The Sun Never Sets On Colorado’s Bioscience
The History of Colorado Bioscience
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Colorado’s Bioscience Industry By The Numbers
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Bioscience Can Count On Colorado
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Directory of Bioscience Companies & Resources
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Located in Aurora, Colorado, it’s one of the largest bioscience developments in the country. Which means plenty of room to grow an idea from discovery to market viability. But this is bigger than just big. What’s emerging here is a unique culture of collaboration — where everything you need to nurture an idea is close at hand. You’ll have direct access to the world-class research facilities at the University of Colorado Anschutz Medical Campus, with its core laboratories, and The Children’s Hospital and Research Center. Features throughout the district, like parks and conference facilities, are designed to inspire collaboration. And the nearby mix of shops, restaurants and homes will let your people thrive right along with your ideas.

For leasing and land purchase opportunities at the Colorado Science + Technology Park, within the Fitzsimons Life Science District, call 720-941-7100.

Join the conversation at FitzScience.com
GET CONNECTED
at the country's newest health care city right here in Colorado

University of Colorado Denver
Anschutz Medical Campus
www.ucdenver.edu/bioscience

BRAIN SYNERGY

AT THE CORE.
More than 30 core labs including 900 NMR, biostatistics and cancer

BRAINS ABOUND.
2,000 of the nation's best and brightest researchers generating more than $378 million annually in funding

EASY ACCESS.
The only academic medical center in a 500-mile radius; convenient location has easy access to Denver International Airport and major highways

SPACE GALORE.
$2 billion in new facilities on 227 acres comprising 3.4 million gross square feet for research, education and patient care

CLINICAL CARE.
Nationally ranked pediatric and adult hospitals on site

THE BUSINESS OF SUCCESS.
Colorado Science + Technology Park at Fitzsimons, creating an environment to take products from discovery to market

IN THE GROUP.
Join a network of educators, research scientists, health care providers and advocates working to improve patient and community health statewide through the Colorado Clinical and Translational Institute, with $76 million in funding
Metro Denver is home to some of America’s top university laboratories and research centers including the country’s largest medical-related development – the $4.3 billion Fitzsimons Life Science District. We are the bioscience center of the Rocky Mountain West, offering companies access to knowledge workers, venture capital, and incubators. Not to mention an enviable lifestyle that helps retain our highly-skilled workforce. Examine us closely at www.metrodenver.org/bioscience. You’ll find that Metro Denver is well positioned for the future of bioscience.

Looking for a place to locate a bioscience company? Put us under the microscope.
Welcome to the Colorado BioScience Association’s 5th edition of Bioscience Colorado, the state’s only in-depth guide and directory to the bioscience industry. Since the magazine’s inception, the bioscience cluster in the state has been evolving rapidly. This edition is dedicated to the industry’s evolution throughout the years.

In this issue of Bioscience Colorado we are exploring the past, present and future of the biosciences in the state. As you flip through the pages of the magazine begin to uncover the origins of bioscience in Colorado and learn about the companies that laid the ground work for the bustling community of today. Then fast-forward and take a look at the present, showing the innovation and research conducted today and the improvements currently being established. Our journey will end with a look into the future of the bioscience industry both in Colorado and the industry as a whole. We look forward to walking through this journey with you and exploring the biosciences in Colorado.

Welcome to the 2009 edition of Bioscience Colorado magazine, we hope you enjoy it.

Produced by:

Published by:
Colorado BioScience Association and Colorado Office of Economic Development and International Trade

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The Colorado bioscience “empire” has been architected by academicians and scientists, technology transfer professionals, entrepreneurs and financiers. Discoveries made in Colorado have been packaged and deployed worldwide and account for a spectrum of products, from innovative pharmaceuticals, to “picks and shovels” tools designed to aid and accelerate subsequent discovery, to platforms that form the bases of innovative clinical approaches.

Colorado placed its pharmaceutical stake in the ground on the heels of World War II when in 1946 University of Colorado graduate Richard Waugh closed his first round of financing to establish Arapahoe Chemicals in Boulder. Waugh’s vision of the future focused on the production of fine organic compounds.

