

TOMPKINS BY THE SEA

A watershed moment



Exhibit fabricator David Jordan works on a mock up of a full scale submersible that will allow visitors to follow water from a mountain stream to the ocean Wednesday as the Sciencenter prepares it's new exhibit Ocean Bound! The exhibit about watersheds opens to the public Saturday February 4th with a preview for members Friday February 3rd from 6 to 8 pm. SIMON WHEELER / STAFF PHOTO / Staff



Exhibit designer Steve Hale prepares to install video screens that will show high definition underwater video in the Sciencenter's new exhibit. SIMON WHEELER / STAFF PHOTO / Staff

ON THE WEB

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Sciencenter's watershed moment

Interactive exhibit links Cayuga drainage to oceans' health

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Ithaca -- Dropped into Fall Creek, a piece of litter has the potential to bob and swirl on a voyage first into Cayuga Lake and then, meandering north, into the St. Lawrence Seaway and, eventually, the Atlantic Ocean.

As through a vein to the ocean's heart, debris and contaminants can journey from Tompkins County through the watershed to contribute to the health -- or lack of it -- of the world's oceans.

To bring home that point, a grant of \$750,000 from the National Oceanic and Atmospheric Administration to the Sciencenter in 2008 has culminated in the traveling exhibition Ocean Bound!, set to open to the public Saturday and Sunday from noon to 4 p.m. in Ithaca.



SIMON WHEELER / STAFF PHOTO
Mike Napierki tests an obstacle course box mounted on a spring as the Sciencenter prepares its new exhibit Ocean Bound! The exhibit about watersheds opens to the public Saturday February 4th with a preview for members Friday February 3rd from 6



SIMON WHEELER / STAFF PHOTO
The full scale submersible nears completion Wednesday afternoon on the second floor of the Sciencenter.

For Sciencenter Deputy Director Lara Litchfield-Kimber, creating the exhibit came with an initial vexing problem: People didn't seem to know what a watershed was.

"We did a lot of research up-front, and people said, 'Oh, it's an outhouse' or 'it's a reservoir'," she said. "And we were thinking, 'No, it's a little different than that.' "

That lack of understanding, coupled with the distance to the coast, can make a local connection to the ocean seem tenuous, she said.

"The focus is to connect everyone to the oceans via watersheds," she said. "No matter where you live, how far inland you live, your actions play a part in the health of the oceans."

Developing the interactive galleries fell to Tim Scott, director of exhibits. His challenge centered on creating an exhibit that covered four themes: understanding watersheds, recognizing threats, describing solutions and empowering visitors to help.

To visualize a watershed, Scott and his team created a full-size submersible vehicle complete with a cockpit and biologist's station. In the cockpit, three high-definition video screens animate the journey through a watershed, starting in a mountain stream and flowing to a lake, a river, estuaries and then, finally, the ocean.

Rather than just a passive display of looped video, the screens are controlled using a spin browser, allowing visitors to cycle frame by frame through the images.

"Because we are designing mostly for a family audience, we want this to be really fun for kids. There's nothing more fun than time-lapse animal stuff," Litchfield-Kimber said.

While the captain steers the flow of images in the front, the biologist's station in the rear of the vessel offers an interactive touch-screen display with information on the creatures and environments encountered along the way.

"The goal ultimately is to see the diversity of life that lives in all these environments," Scott said, "and to hopefully protect the life and the environments themselves."

Filmed by local cinematographer David Brown, the final cut features footage from locales as diverse as Florida, the Caribbean, the Pacific Northwest and Maine, as well as environments closer to home like Fall Creek, Cayuga Lake and Salmon Creek in Ludlowville.

The result: a representative watershed highlighting a diverse and sometimes fragile ecosystem teeming with life.

On the road

The exhibition, much like the watersheds it tries to explain, is dynamic. All parts of the exhibition, including the submersible, have been designed to be taken apart and put back together. Once the three-month stay in Ithaca ends, the exhibition begins an odyssey of its own. Traveling for the next seven years and hitting at least 20 cities, the exhibition will ultimately be viewed by more than a million people, Litchfield-Kimber said.

Because Sciencenter is the home of the project, its patrons not only get to experience the exhibition's world premiere but also have had a voice in influencing the product. Portions of the exhibit have been on the Sciencenter floor since 2008, with the feedback affecting some of the decisions of what goes in and what comes out.

"In a way that is kind of neat, our visitors help to inform the content of our exhibitions," Litchfield-Kimber said. "And so there's a little bit of everybody going around the country in this exhibition because it's all been refined and tested along the way."

In a workshop in the basement of the Sciencenter and from a warehouse on Cherry Street, an eight-member team fabricates the traveling exhibitions, including the ones found in Ocean Bound! Constructing intricate design pieces can be difficult enough, Scott said, but "making it portable is always the tough challenge." "When I started designing this exhibition I kept the renters in mind," he said.



SIMON WHEELER / STAFF PHOTO

Section of the Ocean Bound! exhibit featuring the the high definition underwater footage of local cinematographer David Brown await final placement on the second level of the Sciencenter Wednesday before the Saturday opening to the general public.



