

SCIENCE AND SOCIETY

Lights! Camera! Science?

Science film festivals are popping up around the world. But does *Avatar* belong on the same screen as a documentary about stem cells?



BORDEAUX, FRANCE—A slimy green ectoplasm gobbles up all the food and drink at a swanky hotel. A giant marshmallow dressed as a sailor lumbers through the streets of New York City. *There's something weird, and it don't look good. Who ya gonna call?*

Ghostbusters! of course.

Even a quarter-century after it filled cinemas, and its irresistible theme song hit number one, the zany film about three failed parapsychology students and their ghost extermination service is still fun. But the movie's 4 a.m. screening at a multiplex here in December did raise a question: Why was it part of a festival for *science* films? The organizers of Cinémascience, a festival now in its second year, admit they just didn't put the bar for scientific content all that high. *Ghostbusters* slipped into the program as part of an all-nighter of sci-fi classics.

Cinémascience is part of a new wave of film festivals around the world that show

nothing but science-related films and claim growing audiences every year. Bangkok, Athens, Paris, and New York City have all seen the birth of such festivals in the past 5 years. A few others—such as the Milan science film festival and Australia's Scinema, which runs on 200 screens across the country—have been around for a decade.

But check out the programs of each, and you discover that they have radically different ideas about what constitutes a science film. "I've been asked that question over and over, and I still don't have a good answer," says cell biologist-turned-filmmaker Alexis Gambis, director of the Imagine Science Film Festival in New York City, launched in 2008. Consequently, you can go to three different festivals and have three very different experiences.

The organizers say the festivals exist in part because there's so little science on the big screen. Sure, a good portion of Hollywood's biggest moneymakers are science-fiction films, and there's no reason why record-smashing *Avatar*—whose alien world was shaped with advice from plant biologists and linguists—can't be called a science film, says Emory University physicist Sidney Perkowitz, author of *Hollywood Science: Movies, Science, and the End of*



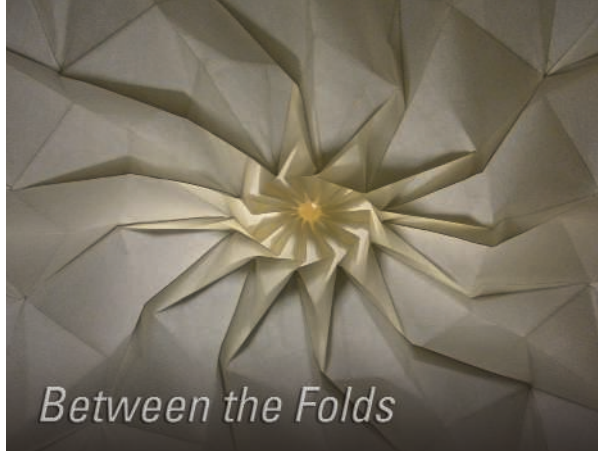
the World. But the movie industry is far less interested in films about the lives and work of scientists and in scientific documentaries, rare blockbusters such as *A Beautiful Mind* and *March of the Penguins* notwithstanding.

And yet, with the advent of the digital camera and video-editing software, almost anyone can make a film, and many scientists, former scientists, and students are becoming part-time directors. Pariscience, an annual film festival in the French capital, now receives some 300 submissions, says director Jean-Pierre Gibrat. Festivals' main headache today is not to find films but to break even, especially because some don't charge admission. Most rely on sponsors; Scinema is underwritten and organized by CSIRO, Australia's national science agency, for instance, and Imagine has many sponsors, including *Science*.

Some festivals clearly focus on education. The festival in Bangkok tries to spark Thai children's fascination for science by showing "family edutainment"—that is, short documentaries on science and nature made for youngsters. Most of the 45 films shown at the 2009 version were originally TV programs made elsewhere in the world and then dubbed in Thai. More than half were German and French; not a coincidence, because the festival was organized by the Goethe Institute—which tries to spread German culture—and the French Embassy in Bangkok.

Other festivals cater to children as well, but not exclusively. The one in Milan, organized by the University of Milan's physics department, shows films for 11- to 18-year-olds in the mornings; afternoons are for documentaries for adults and the official competition; and evenings are given over mostly to historical films, with the occasional drama or science-fiction film thrown in. The 2009 edition featured *Inherit the Wind*, a 1960 courtroom drama about the Scopes Monkey Trial, as well as *2001: A Space Odyssey*.

