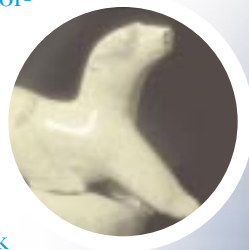


## GOING WITH THE FLOE

In the "Frozen Features" unit of the *JASON XIII: Frozen Worlds* curriculum, students will explore everything from changing landforms to melting ice and learn the impact of these events on other inhabitants of the ecosystem under investigation. But "Frozen Features" is just the tip of the iceberg. The JASON curriculum features five comprehensive study units, including a local aquatic field investigation module in which students explore everything from biodiversity to rocks and minerals – right in their own backyards.

*JASON XIII: Frozen Worlds* will spark kids' imaginations with novels and native art images. Web-savvy researchers will meet others of like mind while exploring interactive games and activities by joining TeamJASON online. The *JASON XIII Prologue* and update videos bring learning to life, along with the live broadcasts that let students ask questions and share experiences with researchers and Argonauts in real time.



# Glaciers Icebergs

# Sea Ice

## COOL SCIENCE, HOT TECHNOLOGY

Just as Earth's ecosystems are in constant flux, teeming with life forms linked in complex, interdependent relationships, EDS uses technology to help businesses and governments evolve, survive and thrive in constantly changing environments.

The same technology innovations that work for business have helped the evolution of the JASON Project. EDS continues to enable access to this world-renowned program by providing Internet solutions, allowing millions of students worldwide to enjoy the JASON Project. Here are some highlights from JASON's history:



**JASON I. 1989. Mediterranean Sea.** EDS pioneered "telepresence" during the world's first live shipboard broadcast via satellite to 12 host institutions and 200,000 students in the United States and Canada.



**JASON II. 1990. Lake Ontario.** EDS helped students at PIN sites "drive" the remotely operated vehicles at the JASON expedition site.



**JASON III. 1991. The Galapagos Islands.** EDS compressed digital video to distribute JASON live to classrooms via the Cable-in-the-Classroom consortium for the first time.



**JASON VII. 1996. Florida.** EDS introduced the world's first underwater Web site so "surfers" could visit the National Oceanic and Atmospheric Administration's (NOAA) underwater research laboratory, the *Aquarius*.



**JASON VIII. 1997. Yellowstone.** EDS introduced Virtual Production, another first, to the JASON broadcasts. Still images were taken by a Web cam, combined with live footage, converted to compressed digital images, and delivered via the Internet for editing and incorporation into live broadcasts.



**JASON XII. 2001. Hawaii: The Living Laboratory.** EDS created a virtual island ecosystem challenge in which students determined the eventual impact on the island of hypothetical human choices and behaviors. We also provided 360° virtual tours through Hawaii's lava tubes and delivery of daily live JASON broadcasts via videostreaming.



### 2001 - 2002

JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY
CURRICULUM											
TEACHER DEVELOPMENT											
CLASSROOM PROGRAMS											
INTERNET											
ARGONAUT PROGRAM											
LIVE BROADCASTS January 28 - February 8, 2002											



