

been purchased by Cray Research, Inc. Minneapolis, MN, which has productized the machine to expand the range in capability and price of the supercomputers it sells.

As a result of close relationships with SDSC management, the editor of the journal *Supercomputing Review* decided to site his publishing operation in San Diego. The journal has since renamed itself *High-performance Computing Review* and has established a commercial electronic news service, which now serves over 11,000 subscribers.

Produced spin-off companies.—Two operations that were spun off from SDSC are Distributed Computing Solutions [DISCOS] and the California Education and Research Federation Network [CERFnet]. DISCOS produces a long-term file storage software product, called DataTree, that runs on a variety of hardware platforms. A UNIX-based version of this product, called UniTree, is now also being marketed. These systems have been purchased by a large number of supercomputing facilities around the country. DISCOS, formerly a division of General Atomics, was sold recently to Open Vision Technologies, Inc.

CERFnet, a division of General Atomics, is a regional communications network that connects academic institutions and private industry mainly in southern California with the Internet. It was begun with a grant from NSF. Recently, as a result of its success in operations and service, CERFnet was awarded an additional \$4.5 million contract from NSF to establish a commercial business to provide information on electronic resources and services available on the growing, and itself increasingly commercial, Internet.

Employed over 110 professional staff and, at any given time, some 30 part-time students.—DISCOS and CERFnet together have provided an additional 3 dozen jobs in San Diego.

#### SDSC'S IMPACT IN OTHER AREAS

SDSC has had an impact on San Diego and the State in other areas that are more difficult to quantify. This impact has been noticeable in:

A more highly trained work force.—SDSC has trained hundreds of undergraduate and graduate students, many of whom have remained in California as skilled professionals in high-technology industry.

The next group SDSC has targeted for training is high school science and math teachers through the Supercomputer Teacher Education Program, funded by a \$1.575 million grant from NSF. SDSC will work with over 40 teachers from primarily minority high schools in a 3-year program to teach them about computational science and help them incorporate the techniques into their class curricula. Each of those teachers, in turn, will train well over 100 students per year.

Advancements in computational hardware and software.—SDSC supports close collaborations with various vendors and academic researchers—many of them within California—to develop, implement, and integrate parallel processing systems, link them by high-speed networks, and develop software such as code debuggers, performance analyzers, resource managers, and accounting tools. The goal of this work is to make powerful computer systems easier to use by large numbers of researchers.

Greater scientific understanding of problems affecting day-to-day life. In some cases this in-

sight has led to legislative action to curb the problems.—SDSC is involved in scientific collaborations that are leading to greater understanding of scientific problems such as AIDS and Alzheimer's disease, air/water pollution, and global change.

One project is focused on designing a drug to inhibit the HIV protease. The HIV protease consists of two molecules; separated, they are harmless, but when docked together they produce AIDS symptoms. Researchers are trying to inhibit the harmful activity by creating a drug that looks like one of the molecules so it will dock with the other, but has different chemical properties so the docking will not produce harmful effects. Researchers from SDSC, Duke University, and UCSF have produced such a model using Sculpt, a program that interactively models the underlying physics and chemistry of a molecule as it is designed. This work could not have been done without Sculpt, which removes human guesswork from the process and runs 100 times faster than other commercially available systems. The next step is to synthesize and test the molecule in the laboratory.

In another project, a study of smog in the Los Angeles basin led to changes in local abatement policies. This work was done in collaboration with the California Air Resources Board.

In a third project, Project Sequoia 2000, SDSC is part of a research team to develop an advanced information management system to improve the productivity of global change scientists. This system, with advanced storage, data management, visualization, and networking capabilities, is likely to have application to a wide range of other scientific disciplines. SDSC's participation in this project was critical to the University of California winning the \$15 million Digital Equipment Corp. grant. For additional important scientific projects, see "SDSC's Effectiveness," below.

A heightened awareness among government and industry of the economic benefits to be derived from computational technology.—Because of SDSC's success, there is now interest in establishing a satellite supercomputer facility in San Jose that will create jobs, attract industry to that area, and promote local area networking.

SDSC and San Diego city government are discussing how to provide CPU power and computational expertise to local-area business for defense conversion and to enhance product engineering. They are also discussing how to implement a county-wide network to link government offices, academic-research institutions, libraries, medical facilities, and, eventually, homes to enhance information exchange, improve medical services, and promote economic development in general. In fact, SDSC Director Sid Karin has become a member of the City of the Future Committee created recently by San Diego Mayor Susan Golding. An early focus of this committee is county-wide telecommunications.

SDSC has some 45 industrial partners. These partners gain a competitive advantage by obtaining access to state-of-the-art computational technology for use in product engineering. This technology helps such businesses produce better quality goods in a shorter period of time. In addition, such businesses gain the opportunity to experiment with various hardware platforms. This allows them to choose the most appropriate systems for

their needs without facing the impossibly high startup costs in hardware and personnel associated with establishing a full-featured high-performance computing facility.

