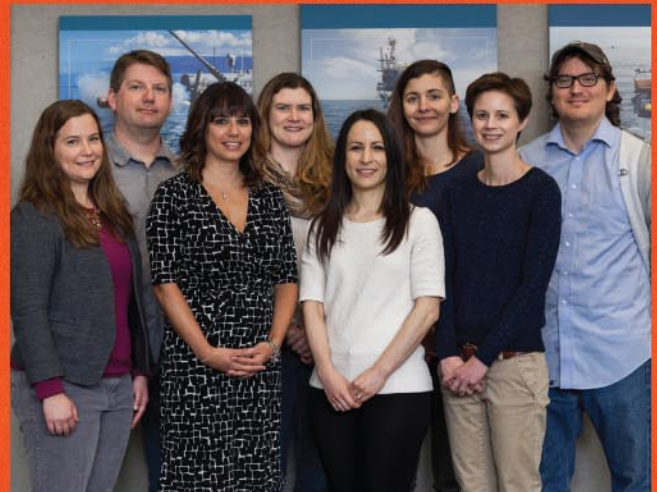
Olivia



Valerie

## STAFF

Lindy Doshier*	Director
Kirk Dietz	Collections Manager
Lorraine Scott	Collections Manager
Mary Ryan	Curator
Jarrood Gahr*	Exhibit and Graphic Designer
Steven Harvey*	Exhibit Fabricator
Valerie Johnson	Educator
Olivia Wilson	Operations Manager
Mary Rogers	Volunteer & Events Coordinator



*\*Staff shared with the Puget Sound Navy Museum*









UNITED STATES NAVAL  
**UNDERSEA**  
MUSEUM