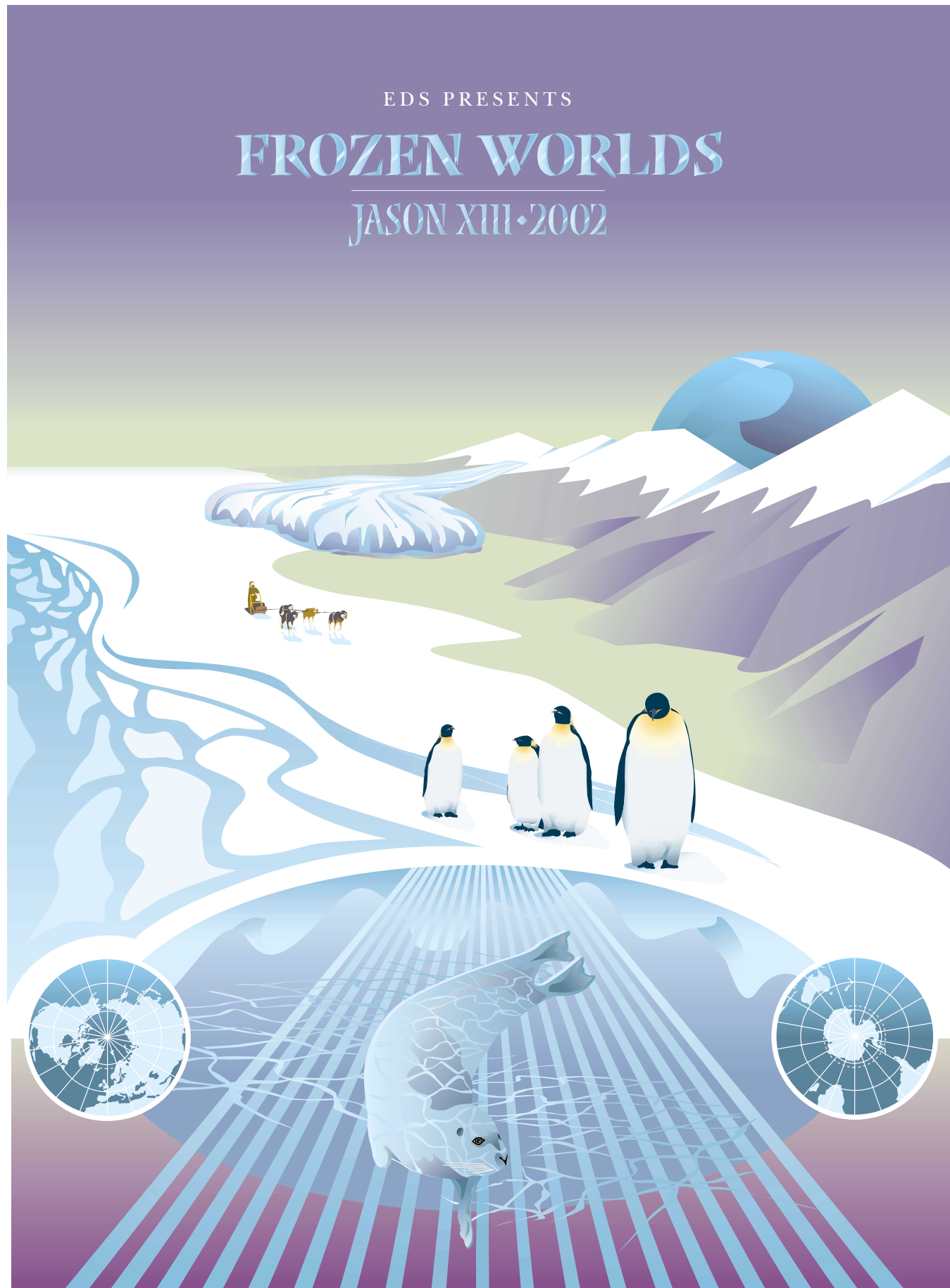
EDS: JASON PROJECT FOUNDING SPONSOR  
PROVIDING INTERNET SOLUTIONS

Visit the JASON Web sites:

EDS/JASON Web Site: [www.eds.com/jason](http://www.eds.com/jason)  
JASON Foundation Web Site: [www.jasonproject.org](http://www.jasonproject.org)

For more information, contact

CoCo Gray, EDS Global Community Affairs  
H3-6F-47, 5400 Legacy Drive, Plano, TX 75024  
Phone: 1 972 605 6822  
E-mail: [coco.gray@eds.com](mailto:coco.gray@eds.com)



EDS PRESENTS

# FROZEN WORLDS

JASON XIII • 2002

# JASON XIII FROZEN WORLDS

*JASON XIII: Frozen Worlds* takes students on a virtual expedition of some of the coldest regions of Earth and its solar system.

Our goal? To probe records frozen in time and gain a greater understanding of our constantly changing climate.

