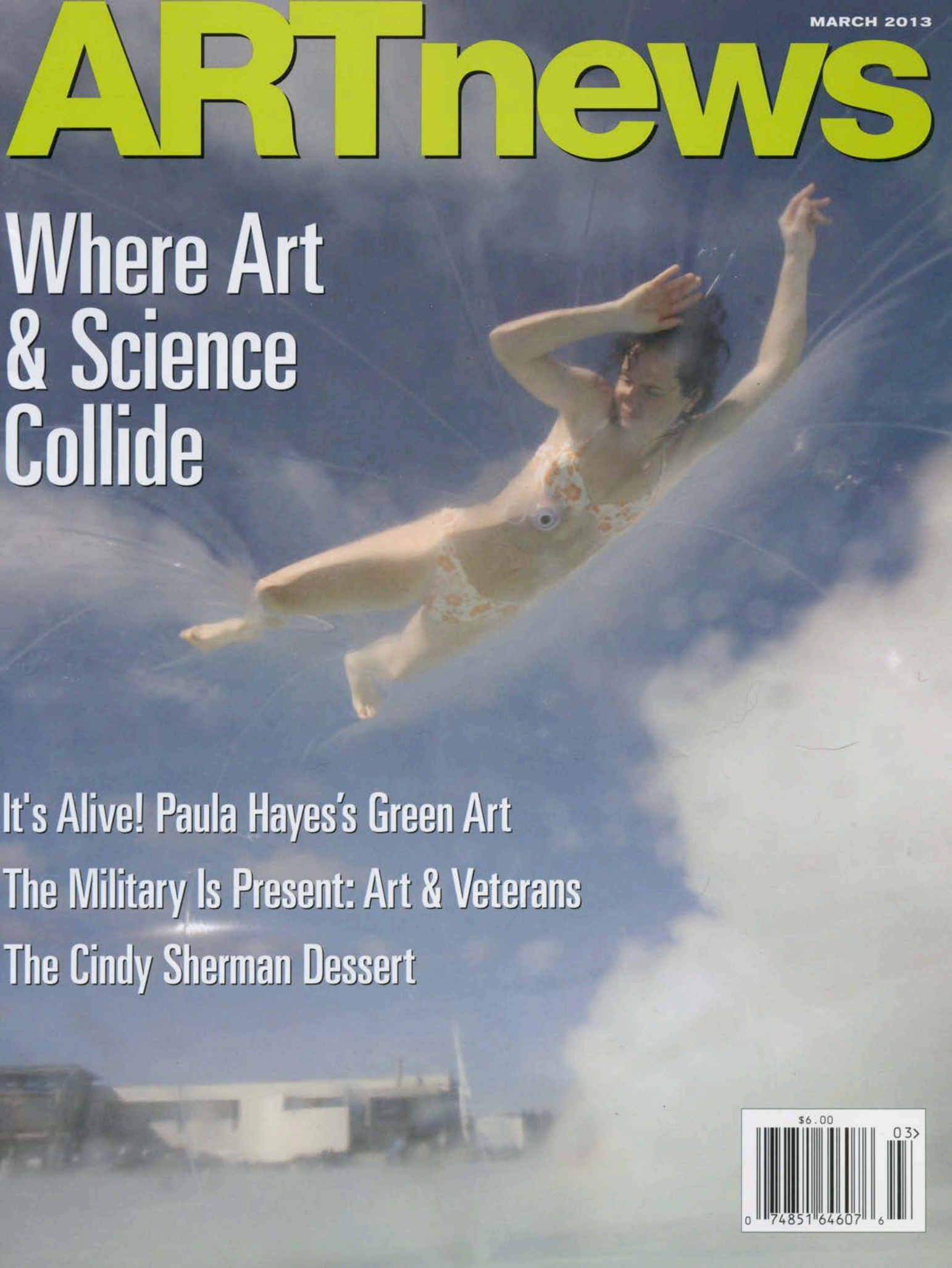
MARCH 2013

ARTnews



Where Art & Science Collide

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Under the Microscope

In museums, schools, and research facilities, scientists and artists are swapping methods to illuminate natural phenomena and solve global problems

BY SUZANNE MUCHNIC

***Coral Forest–White Plastic*, 2011, was created by the Institute For Figuring's in-house team, along with members of the public, who crocheted the coral sculpture from white plastic trash.**

When the Massachusetts Institute of Technology celebrated its 150th birthday two years ago, a group of professors organized a Festival of Art, Science & Technology. The bonanza of installations, concerts, kinetic illuminations, and new-media explorations "turned the campus upside down," says Evan Ziporyn, a composer and clarinetist who has been on the faculty for 20 years. "We discovered that a lot of innovative thinkers and doers had something to say to the MIT community. And we felt that was really what life around here should be like."

