

# Joys match fears as California agrees to stem-cell proposal

Jonathan Knight, San Francisco

A \$3-billion programme that intends to make California a world centre for human embryonic stem-cell research got the green light from voters on 2 November, but some fear repercussions.

Proposition 71, which was approved by a healthy 18% margin, will raise the money by issuing bonds and will spend it on stem-cell research in the state over the next ten years. The win has caused jubilation among California biologists. But there are questions about what it will mean for US researchers outside the state — and about the possibility of retaliatory action by the re-elected president, George W. Bush, who opposes any research involving the destruction of human embryos.

The measure was conceived by several California film producers and businessmen with family histories of diabetes. They were frustrated by Bush's ban on federal funding for work on newly created embryonic stem-cell lines, which he implemented in August 2001. Their initiative gets around the ban by providing non-federal money and creating an Institute for Regenerative Medicine that will set priorities and draw up research guidelines.

"The model everyone has in mind is the National Institutes of Health," says Evan Snyder, who directs stem-cell research at the Burnham Institute in La Jolla, California.

But funding of basic research by a state on this scale is an experiment whose national implications could be profound. One concern is that Proposition 71 could weaken programmes in other parts of the country by luring talented researchers to California. Scientists will have good reason to relocate, says John Gearhart, a stem-cell researcher at Johns Hopkins University in Baltimore. "People will think: if there is money for ten years, why not California?" he says.

Beyond the money, there is also the allure of a single set of standards governing relevant procedures, such as egg collection. This will eliminate the need for researchers to negotiate research guidelines when collaborating with other California institutions, says Alta Charo, a bioethicist at the University of Wisconsin Law School, Madison.

But at the same time, Charo points out, it creates a disincentive for Californians to work with outsiders. "It's almost as if they have their own scientific country," she says. "California has a big enough system that there will be little reason to go outside."

In response to such pressures, other states may consider stem-cell measures of their own, suggests Kevin Wilson, a spokesman for the American Society for Cell Biology, based in Bethesda, Maryland. "There could be a domino effect," he predicts.

In Washington state, for instance, legislation that affirms the legality of working with human embryonic stem cells is gathering support. "There is certainly more interest in passing it," says Steven Gilbert, director of the Institute of Neurotoxicology and Neurological Disorders, a Seattle-based, non-profit group that promotes neuroscience research.

President Bush's opposition to the creation of new stem-cell lines from human embryos became a central issue in his successful re-election campaign, and the California initiative is in large part a reaction to his policies. It is not clear how, if at all, the president and his supporters will react to the measure: Republicans might try to get Congress to ban 'therapeutic cloning' outright.

Wilson says it is too soon to know whether such a move will occur. He says his society still hopes that the Bush administration will loosen restrictions on funding.

The first steps to implementing Proposition 71 were taken this week, but observers say it may be months before requests for research proposals are issued. A supervisory committee is due to be appointed by 13 December, and various elected officials, including the state's governor, will select most of the panel's 29 members from research institutions, private companies and disease advocacy groups in the state.

Research institutions around the state are already planning projects that might merit funding, says Snyder.

## Bush set to keep core science team for second term

Emma Marris, Washington

George W. Bush's re-election on 2 November and his party's increased clout in Congress leave him in an even stronger position to set the national agenda on research, say science lobbyists.

The administration's scientific A-team looks set to stay — Elias Zerhouni is likely to remain the director of the National Institutes of Health and Bush appointee Arden Bement is on course to run the National Science Foundation (NSF).

The day after the election, Paul Gilman, head of research and development at the Environmental Protection Agency, said that he was leaving for a position in the private sector. The agency's chief, Mike Leavitt, has only held his post for a year, but some agency officials suggest that he may now move to a cabinet-level position, possibly as secretary of the interior.

Bush's energy secretary, Spencer Abraham, is also likely to move. "I would be very, very surprised if he stuck around for another four years," says one physics lobbyist. An *Associated Press* report suggests that Abraham may take Norman Mineta's job as transportation secretary.

Bush's science adviser, Jack Marburger, has given no indication of his plans.

Bement, the director of the National Institutes of Standards and Technology, was selected by Bush in September to lead the NSF. Formal nomination and confirmation by the Senate should come quickly, allowing Bement to assume permanent control of the agency, which he has been running as acting director since February.

Zerhouni, who is two-and-a-half years into a six-year term, is widely expected to stay on. His boss, the health secretary Tommy Thompson, has said in interviews that he may leave, although no official announcement has been made.

And observers of NASA predict that its administrator, Sean O'Keefe, will stay — at least until the space shuttle is flying again. John Logsdon, head of the Space Policy Institute at George Washington University in Washington DC, suspects that, after that, O'Keefe "would like another position, more related to national security."

Additional reporting by Geoff Brumfiel.



President Bush.

C. DHARAPAK/AP



Cast off: voters may have established California's research autonomy.

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