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News

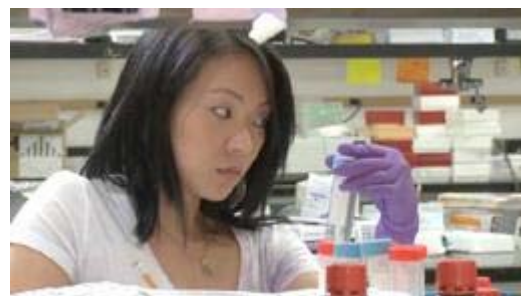
Lab fakery explored in interactive training tool

Video offers a multi-perspective take on scientific conduct at the bench.

Erika Check Hayden

You are a lowly graduate student, and suspect that the golden boy of your lab — your principal investigator's favourite postdoc — has faked data in a paper that is about to be published in a prestigious journal. What do you do?

A new interactive video, *The Lab*, soon to be available online, and on DVD for universities that get US federal funding, poses that and other ethical dilemmas with the aim of making research-integrity training more useful and effective.



The Lab is designed to probe tough ethical dilemmas.

ORI

The video will be released later this month by the US government's Office of Research Integrity (ORI). It offers users a chance to play one of four characters connected to a lab in which fraud is occurring. Its realistic and absorbing depiction of lab life — peppered with references to cultural touchstones, including films *The Big Lebowski* and the *Star Wars* series, and hip-hop group Wu-Tang Clan — also looks set to spark debate about why and how fraud occurs, and what witnesses can do about it.

There's the eager young graduate student whose parents keep asking when she'll graduate. There's the overworked postdoc torn between his pregnant wife and his duties in the lab. There's an up-and-coming principal investigator (PI) who feels overwhelmed by the demands of his work and his family, but can't stop himself from accepting invitations to speak at even minor conferences. And there's a research integrity officer — the official in charge of looking into suspected cases of misconduct.

Creating fate

Depending on the choices users make while playing the characters, the case can unfold well, or quite tragically. The PI who continues to neglect his students, for instance, is blindsided and loses his job when his postdoc's fraud is eventually revealed. And even when characters do the 'right' thing, events don't always work out for the best: in one scenario, the student who reports the fraud is ostracized by her PI and eventually drops out of science.

That, unfortunately, makes the video true to life, says Joe Giffels, director of the research-integrity office at the University of Maryland in Baltimore, who was a consultant on the video. "That is a realistic view of whistleblowing; the risks are very high and the benefits are few," he says.

The video is also unique in its realistic portrayal of the social environment of science, and of the minefield of social and career concerns faced by scientists who suspect that misconduct is occurring.

"A lab is a social environment, almost like its own little dysfunctional family," says graduate student Catherine Sheely, whose lab at the Johns Hopkins University, also in Baltimore, were also consultants on the video. "One of the things that the video addresses is the fact that there can be personal concerns that come up because of scientific ethical questions," she says.

The Lab also leaves unanswered some of the more difficult questions surrounding scientific fraud. John Richard of the State University of New York in Buffalo uncovered serious errors in 2007 in a series of papers published by the lab of biochemist Homme Hellinga at Duke University in Durham, North Carolina. He says that most cases of scientific misconduct are more banal, and more difficult to deal with, than the scenario depicted in the video.

"The trailer seems to fault the PI mainly for failing to closely monitor his group, and then places responsibility on group members who either committed misconduct or failed to report their co-workers," Richard comments. "The real victims of scientific misconduct are the students and postdocs who work in a laboratory where misconduct is promoted or condoned by their adviser."

Neuroscientist Samer Hattar, who heads the lab at John Hopkins that Sheely works in, says he couldn't possibly monitor all the members of his group as closely as the video recommends, even though he is troubled by the thought that he could be burned by a fraudster.

Biggest nightmare

"We live thinking that maybe we will never get an asshole in our lab, but deep down inside, this is my biggest nightmare," Hattar says. Even so, he adds, "It would be impossible to look at every single piece of data that my students generate; you have to develop a certain trust."

Finally, *The Lab* chooses to focus on scientists around the fraudster — not on the fraudster themselves — a decision made because the vast majority of scientists are more likely to witness fraud than to commit it, says Loc Nguyen-Khoa, project manager for the video at the ORI.

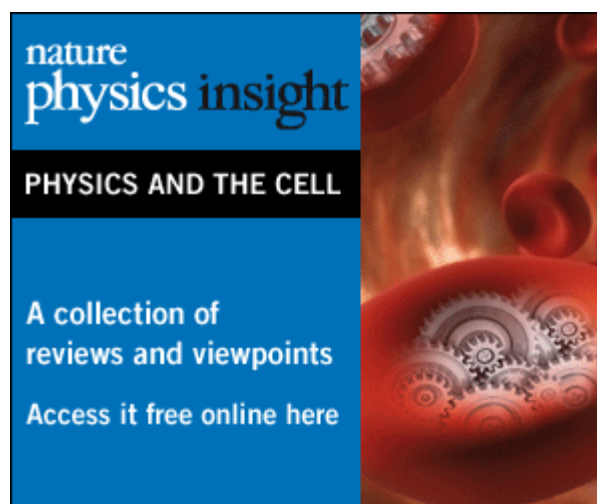
For instance, the graduate student must decide whether to resist the fraudulent postdoc's demand that she sign off on a manuscript without reading

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it, even though it contains some of her own data. And the overworked postdoc must decide whether to risk alienating his PI by helping the graduate student report fraud when she begins to suspect it.

Giffels says this actually makes *The Lab* a more useful teaching tool than it would be if it were focused on the decision whether to commit fraud.

"Most people know when they're doing something that falls into the category of misconduct," Giffels says. "It's probably more helpful to show people around that person and to show a range of different reactions to what's happening. That really is the important part of what happens in a case like this."



Comments

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These efforts are tremendous wastes of effort and resources. In which fantasy land does the scientist exist who is unethical enough to falsify data but is sufficiently reflective to be swayed by a video? Does anyone genuinely believe that this will change a single instance of scientific misconduct — even one single act? #17509

I don't doubt the goodness of the intentions of folks who are behind work like this but being well-meaning doesn't make something a good idea. It doesn't even save it from being a horrible one.

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Posted by: **Dave Perlins** | 2011-01-18 04:29:42 PM

Do anyone believe that scientific misconduct could be eradicated? Obviously impossible. Science should be reproducible, but how could even 1% of the published results be reproduced by different labs? In long term, we believe that fraudulent results could be cleared or forgotten when time pastby. So don't worry about science. #17510

The real problem is that some individual could benefit from misconduct and it's unfair. Trust sould not be given to individuals, no matter he/she is a graduate, postdoc, PI, or even a well-known scientists. People should either work in larger groups with more centralized research topic to ensure reproduced data; or publications should be separated into thoughts and experimental data, made by different people. Biology must learn how physics work today.