Welcome to the expanding world of art and science, where traditional academic borders seem quaint, if not archaic, as more universities, museums, and galleries invite the melding of these once distinct fields. Today, Ziporyn is the director of MIT's Center for Art, Science & Technology, launched last April with the help of a $1.5 million grant from the Andrew W. Mellon Foundation. The fledgling enterprise is expected to develop interdisciplinary courses, research, and exhibitions and to supplement MIT's existing visiting-artists program by embedding resident artists in classrooms and collaborative ventures.

First up is Argentine artist Tomás Saraceno, who's known for making biosphere-like installations such as *Cloud City*, the modular structure designed as an experiment in airborne habitation that was installed last summer on the roof of the Metropolitan Museum of Art in New York. "Our mandate is to do things that can be curricular," Ziporyn says. "But it's also to give an energy boost to the art scene on campus."

At the University of California, Santa Cruz, a creative-research space called OpenLab popped up a few years ago at the suggestion of artist Jennifer Parker, who now directs the facility. "The idea blossomed from a series of conversations I had with faculty and students," Parker

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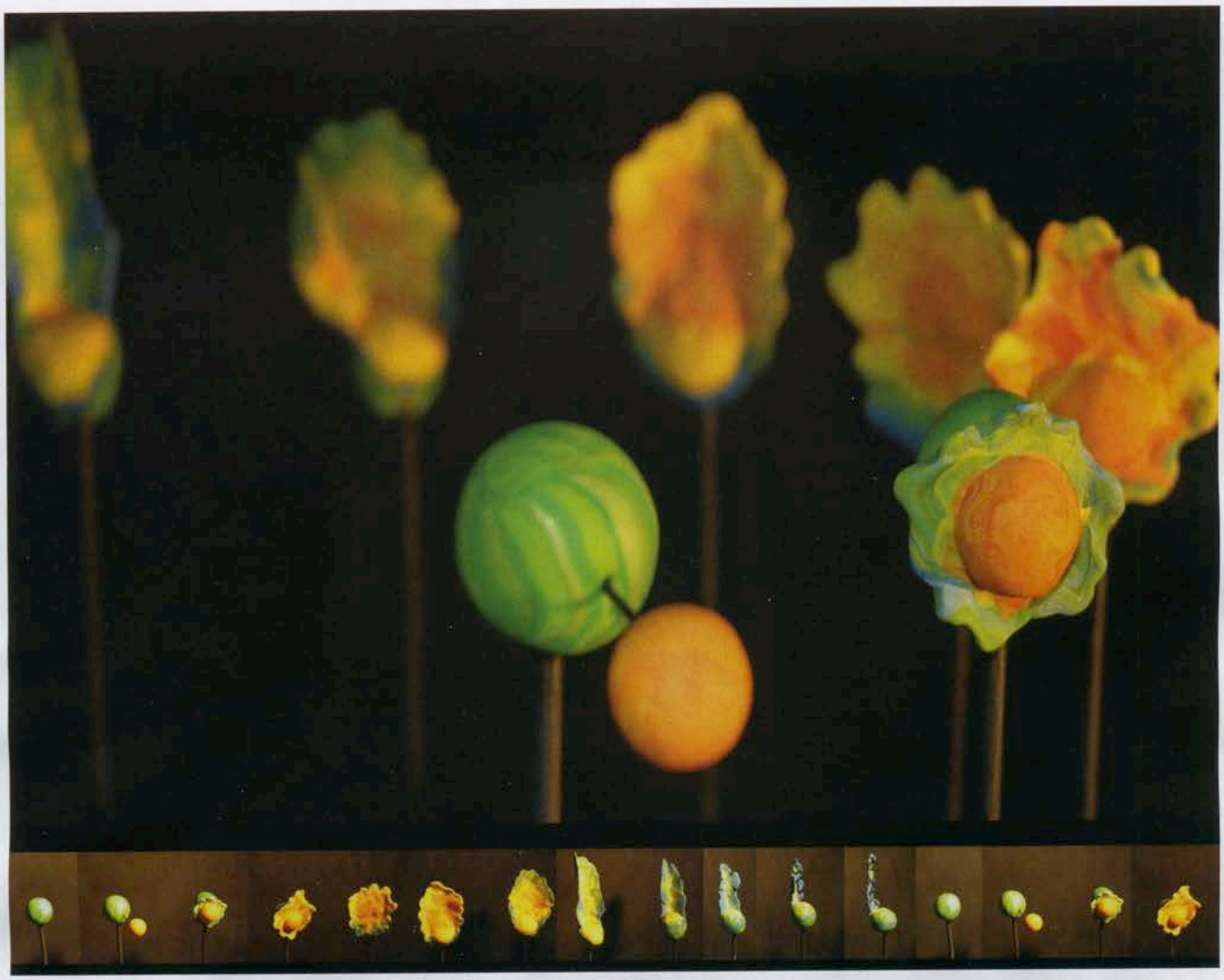
Suzanne Muchnic, former art writer for the Los Angeles Times, *writes for many publications.*