We'll discover what is known about the dynamic systems of Earth and space. We'll see how these systems affect life on Earth. We'll find out which technologies are currently used by scientists to study these systems. We'll learn how satellite remote sensing allows researchers to track the movement of glaciers and collect data that help researchers develop 3-D computer climate models. Telescopes and robots give them the power to examine frozen worlds far from Earth. We'll discover how different these tools are from those used by Amundsen, Peary and other explorers of a century ago as we weave a tale of human exploration.

## MISSION: EXPEDITION!

We'll ponder global issues that concern scientists and policymakers. We'll probe the natural history and culture of diverse native peoples and marvel at the ingenious ways indigenous plants and animals have adapted to subfreezing temperatures. Activities like predicting the weather, making maps and building a kayak will make exploring the coldest regions of Earth and space fun while developing investigative and analytical skills.

# Ice Caps



# Ice Sheets

# Permafrost



## HAVE YOU EVER WONDERED?

Which of the world's eight Arctic nations also regularly reaches temperatures above 117°F?

Students will be able to consult the experts for answers to all kinds of questions during the *JASON XIII: Frozen Worlds* expedition. Scientists like Dr. Warren Washington, a researcher at the National Center for Atmospheric Research (NCAR) will model climatic change and speculate about the future of our planet. Monica Reidel, executive director of the Alaska Native Harbor Seal Commission, will examine ways the native peoples of Alaska have adapted to enviroing conditions in their frozen world.

Explorers will study Dr. Bruce Molnia's research on glaciers and Dr. Claire Parkinson's studies of the changing patterns in sea ice and their possible impact on our future global climate. Students will take a chilling look at shark-infested waters, and Dr. Shannon Atkinson will reveal how contaminants affect sea lions and harbor seals. They'll learn about the new field of astrobiology from Professor Richard Hoover, whose discover-

ies of life forms in glaciers and permafrost tunnels raise the question: Is there a connection between life in this environment and other inhospitable regions of the universe?

It makes you wonder . . .

Are there ice and water on other planets?

How does a land mass the size of Antarctica function without government? Who ensures that the land is cared for?

How can plant life survive Arctic temperatures? Are there any flowers at the Arctic Circle?

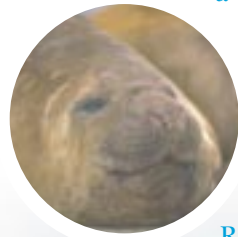
Since water pipes freeze in extreme cold, can Alaskans within the Arctic Circle have running water?

How did human beings get to Alaska from Siberia? When did they arrive? Why did they come?

Is the land flat or mountainous underneath the ice and snow in polar regions?

How can you make a map of nothing but ice and snow?

Why are there polar bears at the Arctic Circle, but none in Antarctica? Are there penguins at both the North and South Poles?



## HITTING THE ROAD WITH JASON

### Achieving Goals

Thirteen-year-old Philip Pauli, a JASON enthusiast since age four, and Eric Elkins, editor of the Colorado Kids page of *The Denver Post*, enjoyed the ultimate field trip in 2001. With a little help from EDS, they traveled to Hawaii to experience *JASON XII: Hawaii: A Living Laboratory*.

Studying the islands' diverse and delicate ecosystem and rich cultural heritage firsthand was a peak experience for the two journalists – literally, since it featured a close encounter with an erupting volcano. A highlight of their trip was meeting Dr. Robert Ballard, founder of the JASON Project and one of Philip's heroes.

Philip, a special correspondent to *The Denver Post's* Colorado Kids page, conducted a memorable interview with Dr. Ballard, in which he learned about the role technology has played in enhancing the learning experience as the JASON Project has evolved.



### Stretching Limits

During each JASON expedition, approximately 30 student Argonauts, named for the crew who accompanied the mythical Greek hero



Jason on his search for the Golden Fleece, accompany Dr. Ballard to the expedition site. Chosen for their academic performance and interest in science and technology, Argonauts must be able to withstand physical challenges and exhibit the maturity to serve on adult teams far from friends and family.