SIMON WHEELER / STAFF PHOTO

Larry George does some of the final work on a new ball machine that asks visitors to operate controls directing balls representing water and pollutants and sewage that are mixed in with it to collection areas representing appropriate treatment solutions.

The bases are in four pieces on casters, and Scott designed them to be moved with pallet jacks or forklifts. Exhibition pieces have to be made to fit into any conceivable space, he said. Features such as openings in the top and the bottom to accommodate electrical inputs from either the ceiling or the floor are considered so as to fit any gallery or museum.

"The fact that it has been broken down, modular, shippable, robust enough to be assembled and re-assembled -- it's a very specified work that the Sciencenter does in its traveling exhibitions program," Litchfield-Kimber said.

The team always has something in the pipeline, she said, and has created exhibitions seen across North America.

"We have the team that can build very complicated exhibits," she said. "Everything from fabrication to the tour management and the tech support: It's a full-service shop."

The revenue generated by the shop goes back to the Sciencenter, Litchfield-Kimber said, providing significant support for local programming. Exhibitions typically rent for four-month periods. During the seven-year touring schedule for *Ocean Bound!*, that could mean 21 venues with rental contracts worth \$37,500 each. All that money -- \$787,500, potentially -- will flow back to the Sciencenter.

"We really see that the Sciencenter has an opportunity to be of service to small science centers," she said. "They are constantly in need of affordable exhibits of really high quality. We really send the Sciencenter's brand of interactivity all over the place." A grant that almost wasn't

Submitted to NOAA in 2007, the grant proposal stressed the Sciencenter's ability to deliver interactive information to places outside of the coastal areas.

"It's not common for NOAA programming and projects to really deal with the interior," Litchfield-Kimber said. With the grant, "we would physically show through really stunning imagery how things move to the ocean and what is under water and what is worth protecting."



SIMON WHEELER / STAFF PHOTO

Tim Scott, the director of exhibits, talks about moving and storing exhibits at the Sciencenter's Cherry Street workshop and storage facility.



SIMON WHEELER / STAFF PHOTO

Sciencenter Deputy Director Lara Litchfield-Kimber talks about moving and storing exhibits at the Sciencenter's Cherry Street workshop and storage facility.



SIMON WHEELER / STAFF PHOTO
Mike Napierski puts finishing touches on the Riverside Clubhouse for the Ocean Bound! exhibit in place on the upper level of the Sciencenter after bringing it over from Cherry Street.

Despite the strength of the proposal, when NOAA's original \$1.5 million grant pool was drained by half, hopes at the Sciencenter floundered.

"Initially we were told 'you are the also-ran'," she said. Two other programs split the remaining \$750,000.

The next year, an election year, the money tap opened back up, and \$750,000 was made available again

"They came back and said 'actually we do (have the money), you have it, you have the whole grant, go'."

Cinematographer Brown set out to film the scenes for the submersible while the rest of the team brainstormed and tested. One exhibit features a kinetic ball machine simulating a storm drain, with manual knobs and cranks used to divert colored balls representing pollutants away from the drain.

The notion of empowerment is an important one, Litchfield-Kimber said. "For a little kid it's really empowering for them to realize the choices they make at home can have a huge impact on the safety and the health of their watershed."

The goal, then, is that knowledge leads to conversations, and from conversations, action.

"We're bringing complicated science to the general public in very fun ways, engaging ways, interactive ways and, hopefully, open-ended ways," Scott said. "And if you can get all those to work you have a great exhibit. And we definitely have that here."



SIMON WHEELER / STAFF PHOTO
David Jordan, foreground and Steve Hale work in the Cherry Street facility to build the piece of the Ocean Bound! exhibit that is shaped like a full scale submersible.



SIMON WHEELER / STAFF PHOTO
David Jordan works in the red lighting inside the full scale submersible.



SIMON WHEELER / STAFF PHOTO
Exhibit designer Steve Hale prepares to install video screens that will show high definition underwater video in the Sciencenter's new exhibit.



SIMON WHEELER / STAFF PHOTO
Mike Napierki, left and Tim Scott move the obstacle course box to be mounted on a spring. The aim is for the visitor to maneuver a ball representing water around holes representing pollution hazards.



SIMON WHEELER / STAFF PHOTO
Larry George cuts a metal rod Wednesday afternoon as he works to finish the new user directed ball machine.



SIMON WHEELER / STAFF PHOTO
Tim Scott makes signs for the Ocean Bound! exhibit in the workshop in the lower level of the Sciencenter.



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Tim Scott makes signs for the Ocean Bound! exhibit in the workshop in the lower level of the Sciencenter.



SIMON WHEELER / STAFF PHOTO
Tim Scott works to make pieces for the Ocean Bound! exhibit in the workshop in the lower level of the Sciencenter.



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Tim Scott makes signs for the Ocean Bound! exhibit in the workshop in the lower level of the Sciencenter.



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David Jordan, foreground and Steve Hale work in the Cherry Street facility to build the piece of the Ocean Bound! exhibit that is shaped like a full scale submersible.

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