THIS PAGE: CAMERON ALLAN/INSTITUTE FOR FIGURING. OPPOSITE TOP: ©STUDIO SARACENO; COURTESY THE ARTIST, TANYA BONAKDAR GALLERY, NEW YORK, ANDERSEN'S CONTEMPORARY, COPENHAGEN, AND PINKSUMMER CONTEMPORARY ART, GENOVA; OPPOSITE BOTTOM: COURTESY RONALD FELDMAN FINE ARTS, NEW YORK/FELDMANGALLERY.COM

ABOVE *80SW/Flying Garden/Air-Port-City*, 2007, part of Tomás Saraceno's series of inflatable sculptures meant to simulate a floating city. RIGHT Brandon Ballengée's *Vertical Fall in the Winter call that dances in the spring nocturnal...*, 2010/12, an X-ray–like photograph of mutated birds.

says—"people like myself needing access to research, ideas, and spaces beyond the silos of our department affiliations or degree majors. Lucky for us, we had a new dean of the arts, David Yager, who was already working at the crossroad of art and science." With OpenLab up and running, Yager is now trying to build momentum for the university's planned Museum of the Arts and Sciences, one of



***MoonSplat*, 2011, a three-dimensional zoetrope model of a planetary collision designed by artists and astrophysicists at OpenLab, at the University of California, Santa Cruz.**

the primary objectives in a major fund-raising campaign.

Farther south, the University of California, Los Angeles has the Art|Sci Center + Lab, founded by artist and professor Victoria Vesna to facilitate collaborations between the fields of media arts, biotechnology, and nano science. And at the Rhode Island School of Design in Providence, scientifically inclined art students can study the effects of climate change on marine life as part of an investigation funded by the National Science Foundation. These students learn how to assimilate scientific information, visualize data, and develop new design skills while working with scientists from other Rhode Island institutions.

Art-and-science mergers are also turning up

off-campus, in museums. A big attraction at London's Tate Modern last year was "Olafur Eliasson: Little Sun," an exhibition centered on *Little Sun*, a device developed by Danish-Icelandic artist Eliasson and Danish engineer Frederik Ottesen to provide inexpensive light for people who lack electricity in developing countries. The show offered information about global energy issues, along with an opportunity to purchase the flower-shaped solar-powered LED lamp, which visitors could use to create "light graffiti" in darkened gallery spaces.

At the San Francisco Museum of Modern Art, Jim Campbell's 2011 *Exploded Views (Improv)* recently brought a cloud of moving light to the museum's atrium. To make the piece, the veteran artist-engineer shot four films—depicting a ballet, a flock of birds, a group of pedestrians, and a boxing match—and projected them one at a time on a "monitor" made of thousands of LED bulbs suspended from the ceiling. SFMOMA acquired *Exploded Views* and presented Campbell with its 2012 lifetime achievement award for producing an innovative body of work that blends technology, cinema, light, and sculpture.

Smaller organizations have also put themselves on the art-science map. The Institute For Figuring, a Los Angeles nonprofit founded in 2003 by Margaret Wertheim, contributes

JENNIFER PARKER AND SUDHU TEWARI

to the public understanding of science and mathematics through programming that often involves playing with materials and ideas. Last spring, the institute opened its own gallery in L.A.'s Chinatown with an inaugural show, called "Physics on the Fringe," that explored alternative theories of the universe developed by geniuses, mavericks, and outsiders from the 19th century onward.

