Science, math teacher shortage grows critical

United Press International SAN FRANCISCO

Drawn by the good pay of the burgeoning high technology industry, science and mathe matics teachers are leaving the classroom in increasing numbers, and it's hurting the nation's school systems, an education expert says.

There are 43 states using less than fully qualified teachers to instruct math and science," said James Guthrie, former chairman of the University of California at Berkeley School of Education.

During the 1981 school year, the entire nine-campus University of California system had only 22 students en-rolled in mathematics teaching programs and 47 in science teaching, according to a report from the Institute of Governmental Studies.

There are nearly 20,000 science and math teachers in Colling and Studies in

California's public secondary schools, but an estimated 2,200 leave, retire or are laid off each year, Guthrie said.

"For the average parent it won't seem like a crisis," he said. "Their kids will be in a classroom and a warm body will be up in front. But the class sizes will get larger. The lack of qualifications of the person at the front of the room is increasing to a crisis proportion.
"For the long term we're in

trouble. When a school super-intendent contacts a placement office to send a math or science teacher, they aren't there. Superintendents take staff teachers who are legally qualified but in fact never had sufficient background to teach math and science," said

The largest demand comes from the new computer technology industries, from which California is expected to gleen 40 percent of its new jobs in

The lack of newly-trained teachers entering the field is compounded by the number of teachers leaving to take higher-paying jobs in hightech industry.

"High tech is by no means the whole problem but it is a significant part," Guthrie.

A national survey of 1976-77 college graduates showed only 5,000 students — out of 1 million college graduates — qualified as math teachers, Guthrie said.

Unless solutions are found soon, the United States will be "overshadowed and dominated by the dynamic hightechnology research and in-dustrial capabilities of foreign powers," he said.

Salaries are a big reason teachers leave.

The average starting pay for a San Francisco Bay Area

teacher is \$12,680. By contrast, a graduate in physics or mathematics who takes a fifth year of training, as teachers do, could start at \$20,000 a year at the Hewlett-Packard computer component company, the Institute report

California once recruited heavily for teachers in the Midwest and South but that

labor pool is dwindling.
"Georgia was 5,000
teachers short last year," said Guthrie.

The use of a reserve labor force of housewives called into use during the baby boom era of the 1950s no longer ex-

ists, he said.
"The fastest fix" for the crisis, he said, will come from industry sending trained personnel to teach in schools dur-

ing part of the work day.

Already he has received positive response from indus-try. "This has been the largest industry move toward a more

responsible position than I have seen in decades."

Second, he said, is the retraining of so-called surplus teachers of English or history to teach math and science And third is governmental tuition loans to students that can be excused for graduates who teach math and science.

"But in the long run, some-thing has to be done about salaries," said Guthrie.

FALL of the

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Teenagers help their peers

Program aids abused kids jo

United Press International and you feel back: You relate to SOUTH BEND, Ind. — Not what those kids are going long ago, Brenda wasn't sure she through and you can help had a friend in the world. Now

sexual abuse.
Brenda, 17, helps abused and battered children deal with their pain and guilt, express their fears and unleash their anguish. She helps them make the transition she says she already has made, from victim to survivor.

The federal government esti-mates there are 1 million cases of child abuse nationwide each year — 2,000 of them fatal.

Brenda and two friends, Sue and Ann, brought those cold statistics to life in South Bend at a recent national conference on child abuse. Only their first names were used to protect their privacy.

"When we're there with counselors, the teenagers say

had a friend in the world. Now she is a friend — a good friend — to other kids like her who have been targets of physical or sexual abuse.

Brenda, 17, helps abused and — Brenda, 17, helps abused and — a good friend — Sue said: "We feel it's important not to have just any teenager working with abused kids, but teenagers that have been abused themselves."

Sue, sexually molested four years ago by an adult in her church-sponsored drug therapy group, recently finished leading nine young girls through several months of weekly therapy ses-

Brenda and Ann, a 16-year-old molested by her brother when she was 9 until she was 14, work together as teenage "co-facilitators" of once-a-week sessions with nine bruised and battered 5- to 8-year-olds at the

them, we almost regress to their they do whatever they can to win level," Brenda said, recalling her the trust of kids who are afraid

own trauma at the hands of her step-brothers. "You look back, A typical session includes ex-A typical session includes ex-

ercises, a snack, activities to help kids act out through painting or acting the horrors of a home life they cannot verbalize. The sessions also include discipline that

— for once in the youngsters' lives — is firm, but loving.

The teenagers say reliving their past through the children who are living it now is both awful and therapeutic.

"I wouldn't remember being sexually abused when I was eight until I was with these kids," Brenda said. "Then, all of a sud-den I was having flashbacks and

"When you look at kids going through the same thing you went through, you can't run away from it anymore. You have to deal with it.'

Brenda's toughest assignment was a young boy — sexually abused by three different men
— who had withdrawn so far he couldn't stand to be touched by anyone. He refused to take part in group sessions.

One night, Brenda said, "he me real hard."

touching off a 10-minute ling match to get him under trol. The struggle unearthe

horrors for her. "It was real hard for men I was on top of Scott," she "because I've been under people. Was I victimizing was I raping this kid in head? Was I underneath?

"Ha

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Democr

In a

Brenda finally got the under control. That was a turning point in their rela

mind went nuts. I was rightly

"Finally, he just sat there looked at me, and I got off and he laid his head on my she said. "The only way hem me is that I have physical; the imp for the Arkansa over him without hurtin He knows he can relate

Ann is looking for ad make the same kind o through with Rachel, al so scared of her real li sometimes creates a fant

Texas economy could suffer unless clean air deadlines met

United Press International HOUSTON — More than two million Texans would feel the clean air deadlines were not met, officials told the Texas Air Con-

trol Board.

"Whether they know it or not, 2.5 million people are looking down an economic gun barrel aimed at their vitals," Harris County Judge Jon Lindsay told the goal we all desire and strive for, which of course, is clean air," Lindsay said.

The EPA on Feb. 3 said it intends to curtail industrial construction and embargo millions of dollars for federal highway

Tuesday.

economic impact of government sanctions, unleashed because would have dire consequences (and) would be counterproductive to the goal we all desire and

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TACB hearing examiners funds, pollution control grants, sewage treatment money for "The EPA (Environmental Harris County and other metropolitan areas of Texas which failed to meet EPA pollution standards.

Lindsay labeled the proposed EPA sanctions "capricious" and arbitrary.

He urged the TACB to renew efforts to persuade the EPA of the validity of Harris County's plan to control its pollution problems and comply with the Federal Clean Air Act by 1987.

"The proposed sanctions would cause significant deterioration of both air quality and water quality, thus defeating the purposes of the Clean Public hearings were planned that the proposed sanctions would cause significant deterioration of both air quality and Corpus Christian the proposed sanctions would cause significant deterioration of both air quality and Corpus Christian the proposed sanctions would cause significant deterioration of both air quality and Corpus Christian the previously in Dallas, For and Christian

Air Act," added Dr. McKee, assistant direct Houston health depart

The EPA has threa impose the sanctions Harris, Dallas, Tarrant Paso Counties because pollution, mainly cause rocarbon emissions fr cles and industries.

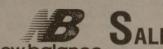
Beverly Fowler, with control board, said the has until May 5 to gathe comment on the proposed tions and present them EPA for further action.

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