The festival in Bordeaux, organized by France's National Centre for Scientific Research (CNRS), is unique because it shows only feature-length fiction films. That's in part to avoid competing with Pariscience, which has only documentaries. "We don't want to step on anybody's toes," says Cinémascience programmer Denise Anderson. But because science-based fiction films are quite rare, Cinémascience's program is thinner on actual science than most others. One of the two winners of a Jury Award was *Skin*, a gripping drama based on the life of Sandra Laing, a black woman born to white parents in South Africa in the 1950s. Except for the brief appearance of a geneticist who explained in a courtroom that "black" genes can lurk in



Between the Folds

Leonardo da Vinci's dream of flying, a rap video about the polymerase chain reaction, and *Skylight*, a "mock animated documentary about the ecological plight of penguins in the Antarctic." (For a review of the festival, see *Science*, 4 December 2009, p. 1348.) Gambis has plans for satellite events in London, Paris, and South America.

white families, science played almost no role in the film.

Cinémascience's philosophy is that each film serves as a springboard for a debate between filmmakers, the audience, and CNRS researchers, says Anderson. After *Skin*, anthropologist Gilles Boëtsch and director Anthony Fabian discussed racism and the lack of science behind the concept of race. With that criterion, however, it appeared that almost any film could be called a science film. The screening of *Admiral*, a lavishly produced \$20 million Russian drama about the 1917 revolution, was followed by a debate with two CNRS experts on Russian history—but even director Andrei Kravchuk was surprised that his movie had been selected for a science film festival. The formula seems to work, however. Attendance rose from about 6000 last year to 8000 in 2009.

New York City's Imagine festival is similar to Cinémascience, says Gambis, in that it "tends to encourage a story, a narrative," while shunning straight-up documentaries. "The goal is not to teach or lecture people," says Gambis. "We wouldn't show 2 hours about antibiotics or a film about how stem cells work." Instead, Imagine in 2009 featured an animation about

Stressing narrative and showing fiction does raise a perennial question among science film buffs, however: Should the science be accurate? Yes, says Gambis—his festival even has a special award for scientific accuracy, sponsored by *Nature*. And scientists tend to agree. At Cinémascience, CNRS robotics researcher Agnès Guillot was taken aback by *Surrogates*, a sci-fi thriller in which people stay at home while robots resembling them and controlled by their minds go out in the real world.

Perkowitz argues that accurate science often gets in the way of a good story. He says directors should be allowed "one major suspension of disbelief per film," such as travel faster than the speed of light. At festivals especially, even imperfect science can make for great debates, Perkowitz says. Indeed, his ideal festival would consist of a couple of stunning documentaries, debates with scientists—and a good dose of razzle-dazzle sci-fi films, complete with laser guns and planets being blown up. "I have no doubt that some 12- or 14-year-old kids will become scientists because something in those films triggers their imagination," he says. "It's what happened to me."

—MARTIN ENSERINK



CREDITS (TOP TO BOTTOM): CHRIS K. PALMER 2010, JENNIFER WHEATLEY

And the Winners Are...

A sampling of the films and directors that took the honors at science film festivals around the world in 2009.

Scinema, Australia

Best Director

400 Years of the Telescope

By Kris Koenig (U.S., 60 min.)

Documentary about the history of the telescope since Galileo.

Best Film

Between the Folds

By Vanessa Gould (U.S., 56 min.)

Documentary exploring the art and science of origami.

Science Film Festival, Thailand

Jury Award

There's Something About Species

By Denis van Waerebeke (France, 82 min.)

Documentary exploring the tree of life and the history of evolution.

Imagine Science Film Festival, New York City

Audience Award

Leonardo

By Jim Capobianco (U.S., 9 min.)

Animation in which Leonardo da Vinci tries to realize his dream of flying.

Scientific Merit Award

Magnetic Movie

By Ruth Jarman and Joe Gerhardt (U.K., 5 min.)

Documentary that visualizes magnetic fields in bright colors.

Cinémascience, Bordeaux

Jury Awards

Skin

By Anthony Fabian (U.K./South Africa, 107 min.)

Biographical drama about a black girl born to white South Africans in the 1950s.

Dirty Mind

By Pieter Van Hees (Belgium, 102 min.)

Comedy about a stuntman who undergoes a radical personality change after suffering brain damage.

Audience Award

The Stranger in Me

By Emily Atef (Germany, 99 min.)

Drama about a woman who suffers from severe postpartum depression.