Of course, the compatibility of art and science

is not a new idea. In Jennifer Parker's view, what's going on now is "a return to a more holistic approach to investigating culture and placing knowledge into the public sphere." Victoria Vesna contends that the division between disciplines was created by industrialization and specialization. Yet, she says, "through technology, this separation is quite naturally blurring."

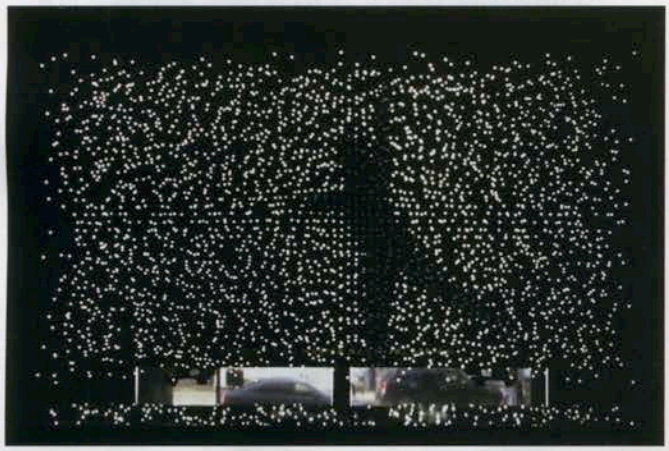
The most obvious historical example of a crossover artist is Leonardo da Vinci. His name is even the title of a scholarly magazine that identifies itself as "the leading journal for readers interested in the application of contemporary science and technology to the arts." It's a constituency that seems to be growing, varied as it may be.

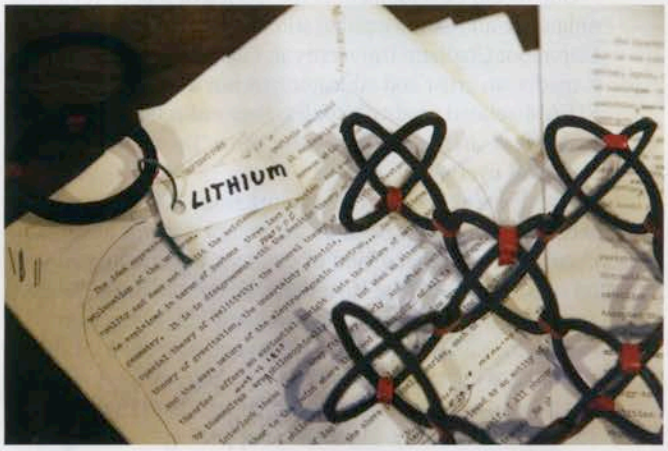
"Cabinet of Curiosities: Photography & Specimens," an exhibition earlier this year at the Nelson-Atkins Museum of Art in Kansas City, Missouri, focused on a centuries-old fascination with objects that can be appreciated as scientific specimens or artworks or both. Examples of such mini museums, assembled by 16th- and 17th-century collectors to show off their unusual treasures, can also be found at the Museum of Jurassic Technology, in Los Angeles.

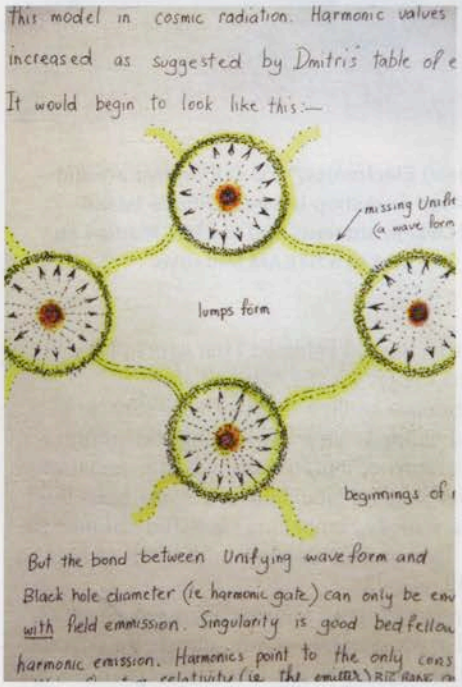
That institution, dreamed up by filmmaker and 2001 MacArthur fellow David Wilson, offers an eclectic assortment of artifacts, oddments, and natural-history specimens in a musty warren of galleries. Wilson's peculiar enterprise touches on the many and various things that draw artists to science: some are attracted to science's esthetics or visual by-products, while others muse on its philosophy or poetry. But for many artists "it's about solving problems and looking at data in new and exciting ways," as Parker puts it.