#### SDSC'S EFFECTIVENESS

Additional evidence of SDSC's effectiveness is shown by the broad scope and tangible effect of the research being conducted. Below is a sampling of projects leading, for example, to new commercial products; a cleaner, safer environment; the development of new materials; and medical breakthroughs. Many of these projects are collaborative efforts lead by researchers at universities in California and State and Federal agencies.

Industrial engineering.—Plastic injection mold design work by GenCorp to create a more durable Corvette car body; and design work by Caltrans to simulate a crash test bogie, a typical small, 1,800-pound car used to evaluate the safety of breakaway sign and lighting supports along roads and highways. Another project involves evaluating the characteristics of a potential new material for pavement consisting partly of recycled tires.

Environmental and Earth science.—Modeling a sewage spill off the coast of San Diego, which provided important information about sewage outfall engineering, containment, and cleanup. Similarly, scientists have demonstrated the effects of tides, currents, and atmospheric conditions on the distribution of pollutants in San Francisco Bay. This work was done in collaboration with the U.S. Geological Survey in Menlo Park, CA; modeling regional and global climate to understand interactions between the atmosphere and oceans or to study specific problems such as the periodic development and dissolution of the ozone hole over Antarctica; and studying fluctuations in the Earth's gravity field to better understand the formation of the Earth's surface and the movement of continental plates.

Materials science.—Studying the structures of various molecules to better understand their properties and evaluate their potential use in synthetic materials.

Medical science.—Studying the causes of fibrillation in heart tissue, which can lead to sudden cardiac death syndrome killing some 500,000 people per year in North America alone; reconstructing ultrasound data computationally into three-dimensional images to diagnose health problems noninvasively; simulating the coiling and knotting processes of DNA, which have implications for fundamental biological activities such as replication, transcription, and recombination; and calculating the stress exerted on developing bones—this is one area where stress has been shown not only to be beneficial, but crucial for proper development.

#### HUNGARIANS IN THE WEST CALL FOR TRANSYLVANIAN SELF-DETERMINATION

**HON. ROBERT K. DORNAN**

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

*Thursday, February 2, 1995*

Mr. DORNAN. Mr. Speaker, the American Hungarian Congress and the Hungarian National World Council held a joint meeting and conference in Cleveland, OH on November

25, 1994, and passed a joint resolution regarding the sad situation of the Hungarian and other minorities in Transylvania—Romania.

While I realize the practical obstacles standing in the way of such a resolution of the ethnic question in Transylvania, I would like to call the attention of my colleagues to the thoughtful and bold proposal the resolution is advancing. There is no question that the tangled ethnic issue which the post-Communist government of President Ilescu seems to be incapable, or even unwilling, to solve, needs courageous and new initiatives which can point the way to a resolution which all the parties are able to live with.

#### AMERICAN HUNGARIAN CONGRESS AND HUNGARIAN NATIONAL WORLD COUNCIL RESOLUTION

Whereas, the history of the Transylvanian Hungarians, ever since they were separated from the Hungarian nation by the Trianon and Paris peace treaties and became a national minority in Romania, clearly demonstrates that they can neither individually nor as an ethnic group exist in Romania under acceptable humane conditions; and

Whereas, in addition, as a result of Romanian nationalistic discrimination and persecution, the Csángó-Hungarians of Moldavia are no longer listed on official Romanian statistics; and

Whereas, fifty years ago, about one million Jews lived in Romania, and today they number less than 20,000; and

Whereas, fifty years ago, about 800,000 Germans lived in Romania, and today their number is about 100,000; and

Whereas, at the present time, the number of Romas (Gypsies) in Romania is about five million, but Romanian statistics recognize only a few hundred thousands; and

Whereas, since the Peace Treaty *Diktat* of Trianon, Hungarians who perished in Romanian internment camps or fled the country are estimated to be more than one million;

Therefore, in the knowledge of the above facts, the Hungarian National World Council and the American Hungarian Congress request, in the name of the more than two million Hungarians living in the United States of America, and other countries of the Western world; that be it

*Resolved*, that the Government of Hungary and the other governments of the Conference on Security and Cooperation in Europe secure the continued existence of the 2.5 million Transylvanian Hungarians (who were separated from their Hungarian motherland by the Trianon and Paris peace treaties) in accordance with European democratic norms (e.g. Switzerland and Belgium), so that within the framework of an independent Transylvania the Hungarians, Germans, Romanians, Gypsies and other ethnic groups may exercise their self-determination and rights as associated nations.

*In witness thereof*, signed in Cleveland, OH in the United States of America, this 25th day of November, 1994.

