

California considers stem cell curriculum

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By Ron Leuty

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The next chapter of California's stem cell battle will be its textbooks.

Backed by the state Board of Education — as well as powerful lawmakers — the California Institute for Regenerative Medicine is ready to reshape the state's science curriculum and direct a rewrite of textbooks to include sections on stem cells.

CIRM and lawmakers say it is an effort to link education with the jobs of tomorrow and keep California at the forefront of research that ultimately could deliver cures, treatments or tests for diseases ranging from diabetes to Alzheimer's.

Opponents, however, worry the emphasis would be on morally controversial human embryonic stem cells at the expense of technologies like up-and-coming induced pluripotent stem cells.

"We would be for the truth being told," said Katie Short, legal director of the Life Legal Defense Foundation in Napa.

The Board of Education voted unanimously March 11 to include stem cell science in the science curriculum. That came two days after President Obama lifted federal funding prohibitions on a large segment of embryonic stem cell research.

Now the state's Curriculum Commission, with the help of San Francisco-based CIRM and others, is charged with fleshing out the curriculum in time for a pilot stem cell program in high schools in 2011.

The commission's work includes setting guidelines for textbook publishers. It can't mandate specific education materials in high schools, but those textbook guidelines shape the publishers' offerings from Crescent City to National City.

"It's really about the jobs of the future," said Don Gibbons, spokesman for CIRM, the state stem cell research funding agency backed by up to \$3 billion in state bonds. "We wanted to find ways to get education initiatives tied to the state's economy. They are links to our economy."

Gibbons pointed to a January report from BayBio highlighting a critical shortage of trained people to fill stem cell and biotech jobs.

“We don’t want California to lose its lead,” said Tracy Fairchild, chief of staff for state Sen. Gloria Romero, an east Los Angeles Democrat.

Romero leads the Senate Education Committee, is a member of the Curriculum Commission and is the lead sponsor of SB 471. That bill, introduced Feb. 26 with Sacramento Democrat and Senate leader Darrell Steinberg, calls on education officials to collaborate with CIRM on education initiatives in public high schools and universities.

The legislation could be used to push more conservative or hesitant school districts to follow CIRM’s lead.

“It can be used as a carrot or a stick,” Fairchild said.

That’s fine, said Short of the Life Legal Defense Foundation, if the curriculum explores stem cell science beyond embryonic stem cells. “But textbook publishers would be loathe to go there,” she said.

Scientists say embryonic stem cells, derived from embryos that develop from eggs fertilized in the lab, are best for research because they are pluripotent. That offers researchers the best opportunity to see how cells change into insulin-producing islet cells, cardiac cells or others.

But many religious conservatives find embryo destruction morally repulsive since they believe human life begins at conception. Instead, they say, science should focus on techniques like induced pluripotency, in which adult skin cells, for example, are manipulated to form embryonic-like stem cells.

Research in embryonic stem cells, though far from conclusive, is much more advanced than that on induced pluripotent stem cells.

Short’s foundation was one of a handful of religious-based or taxpayer advocacy groups whose legal challenges blocked Proposition 71, the 2004 California initiative that called on the state to sell bonds to back stem cell research and formed CIRM as the backbone of that effort.

The courts eventually threw out the groups’ legal arguments, and CIRM, though on shaky financial footing with the meltdown of the bond market, has gone on to approve \$693 million in stem cell research and facilities grants.

Most of the research grants have gone toward embryonic stem cell projects, but the agency in January approved \$58 million in grants to train scientists and lab technicians.

“My great hope is that all the facts are presented,” Short said about the curriculum effort. “But then there’s the question of why are we doing this, on a scientific, pragmatic ground.”