Problem-solvers at schools such as Art Center College of Design in Pasadena, California, try to find solutions to social and environmental problems around the world. Other artists devote themselves to illuminating natural wonders or exposing man-made catastrophes. *Blue Morph*, a touring interactive installation based on the metamorphosis of a caterpillar into a butterfly, is the work of Vesna and scientist James Gimzewski. It recently appeared at Dublin's Science Gallery and will be part of a celebration in Marseille honoring the French city as this year's European Capital of Culture.

"Collapse: the Cry of Silent Forms," an exhibition that

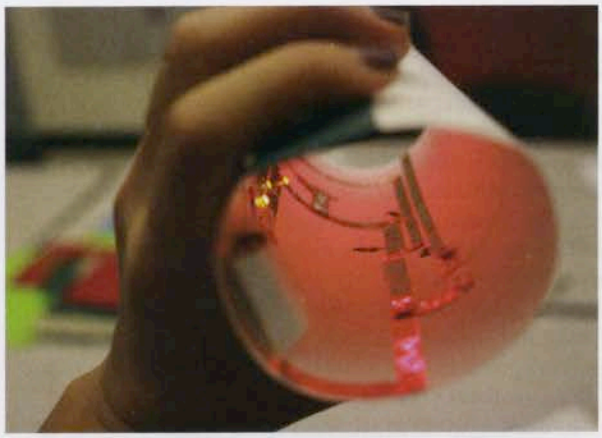


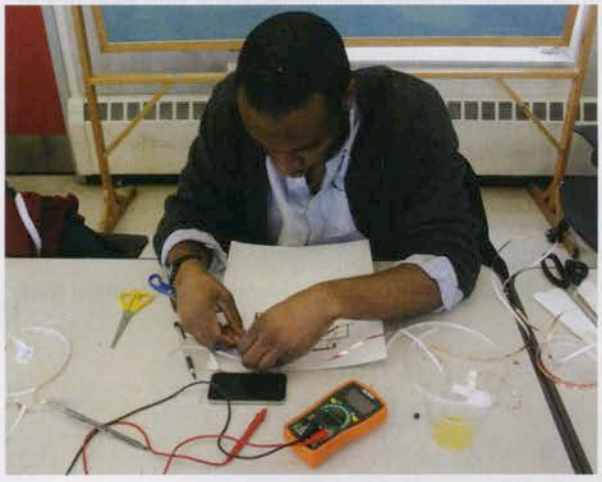




Clockwise from top left: Jim Campbell's LED installation *Exploded Views (Improv)*, 2011, at SFMOMA. Peter Jobson's *Theory of the formation of matter*, 1995, and Jim Carter's *Models of atomic nuclei made from plywood and duct tape*, 1970, both from the recent show "Physics on the Fringe" at the Institute For Figuring.

CLOCKWISE FROM TOP LEFT: SARAH CHRISTIANSON/©JIM CAMPBELL/COURTESY THE ARTIST AND HOSFELT GALLERY, SAN FRANCISCO/COMMISSIONED BY THE SAN FRANCISCO MUSEUM OF MODERN ART; ©INSTITUTE FOR FIGURING (2)





"Paper-Based Electronics," a collaborative art-and-technology workshop between Rhode Island School of Design students and the MIT Media Lab, was part of a STEAM initiative.

has traveled from Ronald Feldman Fine Arts in New York to the Acadiana Center for the Arts in Lafayette, Louisiana, presents a chilling series of works by New York artist and biologist Brandon Ballengée. Through X-ray-like photographs of mutated animals and actual specimens preserved in glass jars, Ballengée transforms field research into a visually compelling case study of damage done to birds, fish, and amphibians in the Gulf of Mexico by the 2010 BP oil spill.

