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## SCIENCE EDUCATION

## Louisiana Opens School Door For Opponents of Evolution

Louisiana school teachers have been given license to supplement the existing science curricula with material that they feel “promotes critical thinking skills.” The seemingly innocuous language, in a bill passed overwhelmingly by the state legislature and expected to become law as early as next week, marks the latest attack in the United States on the teaching of evolution and mainstream scientific thought on global warming and other topics.

“The only thing this bill does is give a green light for the school board to protect teachers who want to use creationist supplementary materials,” says Barbara Forrest, a philosopher at Southeastern Louisiana University in Hammond who has been fighting the legislation.

Under the banner of “academic freedom,” opponents of evolution have made some headway in Florida and have attracted support in Michigan and South Carolina (*Science*, 9 May, p. 731). But their greatest success has come in Louisiana, where state legislators have invited educators to

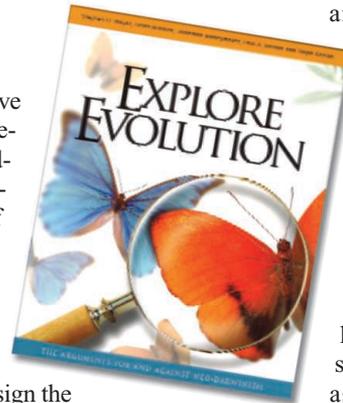
hold “an open and objective discussion of scientific theories being studied, including but not limited to evolution, the origins of life, global warming, and human cloning.”

The approach appeals to Louisiana’s Republican Governor Bobby Jindal, who is expected to sign the bill. “Some want only to teach intelligent design. Some only want to teach evolution. I think both views are wrong,” he told a television interviewer last weekend. “As a parent, I want [children] to be presented with the best thinking. I don’t want any facts or theories or explanations to be withheld from them because of political correctness. The way we are going to have smart and intelligent kids is exposing them to the very best science.”

Science educators say the new wording is intended simply to circumvent rulings by U.S. courts that creationism and intelligent design are unconstitutional religious intrusions into a

public school science curriculum. It’s also unnecessary, adds Brenda Nixon of Louisiana State University in Baton Rouge, who co-directs a statewide effort to improve science and math education and also works with the Louisiana Science Teachers Association, because teachers already explore these topics in class. Teachers are required to fol-

**Political science?** This 2007 book takes a view in sync with supporters of the Louisiana legislation.



low the Louisiana Comprehensive Curriculum, which encourages teachers to keep up to date and allows them to incorporate outside materials as long as the content is consistent with the state framework. “We have had overwhelming support from our science teacher members, who don’t want to see this approved,” Nixon says about the association’s 1600 members.

The bill requires the Louisiana board of education to implement the language in time for the 2008–09 academic year. But Forrest and others worry that it will be very difficult for any government body to make sure that the supplementary materials meet agreed-upon standards.

—FAYANA RICHARDS

## BIOBANKS

## Canada Launches Massive Study of Adult Cancer Precursors

**TORONTO, CANADA**—Canada has joined the global stampede of countries gathering biological data over decades on a large population cohort in hopes of better understanding the genetic, social, and environmental factors that affect human health.

The Canadian Partnership for Tomorrow Project, launched last week, will follow 300,000 adults over the age of 35 for 30 years, gathering saliva, blood, urine, fecal, and toenail samples as well as answers to questions about the health effects of influences including diet, physical fitness, and environmental conditions. The goal is “a comprehensive data set for research into the causes of cancer,” says Heather Bryant, vice president of cancer control for the

Canadian Partnership Against Cancer in Toronto, a federally funded organization helping to lead the study. But she says the project will also “provide a platform for numerous other research topics.”

The project builds on a cancer-risk study in Alberta that examined the interaction of lifestyle, behavioral, environmental, and genetic factors. Five provincial public health agencies have kicked in an initial \$82 million to recruit participants in what is expected to be a \$3.5-million-a-year effort. Researchers have already obtained funding to probe the effects of vitamin D in northern climes, measure compliance with public health recommendations for physical activity, and chart the effects of dietary supple-

ments as varied as alcohol, vitamins, and traditional native diets, notes Phillip Branton, head of the Canadian Institutes of Health Research’s Institute of Cancer Research, who will oversee research.

