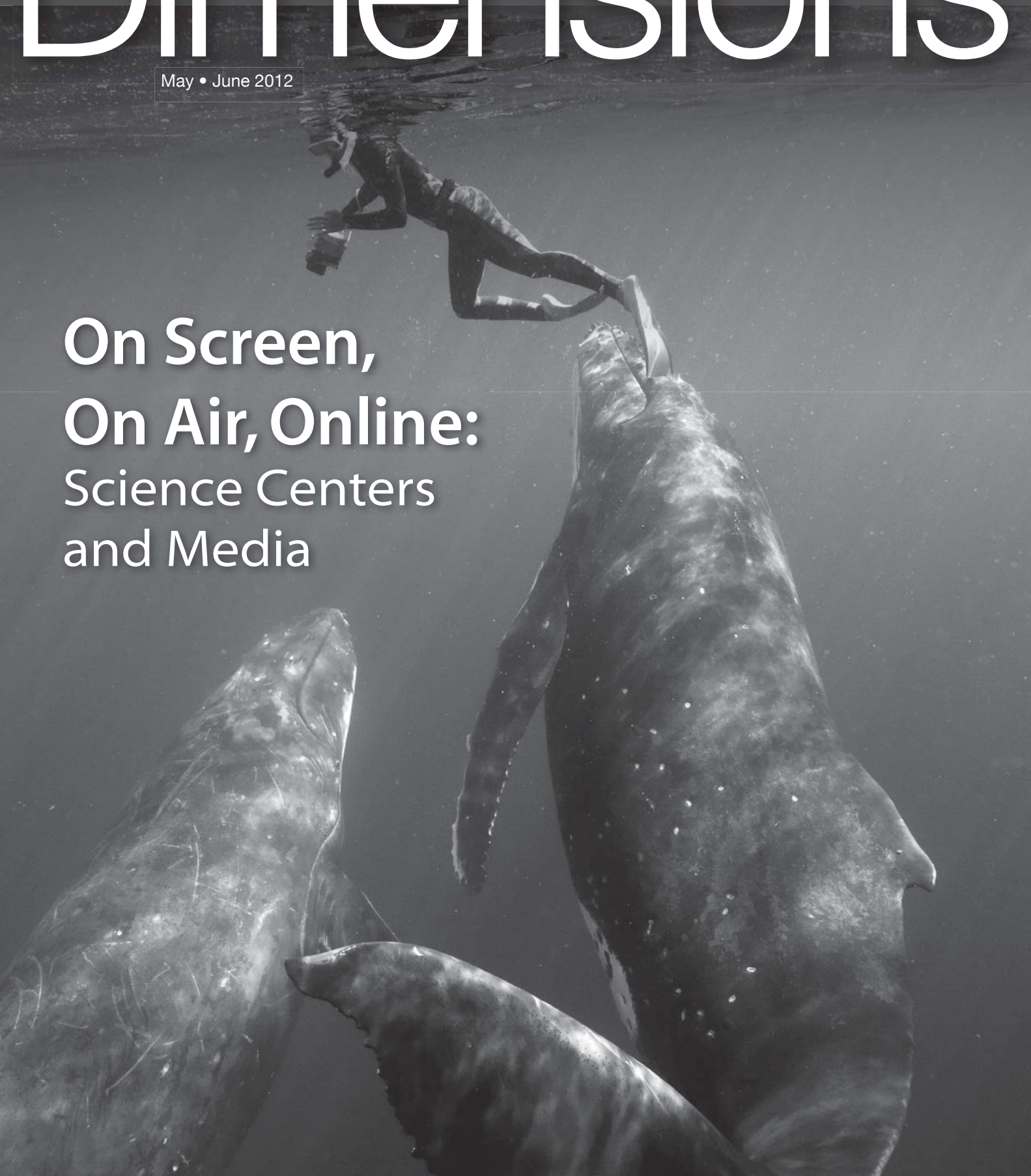


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A visualization created using Uniview software for the dome presentation *A Global Water Story* shows flight into a panoramic photo bubble looking toward Mt. Everest. The watersheds originating from the Himalayas provide drinking water to nearly half the world's population. Panophotography copyright Tito Dupret

The Worldviews Network: Planetariums for Ecological Literacy

By Ka Chun Yu, Healy Hamilton, Rachel Connolly, David McConville, and Ned Gardiner

Planetariums have long been associated with life-changing experiences. Gazing on the apparent motions and patterns of celestial bodies has inspired generations of audiences to reflect upon their place in the cosmos. In recent years, new digital display technologies have expanded our reach far beyond the dome of the sky visible from our Earth-bound perspective. Today, planetariums are full-fledged virtual reality theaters equipped with computer-generated models of planets, stars, and galaxies based on the latest scientific discoveries. By immersing audiences within virtual journeys across vast scales of time and space, today's planetariums provoke questions regarding the nature of the universe and humanity's place within it. We use these new capabilities not only to reveal the depths of space, but also to reflect back on ourselves and our home planet.

