

A proposed solution to arbitrary evaluations

It was a great pleasure to read Toni Feder's feature "When tenure fails" (PHYSICS TODAY, October 2023, page 44). In particular, I enjoyed her insightful discussion of unwritten rules, including that of being a "good fit," in the tenure process. As Meg Urry, director of the Yale Center for Astronomy and Astrophysics, is quoted as saying of tenure candidates, "The vast majority could go either way, depending on how people spin it. It's kind of arbitrary." That tells me that the tenure evaluation system has failed.

Unfortunately, such flaws exist not only in job securement—including when a candidate is selected for a tenure-track position from among the few interviewed—but also in many other activities of scientific research, including peer review of scientific publications and grant applications. The need for evaluation reform is imperative for continued scientific innovation.

The ideal environment for innovation is open, diverse, democratic, tolerant, and motivating. How can we create and maintain such an environment?

As one possible solution, I have proposed a new open-science initiative: the Open ePrint and Rigorous Evaluation System for STEM.^{1,2} Three types of research activities—original research, indirect contributions (for example, participation in the evaluation system), and funding requests—would be evaluated using quantitative, continually refined metrics. The rigorous, community-based evaluation system would reward the quality, not the quantity, of accomplishments. Community members would earn credits for their research and other activities, and as they accumulate experience and credits, they could advance in their role in the community. High-risk, high-reward research projects would have a better chance of being funded.

By implementing a sophisticated credit- and role-based incentive mechanism, we could establish a new self-sustaining ecosystem for the entire scientific community. Rigorous science requires rigorous evaluation, and scien-



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tific innovation won't develop efficiently until such a system is built.

References

1. W. Tan, "A robust community-based credit system to enhance peer review in scientific research," 19 June 2023, <https://osf.io/preprints/metaarxiv/y9qh6>.
2. W. Tan, "OePRESS: An Open ePrint and Rigorous Evaluation System for STEM," 13 September 2024, <https://osf.io/preprints/osf/jvkmz>.

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Defending Oppenheimer

In their letter in the July 2024 issue of *PHYSICS TODAY* (page 11), Bárbara Cruvinel Santiago and Lindsay Rand criticize Christopher Nolan's *Oppenheimer* for glorifying the Trinity test while mostly ignoring the dangers of its widespread fallout. To be fair to the film's creators, the

movie is more of an account of J. Robert Oppenheimer's life and the challenges he endured; it is not a documentary.

An alternate view: The Manhattan Project was now eight decades ago. If watching the movie prompts younger viewers to go learn about it, the context surrounding it, and its legacy of worldwide nuclear deployments and environmental issues—consequences with which Santiago and Rand are concerned—the movie will have done a tremendous public service. Personally, I enjoyed it immensely.

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I do not concur with the substance of a recently published letter by Bárbara Cruvinel Santiago and Lindsay Rand titled "Beyond the cinematic feat: Consequences *Oppenheimer* ignored" (*PHYSICS TODAY*, July 2024, page 11). The film was half the extraordinary "Barbenheimer" phenomenon, which encouraged audiences to return to physical theaters, and it won the Academy Award for Best Picture. I think most physicists would agree that the film was remarkably successful in engaging broad audiences with the origins of nuclear weapons and with the consequences of their use.

As have many other critics of *Oppenheimer*, the letter writers point out the film's limited treatment of the devastation and death that occurred as a result of the Manhattan Project. In the *Los Angeles Times*, Justin Chang provides a more nuanced discussion, writing "I get those complaints. I also think they betray an inherent disrespect for the audience's intelligence and curiosity, as well as a fundamental misunderstanding of how movies operate."¹ That commentary is the first listed in the body of work for which Chang won the 2024 Pulitzer Prize for criticism.

Reference

1. J. Chang, "'Oppenheimer' doesn't show us Hiroshima and Nagasaki. That's an act of rigor, not erasure," *Los Angeles Times*, 11 August 2023.

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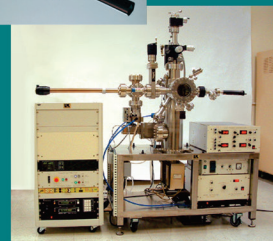
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