Concurrently, 1,500 miles to the south in Mexico City, Syntex Corp. was founded to develop oral contraceptives. Twenty years later Syntex recognized the value of Arapahoe Chemicals, acquiring the company for $4.7 million. Syntex moved the production facility to East Boulder, where it manufactured its flagship product Naprosyn, a non-steroidal anti-inflammatory painkiller.

In 1994, Basel, Switzerland-based F. Hoffman-La Roche Ltd. stepped in to purchase Syntex for $5.3 billion, establishing Roche Colorado. Today the company provides R&D and manufacturing facilities for HIV therapeutics Fuzeon, Invirase, Cytovene and Valcyte and osteoporosis treatment Rocaltrol.

At the same time Waugh was getting Arapahoe Chemicals up and running, Detroit-based pharmaceutical company S.J. Tutag & Company was spinning off Geneva Pharmaceuticals. In 1975, Tutag purchased 15 acres of land in Broomfield and sent 15 employees and their families there to establish a new manufacturing facility.

Four years later Geneva merged with Basel-based Ciba-Geigy Ltd. A producer of generic pharmaceuticals, the company was renamed Geneva Generics, rebranding itself again to Geneva Pharmaceuticals in 1991. In 1996, Ciba-Geigy merged with Sandoz Ltd. of Princeton, N.J., to form Novartis AG, creating one of the largest biopharma companies in the world. In 2003, Novartis rebranded all of its generic businesses under the Sandoz name.

It was during the “pre-biotechnology” epoch of the Colorado pharmaceutical industry that Hauser Labs was established in 1961 as a chemistry and polymeric specialties formulation laboratory. In 1983, the company became Hauser Chemical Research Inc., focusing on its proprietary extraction technology for isolating and purifying plant and animal compounds at higher yields and lower costs than conventional methods.

In 1988, Hauser, through a National Cancer Institute contract to isolate anti-tumor agents from natural sources, began supplying the NCI with paclitaxel. The compound, extracted from yew trees, showed promising results for the treatment of various cancers in NCI-sponsored clinical trials. The production and use rights of paclitaxel were eventually awarded to a partnership between Hauser and Bristol-Meyers Squibb.

In 1990, Bristol-Meyers acquired Hauser for approximately $25 million. Bristol-Meyers dubbed the paclitaxel drug Taxol, and it soon became a common chemotherapeutic agent to treat breast and ovarian cancers. By 2000 Taxol sales reached $1.6 billion.

Some may argue that the age of biotechnology dawned in 1953 courtesy of James Watson and Francis Crick, who first identified the double helix structure of DNA. But the industry of biotechnology wasn’t catalyzed until the 1980s, when scientists began to apply industrial recombinant applications to DNA.
This revolution was spearheaded by University of Colorado professor Marvin Caruthers, whose work on phosphoramidite chemistry enabled the manufacturing of short strands of DNA known as oligonucleotides. Caruthers co-founded Amgen Inc. in 1980, which has since grown into the world's largest biotechnology company. Caruthers' discoveries have enabled the manufacturing techniques for a global industry that continues to impact academia, therapeutic design and practice some 30 years later.

Although now headquartered in Thousand Oaks, Calif., Amgen has major facilities in Colorado. Its Longmont campus is home of the manufacture of Epogen, a regulator of red blood cell production for the treatment of anemia; in 2004 sales of the drug exceed $2.4 billion. Nplate, a treatment for chronic bleeding disorders, is manufactured at Amgen's Boulder plant.

In 1981, Caruthers co-founded Applied Biosystems to commercialize “gene machines” for the chemical synthesis of nucleic acids and the sequencing of proteins. Ten years later Applied Biosystems was acquired by Perkin Elmer Corp. for $450 million and is now held by Life Technologies.

The Colorado bioscience industry continued to accelerate through 1981 with the founding of sepsis-focused Synergen Inc. by Larry Gold. The Boulder company went public in 1986 and was acquired by Amgen in 1994 for approximately $240 million.

