

## YOUTH CRIME

Bill would fund state programs that crack down on juvenile offenders.

D3

# Metro & New Mexico

## UNM To Crank Up \$400,000 Supercomputer Today

### Machine One of 100 Speediest in World

By JOHN FLECK  
Journal Staff Writer

A cluster of computers looking like a stack of oversized dorm room refrigerators is about to plug the University of New Mexico into an ambitious new supercomputer "mega-brain" spanning the nation.

Dignitaries from around the country will gather at UNM's Albuquerque High Performance Computing Center today to throw the switch on the "Roadrunner Supercluster."

Fresh out of the box, the Roadrunner is one of the 100 fastest computers in the world.

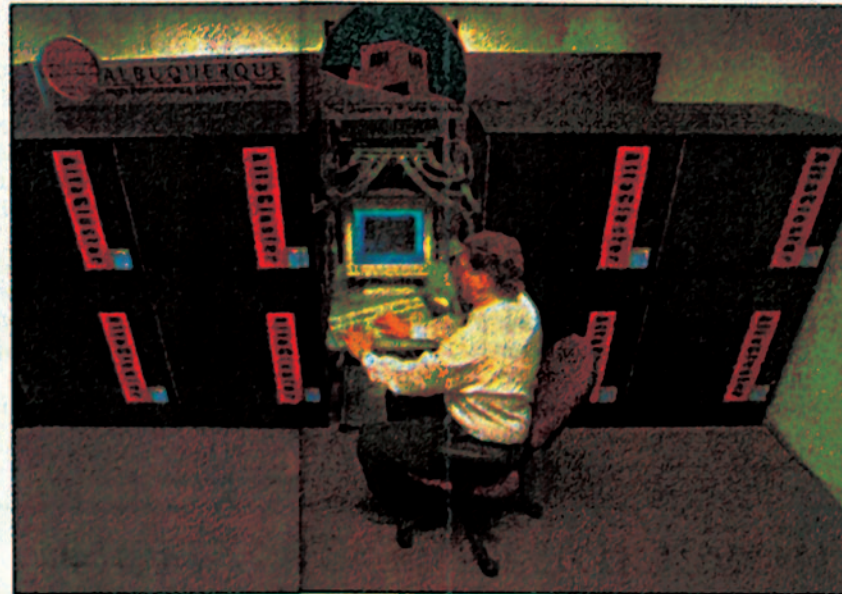
But its rocket-sled speed is just part of a more ambitious idea — an attempt to give scientists around the country access to a distributed supercomputing "brain" stretching from Boston to Maui, ready to solve their toughest problems.

The Roadrunner Supercluster will be part of what researchers are calling the "National Technology Grid," a collection of supercomputers across the country wired together to help handle scientists' growing demand for computer time.

Sitting at their own desks, the researchers could hook into the grid and begin solving large-scale problems without having to worry about where the computer doing the work is located, explained Larry Smarr, director of the National Computational Science Alliance, the federally funded group that paid for the new machine.

"The goal is to be completely seamless," the University of Illinois-based Smarr said in telephone interview this week.

UNM professor David Bader envisions a day when a researcher studying an ecosystem — Chesapeake Bay, say, or the Rio Grande Valley — can log in and rapidly spin through vast amounts of satellite data on climate and ground cover



JAIME DISPENZA/JOURNAL

**BIG BRAIN:** University of New Mexico professor David Bader tests the Roadrunner Supercluster. It will be dedicated today.

for their plot of land.

They wouldn't need to be located at a specialized supercomputer research center to do their work,

explained Smarr — they could just plug into the grid and let the computers take care of the rest, much as you plug a toaster into the wall with-

out having to worry about which power plant is generating the electricity.

"That's the vision," said Bader, who has spent the last week testing the brand new Roadrunner machine in preparation for today's unveiling.

Smarr, one of the leaders of the nation's supercomputer research community, is scheduled to join Sen. Pete Domenici, R-N.M., and others to formally throw the switch turning on the computer at a ceremony this afternoon.

The \$400,000 computer, built by Alta Technology Corp., bears the mark of a new breed of moderately priced machines that are making inroads in the high-performance scientific market.

Instead of using specialized high-performance computer chips made especially for supercomputing, it's built around 128 top-of-the-line Intel Pentiums, the same breed of computer chips used in desktop computers.

Programmers split up a large

problem into smaller pieces, farming them out so that each of the 128 chips can work on a portion of the problem and then share results.

"You get to profit from the collapse of PC prices," explained Victor Yodaiken, a computer scientist at the New Mexico Institute of Mining and Technology who does research on a similar "cluster" machine at Tech.

Similar machines also have been built at Sandia and Los Alamos national labs for nuclear weapons and physics research, and the experience of the New Mexico research community is one reason UNM was chosen to host the new machine, Smarr said.

UNM is one of six "supernodes" on the National Technology Grid. In addition to the Roadrunner Cluster, the grid will be connected to UNM's Maui High Performance Computing Center, an Air Force-funded research complex in Hawaii run by the university for the military.