The Canadian study is intended to dovetail with the efforts of more than a dozen biobank studies around the world, says Branton. “One of the biggest questions to be tackled is, ‘Who are the people first at risk for cancer as diets and lifestyles rapidly change in different societies?’” Epidemiologist Michael Thun, who is recruiting 500,000 participants for a biobank to be managed by the American Cancer Society in Atlanta, Georgia, says the Canadian study will add “useful further capacity. The



## BIODEFENSE

## Senate Bill Would Alter Biosafety, Select Agent Rules

As U.S. biodefense research has expanded since 2001, so has scientists' frustration with the red tape involved in studying potential bioweapons. Last week, a bipartisan pair of U.S. senators introduced a bill that would address some of these problems as well as safety concerns at the nation's biodefense labs. Some researchers hope the legislation will trigger a broader debate on finding better ways for science and security to coexist.

The Select Agent Program and Biosafety Improvement Act of 2008 would reauthorize an arrangement under which 325 research organizations and nearly 10,000 individuals have been approved by the Centers for Disease Control and Prevention since 2002 to work with anthrax and botulinum toxin and other so-called select agents. The bill (S. 3127), introduced by senators Richard Burr (R-NC) and Edward Kennedy (D-MA), calls for "minimum standards" for biosafety and biosecurity training, a voluntary, anonymous accident reporting system, and inclusion of newly created organisms. It would also have the National Academies study whether the select agent program has hindered research, including international collaborations.

Microbiologists say strict rules for shipping samples have stymied investigations of outbreaks abroad, and a requirement that collaborators abroad follow U.S. rules has made some joint research projects impossible. "The Select Agent Program is an important part of ensuring the nation's safety and security," Burr said in a press release, "and I look forward to working with my colleagues to reauthorize and improve the program."

Stanford University microbiologist David Relman, a member of the National Science Advisory Board for Biosecurity (NSABB), says he hopes the provision to update the existing list of select agents will "open up a larger discussion about how we prioritize concerns." He worries that a definition based on nomenclature is not specific enough and may be hindering research. The bill also asks the U.S. Attorney General to clarify language adopted in 2004 that would ban work on poxviruses genetically similar to smallpox but fairly benign (*Science*, 11 March 2005, p. 1540). NSABB, which offers advice on the oversight of research that could be potentially useful to terrorists, advised that the language should be repealed.

The senators also want to address biosafety concerns—including the fear that many accidents aren't reported (*Science*, 12 October 2007, p. 182). The bill calls for a system, similar to what's used by the aviation industry, that would allow researchers to learn from one another's mistakes.

"It's very exciting. It has a lot of things that I completely agree with," says Gigi Kwik Gronvall of the University of Pittsburgh Center for Biosecurity in Baltimore, Maryland, who's also encouraged that the bill asks for an assessment of whether the many new labs are needed. But Janet Shoemaker, public affairs director of the American Society for Microbiology, says the bill, although worthy, "needs further refinement." She suggests deferring action on any reporting system until after an interagency task force examining biosafety submits its report later this year.

With little time left on the legislative calendar and Kennedy recovering from brain surgery, prospects for the bill appear dim this year. But Senate staffers hope that its introduction will stimulate interest in the House and lay the groundwork for passage in the next Congress.

—JOCELYN KAISER

more communication there is among early stage cohorts, the more that can be gained."

Co-principal investigator Louise Fortier, who directs an international biobank consortium centered at Montreal's CARTaGENE biobank with information on 20,000 Quebec participants, predicts that "environmental measures are likely to become an important and novel focus" as the new study progresses. "We will have samples as well as really good information on the subjects' homes and environments," she explains.

Thun says the decentralization of private and public health records in the United States makes it difficult to collect and man-



**The long view.** Canadian cancer scientists Jeffrey Lozon (*left*) and Phil Branton flank study participant Mary O'Neill.

from large populations.

The Canadian study is enrolling adults from five provinces from eastern, central, and western Canada. Instead of canvassing for volunteers, researchers will seek a cross section of "ordinary Canadians," says Bryant, perhaps by calling a randomized list of telephone

numbers. She believes that such a pool will be of greater value to other researchers. "If you don't build the platform," she says, "you can't ask the questions."

—PAUL WEBSTER

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Paul Webster

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