



## Local scientist's work takes world view

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PITMAN A local scientist is making great strides in a field of research that could wipe out some of the world's most common and serious diseases without stepping outside ethical boundaries.

Pitman resident Margaret Keller is one of the nation's leading stem cell researchers and associate director of the Cell Culture Laboratory at Coriell Institute for Medical Research in Camden.

But the stem cells she investigates are not those derived from controversial embryonic cultures; rather, they are found in the umbilical cord blood often discarded after childbirth.

She is the principal investigator of the New Jersey Stem Cell Resource and her research is focused on discovering molecular and genetic factors associated with various inherited blood disorders.

On Aug. 6, she was appointed to the Scientific/Medical Advisory Panel for Community Blood Services, a blood center in Paramus that handles public and private cord banking.

"Stem cells found in umbilical cord blood, and in small amounts in other blood, have the potential to differentiate into bone, cartilage, muscle and fat," said Keller.

"And experiments are under way to see if they can be pushed to become even more types like neurons. My background is in sickle cell disease and thalassemia, but preliminary data shows these cells could also treat bone and joint injuries, inflammatory bowel disease and others. Their potential has not been fully realized."

According to the National Institute of Health, these blood or adult' stem cells have been used in bone marrow transplants for more than 30 years. A potential advantage of using adult cells in these types of procedures is that a patient's own cells could be expanded in culture and reintroduced decreasing the chances of immune system rejection.

"The problem with using adult cells, as opposed to embryonic, is that they are generally in lower concentrations and are more rare," said Keller.

"Also, embryonic cells differentiate into other cell types more easily. However, cord blood is a great resource and there has been no opposition. This is a growing field and these adult cells may be the source of cellular therapeutics in the future."

Cord blood stem cells have become a welcome alternative to those opposed to embryonic research. In fact, one of Keller's fellow panel members is a Catholic priest.

The Rev. Joseph Kukura of Jackson is president of the Catholic Health Care Partnership of N.J. and he serves as an ethical consultant to Catholic hospitals and other organizations.

"The research I do is mostly on cord blood cells that are insufficient for donation," said Keller.

"Viable amounts can be donated to public banks through Community Blood Services or, for a fee, can be saved in private banks."

Keller said the biggest obstacle in cord stem cell research at this point is a lack of awareness.

"There is an ongoing effort to educate expectant parents. In the past, they may have been approached with the option for private banking, which requires up-front cash. There is no cost to a donor contributing to a public bank."

Keller said she has spoken at various universities and outreach facilities about the different types of stem cells and their potential, and she hopes to do more.

Community Blood Services has also been working on a large educational program.

"We want it to be people's first thought when they think about stem cell research or when they're expecting a child," said spokesperson Karen Ferriday.

"We have already seen a sizable increase in donations since we started in 2005, but more people need to know this is out there. This is technology that could lead to cures for so many diseases diabetes, Parkinson's. It needs to be discussed in high schools, colleges and certainly in doctors' offices."

On July 26, Gov. Jon Corzine signed legislation giving voters the opportunity to decide this November whether the state should borrow \$450 million to fund stem cell research grants.

The money would support research on adult and embryonic stem cells.

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