

[Sign in](#) · [Register](#)Go to: [Read today's paper](#) · [Jobs](#)Search: Guardian Unlimited Web**EducationGuardian.co.uk Research**

Home	Higher	Schools news	FE news	TEFL news	Virtual fair	Jobs	Talk	Help
	Comment	Courses	Research	Worldwide	Interactive guides	Careers	Links	

Research

Putting the science into fiction

Who makes sure disaster movies are not laughable? These days, you can't make a film without a boffin

Linda Nordling**Tuesday April 18, 2006**[The Guardian](#)

Search Education

Blog

[Mortarboard](#)

Podcasts

[Exclusive video podcasts from Teachers' TV](#)

Clearing 2006

[For places, news and advice](#)

Higher

- [This week's news](#)
- [Choose a degree](#)
- [Comment](#)
- [E-learning](#)
- [Find a course](#)
- [HE jobmatch](#)
- [Higher noon](#)
- [Higher profiles](#)
- [Improbable research](#)
- [National Student Survey results by institution](#)
- [National Student Survey results by subject](#)
- [Postgraduates](#)
- [Research notes](#)
- [Special reports](#)
- [Third degree](#)
- [Worldwide](#)
- [Work in progress](#)

It's a curious fact of modern life that if the world were to end tomorrow, we'd have seen it all before. From a giant asteroid striking the earth to the Statue of Liberty up to her neck in glacial ice, no sooner do scientists come up with a new threat to our planet than it's being shot in Technicolor. But with audiences getting better at spotting flaws of logic, production companies have woken up to the importance of getting the science right. Enter Hollywood's unsung boffin hero - the science consultant.

Dr David Kirby is a lecturer in science communication at the University of Manchester. He has studied what happens when the white coat meets the silver screen. "Movie audiences are more savvy today," he says.

- There have been a spate of films featuring scientists (Proof, A Beautiful Mind), or dealing with scientific issues (The Day After Tomorrow, What the Bleep Do We Know?).
- And if audiences want better science, production companies have to give it them.

- A lot of Kirby's students are interested in how to get into science consultancy, he says. But the former microbiologist has some harsh advice. "You can make an established career out of it if you want, but it can't be your only source of income."

- Payment for science consultancy, even on Hollywood blockbusters, is a nominal amount, says Wayne Grody, a molecular biologist at UCLA in California. He worked as a consultant on The Nutty Professor, featuring Eddie Murphy, and on the hospital TV drama Chicago Hope. He loves film, and is writing his own screenplay. But the consulting, he says, is only a sideline: "It's fun and it gets

me out of the lab." He started out by writing film reviews and got into science consulting through contacts he made interviewing directors and actors. "So much out here is networking. It's whom you know and the networks you have."

According to Grody, the job changes according to what the producers want. On *The Nutty Professor*, they were not looking for scientific accuracy. But they wanted Murphy's lab to look right. Grody changed a picture of a DNA molecule that would feature prominently in the film. "Every school kid could have told you it wasn't an accurate double helix DNA molecule," he says.

Other movies involve scientists at the scriptwriting stage. The 1998 comet film *Deep Impact* received plaudits in the geology community for scientific accuracy. Josh Colwell, a planetary scientist at the University of Colorado, was one of its consultants. "My brother is a first assistant director in Hollywood and was working on it, and he knew I could answer some questions about the scientific aspects. When he brought some of my suggestions and concerns to the attention of the producers, they decided they should have some astronomy consultants officially on board."

So Colwell was joined by Eugene and Carolyn Shoemaker, who discovered the comet that hit Jupiter in 1994, and by Chris Luchini, who makes computer models of comets at Nasa's jet propulsion laboratory. "A major impact we had on the movie was to make the film-makers aware that the gravity on a comet is negligible," he says. As a result, for most of the shots on the surface of the comet, the actors were hung from wires and floated over the surface, rather than doing a slow-motion moon walk. "The idea of working on the night side of the comet and getting work done before sunrise also came out of this."

Other conversations between the scientists and the production staff resulted in additions and changes to the dialogue. "I introduced them to the word 'outgassing', which describes the process of a comet nucleus losing its volatile materials by evaporation. This had obvious humorous possibilities," Colwell says.

Working on a film throws up all sorts of opportunities. Visiting the set one day, he was offered a bit part in mission control. "I can tell you that acting paid significantly more than consulting," he says.

Deep Impact came out the same year as another asteroid blockbuster, *Armageddon*, starring Bruce Willis. It made more money, but paid less attention to scientific accuracy. "My favourite ridiculous thing in *Armageddon*," says Colwell, "was having the astronauts' space suits have rockets on their shoulders to push them into the surface of the asteroid so they could walk around it like it was normal earth gravity. Forget the fact that if you bent over, you'd get knocked on your rear."



In the UK, an Oxford biochemist and visual artist, Lizzie Burns, and a Stanford-based mathematician, Jonathan Farley, manage Hollywood Math and Science Film Consulting, offering science advice for film and TV in the UK and the US. "Neither of us thought it would be anything more than a lark," says Farley. But the company is going strong and has gone from providing people to scrawl equations on chalkboards to offering script advice services. It recently worked on the US TV drama *Numb3rs* and the crime series *Medium*.

Farley says there can be a dark side to the job. Production companies can be sly about intellectual property, and some are not above borrowing ideas without acknowledgment. Nor is science consulting for those who want their films textbook-perfect. Ultimately, producers care about making money, not accuracy. But the conflict is not between visual effects and realism, says Colwell. Realism can be just as dramatic as fiction. The difficulty arises when reality conflicts with the story the filmmakers are trying to tell. In *Deep Impact*, the astronauts who fly to the comet end up sacrificing themselves to save earth. In reality, he says, there would be no need to send astronauts. It could be done robotically.

But pointing out such things was not part of Colwell's brief. "Our job was to help the moviemakers understand where they were being realistic, where they weren't, and how to make the movie feel as realistic as possible while staying true to the story they were telling."

It's important to remember, Farley adds, that movies thrive on the fantastic; they always have and always will. "You wouldn't have movies at all if you avoided everything implausible."

[Printable version](#) | [Send it to a friend](#) | [Save story](#)



[Privacy policy](#) | [Terms & conditions](#) | [Advertising guide](#) | [A-Z index](#) | [About this site](#)

EducationGuardian.co.uk © Guardian Newspapers Limited 2006