

**A hands-on business education for high school students,
conducted and sponsored by Colorado's business community.**

Colorado
**BUSINESS
WEEK**

Colorado Business Week is sponsored by the Colorado Association of Commerce and Industry, and cosponsored by the Colorado Department of Education and the host colleges of University of Northern Colorado and University of Southern Colorado.

Colorado Business Week is made possible by the hundreds of large and small business, service and community organizations, and interested business citizens who participate each year.

Businesses and their leaders can help with this important education program in a number of ways.

Company advisors are adults who give a week of their time to spend with the students, acting as experts, counselors and friends in the learning process.

Speakers are business leaders who share their expertise on a particular subject during lecture and discussion sessions.

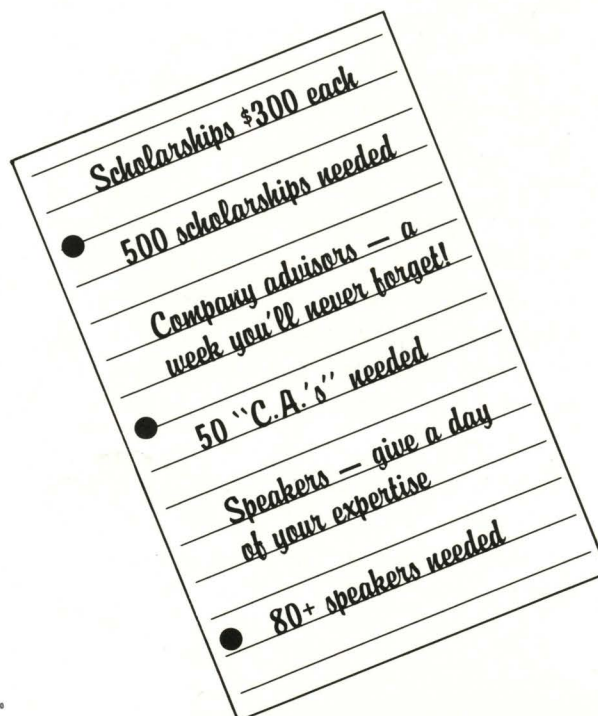
Sponsors are those companies and organizations who donate scholarships covering the costs of the week's education for the students. Scholarships are matched with students from your local community whenever possible.

The return on this tax-deductible investment is knowledge that the ideals of the free enterprise system are being imparted to our next generation of leaders.

For more information contact:

Director, Colorado Business Week
Colorado Association of Commerce
and Industry

1860 Lincoln Street, #560
Denver, CO 80295-0501
(303) 831-7411



"I gained a better understanding of business and how it will affect my life."



Preparing tomorrow's business leaders today

Colorado
**BUSINESS
WEEK**

Colorado Business Week is an intensive, week-long education in business and enterprise for high school students. Conducted by business people serving as speakers and advisors, Colorado Business Week imparts a thorough understanding and appreciation of the American business system to teenagers who attend.

The course of study covers all of the aspects of business—capitalization, research and development, marketing, management, and making a profit. It teaches students what it takes to compete and to succeed in business. Lessons and discussion sessions are reinforced by a computer exercise, letting students make their own decisions about running a business.

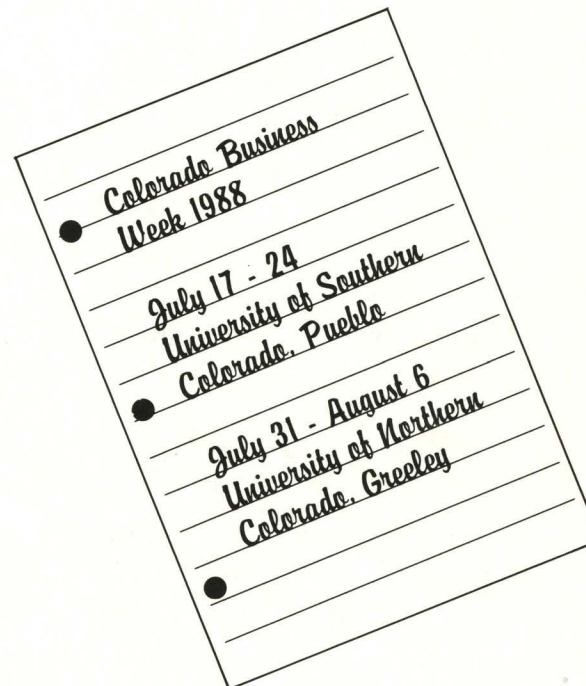
The hours of classroom time are complemented by recreation and social activities on a college campus. The week gives teenagers an important perspective on their future direction, and many Colorado Business Week graduates go on to higher education and careers in business.