Gold’s follow-on work has yielded a much greater and far-reaching impact. He not only developed of a new class of aptamer-based drugs—where nucleic acid polymers bind to specific target molecules—his work evolved into a new diagnostic platform called SELEX (Systematic Evolution of Ligands by Exponential Enrichment).

Gold and co-discoverer Craig Tuerk founded NeXagen Inc. in Boulder in 1991 to commercialize SELEX, their patented process that screens for nucleic acid sequences capable of binding to specific proteins that cause disease.

In 1994, NeXagen acquired Vestar to become NeXstar Pharmaceuticals Inc., and five years later California-based Gilead Sciences Inc. acquired NeXstar for approximately $550 million. Gilead licensed certain NeXstar technology to Eyetech Pharmaceuticals, now a part of OSI Pharmaceuticals of Melville, N.Y.
The technology went on to become Macugen, a treatment for age-related macular degeneration that’s the first FDA-approved aptamer therapeutic.

Cambridge, Mass.-based Archemix Corp. has worked feverishly to amplify the impact of aptamers in the pre-clinical and clinical setting. In the early 2000s, Archemix licensed some 400 issued and pending patents from Gilead Sciences covering aptamers and the SELEX process. Since then Archemix has established partnerships with bioscience and pharmaceutical giants including GlaxoSmithKline, Merck, Takeda, Pfizer and others.

Gold has since gone on to co-found SomaLogic Inc., whose proprietary aptamer arrays and associated instrumentation are being developed for both clinical proteomics research (protein signature discovery) and clinical diagnostics (protein signature-based analyses of actual patient samples). An aptamer array enables the simultaneous measurement of a number of corresponding protein targets. SomaLogic’s instrument platforms integrate this core technology, which may be used in hospital labs and physician’s offices worldwide.

In 1982, University of Colorado professor Thom Cech became the first to show that RNA molecules can have a catalytic function, a discovery that in 1989 earned him the Nobel Prize. The discovery of the ribozyme formed the foundation for a new class of RNA therapeutics using RNAi, siRNA and miRNA-based approaches.

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In Boulder Ribozyme Pharmaceuticals was founded to develop commercial products and services based on the potential of ribozymes. When the company sharpened its focus to work on hepatitis C, dermatology and respiratory indications it was renamed Sirna Therapeutics. In 2006, Merck acquired Sirna for $1.1 billion.

More recently Colorado has made a name for itself as a global exporter of important “picks and shovels” tools for investigators.

Dharmacon Inc., founded by Steve Scaringe in 1995 as Dharmacon Research Inc., originally focused on developing 2’-ACE RNA technology for RNA synthesis. As RNA interference emerged, Dharmacon became the premier provider of RNAi-related products to academia and industry. In 2004, Fisher Scientific acquired Dharmacon for $80 million.

Aurora-based PhosphoSolutions is an international supplier of phosphoprotein antibodies, the nanoscale research tools used in the study of phosphoproteins. Many proteins are turned on or off by other proteins that add (kinases) or subtract (phosphatases) phosphate groups, and it is possible to make antibodies that distinguish between the two. These antibodies greatly accelerate drug discovery in cancer and neurodegenerative diseases including Alzheimer’s disease.
Twenty years ago, fledgling bioscience entrepreneurs dreamed of deals with New Jersey pharmaceutical companies and funding from Wall Street. A startup’s business plan would sketch out clinical trials at leading American medical centers, U.S. Food and Drug Administration approval and a late-stage domestic licensing deal.

The biotech industry has grown up, and now it travels in international circles. Investors are as likely to come from Europe, Japan or Latin America as the United States. New company business plans may include – or even prioritize – overseas research and development, manufacturing and marketing.

“The ‘globalization’ of biotechnology/life sciences is now well established,” wrote venture capitalist G. Steven Burrill on the Burrill & Company web site, highlighting India and China as the next big markets.

That’s nothing new to Colorado bioscience firms.