#### PROPOSING A BALANCED BUDGET AMENDMENT TO THE CONSTITUTION

SPEECH OF

**HON. BLANCHE LAMBERT LINCOLN**

OF ARKANSAS

IN THE HOUSE OF REPRESENTATIVES

*Thursday, January 26, 1995*

The House in Committee of the Whole House on the State of the Union had under

consideration the joint resolution (H.J. Res. 1) proposing a balanced budget amendment to the Constitution of the United States:

Mrs. LINCOLN. Mr. Chairman, I rise today in support of the Stenholm balanced budget amendment of which I am a cosponsor. As I was recovering from back surgery last week, I sat at home watching the House debate legislation on C-SPAN and I saw the legislative process through the eyes of our constituents.

It's no great secret that Democrats and Republicans have differing views on many issues, but what is scarcely known is that we share many common goals as well. That message all too often gets lost in the confusion over parliamentary procedure that America sees at home. My colleague CHARLES STENHOLM and other Democrats have been working to pass a balanced budget amendment for years. I was proud to begin working with these conservative Democrats on a balanced budget amendment during my first year in Congress. Democrats like Mr. STENHOLM and Republicans like Mr. BARTON have risen above partisanship in bringing the balanced budget amendment to the forefront of political debate.

This week we are being given the chance to build on the efforts of Mr. STENHOLM and Mr. BARTON by cooperating to eliminate one of the largest threats to the continued prosperity of our country—the deficit. A majority composed of both Democrats and Republicans now believes that a constitutional amendment requiring a balanced budget is the right choice for taking our country into the 21st century with the guarantee of permanent fiscal responsibility. The question seems to be how to do it. I simply ask that you don't get lost in all the speeches that you hear on the floor this week. We must not get so caught up in the debate over how to balance the budget that we let the balanced budget itself slip away.

Past Congresses have proven they lack the will to balance the budget. A balanced budget amendment will provide the constitutional mandate that will ensure that future Congresses make balanced budgets the rule rather than the exception. But we can't forget that passing a balanced budget amendment will only be the foundation on which we must build a fiscally responsible Government. The real work will come later when we vote on spending cuts and reductions in the size of Government that will be necessary to eliminate the deficit. Again, I urge my colleagues to support the balanced budget amendment and to dedicate themselves to making the tough decisions that will be necessary to eliminate our deficit.

#### WELFARE, TIME, AND MONEY

**HON. LOUIS STOKES**

OF OHIO

IN THE HOUSE OF REPRESENTATIVES

*Thursday, February 2, 1995*

Mr. STOKES. Mr. Speaker, as Congress considers reforming our Nation's welfare system, articles and editorials throughout the country are capturing some of the key elements of the debate on the issue.

Just recently our distinguished colleague from Missouri, BILL CLAY, during a hearing of the Committee on Economic Opportunities,

elaborated on the need for a welfare system that provides education and training, child care and health care support for individuals. His words were subsequently captured in an editorial which appeared in the St. Louis Post Dispatch.

Mr. Speaker, I am pleased to share the Post Dispatch editorial with my colleagues. It is insightful and certainly worthwhile reading. I also take this opportunity to commend BILL CLAY for his continued leadership on the welfare reform issue, and other issues of importance to American families.

[From the St. Louis Post-Dispatch, Jan. 23, 1995]

#### WELFARE, TIME, AND MONEY

At times, the public debate over welfare is depicted in ways to suggest that liberals want to do nothing about the problem and that conservatives have all the right answers. If the debate continues in that vein, chances are the people who need help the most could get lost in the rhetoric.

Last Wednesday, at a hearing of the Committee on Economic Opportunities, the ranking Democrat, Rep. William L. Clay of St. Louis, tried to boil the debate down to sensible questions: Are there enough jobs for the 4.6 million adults now receiving welfare? Who will care for the children while their parents work?

At issue are not people who are capable of finding work immediately. Forty-six percent of them, Mr. Clay notes, have less than a high school education. And the skills of the rest are such that they wouldn't be able to find work that pays a sufficient wage to support families.

"If we want welfare to become a temporary support system," he said, "then we must provide the education and training and child care and health care support essential to long-term employment. But that will take time and money."

Precisely. Time and money.

But that's not all. Both the GOP and the Clinton administration have to acknowledge that many of the hard-core segment of the welfare population are just plain unemployable. A study done for the federal government noted that this segment includes many with lower IQs, among other problems, making it exceptionally difficult for them to move easily from public aid to private work.

Another issue worth more discussion is the sorry state of this nation's child-support payment system. Illinois is a good example. A state audit found that 62 percent of the court-ordered support cases lacked sufficient information, such as driver's license numbers and Social Security numbers, to collect payments.

The Republican administrations at the top of Illinois government certainly haven't demonstrated that their party has all the solutions to welfare. Washington can make it easier for states to track these so-called deadbeat parents, some of whom are known to avoid their responsibilities by moving to another state. Why not use Internal Revenue Service records to help states keep track of these parents and make them pay their fair share?

Meanwhile, both the Republicans and the administration would do well to acknowledge Mr. Clay's points that genuine welfare will take time and money. To say the problem can be solved quickly or cheaply is either a delusion or a deception.