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## **New stem cell map to steer scientists**

The chief executive of BioTime is expected to launch a complex database this afternoon, one he says will be a breakthrough stem-cell tool that will put this small company on the world stage.

This database, accessed through the Web site [www.embryome.com](http://www.embryome.com), will serve as a vehicle to allow more than 5,000 experts worldwide to channel their knowledge of how complex cell types can be formed and how they can be differentiated from one to another.

"The question has always been, 'How do you make all these stem cell types without knowing the road map to get from one place to another?'," said Michael West, CEO of BioTime in Alameda. "This is an extremely important tool in the field that will help us now get to where we want to go."

To understand the importance of such a map, West likes to use an analogy to a conventional road map.

If a person were to drive from New York to San Francisco without any street signs or road map, it would be nearly impossible. Similarly, as a stem cell is going from its initial, basic state to a complex ear cell, for example, it needs to be steered through a specific path. This map gives scientists not only the knowledge of where they're going, but key "markers" that need to be crossed along the way. Ultimately, this will save stem cell companies time and money, West said.

The initial page of the Web site looks like an oak tree with terms such as "liver," "cardiac," and "limb buds" on its branches. By clicking on the term, it shows the cellular variations within each branch.

West is considered to be a pioneer in the field of human embryonic stem cell research. He founded Menlo Park-based Geron and also worked with Alameda-based Advanced Cell Technology.

"Mike is a great visionary in this field who has always been way ahead of the curve in his thinking," said Chris Mason, a professor at University College London in England, who collaborated with West on the project. "And of all that he's done, this might be one of the most important."

The creation is the backbone of the International Embryome Initiative, which is part of Embryome Sciences Inc., a wholly-owned subsidiary of BioTime.

Although most scientists in his field know who West is, he admits that not many people realize he works for BioTime. The company recently moved from Emeryville to Alameda, where they have a manufacturing facility.

The long-term hope for West and his team is that if embryonic stem cell research is ever given the full go-ahead by the next presidential administration, the knowledge from this database can be used by companies to develop more therapies of their own.

"It's amazing how much politics has slowed down our ability to do what we feel we can do," West said. "It just blows your mind really to think that we are stalled on people trying to get political points across when — first and foremost — we need to think of the needs of patients."

The site is going to be set up so that experts of each cell type can add their knowledge to the database, similar to Wikipedia. However, each insertion will be carefully screened by West for accuracy. The map, similar to the Human Genome, will likely take many years to complete, but the collaboration will ultimately speed the work-in-progress along.

The site also will provide numbers, similar to a ZIP code, so that each end cell can be specifically identified.

"The idea is that there (are) thousands of research and information around the world, but a lot of it is hard for everybody to get to," West said. "Now when someone wants to look at particular aspects of a cell type, they just need to look in one place."

West set up most of the database to be free, although there will be some pay-for features that will help generate a revenue stream for BioTime, which is already selling subscriptions.

"We believe we have a wonderful marketing tool to show researchers that we have products that can benefit them with whatever cell type they are working on," West said. "Our plans for profitability stems from our research products. The database is simply our sales force."

BioTime was trading at 47 cents a share at the end of Thursday's trading and West hopes to eventually get it in the \$1 range, a prerequisite for Nasdaq.

"My goal is not to have the company's stock quadruple the same day some high visibility science is released and go back down three days later," said West, who's been with BioTime for about a year. "My hope is to build a progressive revenue stream that will allow us to be around 5 years from now."

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