Cut cable curtails communication

By Becky Mabry
Assistant Editor

Hundreds of UI faculty and staff members may never take their telephones for granted again. All phones are operating now, but on Aug. 3, a large telecommunications cable was cut during a construction project that silenced the phones for a week.

WILL-AM (580) and several fire alarms were knocked out as well but were operational by the next day.

Fifteen buildings had phones affected including Architecture, the Armory, Clark Hall, Wohlers Hall (formerly Commerce West), Huff Gymnasium, the Ice Arena, Muntford House, the Police Training Institute, the Harding Band Building, the Institute for Labor and Industrial Relations and David Kinley Hall.

It was a huge disruption and the first time telecommunications cable was cut during a construction project, according to Beth Scheid, an assistant director of the Computing and Communications Services Office.

Many of the offices were able to conduct business by using cell phones. Voice mail was still operating, so it could tell callers of the disruption and advise them to call the cell phone numbers or leave messages.

“We were very, very fortunate that the fiberoptic cable wasn’t cut so that people were still able to get e-mail and get to the campus network and onto the Internet,” said Glen Whitmer, assistant director of CCSO.

As inconvenient as it was, staff and faculty members were able to find solutions.

“The housing department has their main office at Clark Hall, which was affected, but they have offices at other residence halls that were not affected, so they were able to forward calls to the other offices,” said Whitmer.

Those are the kinds of things we did – call forwarding, cell phones and the use of e-mail for communications.”

The incident occurred at the end of the work day Aug. 3 when the Miller Driller contractors were digging a trench for a project intended to increase and improve electric power availability around campus. The contractor inadvertently bored through a large section of the telecommunications cable buried 12 feet deep.

Nothing like this had ever occurred on campus before because all the cables are enclosed in a protective concrete system, Scheid said.

“Most contractors have equipment like backhoes that will not damage our conduits that are enclosed in this concrete conduit system,” Scheid said. “But this particular boring machine was made to drill through rock, so it cut through our cable like butter.”

To get an idea of how many cables were sliced, consider that one conduit had 600 pair of copper cables, another conduit had 1,200 pair, and two conduits each had 1,500 pair of copper cables.

“The miracle was that we were able to locate the spool of cable that was the length and type we needed. After calling all over the country we located our mate-

ral in South Carolina and it was loaded on a truck and delivered as quickly as it could be,” Scheid said.

“The other miracle is that we had an excellent con-
tactor who had the experience and equipment to tackle such a repair,” Scheid said. “Decade Telecommunica-
tions from Greenup not only came the moment our con-
tactors arrived, but they also started working 16-hour shifts and soon were able to bring on more crew and work 24 hour shifts. And they did an absolutely excellent job.”

All of the repairs were completed by Aug. 11, said Whitmer. Workers spent the weekend doing some test-
ing to make sure all the phone lines were operational.

Potential applications of smell-seeing arrays

Food and beverage industry:
- detect presence of flavorings, additives or spoilage

Perfume industry:
- identify counterfeit products

Customs checkpoints:
- detect banned plant materials, fruits and vegetables

Chemical workplace:
- detect and monitor poisons or toxins

better than that for many compo-
dunds.”

And, unlike other technologies that are being explored, smell-
seeing is not affected by changes in relative humidity.

“Our color-change technique is extremely insensitive to water va-
pors,” Suslick said. “The ability to easily detect odors regardless of the humidity background is defi-
nitely a big advantage.”

The researchers have applied for a patent. Research support came from the National Institutes of Health and the Department of Defense.

Artificial nose knows

Simple and inexpensive, artificial nose senses smell by seeing colors

By James E. Kloeppep
News Bureau Staff Writer

Imagine a small slip of paper that can sniff out odors such as sour milk, illegal drugs, environmental pollutants or deadly tox-
ins simply by changing color.

As reported in the Aug. 17 issue of the journal Nature, chemists Kenneth Suslick and Neil Rakow at the UI have developed an artifi-
cial nose that is simple, fast and inexpensive – and works by visualiz-
ing odors.

Called “smell-seeing” by its inven-
tors, the technique is based on color changes that occur in an ar-
ray of vapor-sensitive dyes known as metalloporphyrins – doughnut-
shaped molecules that bind metal atoms. Metalloporphyrins are closely related to hemoglobin (the red pigment in blood) and chloro-
phyll (the green pigment in plants).

“Our technique is similar to us-
ing litmus paper to determine if a solu-
tion is acid by seeing if the paper goes from blue to pink,” said Suslick. “The other miracle is that we had an excellent con-
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Kevin Weiss/For the News Bureau

"“Our color-change technique is extremely insensitive to water vapor," Suslick said. "The ability to easily detect odors regardless of the humidity background is definitely a big advantage."