

# Study finds gene linked to alcoholism

by Tina Hesman

St. Louis Post-Dispatch

Researchers at Washington University and five other centers have identified a gene that is associated with alcoholism in some families.

The scientists, including Danielle M. Dick and Allison Goate of Washington University, are part of a 15-year research project known as the Collaborative Study on the Genetics of Alcoholism. A report published Thursday in the journal *Alcoholism: Clinical and Experimental Research*, shows that one version of the gene GABRG3 predisposes people to alcoholism. It is the first study to link

the gene to dependence on alcohol.

Earlier studies of twins indicates that at least one-third of the susceptibility to alcoholism is due to genetic factors, said William True of St. Louis University. True conducted some of the twin studies.

The new study takes previous genetic research a step further, and will direct other researchers to take a look at how this particular gene reacts to alcohol and how it influences the propensity to alcoholism, True said.

The researchers collected DNA samples from 2,282 people from 282 families heavily affected by alcoholism and identified several regions of chromosomes that were shared between alcoholics in the families. For this study, Dick and her colleagues

focused on a region of chromosome 15 that contains several genes involved in the movement of a brain chemical called Gamma-amino butyric acid, or GABA, between neurons.

In other experiments, the chemical seemed to modulate the effects alcohol has on the brain, Dick said. When scientists stimulated GABA receptors in the brains of mice and then fed them alcohol, the mice were more uncoordinated and drank more than mice who only drank alcohol. Shutting down the activity of the GABA receptors had the opposite effect. Scientists don't yet understand how the chemical works on brain cells.

Those results encouraged the re-

searchers to take a closer look at three GABA receptor genes on chromosome 15. Genetic and statistical analysis of those genes showed that only one of them, GABRG3, is linked to alcoholism in the affected families.

The researchers don't yet know how changes in the gene increase the risk of alcoholism, Dick said. She said she expects that one version of the gene may interact with other genes to determine whether a person is likely to become alcoholic when they drink.

"All of the genes probably have a small effect. It's just getting the right, or "wrong," mix of these genes that predisposes you to alcoholism," Dick said. "We think we have found one

of the risk genes, but we think there are a lot more out there."

The study is "strong evidence" that GABA plays a role in alcoholism, True said. But don't expect it to be the final answer, he said.

"Scientists look at this as a conversation and this is the latest comment. We're waiting for the next comment and its follow-up. So it's not like there's ever a final word," True said.

The most important risk factor for developing alcoholism may be a person's environment and personality, even for people who carry genetic risk factors, Dick said.

"If you never take a drink," Dick said, "you're never going to become an alcoholic."

# Spaceflights spurs debate over purpose, cost

by Seth Borenstein

Knight Ridder Newspapers

When President Bush on Wednesday challenges the nation to send astronauts back to the moon and on to Mars, the big question is: Why? Proponents say exploring the unknown is one of the soul's innermost desires. It's not what you'll find, they say, but the journey itself. It's about overcoming seemingly insurmountable obstacles.

The reason not to go, opponents say, is more grounded in reality: money. Experts put the cost of the missions at around \$200 billion for a country already running record deficits. To make the commitment easier, Bush is expected to propose starting with an additional \$4 billion over the next five years.

Still, a clash is coming between

people moved by balance sheets and by adventure epics and sometimes by both.

"The main driver for why we would go to the moon and on to Mars is not the science, it's exploration," said Rice University professor Neal Lane, who was President Clinton's science adviser and director of the National Science Foundation. "It stirs the soul." But when Lane considered the costs, he hedged: "I don't know if we can afford it."

American University public policy professor Howard McCurdy, author of the book "Space in the American Imagination," compared the choice to "buying a boat. There's half of you that says 'I want to do this.' The person on the other side of your shoulder says 'Let's get real.'"

The president is seeking a "Kennedy moment," something to inspire the

American public, said John Logsdon, space policy director at George Washington University and a member of the independent board that examined last year's space shuttle Columbia explosion. He is tapping into a classic Kennedy moment from a 1962 speech:

"We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills," Kennedy said.

Bush hinted at that Tuesday in Monterrey, Mexico, saying his plan will be about "seeking new horizons."

Unlike the competitive Cold War race for the moon, Bush's proposal is more a matter of reaching within, said Gerry Griffin, a former director of the Johnson Space Center in Houston.

"Are we up to it?" Griffin asked. Establishing a permanent moon

base is an evolutionary step that gives humans a habitat "not just of Earth but of the solar system," said Harrison Schmitt, the last man to step on the moon. Schmitt, a former New Mexico senator, said it was comparable to humans first moving out of Africa.

Less lofty reasons to go to the moon include finding helium 3, which can be used in nuclear fusion on Earth, setting up a solar power farm to beam electricity back to Earth, and a telescope on the moon's dark side, scientists and engineers said.

The main reason to go to the moon, most said, is as a training base for Mars, where astronauts can look for life and clues about the way planets formed.

