

bison was not sought out for the demonstration. She, along with other violinists, has been working with Fry for the past several years. Fry is leaving more than 600 pages of his notes and his experimental records to the rare books and manuscripts section of the University of Wisconsin–Madison Libraries, with free access to anyone interested. Also, a video book on the simple physics of violins is in preparation.

Neither Fry nor I claim to have a precise mechanical method for turning out great violins, each sounding exactly alike. However, a violin maker who understands the science of his instrument can make consistently better ones, perhaps eventually even better than those of the Cremona masters. Fry's effort, like any scientific and artistic inquiry, is a quest for truth, enlightenment, and beauty.

Reference

1. G. Weinreich, *Am. J. Phys.* **61**, 1067 (1993).
Kameshwar Wali
(wali@physics.syr.edu)
Syracuse University
Syracuse, New York

Oil sands and the environment

The December 2009 issue of *PHYSICS TODAY* (page 8) had an interesting letter exchange on environmental effects in the Alberta tar sands—especially on the impacts of oil development on birds. In response to a letter, Murray Gray, Zhenghe Xu, and Jacob Masliyah, authors of the original article on the subject (*PHYSICS TODAY*, March 2009, page 31), wrote that claims of the specific adverse effects on birds and bird habitat were “grossly exaggerated,” as though the claims focused only on the effects of mining and the tailings ponds that store waste products. Yet the Natural Resources Defense Council study to which the article authors seem to refer also reviewed the current and potential future effects of fragmentation from in situ drilling, water withdrawal, air and water toxins, and global warming.¹ The harmful effects of tar-sands operations on birds nesting in the region are very real and will grow if the oil-removal operations continue along their planned path of rapid expansion.

The public in the US and Canada needs to understand the real, long-term ecological costs of tar-sands oil development and determine whether petroleum from that source is what people want fueling their motor vehicles. Birds are telling us it is time for a change in North American energy policy. Better

energy options are available, options that do not foul our air, poison our waters, or kill our backyard birds.

Reference

1. Natural Resources Defense Council, *Danger in the Nursery: Impact on Birds of Tar Sands Oil Development in Canada's Boreal Forest*, NRDC, New York (2008), available online at <http://www.nrdc.org/wildlife/borealbirds>.

Susan Casey-Lefkowitz
(sclefkowitz@nrdc.org)
Natural Resources Defense Council
Washington, DC

Gray, Masliyah, and Xu reply:

Readers who are interested in the environmental impact of energy supply need to ensure that they consider accurate information, and avoid the kind of hyperbole presented in the above letter. On the specific issue of the Canadian oil sands, readers are encouraged to examine the recent impartial report from the Royal Society of Canada, which details the shortcomings of government regulation, the need for the oil industry to improve its practices, and the exaggerated claims of environmental groups.¹

Reference

1. For the news story, see <http://www.theglobeandmail.com/news/politics/oil-sands-report-criticizes-all-stakeholders/article1838315>. The original Royal Society of Canada report is available at http://www.rsc.ca/expertpanels_reports.php.

Murray R. Gray
Jacob H. Masliyah
Zhenghe Xu
University of Alberta
Edmonton, Alberta, Canada

Multiferroics erratum

We wish to correct an error that appeared in our article “Multiferroics: Past, Present, and Future” (*PHYSICS TODAY*, October 2010, page 38). Hans Schmid's work on multiferroics and magnetoelectrics was funded not by the Swiss Post Office but initially by the French National Center for Telecommunications Studies in the early 1960s and later in the 1980s and 1990s by the Swiss National Science Foundation. We apologize for the error and thank Schmid for bringing it to our attention.

Nicola Spaldin
ETH Zürich
Zürich, Switzerland
Sang-Wook Cheong
Rutgers University
Piscataway, New Jersey
Ramamoorthy Ramesh
University of California, Berkeley ■

Laboratory Cryogenic Systems

Visit our Booth #604 at 2011 APS

Cryogenic Probe Station

Cryogen Free
Up to 8 Probes

Modular Design
Custom Solutions



UHV 10⁻¹¹ Torr
Ultra Low Vibration
3-5 nm

Non Optical
1.7 K — 350 K
40mW @ 2K



Advanced Research Systems
Tel: 610.967.2120
www.arscryo.com