

Clemson spinout Kiyatec seeks \$250,000

April 10, 2007

By Allan Maurer

CLEMSON, SC—Kiyatec, a fledgling company that evolved from research at Clemson University's innovative bioengineering department, is seeking \$250,000 seed funding to prototype a test that may help drug developers avoid expensive clinical trial failures.

Founded in 2005, Kiyatec is competing in the University of North Carolina at Charlotte Five Ventures business plan competition this Thursday.

David Orr, 32, CEO, co-founder and the company's only fulltime employee, tells TechJournal South that working with Dr. Karen Burg of Clemson's bioengineering department, Kiyatec is developing a unique preclinical drug test using a patent-pending "bioreactor" licensed from Clemson.

"It allows us to culture multiple adult human cell types into a three-dimensional tissue engineered scaffold we can use to test experimental drug compounds," says Orr.

Could save millions

"When we introduce a drug compound, each cell interacts with the drug itself and also with the biochemistry produced by the other cells," says Orr.

"We're targeting two areas, first, basic predictive toxicology screening. Is the drug detrimental to the cell lines viability? Then, how cells metabolize the drug, how it's processed and eliminated."

Those are the aspects of a drug tested by early clinical trials: safety, and how it is processed by the body. Clinical trials are very expensive, however. If the Kiyatec tests could show drug toxicity or metabolizing problems in pre-clinical work, it could save drug developers millions. "We're hoping the technology can capture drug failures prior to moving to expensive clinical trials," Orr says.

Clemson pioneers such 3D cell scaffolds in its bioengineering department. Another Clemson researcher, Tom Boland, uses off-the-shelf ink-jet printer technology to "print" live, beating heart cells on a scaffold. That technology could eventually lead to heart tissue repair.

The scaffolding technology is similar to that used by Dr. Anthony Atala at the Institute for Regenerative Medicine at Wake Forest University in Winston Salem, NC. Dr. Atala has created bladders from a patient's own cells and is working on creating other working organs in the lab that could one day replace damaged human organs.

Seeks seed funding

"We hope the knowledge gained from these drug discovery applications will evolve into regenerative medicine applications," Orr says. The advantage of creating a lab tool first is that the U.S. Food and Drug Administration regulatory hurdles are less rigorous. "We do plan on creating strategic partnerships with large pharmaceutical companies to assist us in getting FDA acceptance as a valid protocol," he adds.

Orr, who has a Ph.D. in bioengineering from Clemson and an MBA from Purdue University, also had industrial experience before attending graduate school, as did his co-founder, Matt Gevaert.

So far, Kiyatec received a \$25,000 grant from SC Launch. Orr says he's talking with potential investors and wants to raise \$250,000 in seed funding to do proof of concept work.

TechJournal South Editor Allan Maurer can be reached at: allan@techjournalssouth.com