Students are chosen from high schools across Colorado. Aptitude, character, and interest in learning more about business are factors in student selection.

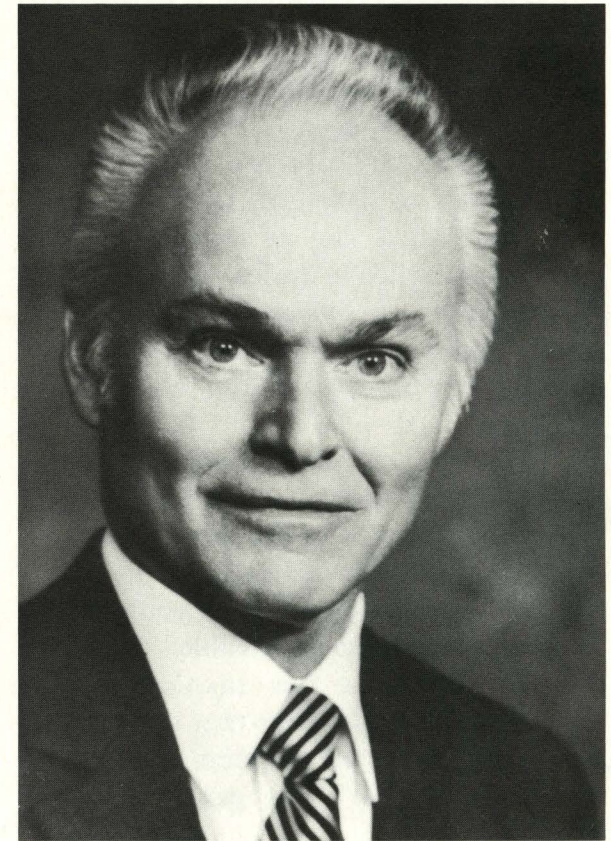
Students who are chosen commit a \$30 registration fee. The remainder of the costs for the week are covered by scholarships donated by the business community, enabling students from all backgrounds to attend.

Students, see your high school counselor or Colorado Business Week coordinator for application information, or contact:

Colorado Business Week
c/o Colorado Association of
Commerce and Industry
1860 Lincoln Street, #560
Denver, CO 80295-0501
(303) 831-7411



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"Business Week is an invaluable introduction to the challenge and excitement of business — an excellent investment in the students' future, and ours!"



Duane Pearsall, 1987 Chairman of the Board
Colorado Association of Commerce and Industry
Speaker, Colorado Business Week, 1985, 1986, and 1987.



COLORADO BUSINESS

VIEWPOINT

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Duane Pearsall, 1988 CACI Chairman, passes the gavel to Girts Krumins, new chairman of the board, at CACI annual meeting.

In this issue: *Technology in Colorado*. Advanced education and research translate into commercial products and economic development. Pages 2-7.

Biotech industry today — Like the 50's computer boom

by Anne Lawshe

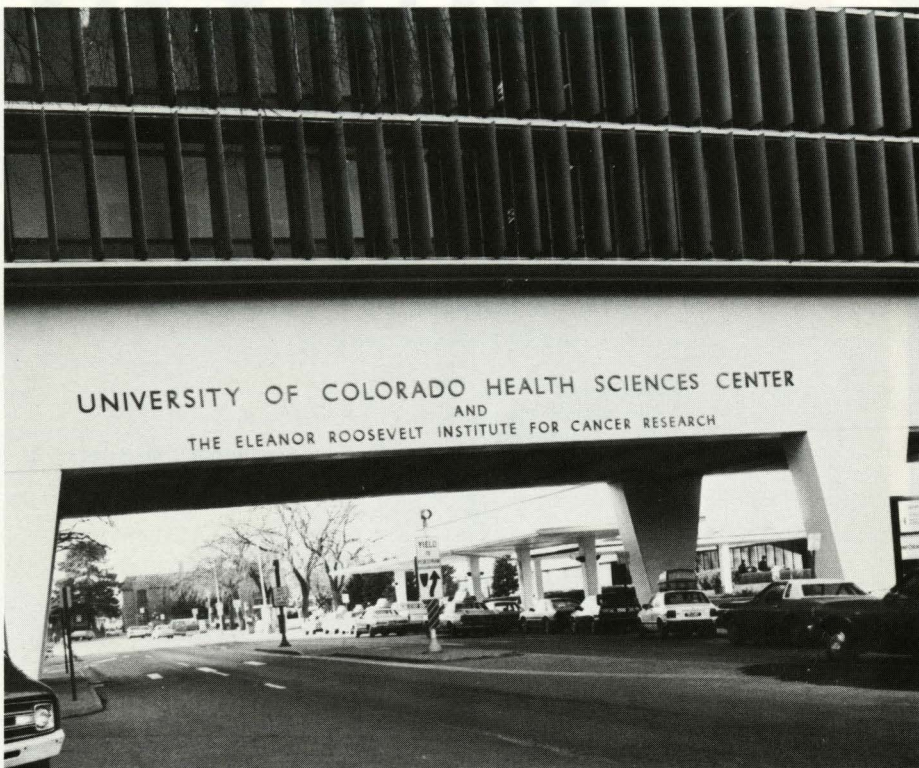
Nearly 4000 people in Colorado are conducting advanced biology research for the future health of mankind and superior animal reproductivity. How will business and industry take this knowledge and apply it to actual products and services?

