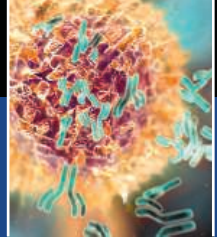
False clues to genomic riches
142



Buzz over B cells
144

DOE a bigger role in STEM education, especially at the precollege level. By the end of the decade, appropriators had sent DOE officials a clear message that they felt the department's strengths lay elsewhere. "It's certainly had its ups and downs," says James Decker, a physicist and longtime senior manager of DOE science programs who retired in 2006. "I'm not sure exactly why. It's not because of any review that said its programs weren't any good."

There's an old adage that "the president proposes and Congress disposes," and late last month, the House energy and water appropriations subcommittee reminded Chu and the new Administration of that rule (*Science*, 3 July, p. 20). Taking up DOE's 2010 budget request, the panel agreed that improving U.S. science education is important but said that DOE needs to do a better job of explaining how RE-ENERGYSE fits into existing programs at other federal agencies. Instead, legislators gave Chu $7 million to get started and told him to come back next year when he's worked out the details, in coordination with the White House Office of Science and Technology Policy.

The recent growth in Valdez's budget builds upon energy legislation passed in 2005 that endorses a bigger role for DOE in education. "Every university has some type of energy program, but there was never any money," says Raymond Orbach, who led the Office of Science under President George W. Bush and who promoted summer internships that give schoolteachers a chance to do research at the labs. "Once we got an authorization, we tried to beef up the program. The interest is already there."

The subcommittee's vote is only the first step in a lengthy budget process. And although Chu is not likely to abandon his signature education program, a former aide to the committee predicts that it will require some heavy lifting to get RE-ENERGYSE back on track this year.

Mike Lubell, head of the Washington, D.C., office of the American Physical Society, hopes that Chu succeeds. "Getting kids fired up about the opportunities and challenges in the field is terribly important," he says. "Improving STEM education in the United States is tough. But this is far more complex and will take a heck of a lot longer."

–JEFFREY MERVIS

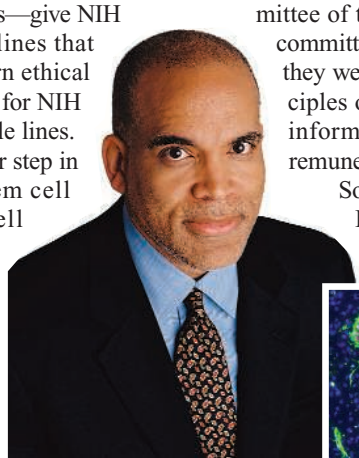
CREDITS (TOP TO BOTTOM): NIH; CIRM

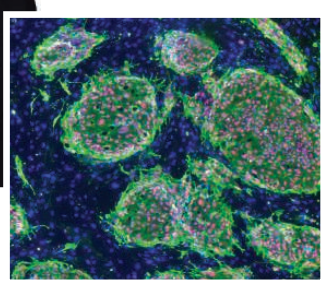
BIOMEDICAL RESEARCH

Researchers Generally Happy With Final Stem Cell Rules

Scientists expressed satisfaction this week with the final guidelines on research with human embryonic stem (ES) cells issued on Monday by the National Institutes of Health (NIH).

The new rules—which set out criteria for determining which ES cell lines can be used in federally funded experiments—give NIH discretion to approve old lines that don't meet stringent modern ethical requirements. And they call for NIH to set up a registry of eligible lines. The rules add up to "a major step in the right direction for stem cell research," says stem cell researcher George Daley of Harvard University.





Ready to roll. NIH Director Raynard Kington introduces two-track procedure for vetting cell lines.

Like draft guidelines issued in April (*Science*, 24 April, p. 446), the new rules limit federal funding to research using ES cells derived from surplus embryos donated by couples receiving fertility treatment. (ES cell lines must still be derived using nonfederal funds; Congress has barred NIH from funding such work.) The big question researchers had was whether the 21 lines approved for use under the Bush Administration, which are still used in many research labs, would qualify under detailed provisions for informed consent by embryo donors that are spelled out in the guidelines. The answer is there will be no automatic "grandfathering" in of the Bush lines. However, a working group will deal with them on a case-by-case basis, recommending that they be approved if they conform to the spirit if not the letter of the guidelines.

As acting NIH Director Raynard Kington explained at a press conference, there will be separate channels for determining whether a cell line is eligible depending on whether it was derived before or after 7 July, the effective date of the guidelines. For those derived on or after that date, there will a routine administrative review to see that they conform with informed-consent requirements. If such lines are derived outside the United States, NIH will decide if the rules under which they were obtained are "at least equivalent" to NIH rules, said Kington.

Determining eligibility of cell lines derived before 7 July will require a "more complicated exercise of judgment," said Kington. For this, a task force—a subcommittee of the NIH director's advisory committee—will determine whether they were obtained within the principles of the guidelines, including informed consent and absence of remuneration for embryos.

Some scientists, such as Kevin Eggan of Harvard, were disappointed that NIH didn't open the door to the use of embryos created for research purposes—including through somatic cell nuclear transfer (cloning) and parthenogenesis (from an unfertilized egg). But "on balance, the guidelines are a vast improvement over the draft guidelines," says Eggan. "The establishment of the registry is an important improvement, as is the clearly established route to approval for lines that need 'grandfathering.' " Stem cell researcher Sean Morrison of the University of Michigan, Ann Arbor, lauds NIH for "a really good job." He also says establishment of a new registry is "really important because it was going to take enormous resources for each individual institution to ascertain for themselves" whether a given line qualified for federal support.

Kington predicted that both the new NIH stem-cell registry and the working group, comprising nine or 10 scientists, ethicists, and members of the public, will be in business within the next 2 months.

–CONSTANCE HOLDEN

Published by AAAS