Each year, one of the Argonauts is the child of an EDS employee. Many exceptional students like Jeff Meng of Rochester Hills, Michigan, submitted hopeful essays in 2000 describing their desire to serve as Argonauts for JASON XII. "Through knowledge and learning, the impossible can be achieved" Jeff wrote. "My goal is to be part of the quest." Months later, the 15-year-old was indeed part of it, working alongside Dr. Ballard and his crew in Hawaii.

## TOO COOL FOR SCHOOL

The JASON Project began in 1989 when oceanographer and explorer Dr. Robert Ballard, who discovered the wreckage of the R.M.S. *Titanic*,

envisioned a unique distance learning program that would engage the imaginations of participating students – and spark their interest in science and technology.

Dr. Ballard's vision was to share live scientific expeditions with a widely dispersed student body via interactive television programming and an interdisciplinary curriculum, creating a "you-are-there" experience. Dr. Ballard was convinced this would ignite students' interest in science and technology careers in ways traditional science education programs could not. The tool would be technology, and the technology provider would be EDS. Our company became the founding technology sponsor of the JASON Project with *JASON I: Mediterranean Sea*.

Now in its 13th year, JASON is the world's premier distance-learning program, teaching more than 11 million students to date.

Students and teachers participating in each year-long JASON Project use an integrated set of multimedia educational tools, including an award-winning printed curriculum, a highly interactive Web site designed and maintained by EDS, video supplements, and a live satellite broadcast. The experience is correlated with national science, geography, math and language arts standards, current research, and local investigations to enhance the year of exploration and discovery.

EDS collaborates with the JASON Foundation for Education to design online curriculum components and provides Internet solutions that enable live dialogue between students and scientists during JASON broadcasts. EDS delivers the broadcasts to thousands of students at the Primary Interactive Network (PIN) communications centers we build and implement. Our employees also introduce JASON to teachers, school districts and communities, often volunteering their time in classrooms.

Sometimes it's difficult to tell who's enjoying the JASON Project more: the students, the teachers or our employees. JASON is one way EDS focuses on our top community priorities – education and bridging the digital divide – while showing the world what we can do with our technology.



"Without EDS, there wouldn't be a JASON Project, period. EDS makes JASON happen."

Dr. Robert Ballard,  
JASON Project  
founder and  
*Titanic* discoverer

# Geologist

## EXPANDING MINDS, OPENING DOORS

In 1989, Tony Espinoza, a top science student at Skyline High School in Dallas, Texas, became the JASON Project's first Argonaut. Tony immersed himself in science and technology, first accompanying Dr. Ballard and the crew to the Mediterranean Sea and later working as an intern in the Technical Products Division at EDS.

Tony's drive and ambition to become an engineer got noticed. An EDS employee encouraged him to apply to Stanford University, MIT and Rice University, and to his delight, he was offered full scholarships at all three schools.

Tony chose Stanford; EDS gave him a computer; and the rest is history. He later helped found When.com, a personalized, online event directory and calendar service for consumers.

Tony reflects on his voyage from research ship to Stanford scholarship to entrepreneurship. "JASON fundamentally changed my expectations of life," says Tony. "The experience of working alongside talented scientists and engineers provided me with a reference point that I still think about years later. And the people I worked with at EDS inspired me to set my sights high and believe that I could and would make great things happen."



# Marine Biologist

## IGNITING SPARKS

Many former Argonauts, like Thomas Pool, who participated in the second JASON expedition, continue on the path of scientific discovery. Thomas writes, "Since Jason II, I have gone on to conduct research at Kalamazoo College, The Oregon Institute of Marine Biology, Scripps Institute of Oceanography, The Dolphin Research Center of Florida, The Denmark National Aquarium and, currently, James Cook University in Australia. I graduated from Kalamazoo College two years ago with a biology degree. I [will] finish my masters degree next December."

# Webcasting Engineer

"The more we can connect kids with real researchers in the battlefield of science and the pursuit of truth, the more they'll realize what an adventure it is."

Dr. Robert Ballard, founder, the JASON Project

# Web Designer

# Glaciologist