This question and others in the area of technology transfer in the biological sciences were discussed November 15 at a symposium co-sponsored by CACI's Educational Council, Colorado State University, the University of Colorado at Boulder, the University of Colorado Health Sciences Center, the Colorado Advanced Technology Institute (CATI), and the Colorado Biotech Roundtable.

Dr. Alexander (Sandy) Bracken, Director of Public Affairs, Ball Aerospace, and chairman of the Education Council, introduced the Bio-Tech Forum, which was hosted by the C.U. Health Sciences Center. According to Bracken, the importance of biotechnology in Colorado was brought to the Education Council's attention through a report by Dr. Hank Zentgraf, a Council member from IBM. Biotech research is projected to grow from \$550 million in U.S. shipments to \$25-40 billion by the year 2000. Over \$100 million in funded research is taking place now in Colorado's major universities and hospitals. Of the 400 companies involved nationwide in bio-tech commercial applications, about 40 are located in Colorado.

Dr. Gordon Niswender, Associate Dean of the College of Veterinary Medicine and Biomedical Science at CSU, began the Forum presentations by familiarizing the audience with work done in artificial insemination, the first major application of biotechnology, most of which was performed at the bull farm at CSU in the 1940's and '50's. Artificial insemination includes the transfer of embryos to achieve reproductive efficiency in animals. Currently, there are fourteen commercial farms in Colorado engaged in embryonic transfer. The training of their industrial scientists was all executed at CSU.

Niswender described the benefits of biology research in animals by giving the example of dairy cows which are producing 20 percent more milk through the effects of genetic engineering. Other results are improved disease control: the



early detection of viruses, better vaccines, and disease resistant animals.

Dr. Larry Gold, chairman of the Molecular, Cellular, and Developmental Biology Department at C.U. Boulder, issued a challenge to private corporations and venture capitalists in Colorado to take advantage of the tremendous wealth of local biotech research. The University of Colorado (all four campuses) receives \$75 million in externally funded research, \$7 million of which is in the MCDB Department at C.U. Boulder.

Gold, a co-founder of Synergen Associates, a successful biotech firm in Boulder, noted several of the biotech companies were "built on the brains" of professors at the state's research universities. Gold pointed out that the wide gap between the corporate and university philosophies and ways of operating increases the difficulty of cooperation between the two. He proposed professor-initiated companies as one way to bridge the gap. Still more effective would be corporations actively going after research information at universities and developing working relationships with university scientists. Gold described the innocence of the experimental scientist; he/she has no idea

what the commercial value of his research is.

Chancellor Bernard Nelson, Health Sciences Center, compared biotech to where the electronics industry was 15 years ago: on the verge of a boom. He introduced Dr. Robert Freedman, Professor of Psychiatry and Pharmacology at HSC who was recently awarded a \$5 million federal grant for schizophrenia research.

Freedman described how biotech experiments include the transplantation of cells to discover cures for various diseases. The HSC conducts experiments in analyzing and studying brain waves to find out why brain functions fail in such diseases as Parkinsons.

All forum participants agreed on the main challenge in biotechnology: There is no mechanism for the standard harvesting of ideas at research institutions. The Biotech Forum and other efforts are important in order to heighten awareness of the magnitude of biotechnology research in the state and its potential for economic development. CACI's Education Council will be working with the state's research institutions on ideas for developing efficient technology transfer in the coming year.

