LETTERS

Convincing tests

Independent reviews are said to have concluded that the planned National Ignition Facility would likely achieve "fusion ignition" and be useful for nuclear weapons "stockpile stewardship." "Animal teeth and bones" found along with Neandertal and Cro-Magnon remains are used to assist in the "molecular investigation" of the origins of humankind (right, a Neandertal skull from France). And methods for "precise editing of chromosomal and extrachromosomal sequences" in mouse and other mammalian cells are discussed.

NIF: "Harsh Light" or "Illumination"?

The News & Comment article "A harsh light falls on NIF" by James Glanz and with sidebars by him and Andrew Lawler (18 July, p. 304), is accurate and informative. The article does convey some of the excitement of laboratory fusion ignition and the sense that the National Ignition Facility (NIF) will have broad value for science. However, because of the title and some of the quotes selected early in the article, the sense of controversy is exaggerated. NIF is not a weapon, and its use for nuclear weapon assessment requires scientists to integrate results from laser-based experiments with computations and other experience; thus, judgements on NIF's use in stockpile stewardship may differ. Laboratory ignition has not been achieved and cannot be guaranteed; this can be used to suggest controversy, but many highly respected physicists are willing to bet their careers on ignition with NIF.

Because the mission value and the likelihood of full success of NIF require expert judgements, a number of independent reviews have been conducted since 1990, including those by the JASON group (twice), the Fusion Policy Advisory Committee, the 1990 National Academy of Sciences, and the Inertial Confinement Fusion Advisory Committee (several reports). These and other reviews represent significant effort by qualified scientists to examine the issues discussed in the article. The reviews have examined the issues from every perspective and have established a well-founded view that NIF will have significant value to stockpile stewardship and that ignition is likely. These reviews serve to reduce controversy on these issues, and they deserved more weight in the article.

Accomplishing the goals of NIF is a considerable challenge, as it should be. A better theme for the article could have been, "Illuminating the NIF challenge."

David H. Crandall
Director, Office of Inertial Fusion and the NIF, U.S. Department of Energy, Washington, DC 20585, USA

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Neandertal Genetics

The recent discussion regarding Neandertal molecular studies (P. Kahn and A. Gibbons, Research News, 11 July, p. 176) suggests that other Neandertal and Cro-Magnon specimens should be examined for modern human mitochondrial haplotypes to further test multiregionalism (*1*). A Neandertal sequence from another site would also corroborate the initial study (*2*) and provide valuable data about the population structure of this temporally and spatially diverse group. To investigate the possibility that Paleolithic sites other than the Neander valley will be amenable to molecular investigation, we examined remains from four important Neandertal and Cro-Magnon sites in southern Europe, plus control samples of similar or younger age that are known to contain ancient DNA.

Contamination of preserved remains with modern human DNA is a significant problem in ancient DNA research (*3*), seriously complicating Neandertal studies (*2*). We avoided this problem by using relatively unimportant animal teeth and bones associated with Neandertal and Cro-Magnon remains as a proxy to determine the suitability of sites for molecular studies of human material. We analyzed several biochemical parameters indicative of diagenetic change (chemical modification associated with preservation processes) and DNA preservation (*4*, *5*) before using an-