

I earned my Ph.D. in ecology and evolutionary biology in 1979 and since that time I have worked as an active scientist, senior academic administrator and a promoter of public understanding of science. My work has been generously funded by the National Science Foundation and the US Department of Agriculture, in addition to numerous private foundations. I have published scores of peer-reviewed research papers over the course of my career, some with colleagues from other countries. I have also served on a number of review panels for the National Science Foundation. My work promoting a broader understanding of science has led to Johns Hopkins University Press publishing my book entitled *Science, Nonsense, and Nonsense: Approaching Environmental Literacy*, my work as a syndicated columnist for the LA Times Syndicate, and my election as a Fellow of the American Association for the Advancement of Science. Additionally, I founded and currently serve as the executive director of The Clergy Letter Project, a grassroots organization consisting of more than 18,000 clergy members who promote the teaching of high-quality science while recognizing that religion and science need not be in conflict with one another. I have gone on in such detail about my background because I believe my work and my experience has taught me an enormous amount about the nature of scientific investigation, the value of federal funding for both pure and applied research, the need to nurture newly minted scientists, and the environment necessary to enhance scientific communication among scientists and between scientists and the general public. In short, I've worked in virtually every area being addressed by the "Regulation for Federal Financial Assistance" and I am incredibly troubled by what is being proposed. I fear that, if implemented as written, this regulation will fundamentally transform US science from being the world leader in innovation into a third-rate shell of itself that focuses more on political whims than serious investigation.

Let me address a few significant problems that I see in the proposed regulation, problems about which I have expertise, recognizing that I'm only touching on the depth of the problems associated with the proposal.

Section 200.205—Federal Agency Review of Merit of Proposals: The thrust of this section is to replace the scientific peer review process with a blatantly political one. The section would give political appointees final say in grant approval and expect them to render their decisions based on whether the proposal in question is in political alignment with the President's priorities. Such a change would completely eviscerate the peer review process which is essential if the goal is to fund high quality science. Expecting scientists to craft proposals that are politically attractive rather than scientifically meaningful is a recipe for disaster. History has shown us two things very clearly. First, when politics attempts to dictate direction horrendous results follow. The situation in the Soviet Union when Trofim Lysenko attacked standard agricultural genetics for political reasons led to an undermining of Soviet agriculture for well over a generation which was responsible for serious food shortages and economic hardship across the country. Second, most pure research simply cannot be tied to any specific political agenda, and it is this type of

research that historically has led to surprising and unforeseen breakthroughs. Breakthroughs of this sort are unlikely to arise under the proposed regulation.

Section 200.206—Federal agency review of risk posed by applicants: Section viii: Membership and Affiliations is so vague that it could easily be used against individuals who participate in organizations promoting the collaboration between religion and science. An organization like The Clergy Letter Project, comprised of thousands of clergy members coupled with hundreds of scientific advisors, make the case that although religion and science need not be in conflict there are some narrow and parochial versions of religion that think otherwise. Members of The Clergy Letter Project are opposed, on both religious and scientific grounds, of having religion taught in public school science classrooms and laboratories while some extremists are promoting exactly this action. Belonging to an organization that promotes science while respecting religion should not keep any scientist from being funded by the federal government – and yet this section might do exactly that. Doing so would do significant damage to both science and religion.

Section 200.300—Statutory and National Policy Requirements: Two revisions in this section are particularly troubling. The first concerns the portion dealing with “Diversity, equity, and inclusion.” The scientific work I’ve performed, read and studied has all been enhanced by the diverse people and voices that have participated. Politically mandating discrimination against achieving a wide range of talents in the scientific undertaking is counterproductive. The second revision that is troubling is the one that attempts to ensure that political beliefs trump scientific understanding. Simply put, and I say this as someone with a Ph.D. in biology, to define gender ideology as anything that “includes theories or ideologies that deny the biological reality of sex or the sex binary in humans,” is an ignorant politicization of the reality of sex, in all living species including humans. The idea that sex in humans is binary is a biologically bankrupt concept. Perhaps the authors of this alteration are unaware of the fact that intersex people constitute as much as 6% of the human population.

Section 200.340—Termination and Suspension: Expanding the ability to terminate and/or suspend funded research programs for political reasons is yet another way to ensure that politics plays more significant role in the nation’s scientific agenda than actual science. By writing that termination and suspension can occur “when the award no longer advances [Federal] agency priorities or the national interest,” the political intent of the rule change becomes patently obvious. Such terminations and suspensions will wreak havoc with laboratories around the country and likely put scores of scientists out of work.

Section 200.432—Conferences: Requiring that specific conference attendance be specified at the time of grant application makes little sense given that the results of the funded research will often dictate which conference makes the most sense for dissemination. Additionally, pertinent

conferences may well be announced during the course of an award. Funded research should be shared as broadly as possible in the most appropriate venues and this rule change makes such sharing virtually impossible.

Section 200.461—Publication and Printing Costs: While it is true that publication costs associated with peer review can be burdensome, until the nature of the publication process is dramatically altered, the reality is that dissemination of research results of funded research, a critically important goal, will continue to be done largely through peer reviewed journals that require publication costs. Eliminating this option for grant funded research will severely limit the reach of that research.

I know that I am not alone in offering comments on the changes being proposed. I do hope that you take the comments made by those of us who have intimate knowledge of the research environment into consideration prior to implementing any changes. All of us, regulators, scientists and citizens should be able to agree that we share a common set of goals: encouraging the best scientific research possible and enabling that research to be shared as broadly as possible.

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