Commission on State Government Efficiency

In an effort to apply efficient private sector management and cost control procedures to state government operations, Governor Roy Romer has created a Commission on Government Productivity comprised of nine corporate executives, four state legislators and four senior state administrators. The commission, co-chaired by IBM Site Manager Walt Price and CACI Chairman Duane Pearsall, is reviewing all twenty departments within state government and recommending measures to streamline and improve the overall quality of government operations.

All of the private sector commission members are from CACI member companies. More than thirty corporate executives will participate in examining the operations and adding to the report by its targeted completion date in mid-December.

The commission is reviewing an annual state budget of \$4.5 billion in general funds, cash funds and appropriate federal funds, as well as the functions of approximately 27,000 state employees.

Public higher education is excluded from the study. The review will cost \$200,000 with half paid for by grants from the business community and half from the state. Implementation is expected to take a full year.

Robert B. Knouse, a veteran IBM employee of thirty years, is the full-time paid director whose temporary office is in the State Services Building. IBM is loaning computer equipment for the research.

Fifteen subcommittees are looking over the 20 state departments while five more subcommittees analyze the cross-over functions such as purchasing of several departments. Colorado's government is structured in the reverse of the organization most common in large corporations with the department being the largest entity, the division the second largest, and a section the smallest segment of the whole. The panel of executives is inspecting each layer to determine if it is properly managed and staffed and if any deterrants are in the way of the staffer doing his job.

Governor Romer stated, "I want to know if there are any other problems, like the purchase of full-service gasoline, that we don't know about."

Bill Newman, manager of governmental affairs at IBM, who is also working with the commission, says it is important that the commission approach the review with no prior biases to ensure as much objectivity about the outcome as possible. Chairman Pearsall adds the commission is not "head-hunting" or targeting any particular department. The study is intended to give the Governor a better feedback system for the management of his administration, and to aid the legislature in making more informed long-term budget decisions.

The panel is the first of its kind in twenty years. The 1968 study, initiated by Governor Love, has been perceived to have made few changes. But Pearsall points out that before that study, 120 different departments reported individually to the governor. The panel recommendations cut this number to twenty.

Newman states it is very important that this become not just another document to put on a shelf. Every recommendation will include a section on affirmative implementation. The commission will lobby other appropriate groups, such as local chambers of commerce, to gain support and will remain in existence as long as it takes to see it through. Bob Knouse will also remain involved part-time after his six-month tenure to assist in implementation.

It is an interesting aspect of this period in Colorado's history that several studies with similar goals are taking place at the same time: the Commission on Government Productivity, Blueprint, Vision 2000, the new Office of Economic Development programs. Each of them relies heavily on the private sector for direction and on public-private cooperation for success. Rather than duplicating efforts, the commissions and study groups will have more power and support for their recommendations when they converge. Pearsall states the response from the business community to assist in these endeavors has been "prompt and gratifying."

— A.L.

Commission on Government Efficiency, Members

I. Private Sector

1. Duane Pearsall
General Partner
Columbine Ventures
2. Walt Price
Site General Manager
IBM Corporation
3. Roger Ogden
President & General Manager
Channel 4
4. George Martin
Sales Vice President
AT&T
5. Dr. Tom Velez
President
Computer Technology Assoc.
6. Jim Smith
Colorado Vice President and
Chief Executive Officer
U.S. West Communications
7. John Murphy
Vice President/Product Excellence
Martin Marietta
8. N. Bernie Hart
Chairman of the Board and CEO
United Banks of Colorado, Inc.

9. Del Hock
President & Chief Operating
Officer
Public Service Company of
Colorado

II. Cabinet Members

1. Stewart Bliss
Chief of Staff
Governor's Office
2. Eugene T. Petrone
Executive Director
State Planning & Budgeting
3. Dave Longanecker
Executive Director
Colorado Commission on Higher
Education
4. JoAnn Soker
Executive Director
Department of Personnel

III. Legislative Members

1. Representative Samuel Williams
2. Senator Ted Strickland
President
Colorado Senate
3. Senator Jana Mendez
4. Representative Tony Grampas

HOW YA GONNA KEEP 'EM DOWN ON THE FARM?

By John M. Gardner

CACI's 50 FOR COLORADO program for 1988 continues to set a fast pace for interest and information. Since January, the participants witnessed the unveiling of CACI's update to its "Blueprint for Colorado," and were introduced to the State legislative process. We spent a fascinating day with the State judiciary, concentrating on the existing corrections system. We traveled to Keystone and saw some of the challenges in the tourism industry. We studied proposed solutions to our water problems. We spent a day studying the arts and higher education, and had exciting introductions to the high tech and defense communities. In September, we took part in an on-site examination of the energy and natural resource industries in Colorado. We didn't just listen and learn, however. Our team projects brought us much closer to the important issues of prison reform, housing, education and economic development.

