Matters of the heart

Heart mechanics researched by biomedical engine

By Jesse Stephenson
THE BATTALION

When it comes to matters of the heart, a Texas A&M professor is taking a different approach to understanding how the muscle works.

Dr. John C. Criscione, assistant professor of the biomedical engineering program, researches heart problems such as congestive heart failure using an engineering method.

"Biomedical engineering is the application of engineering principles to medicine," Criscione said. "Its an engineering approach to a medical program."

Criscione said biomedical engineering is a new field and at the forefront of engineering. At Texas A&M, it is a division of the industrial engineering department, but soon it will be operating on its own.

Criscione's area of specialty is congestive heart failure, a disease that affects five million Americans.

"Congestive heart failure is when the heart grows and remodels in a bad way. Heart attack is one of the primary causes of congestive heart failure," Criscione said.

In medical jargon, growing is the act of adding mass and remodeling is redistributing that mass. "The coronary arteries get blocked, then the tissue downstream dies because of a lack of oxygen, and it kills part of the heart wall and a heart attack ensues," Criscione said. "When a part of the heart wall dies, it puts too much stress on the rest of the heart."

Criscione's research already has made some interesting findings. One example is the differences of the inner and outer walls of the heart.

"In a normal heart, the inner wall is not like the outer wall," Criscione said. "In the case of congestive heart failure the inner and outer walls look the same, and they tend to look like the outer wall of a normal heart."

While the research is promising, Criscione said science is only beginning to understand how the heart works.

"We are very behind on the physiology of the heart, most breakthroughs have been by trial and error," he said.

"Biomedical engineering is the application of engineering principles to medicine."

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Criscione's research will take some
He expects to be busy with research
next 10 years.

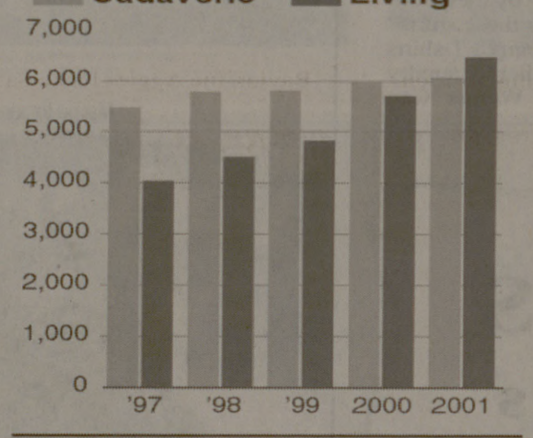
"Within 15-20 years we should be
implement some treatments," he said.

Criscione describes the present a
second wave of bio-engineering." H
computers are driving this second
Part of his work deals with difficult
matics called non-linear partial differ
equations. Computers are used to
these tricky problems which allows
tists to conduct research much faster
years past.

Living organ donor numbers on the ris

Organ donations

For the first time, organ donations from the living last year surpassed donations from those who had died. There were 6,485 living donors in 2001, 92 percent of whom donated a kidney.



SOURCE: United Network for Organ Sharing AP

WASHINGTON (AP) — For the first time, organ donations from the living reached a record high last year, outnumbering donors who are dead. With waiting lists growing, more than 6,400 people gave away a kidney or a piece of their liver.

For more than a decade, the numbers of organs donated by the living have been growing more quickly than those given after death as desperate patients have turned increasingly to families or friends.

In 2001, the number of living donors jumped by 13.4 percent, on top of a 16.5 percent increase a year earlier, the government said Monday. By contrast, donations from dead people inched up by just 1.6 percent.

Surgeons across the country routinely suggest now that patients look for donors rather than rely on a growing waiting list.

In the past, a patient facing a wait of a year or two for a kidney would resist asking family or friends for fear of putting them through a painful procedure with medical risk, said Dr. Jeffrey Punch, a kidney surgeon and chief of the University of Michigan Medical Center's transplant division.

"Now that they're thinking about five or six years, they're more willing to accept it," he said.

Rick Palank decided to donate a kidney after hearing about his boss' deteriorating health. He said his boss never suggested it, but after hearing that no one in the family was a match, Palank volunteered, even though the two are not particularly close or friendly outside the office.

"I was sitting there thinking, `Wow, this guy looks terrible. I've had perfect health, and this guy's

had all these proble
should help him,"
Palank, 55, of St. L
who donated a kidne
month and was out o
hospital a day later.

"He's a very nice,
good human being
added. "That probabl
something to do with

Last year, there
6,081 donor cadavers.
can give several organs,
dead people still
about three out of
four transplants.

They now are outn
bered by living donors
2001, there were a re
6,485.

Public campa
encouraging organ d
tion all revolve aro
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aging people to talk
family about the is
before someone dies.
year ago, Health
Human Services Secre
Tommy Thomp
launched an effort to
with employers. He pu
the effort again Monday