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Scientists may use schools' computers

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Idle machines may aid medical work

By Chris Kenning
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The Courier-Journal

Jefferson County Public Schools soon could give laboratory researchers access to thousands of idle classroom computers to help them develop new drugs to battle cancer.

The unusual partnership would let scientists at Louisville's James Graham Brown Cancer Center tap into the school computers when students aren't using them, harnessing them to operate collectively as a virtual supercomputer. Jefferson County could join two smaller districts that have volunteered their computers to the research project.

The combined processing power can cut in half or more the time it takes to screen millions of molecular combinations for possible cancer-fighting therapies, officials said.

"We can translate basic science into potential drugs much faster," said John Trent, a computational biologist with the cancer center who is part of the project.

Up for approval by the school board tonight, the partnership also would bring scientists and professors such as Trent into classrooms to tell students about the research.

Jefferson County board chairman Joe Hardesty said he knew of no major objections to the agreement, which has the administration's support.

It's part of a statewide initiative led by Louisville-based company Dataseam, which has worked with universities, schools, research companies and state officials to develop the technology for research, said Brian Gupton, Dataseam's CEO.

So-called "grid" or "distributed" computing — linking the unused processing power of individual computers to create an inexpensive supercomputer — isn't new.

One of the best-known uses of grid computing is the SETI project, or Search for Extraterrestrial Intelligence, which uses personal computers volunteered by individual users across the nation to help analyze huge amounts of electromagnetic signal data from space.

How it works

"Grid" or "distributed" computing strings together individual computers to create a virtual supercomputer.

Data is sent from the district's computer network through the Internet or wire connections to idle work stations.

The computers analyze the data and send the results back to a central location for collection.

If someone begins using one of the computers, analysis at that work station pauses until the user is finished.

School Board meets tonight

The Jefferson County Board of Education meets at 7 tonight in the Van Hoose Education Center, 3332 Newburg Road.

Agenda items:

Action on an agreement to allow the James Graham Brown Cancer Center to use school computers to aid cancer research.

Public input:

The public can sign up to speak before the meeting. Public comment on nonagenda items will be heard at the meeting's end.

On the Web:

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But the school-cancer research project is the first of its kind in Kentucky, Gupton said.

Schools were chosen partly because their computers often are underused and many are on controlled networks, he said.

Dataseam has identified 12,000 school computers in Kentucky districts that ultimately might be available, he said. Caldwell and Warren county school districts already are participating.

The Brown Cancer Center's ongoing research — analyzing millions of molecular combinations as a first step in developing drugs targeting proteins related to tumor growth — requires crunching overwhelming amounts of data.

The work also could help reduce the side effects of chemotherapy. Trent said that's important work because there are few effective anti-cancer drugs available.

While researchers say they'll be greatly helped by the school computers, students won't notice any disruption, said Alan Whitworth, director of technology for Jefferson County Public Schools.

A network will send data to about 3,400 computers that are turned on but not being used. Eligible computers will require the Apple OS-X operating system, which includes many laptops. That number will grow once planned upgrades to other computers are made, officials said.

The computers will analyze the data and return the results automatically when their applications aren't being used, such as during lunchtime, between classes or after school.

"It doesn't sound like much" time, Whitworth said. "But it adds up."

According to a copy of the proposed agreement, the district also would leave designated computers on 24 hours a day, seven days a week, to be used at night and on breaks.

Whitworth said the added cost of electricity wasn't available but would be "negligible" and worth the benefits to science education and cancer research.

Rocky Sears, a technology official for the 1,900-student Caldwell County schools, said about 100 of their school computers are used during the day, at night and on breaks. Students didn't notice when it began this spring, he said.

And they got to hear first-hand from scientists about their biomedical research, and hear about how the technology was making it happen.

"Students were exceedingly interested," Caldwell High biology teacher Dale Faughn said.

SCHOOL BOARD

Members tonight will discuss using computers for cancer research. **B3**

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