Highlands Ranch-based Sandhill Scientific Inc., for instance, manufactures its gastroenterology diagnostic devices in Prague, Czech Republic. Fort Collins-based TOLMAR was spun off by Canadian firm QLT and is owned by Argentinean distributor Technofarma. Companies that range from 12-person Inviragen to 450-employee Baxa Corp. see great their future in overseas markets.

NEW FRONTIERS AT BAXA

Englewood-based Baxa makes suites of products that help health-system pharmacists safely, efficiently and precisely handle, package and dispense liquid medications. It likens its products to a kitchen food processor that enables pharmacists to blend custom preparations, while its competitors provide ready-made preparations – akin to TV dinners. It also offers products to ensure that liquid medicines are dispensed safely, avoiding medication errors that stem from wrong-site administration.
The 34-year-old, $100 million company sells its products in more than 50 countries. “Very early on we realized that in order to grow, we would have to market internationally,” said Marian Robinson, vice president of marketing. “We tend to market in countries where health care is delivered in a similar way to the United States.”

Offices in Europe and Canada enable salespeople to work directly with local hospitals in a handful of countries. But in many regions Baxa works through distributors, and recently has added sales offices for direct representation in target countries. As the company grows, this sales model will continue to expand.

“We are dedicating more individuals to focus on selling into individual markets, and to determining what those local markets need,” Robinson said. “It might mean localizing the Web site, adjusting the products we already have, developing regional specialty products, and becoming a little less English-centric.”

It also means addressing American employees’ stereotypic image of Europe as a monoculture. “Health-care delivery is very different from country to country in Europe,” Robinson said, “and you have to understand those differences to manage the sale process.”

Cultural finesse extends to understanding foreign regulations, which have gotten more complex. Baxa works with consultants and in-house experts to understand and meet diverse countries’ rules. “Trademark registration and intellectual property protection can be daunting.”

Some overseas markets are too risky, Robinson said. Baxa doesn’t sell or manufacture in China, for instance, in part to avoid the possibility of patent infringement. While intellectual property theft is illegal, “for a small company to litigate something like that is a significant ordeal.

Beyond growth opportunities, Robinson notes that international work has advantages: It brings best practices to light.
“When we talk to our counterparts in Europe, they long ago understood the issues around sterile compounding and took steps to upgrade the cleanliness of their pharmacies,” she said. “If we make a product that meets their requirements, that’s great for the U.S. market.”

**INVIragen’s Global Reach**

Dan Stinchcomb logs 100,000 frequent flier miles a year traveling to India, South Korea, Columbia and parts of the U.S. His Fort Collins-based company Inviragen Inc. has licensed technologies from the Fort Collins-based division of the Centers for Disease Control and is working to commercialize vaccines for plague, West Nile virus and dengue fever.

From the start, the 12-person firm focused on overseas markets, global partners and multi-country clinical trials.

The cost advantages alone are stunning; the company’s relatively tiny $5.5 million in funding has gone further with Inviragen’s global business model than would be possible working in the U.S. alone. It’s made it possible for the five-year-old company to already be on the cusp of human clinical tests for its most advanced product, a dengue fever vaccine.

Dengue fever is endemic to tropical and subtropical regions, home to an estimated 3.5 billion people. Its incidence has increased rapidly worldwide in recent years, thanks to urbanization and poor mosquito control.

Dengue fever is caused by any of four variants of a flavivirus, DEN-1, DEN-2, DEN-3 and DEN-4. While infection by one variant brings lifetime immunity to it, a person can still be infected by any of the other three.

Inviragen’s vaccine is based on an attenuated strain of the DEN-2 virus, much as the measles-mumps-rubella and yellow fever vaccines are based on safe modifications of virulent viruses.

The genetically engineered DEN-2 backbone contains antigens for the other three viral strains, resulting in a vaccine shown to be safe and effective against dengue fever in mice and monkeys.

Although it conducts preclinical work in Fort Collins, Inviragen manufactures its GMP-quality vaccine in partnership with Shantha Biotechnics in Hyderabad, India.

“We were looking for a manufacturer in an affected region that could produce the vaccine to World Health Organization standards,” Stinchcomb said. “We didn’t want to manufacture a high-cost vaccine and then transport it to affected areas. The costs are one-third to one-quarter lower there.”

