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Stem cell research: California will keep its edge in 2008

BY MICHAEL FITZHUGH
EAST BAY BUSINESS TIMES

California, already a hotbed for stem cell research, is likely to remain at the forefront of that wave in 2008.

Stem cells, much like water, can take many forms and serve many purposes. The cells, at first undifferentiated, can both replicate and grow into more-mature muscle, nerve and immune cells. That makes them a potentially potent tool for fighting disease and a probable gold mine once their application is more fully understood.

Looking forward

Among the East Bay companies looking to develop uses for stem cells is Alameda's Advanced Cell Technology Inc., which said it plans to be the first applicant for Food and Drug Administration clearance to test the use of embryonic stem cells to treat eye disease. Fremont's Wafergen Bio-Systems Inc. will continue its effort to establish the company's cell incubators as a standard platform for stem cell research. Researchers at UC-Berkeley, UCSF and other organizations will delve into new areas of stem cell research, funded largely by money from the state's voter-created \$3 billion California Institute for Regenerative Medicine.

Federal funding for stem cell research is still weak due to ethical battles over the use of embryonic stem cells, the harvesting of which can result in the destruction of em-

Advanced Cell Technology Inc.

Symbol: OTCBB/ACTC

Business: Stem cell-based therapies

Local operation: Alameda

(Headquarters: Los Angeles)

Chairman and CEO: William M. Caldwell

2006 revenue: \$441,000

2006 loss: \$18,720

Local address: 1201 Harbor Bay Parkway, 94502

Phone: 310-481-5124

Web: www.advancedcell.com

bryos. But the time when funding for stem cell research will expand is growing near, said Advanced Cell CEO William Caldwell in a year-end letter to investors, especially considering the upcoming presidential election.

"Should the election bring a change in the (political) position of the executive branch, it would remove the last impediment to opening up the floodgate of billions of dollars in federal support for companies like ours," Caldwell said.

Meanwhile, researchers will continue to explore other paths to stem cell cures in the year ahead. One such method, pioneered by Advanced Cell, harvests a single embryonic stem cell from a frozen embryo without destroying it. Another approach, demonstrated by U.S. and Japanese researchers, turned ordinary skin cells from a 36-year-old woman and cells from the foreskin of a

WaferGen Bio-Systems Inc.

Symbol: OTCBB/WGBS

Business: Biology research equipment

Headquarters: Fremont

Founded: 2002

Chairman and CEO: Alnoor Shivji

Employees: 15

2006 revenue: (\$67,460, nine months ended Sept. 30 2007)

2006 loss: \$2.8 million

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newborn into stem cells by way of genetic reprogramming.

As the research continues, there will be a need for the right kind of enabling technologies, said Alnoor Shivji, Wafergen's CEO. "Just like in the semiconductor industry, what was really needed was all the equipment that helped optimize the (manufacturing) process, really making it (ready for) production."

"Next year, I think we'll still be at the stage where researchers will be trying to understand the mechanisms of these cells," said Shivji. "We are not yet at the stage where you will see cures happening" for diseases like Parkinson's, cancer and spinal cord injuries. "In terms of approved therapies, it's still a way off."

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