When it comes to science, robots have accomplished more than astronauts, said David Stephenson, professor of planetary sciences at Califor-

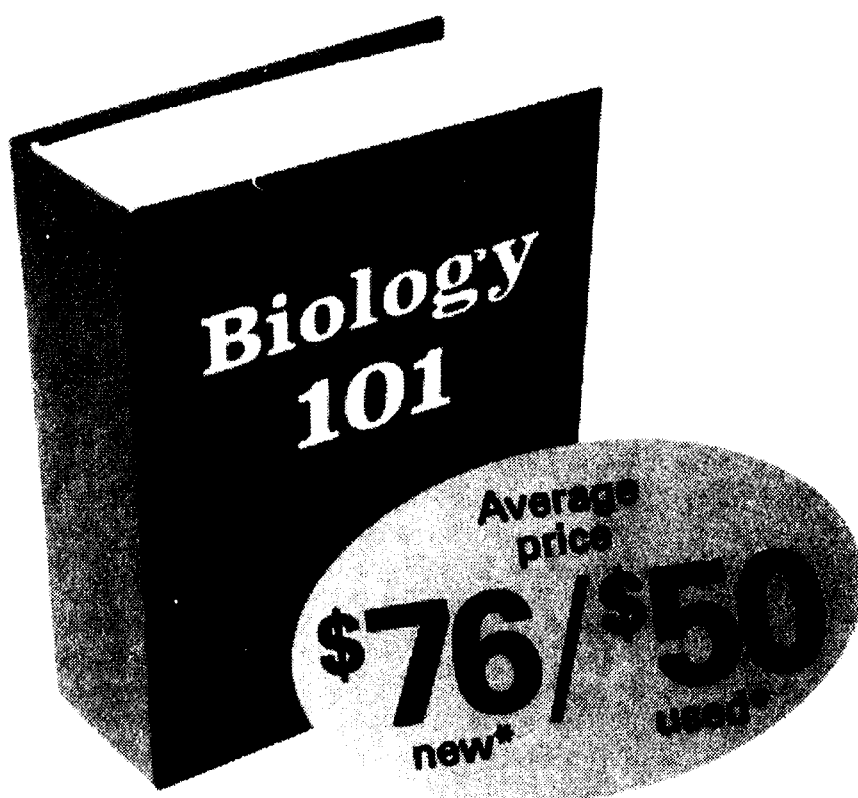
nia Institute of Technology in Pasadena.

Alex Roland, a Duke University historian, said putting people into a spaceship makes crew safety the absolute priority and "diminishes the amount of science you're going to get out of it at ten times the cost."

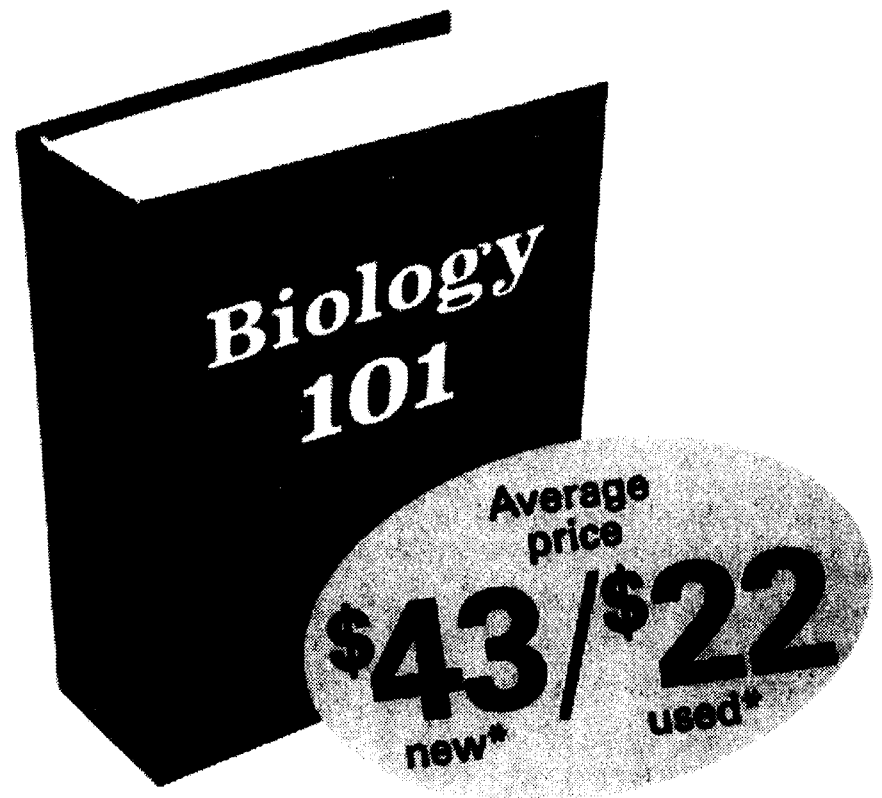
Cost is a major problem for NASA, said conservative former Rep. Dick Zimmer, R-N.J., and liberal current U.S. Rep. Barney Frank, D-Mass., both foes of the over-budget International Space Station.

"If they want romance, let them buy Danielle Steel books. It's much cheaper than going to Mars," Frank said. "It's important for human beings to have goals, but why does the goal have to be going millions of miles away? I think it's a good goal to clean-up all the hazardous waste sites in America and provide health care to people."

## Retail



## Half.com



## Natural selection.

For a limited time, first-time buyers  
**Save an additional \$5**  
 on purchases of \$50 or more!  
 Simply use this code:  
**PSUERIE**

How smart is this: All the textbooks you need for up to 50% off retail prices. New or used, all you have to do is go to half.com and type in the book titles, or ISBN numbers. Then let nature take its course.

**half.com**  
 by **eBay**

**Same textbooks.  
 Smarter prices.**