The challenge was providing Shantha the expertise to grow the vaccines. Time zone differences added a wrinkle of complexity.

Inviragen is also collaborating with the Pediatric Dengue Vaccine Initiative in South Korea to organize safety trials this year in the U.S., Colombia, Singapore and possibly India.

While it can be confusing to address a myriad of regulatory frameworks, Stinchcomb believes the clinical trials may progress more quickly offshore than in the United States. “In developing countries, you can often get fast recruitment and very good compliance, and that can shorten timelines.”

The company plans to develop a tiered pricing structure; the developing world’s growing, affluent middle class can afford medications, Stinchcomb says. Plus, Americans travel to affected regions will seek vaccinations against dengue fever.

Funding has been a challenge, Stinchcomb admits. Inviragen’s focus on unmet medical needs has allowed it to win grant funding from the National Institutes of Health, and the firm has a few international seed capital investors. But attracting major U.S. venture investment has been difficult.

“The challenge for Inviragen in raising additional venture financing is that the venture capital groups really focus on markets in the U.S. and Europe,” Stinchcomb says. “So we are talking to some venture capital groups that are much more visionary.”

*Pharma*

Pharmaceutical Research & Manufacturers of America

Disease is our enemy. Working to save lives is our job.
Colorado Bioscience Geography

The Light is Brighter than that of Sunset or Stars

By Adam Rubenstien

A map is not simply a visual representation of an area; rather a paramount function is to provide a symbolic depiction highlighting relationships between elements. Considered by most as the oldest known surviving world map, the Imago Mundi, depicting 6th century BC Babylonia, has survived along with an accompanying text identifying a landmass in Oceanus where “the light is brighter than that of sunset or stars”. This description is exceedingly applicable to the Colorado bioscience geography. The following maps of public companies, new companies and recent financings combine to tell a story of the engineering of a sound foundation where intellectual property, a talented workforce and the attraction of capital are highlighted, thereby detailing a region that has unambiguously arranged these complex elements together to yield an ecosystem whose trajectory yields an exceptionally bright future.
NEW COMPANIES FORMED 2007 TO PRESENT

1 3Q Matrix
2 A2BE Carbon Capture
3 Accuthera
4 Advanced Headache Intervention
5 Advanced Microlabs
6 ApopLogic Pharmaceuticals
7 ArcScan Inc.
8 Beacon Biotechnology
9 BioAMPs International
10 Biodesix
11 BlueSun
12 Caveo Therapeutics
13 Chemizon
14 Clarimedix
15 CycleGen
16 EndoShape
17 FireFly Medical
18 Fluonic
19 HepQuant
20 Hiberna
21 Illumasonix
22 KromatIDTID
23 Lanx
24 Locomotion
25 mBio Diagnostics
26 Miragen Pharmaceuticals
27 OpX Biotechnologies
28 Peak Biosciences
29 pico-tesla Magnetic Therapies
30 Precision Biopsy
31 Sierra Neuropharmaceuticals
32 Snoasis Medical
33 Solix Biofuels
34 Taiga Biotechnologies
35 Tissue Genetics
36 ValveXchange
37 V-Clip Pharmaceuticals
38 Ventrus Biosciences
39 Vitrumed
40 MycoLogics
## INSTITUTIONAL FINANCINGS 2007 TO PRESENT

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<tr>
<td>Allos Therapeutics</td>
<td>Secondary</td>
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<tr>
<td>Allos Therapeutics</td>
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<td>CeraPedics</td>
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**Technology Legend**

- **Medical Device**
- **Biopharma**
- **Diagnostic**
- **GreenBio**
- **Other**
**COLORADO-BASED AND RELATED PUBLIC COMPANIES**

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<td>Amgen</td>
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<td>Covidien</td>
<td>NYSE: COV</td>
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<td>Dharmacoan/Thermo Fischer Scientific</td>
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Today Alysha Dihle is exploring epigenetic interactions and alternative splicing. A few weeks back she was studying molecular genetics and inheritance patterns. Next week she’ll be examining the effects of mutations in DNA on protein synthesis and making possible correlations to diseases.

