

Bioreactors Drive Advances in Tissue Engineering



Johnson Space Center

Synthecon Inc.
Houston, Texas

NASA Technology

- ◆ NASA scientists wanted to test cell cultures using the benefits of microgravity
- ◆ Rotating the wall of the bioreactor created a suspended environment without also introducing turbulent conditions that might harm cells



Partnership

- ◆ NASA built a grant program around the technology, funding researchers at top universities and helping Synthecon, a small company that licensed the technology, to survive and grow
- ◆ Synthecon's bioreactor system won an "R&D 100" award and was inducted into the Space Technology Hall of Fame

Benefits

- ◆ The Rotary Cell Culture Systems (RCCS) grow cell cultures used in advanced tissue engineering
- ◆ A gentle growing environment allows for complex and three-dimensional cell structures
- ◆ An RCCS produces 10 times more cells than standard systems and creates more realistic cultures for testing