

FTCN Replay: How Hollywood Transforms Complex Science Into Public Understanding

In a recent episode of [“From the Crow’s Nest,”](#) host Ken Miller explored the intricate relationship between science and cinema with guest David Kirby, department chair of Interdisciplinary Studies in Liberal Arts at Cal Poly and author of [“Lab Coats in Hollywood: Science, Scientists, and Cinema.”](#) The conversation revealed how entertainment serves as a powerful vehicle for communicating complex scientific concepts to the public, particularly in fields like electromagnetic spectrum operations.

The Science-Cinema Collaboration

The relationship between science and Hollywood extends back to cinema’s earliest days. Kirby explained that “movies actually emerged out of scientific research” as scientists like Étienne-Jules Marey used early film technology to study movement. This scientific origin created a natural connection between the two fields that continues today.

Early filmmakers recognized that scientific spectacles could captivate audiences in ways traditional storytelling could not. “You put a camera on a microscope and you show them bacteria. Because most people at that time would have never seen something like that before,” Kirby said. This approach established cinema as a medium for making the invisible visible and the complex accessible.

The Realism Factor and Cultural Legitimacy

Cinema’s power lies in its perceived realism, which Kirby connects to science’s role as “modernity’s reality defining enterprise.” When filmmakers incorporate scientific accuracy

into their narratives, they create what he calls a “naturalization effect” that makes even fantastical elements seem plausible to audiences.

The 1933 film “King Kong” exemplifies this phenomenon. While the premise of a giant ape is clearly fictional, filmmakers employed leading paleontologists to ensure the dinosaurs were scientifically accurate for their time. “They brought in a world’s leading expert or one of the world’s leading experts on dinosaurs to work on that Tyrannosaurus Rex,” Kirby explained, though he noted that subsequent discoveries revealed some of those scientific assumptions to be incorrect.

The War Games Effect: When Fiction Drives Policy

Kirby introduced the concept of the “War Games effect,” referencing the 1983 film that reportedly influenced President Reagan’s cybersecurity policies. This demonstrates how successful films can generate real-world attention and funding for scientific issues that might otherwise struggle to gain public awareness.

“Movies can be used to call attention to something that the scientific community feels needs either more scientific attention, political attention, or financial attention,” Kirby said. Recent examples include “Twisters,” which sparked renewed interest in meteorology, and earlier films like “Deep Impact” and “Armageddon,” which influenced policy discussions about near-Earth objects.

Beyond Facts: Shaping Cultural Meanings

The conversation highlighted a crucial distinction in science communication. Rather than simply conveying facts, effective science-media collaborations focus on shaping what Kirby calls the “cultural meanings of science.” He illustrated this with DNA, explaining that while scientists might define it as deoxyribonucleic acid, the general public understands it as “what makes me who I am.”

“The goal in communicating science through fiction is to frame the cultural meanings of science, not to teach people what it is,” Kirby emphasized. This approach recognizes that emotional and narrative connections often prove more influential than technical explanations in shaping public opinion and behavior.

Navigating the Pitfalls of Science Communication

The discussion addressed legitimate concerns about potential negative consequences when science meets entertainment. Miller raised examples of how inaccurate portrayals can fuel conspiracy theories or create unwarranted fears that impact public health and safety decisions.

Kirby argued that most negative outcomes occur “where scientists weren’t involved or they weren’t paid attention to.” Active participation allows scientists to influence how their fields are portrayed and provide alternatives when dramatic needs conflict with scientific accuracy. “The best science consultants I spoke to weren’t the ones who just said, oh, no, no, no, no, that’s totally inaccurate. You can’t do that. But would say, you know, that’s not right. But let me give you an idea about what you could do that would work better,” he explained.

Practical Steps for Scientific Communities

For fields like electromagnetic spectrum operations seeking to improve public understanding, Kirby recommended several proactive strategies. First, he emphasized the importance of being “in the room where it happens” by engaging with organizations like the Science and Entertainment Exchange, run by the U.S. National Academies of Science.

The Exchange maintains a database of scientific experts who Hollywood professionals can reach out to when developing projects. Kirby also suggested that scientific communities should work with writers to develop story treatments and scenarios that demonstrate the dramatic potential of their

fields while maintaining scientific plausibility.

The Attention Economy Challenge

The conversation acknowledged the fundamental challenge facing all science communication efforts: capturing public attention in an increasingly crowded media landscape. “We live in what we call an attention economy,” Kirby observed. “The public’s attention is a finite resource that is very difficult to get to grab hold of.”

Hollywood’s reach provides an opportunity to break through this noise, but success depends on creating genuinely compelling narratives rather than simply educational content. The goal is storytelling that happens to educate, not education disguised as entertainment.