Dihle is not a scientist at a biotech firm, forensics expert or physician. The 17-year-old high school student is doing all those high-tech maneuvers in her Biotech I class at Castle View High School in Castle Rock.

"I’ve learned so much," Dihle says. "It’s given me a great foundation to better understand the life sciences."

"Not your father’s high school—by a long shot."

The school offers the Cadillac of biotechnology education, where students kick the tires of biotech, test drive it as a possible career—taking forensic science, genetic counseling, cancer research and bioinformatics for a spin.

What’s more, CVHS gives math, language arts, social studies and art a biotech touch. In math the focus is on statistics; in social studies students learn the history of how biotechnology became an industry; and in language arts, they write scientific papers.

TEENAGE RESEARCHERS

Brenda Dempsey, the biotechnology coordinator at CVHS, calls the school a special place and says students are “fascinated with the genome, human or otherwise, and all that genomes tell us.”

“Our purpose is to build student interest in biotechnology and biotech-related career fields,” she says. “Students are immersed in..."
the process of science as they analyze the latest research, perform in-depth experiments, and discuss the bioethics and implications of the technology."

CVHS now offers two classes in biotechnology; a third is on the way next year.

Biotech at CVHS offers “relevant and rigorous” real-world connections, Dempsey says. “Courses are taught in the present tense. They’re learning new concepts and emerging technology... in molecular biotechnology. And they’re able to see the connections to the real world.”

At CVHS teenagers tackle topics most scientists don’t get to study until college or grad school: molecular genetics and inheritance patterns; protein synthesis and structure; gene-gene and gene-environment interactions; genomewide linkage; transgenic organisms and cell-signaling pathways, cancer genetics and stem-cell properties. They use bioinformatics software for gene hunting, designing primers, predicting protein-folding patterns and looking at genotype distributions across population data sets.

Students have the opportunity examine different cellular types of cancers, examining tumor slides of real patients (with these patients remaining anonymous), learning about disease in a molecular context and looking for target areas where new drugs might be effective.

Each year students visit Long Island, N.Y.-based Cold Spring Harbor Laboratory, home of James Watson, the American molecular biologist best known as one of the codiscoverers of the structure of DNA. There they work in the lab’s Dolan DNA Learning Center performing DNA experiments using their own DNA. “It is an inspiring experience,” Dempsey says.

Thirty-five miles north of CVHS, there’s another inspiring scene at Lakewood-based Bear Creek High School. That’s where Ashley Cavanaugh, 17, is taking Process Technology I, a course where students earn college credits through Red Rocks Community College.

In the lab-based class students handle everything from blood typing to urinalysis to gram staining bacteria.

“The class is awesome,” Cavanaugh says. “It’s challenging in a fun way. We’re getting to use the hands-on experience that the professionals use. It’s really cool.”

For their final project students diagnose possible illnesses in samples of fake urine, blood and bacteria using techniques
they’ve learned during the class. Next year a Process Tech II class is on tap.

REAL SCIENCE

In biology classes at BCHS, students are isolating DNA from wheat cells, running PCR (polymerase chain reaction) on their own DNA, and performing bacterial transformations to create glowing bacteria. Students do Internet research related to the latest cancer, cloning and stem-cell research, followed by class discussions, says Tamra Miaja, a biology teacher at BCHS.

“We look at jobs in bioscience, too,” she says. “I hope to open their eyes to the myriad of possibilities that exist after college.” Students are enthusiastic about the lab work. One shouted out recently, “I actually feel like a real scientist,” Miaja reports.

RAISING THE BAR

Despite such shouts, there’s room for improvement in science education. The National Association of Educational Progress, a group that issues national reports cards on school performance, found in 2005 that 34 percent of Colorado’s eighth graders fell into the “below basic” understanding of science, while 62 percent had either a basic or proficient understanding of science. The rest were considered advanced.

Colorado’s scores are slightly above the national average, where roughly 41 percent scored “below basic,” 59 percent at or above the basic level.

