we observed that when the rowers were synchronized, the higher the mass of the rowers, the higher the speed of the boat. However, after further investigations and as Firing suggests, we think the phase shift between rowers might also affect the efficiency of oar propulsion. Our current study on oar propulsion will surely clarify that point.

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"Necessary and sufficient"—and classic

The letter by Robert Hirsch and the response by Steven Cowley (PHYSICS TODAY, October 2017, page 11) discuss a classic issue related to fusion research. In 1991, as chairman of the American Physical Society's division of plasma physics, I met with US secretary of energy James Watkins and pointed out the problems a deuterium–tritium fusion reactor has with tritium fuel storage and with radioactive waste created by neutron-damaged reactor structure.

The debate between Hirsch and Cowley demonstrates that no progress has been made on the issue in the past quarter century. Hirsch advocates using an alternative advanced fuel, such as proton–boron, which produces no neutrons. Although p–B fuel in theory could be ideal, the excessively higher temperature and the necessary plasma confinement time make its use unworkable. In meeting with the energy secretary, I proposed deuterium–helium-3 fuel, which also produces no neutrons (although subsidiary deuterium–deuterium fusion produces neutrons but with much less energy and quantity than D–T reaction).

The D–^{3}He reactor requires a container that can withstand an order-of-magnitude higher pressure than D–T requires, but still in a more feasible range than p–B. I also recommended the magnetic dipole container that allows much higher pressure than ITER standards for D–^{3}He fuel.

I agree with Hirsch that the research goal of a fusion reactor should be based on what he calls the sufficient condition of being economically and environmentally acceptable. If the goal is right, the physics problem will eventually be solved.

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Rosenfeld's work on Fermi compilation

The obituary honoring Arthur Rosenfeld (PHYSICS TODAY, September 2017, page 72) did not mention the very important contribution that he, together with Jay Orear and R. A. Schluter, made to the education of my generation of physicists. The trio compiled Enrico Fermi's 1949 physics lectures from the University of Chicago into the book *Nuclear Physics*, originally published in 1949–50. Students at the time universally referred to it as Fermi's Notes.

A dense compilation of just about all the nuclear physics understood at the time—including a chapter each on nuclear reactors and cosmic rays—this modest and reasonably priced volume sparkles with the kind of physical insight said to be characteristic of Fermi's style as a teacher.

I remember one of its sample problems: An American car was shown to be tunneling quantum mechanically through a one-foot-high bump in the road. Would this be a solution to our crumbling roads? Not quite. The probability of that happening is not zero, but it is infinitesimally small!

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Correction

February 2018, page 55—Although Jill Tarter was the only woman in her engineering class at Cornell University in 1965, she was not the first woman to receive an engineering degree from the university. That benchmark belongs to Nora Stanton Blatch Barney, who received a civil engineering degree in 1905. PT