In August, the "50" had an introduction to Colorado's agriculture industry. Since I am a lawyer spending much of my time recently with a resource recovery client who hopes to strike it big in the "trash to cash" game, I was the logical choice to give a report on this session. Actually, I convinced the CACI staff that my background was perfect to understanding the subtleties of our day. After all, I was raised 40-some years ago in the fertile farm area of southeastern Pennsylvania (if you remember the motion picture "Witness", that was the place — how could you forget Kelly McGillis?). From my boyhood, I remember the rolling hills of dark, rich soil with bumper crops of tobacco and corn. Amish farmers plowed their fields with teams of mules, and irrigation wasn't necessary. One could tell when the fields were being fertilized because the barns were cleaned to get the raw materials!

Despite my questionable credentials, I welcomed the introduction to Colorado-style agriculture; it was a fascinating experience. We began the day with a

briefing at the Colorado Department of Agriculture where Dr. Steve Horn, Deputy Commissioner, and Jim Rubingh, Markets Administrator, gave us an excellent overview of the industry in general and how the Department operates. I was surprised to learn that Colorado agribusiness amounts to some \$12 billion per year; beef and lamb sales comprise 68 percent of that volume. Colorado agriculture accounts for 86,000 jobs in direct production and food processing, as well as 26 percent of the State's total exports for 1987.

The Department uses its \$14 million annual budget to meet many challenges. It is studying methods for water conservation and has helped in the development of a biodegradable plastic material used for food bags. The Department even has 30 brand inspectors who annually catch up with some 36,000 lost or stolen cattle — who said the Wild West was dead!?

We left the Department of Agriculture and boarded a bus for a short drive to Sakata Farms in Brighton, the largest fresh vegetable producer in Colorado. Bob Sakata told us his main products are loaded with nutrition and fiber and include sweet corn (30-50,000 dozen per day), broccoli (14-20,000 bunches per day), cabbage (100,000 heads per day) and onions (200,000 pounds per day). Sakata Farms is a direct supplier to retailers such as King Soopers and Safeway and even ships onions to Europe and Japan.

Sakata Farms is an impressive operation with large production. However, getting to know Bob Sakata was the real enjoyment of our visit. From very humble beginnings in California, Bob has built his operation from 40 acres to over 3,000 acres. He told us how he got his first loan in 1948 by personally appearing before the loan committee of the First National Bank of Englewood. Bob not only got his loan, but was invited to join the Board of Directors of the Bank! Bob is clearly a man of opportunity, freely admitting to and learning from his mistakes. His watchwords are consistent quality,

service and competitive price. He has served the public throughout his career, in such positions as chairman of his local school board and recently as a member of the Governor's Water Advisory Board.

We left Bob Sakata's operation and drove to the Monfort of Colorado feedlot near Greeley. When I stepped off the bus in my waffle-soled Reeboks, I recalled the days of my youth when the local Amish farmers had cleaned their barns. However, that's where the similarity ended. This feedlot is the largest in the world, having 100,000 head of cattle on feed at one time. It is one of three such Colorado feedlots run by Monfort, and is a truly high tech operation. This allows Monfort to produce about 750,000 head a year of the world's finest beef for processing in the Company's own facilities. Monfort is the largest supplier of meat and hides to Japan, with annual sales there of about \$150 million — a respectable dent in the trade deficit!

Our afternoon was spent at Colorado State University in Fort Collins. We met there with Dr. Merle Niehaus, Dean of the College of Agricultural Sciences. This college has some 1,100 students and teaches and conducts research for new products, plant and animal genetics and water conservation. We learned that CSU is the home of the only federal seed laboratory, which collects and researches seeds from around the world. We also got a look at CSU's fabulous new \$1 million computer network, a gift from AT&T. Dr. Jim Brinks explained how this computer system is put to use in tracking and planning genetic management in beef cattle. CSU's Center for Genetic Evaluation of Livestock is a leader in the country — and that's no bull!

As we headed back to Denver on the bus, members of the group discussed our impressions of the day. As always, we had our own ideas as to how things should be run, particularly in terms of communication and coordination. However, I believe our whole group was impressed with what we had seen during the day. I found myself thinking