THE WORLDVIEWS NETWORK

Taking advantage of the unique capabilities of digital dome theaters, the Denver Museum of Nature & Science (DMNS); the California Academy of Sciences in San Francisco; NOVA/WGBH in Boston; design/engineering firm the Elumenati in Asheville, North Carolina; and the U.S. National Oceanic and Atmospheric Administration (NOAA) Climate Program Office in Silver Spring, Maryland, have joined to form the Worldviews Network (www.worldviews.net) through a three-year Environmental Literacy Grant from NOAA's Office of Education.

The network's mission: Place Earth within its cosmic context and connect audiences with ecological and biodiversity issues in their backyards. The network launched with partners across the United States, including the American Museum of Natural History, New York City; the Noble Planetarium at the Fort Worth Museum of Science and History, Texas; the Journey Museum, Rapid City, South Dakota; the Bell Museum of Natural History, Minneapolis, Minnesota; the Exhibits Museum, Ann Arbor, Michigan; NASA Goddard, Greenbelt, Maryland; NASA Ames, Mountain View, California; and the National Environmental Modeling and Analysis Center, Asheville, North Carolina.

The project links informal science institutions, researchers, and community-based organizations to create interactive planetarium programs for promoting ecological literacy. We have designed a professional development strategy that supports partners in the areas of technology skills, pedagogy, and content knowledge. Using resources provided online, as well as regular calls with the Worldviews team, partners identify a global change issue that has local impacts and then build a coalition of highly motivated individuals involved in that issue. This blended internal/external team co-constructs a narrative that spans cosmic, global, and local perspectives. Delivering this storyline, the team connects its own target audience with opportunities to engage with issues at the nexus of science and society.

SEE, KNOW, DO

We use a "see, know, do" framework to design the events. "Seeing" involves the creation and presentation of compelling immersive visualizations within the planetarium to engage visitors. For "Knowing," the narratives are constructed to help visitors understand the web of physical and biological systems that interact on Earth. The "Doing" component emerges from interaction among participants; for example, researchers and

nongovernmental organizations help audience members conceive of their own relationship to the highlighted issue and ways they may remain involved in the resolution of problems the audience identifies.

Given the scale and scope of anthropogenic (human-caused) global changes, we have found it essential to provide inspiring examples of how small groups and individuals are addressing complex challenges from whole-systems perspectives. By highlighting examples from the Buckminster Fuller Institute's Idea Index (www.ideaindex.org) and elsewhere, we demonstrate how organizations around the world are developing and implementing innovative strategies to solve humanity's problems. Such examples provide a positive heuristic for audiences to gravitate toward as they deepen their awareness of the complexity of the challenges we face on the planet today.

ENCOURAGING DIALOGUE

Given the varying sizes of venues, events may serve from dozens to hundreds of people at a given time. Since external groups participate in the curation of the story and in the dialogues that ensue from public programs, their unique viewpoints propel discussions and lend expert credibility for audience members.

For example, after DMNS's *A Global Water Story* dome presentation, 40 audience members moved from the Gates Planetarium to a classroom where the director of a Colorado water education organization led a group discussion. Participants shared perspectives with one another about what they had seen and heard, discussed how it related to their own work and lives, and conferred on strategies for addressing water issues. Such dialogues help audiences remain engaged with network partners and the issues they highlight long after each event.

The DMNS team has also continued to work with its external partners, leading to presentations of its water story via a portable dome to a statewide water congress and a water conservation workshop.

JOIN US

Focusing on Earth might be the most powerful and relevant application of dome technology. Visit us at www.worldviews.net to find an event in your area and to inquire about how our production and professional development models apply to your institution and region. ■

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Worldviews Network Partners & Professional Development Site:
<http://partners.worldviews.net/>