

Ten Biotech Companies to Watch  
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### **SenesTech, Flagstaff**

Because pharmaceutical companies are required to screen new compounds and treatments in animals prior to use in humans, menopausal women present a unique challenge. In order to create a “menopausal” animal, the ovaries of the research animals are surgically removed.



But to Dr. Loretta Mayer and Dr. Patricia Hoyer, that didn't make sense. Post-menopausal women continue to produce hormones even after the eggs are deleted. Removing the animal's entire ovary creates a whole different testing scenario.

So the pair developed an innovative process which greatly accelerates the natural process. In mice, menopause is complete in 40 days. “What this technology allows are animal models which more closely mimic an aging female,” says Mayer.

In 2002, Mayer, Hoyer and Dr. Cheryl Dyer kicked off SenesTech in Flagstaff. Although the founders' roots were in bio-rich San Diego, the trio chose Arizona because Mayer believed the universities here were developing a technology-based approach to translating science to real life. “That's exactly what had happened in San Diego,” she says.

SenesTech's discovery might first appear to be rather limited in scope. The truth is exactly the opposite. The obvious market: pet owners who want their pets spayed without the necessity of surgically removing their ovaries and uterus.

“With our technology,” says Mayer, “while FiFi is at the vet getting her puppy shots, she gets one more and she'll be sterile without having to undergo an invasive operation.” The market for this application alone could be \$300 million.

There are other uses as well, including in agriculture. A female heifer with her reproductive ability intact gains 1 to 2 pounds a day. If she's sterile, she'll gain 4 to 5 pounds a day. The implications for beef production are huge. Also, wildlife populations might be better controlled. Rodent infestations might be averted. And far, far down the road, there might be human potential as well for women undergoing difficult menopausal transitions.

SenesTech maintains only five people because the production has been licensed to Jackson Laboratories for implementation. SenesTech derives licensing and consulting fees, and Mayer sees the company's potential as “pretty much unbounded.”