Not surprisingly, art that's informed by science isn't always accepted as art. Stephen Nowlin directs the Alyce de Roulet Williamson Gallery at Art Center College of Design, where he organizes art-and-science crossover shows that are often seen as curiosities or spectacles. "It's this odd pairing of things that exist on opposite ends of a spectrum," he says. "Science is supposed to be rigorous and rational. Art must be freethinking and irrational. Therefore, art is creative, and science is calculated. I think the art-and-science movement is about dispelling those myths and talking about how the two domains are interconnected."

"This pairing of art and science is sort of inevitable if you look at the whole history of modernism," Nowlin adds. "You can follow the progression from painting as a frame or window through which you look into a fictional space, with the perspective shortened, to Mondrian and Malevich, when the painting was an object in real space. And that continued with Marcel Duchamp, Kurt Schwitters, Jasper Johns, Robert Rauschenberg, and Frank Stella. Not only was the painting an object on the wall, but the painting moved physically into real space. And science has always been about real space."

MIT's Ziporyn also thinks the marriage of art and science was inevitable, but he sees it as a progression of what artists do naturally. "They engage with ideas that are floating around," he says, "ways of thinking about information, systems, and materials. At a certain point, that permeates into the milieu as a whole."

Regardless of how the current art-and-science movement evolved, it is philosophically related to a broader effort to include the arts in a national educational agenda. In recent years, STEM, the acronym for "science, technology, engineering, and mathematics," has been a watchword in discussions about improving the education of American children. President Barack Obama took up the cause in 2010, when he launched Change the Equation, a business-led effort to upgrade the teaching of STEM subjects as part of his "Educate to Innovate" campaign. But arts leaders are calling for the addition of art to the list of essential subjects, in an initiative called "STEM to STEAM" (science, technology, art, engineering, and mathematics).

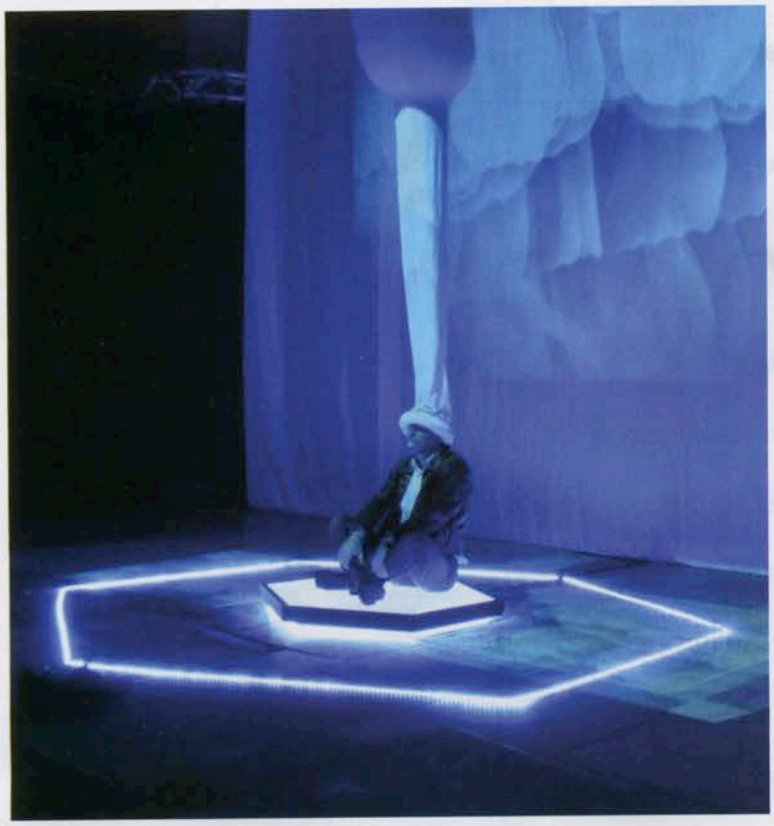
Although the STEAM effort focuses on the education of children, institutions of higher learning are getting on board as well. John Maeda, president of the Rhode Island School of Design, is a leading advocate, and RISD has become a sort of clearinghouse for information on new developments, programs, and political action. Maeda, who came to RISD from MIT four years ago and is educated in both art and science, says that STEAM needed a champion, and he thought RISD was in a good position to take a stand for art-education innovation.

"I came to RISD as a very STEAM-like person, and I'm looking at how to get the whole nation to be aware of our education," he says. "Art is not just a nice-to-have but a need-to-have. It's vital to creativity and innovation."

