



LINDY KEAST ROOMAN/TIMES-DISPATCH

**Boogie-board pup**

Clementine the rat terrier spent some supervised pool time yesterday with Lisa Franklin at their Mechanicsville home. Franklin said she had to install a gate to block access to her pool deck when she isn't home so her pooch won't hop on a float or a boogie board.

**Impaired blood vessels saved**

**VCU engineers create fiber that stimulates cells for regeneration**

**BY JILL SAKAI**  
TIMES-DISPATCH STAFF WRITER

A new material made by Virginia Commonwealth University engineers may someday help surgery patients regrow their own blood vessels.

In preliminary tests in rats, the nanofiber material created by biomedical engineer Gary Bowlin mimics many properties of normal blood vessels. Unlike the artificial vessels now used, the new material also stimulates cells of nearby vessels to grow and fill in the damaged region, which promotes healing of the artery.

"Everything [we're] looking for

is in this one package," Bowlin said.

Atherosclerosis — hardening of the arteries — or blood clots can slow or prevent blood flow and lead to heart attacks or strokes.

More than 1,000 people in Virginia died in 2004 from atherosclerotic cardiovascular disease, according to the Virginia Center for Health Statistics.

During bypass surgery, doctors reroute blood flow around blockages by grafting in new vessels. The grafts are usually sections of vessels taken from elsewhere in the body, often the chest or leg.

Unfortunately, patients who need bypass surgery do not always have healthy blood vessels to use. As a last resort, surgeons turn to synthetic tubes made of Teflon or Dacron.

The existing synthetic materi-

als don't work very well in patients, especially for small blood vessels in the arms, legs, hands and feet, said Dr. Howard Greisler, a vascular surgeon at Loyola University in Chicago. "The problem is the body's response to those materials," he said.

Teflon grafts increase the chance of blood clots, which can easily block small vessels. In addition, they are very rigid and can cause scar tissue, inflammation or infections over time.

"The ideal material . . . would be one that permits normal arterial tissue to grow into it," Greisler said.

Bowlin's new graft material combines a man-made material used in sutures along with a natural protein called elastin. The synthetic material provides strength, while the elastin provides stretchiness and promotes cell growth.

In a paper published in the June issue of Biomedical Materials, Bowlin said that human cells recognize the natural proteins in Bowlin's material and grow into the grafts to help regenerate the blood vessels. In contrast, patients' cells do not grow well on Teflon grafts.

As an extra benefit, the grafts are biodegradable. If they perform as expected, the graft will gradually dissolve as a patient's own cells grow in. After six months, all that's left is a natural, newly formed blood vessel.

While initial results in preclinical trials are promising, Bowlin cautioned that the grafts need more testing. Rats are good for early studies because their aortas are about the same size as the vessels in patients' arms and legs. However, human blood vessels may not respond to grafts in the same way.



DEAN HOFFMEYER/TIMES-DISPATCH

**Virginia Commonwealth University biomedical engineer Gary Bowlin holds a grafting device made from nanofibers that may allow people to regrow their own blood vessels.**

In future work, Bowlin said, the grafts will be tested in larger animals and with more human cells. He hopes his grafts will eventually be used to fix arteries in people's arms, legs and hands.

The biggest advantage of these

grafts is that they use the body's natural ability to heal, Bowlin said. "The body does all the work."

• Contact staff writer Jill Sakai at jsakai@timesdispatch.com or (804) 649-6860.

A directory of businesses & planning services to help you prepare

# Pre-Planning Services Guide

## Funeral Homes

**BENNETT**  
funeral homes  
Established 1897

**Now Serving Chesterfield**  
14301 Ashbrook Parkway  
(Off Winterpock Road)

**CENTRAL**  
3215 Cutshaw Avenue  
804-359-4481

**HANOVER-MECHANICSVILLE**  
8014 Lee-Davis Road  
804-746-8665

**CHESTERFIELD**  
14301 Ashbrook Parkway  
(Off Winterpock Road)  
804-639-4975

**WEST**  
11020 West Broad Street  
804-270-6321

SERVING ALL FAITHS  
Charles D. Morehead, President

**E. ALVIN SMALL**  
FUNERAL HOMES & CREMATORY  
*Family Owned Since 1952*  
Traditional Services • Affordable Cremation

2033 Boulevard, Colonial Heights • 3935 S. Crater Rd., Petersburg  
EAlvinSmall.com • 748-4381

## Cemeteries

*Hollywood Cemetery*  
412 South Cherry Street

678-8501 [www.hollywoodcemetery.org](http://www.hollywoodcemetery.org)

## Estate Planning

**PRE-PLANNING OF ESTATE**

The liquidation of an estate can be a trying time for the family. When a death occurs, families automatically call a funeral home & often the attorney who is in charge of the will & estate. However, an auctioneer should be on top of the call list as well. **Before you touch the estate, executors should know what should be done with the estate.**

**DIXON'S AUCTIONS & ESTATE SALES** comes highly recommended for conducting successful estate sales. From the contents to selling the real estate Dixon's does it all! Dixon's will take the time to evaluate every item in the estate & give a fair appraisal, explaining the value of the items in the estate, and handle everything from packing & documentation for legal advisors to final reports. Each transaction is always handled in a friendly, efficient manner. A good auctioneer can make all the difference in a successful sale. Remember... when you lose a loved one, the more knowledge you have regarding the estate & home will help you get through such a hard and emotional time.

Contact Ed Dixon at Dixon's Auctions & Estate Sales. One call does it all.

**Visit us at [www.dixonsauction.com](http://www.dixonsauction.com)**  
**For more details or call Ed at 804-683-0133**

*Dixon's has been in business over 25 years doing onsite estate sales, auctions or gallery auctions located at 14300 Midlothian Tpke. Midlothian, Va. Auctions every Tuesday starting at 6:00 pm with viewing 12 noon.*

## DID YOU KNOW?

**Q**uestion: How do I go about finding a funeral home?

**A**nswer: When considering prearranging, you should contact funeral homes in your community. A funeral director can walk you through the prearrangement process. VFDA recommends prearranging for everyone.

PROVIDED BY  
VIRGINIA FUNERAL DIRECTORS' ASSOCIATION

For more information or to reserve your space in our August Pre-Planning Services Guide, contact Pat Penley 804-775-8142 ppenley@timesdispatch.com or your newspaper advertising representative. Other Advertising Categories Available: Hospice • Insurance • Will Preparation