One recent development is the launch of a peer-reviewed online art-and-science publication called *STEAM Journal* at Claremont Graduate University in California. Its editor, Sara Kapadia, an artist and educator, put out a call for papers on STEAM-related academic topics, personal reflections, program ideas, and successful lesson plans. The response, she says, was overwhelming.

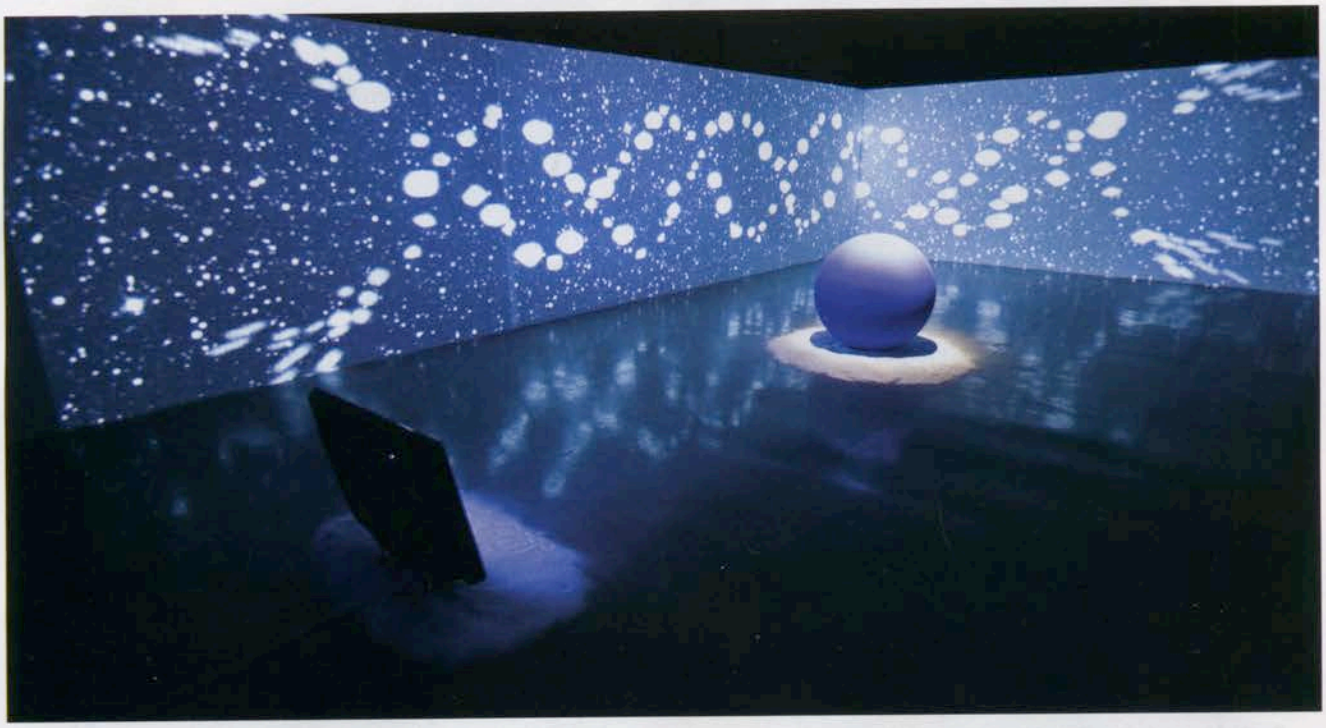
Maeda says that for him, moving from MIT, a giant in the field of technology, to an art school was not a big change. "It's the same kind of creative, passionate people," he says. "They just use different sides of the brain. There's that same obsession for detail and perfection, the same hard work ethic. However, it's merging. You see a lot of scientists who naturally embrace art. You see a lot of artists who embrace science. People say, 'Isn't that a stretch?' I like to say, 'It's what's happening.'" ■

RISD STEAM CLUB (2)



An installation view of Victoria Vesna's interactive piece *Blue Morph* at the Cathedral of Saint John the Divine in Gdansk, Poland, 2011.

Paris Arguta, ca. 1850, a cyanotype by Anna Atkins in the exhibition "Cabinet of Curiosities: Photography & Specimens" at the Nelson-Atkins Museum of Art.



Lita Albuquerque's high-tech installation *Stellar Suspension*, 2008 (detail), portraying the stars observing planet Earth, at Art Center College of Design.

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