U.S. science education needs to become “more inquiry-oriented” so students can “learn how to think scientifically,” says Susan M. Buhr, director of Cooperative Institute for Research in Environmental Sciences (CIRES) at the University of Colorado at Boulder.

Buhr is not alone. Numerous sources, including the National Science Education Standards established by the National Research Council in 1996, agree that inquiry-based learning needs to be beefed up.

The good news for Colorado is that help for K-12 science teachers is available. The Biological Sciences Initiative, a program offered by CU-Boulder, now offers workshops and tuition-free graduate courses for teachers.

Both Miaja and Dempsey hold out hope for students. “I believe the most important thing students are learning is critical thinking. That’s what will allow them to succeed,” Miaja says. “If I can instill a passion for scientific curiosity ... then hopefully they’ll take that with them into their careers.”

Back in Castle Rock, Dihle reflects on the future: “We can bring a lot of passion to ... biotechnology. We realize the potential for the future ... and we’d like to be the ones to reach that potential of what can be done next.”

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Poudre Valley Health System has received the 2008 Malcolm Baldrige National Quality Award – the highest Presidential honor given to United States businesses and organizations that demonstrate performance excellence.

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pvhs.org
For many Americans, 2008 was a year they hoped for change. But one Fort Collins company welcomed stability in 2008, as change had been the only constant in the past few years. With a new owner, desirable product niche and growing market demand, pharmaceutical manufacturer TOLMAR Inc. is on sound footing.

“Right now, TOLMAR is as strong as it has ever been,” CEO Mike Duncan said. “We are owned by a very strong parent company, we have a lot of capital, and our business has grown dramatically in 2007 and 2008.”

TOLMAR has 15 commercial products: three dental medicines and 12 generic topical dermatology drugs for conditions such as acne and rosacea. All of its products are sold through marketing partners such as Sandoz. The firm researches new dermatology drugs and manufactures its products onsite. It has five Abbreviated New Drug Applications (ANDA) before the U.S. Food and Drug Administration, as well as 15 products in its pipeline.

Privately held TOLMAR does not release sales, but in the past two years its workforce has grown from 144 to 235. That’s quite a contrast from years before.

The turmoil began in 2004 when Atrix Laboratories, also based in Fort Collins, owned the facility. At the time Atrix was known for its sustained-release drug delivery technology, a polymer gel injected under the skin. Its most successful product was Eligard, a prostate cancer medication.

The 225-employee company also had a small line of dental products, a late-stage acne drug before the FDA, a dermatology research program, and the manufacturing equipment and expertise to develop generic topical dermatology drugs.

When Vancouver, Canada-based drug developer QLT Inc. bought Atrix in late 2004, it promised to spend $70 million on Atrix’s pipeline.

“We were all very happy about the acquisition,” said Duncan, who has worked at the company since 1996. “We had a huge pipeline, and if we spent all the money necessary to develop it we would have gone into the red.”

Trouble began six months later, largely because of QLT’s flagship product, Visudyne, a treatment for age-related macular degeneration (AMD). First, OSI Pharmaceuticals launched a competitive AMD drug. Then, early results of Genentech’s AMD drug Lucentis, to be marketed in 2006, showed it had greater clinical impact than Visudyne.

As Visudyne’s year-over-year sales fell in late 2005, so did the promise of investing millions of dollars in the Fort Collins pipeline. In December 2006, after Duncan talked to 19 potential buyers, QLT sold the Fort Collins manufacturing plant, dental products line and generic dermatology business to Argentina-based pharmaceutical company Technofarma for $21 million.

Most venture capitalists Duncan had approached wanted to buy only the generic dermatology line and plant, then resell it two years later for a quick profit.

“Their emphasis is on quick money. But we had a 10-year business model. We said, ‘This company is not going to be profitable for two to five years, and then it is going to be very profitable.’”

Since the acquisition the company is on track to have more than 20 marketed products in the next few years. As for the company’s recent success, Duncan credits Wal-Mart and Target’s decision to sell generics for $4.

Meanwhile, TOLMAR employees have been working overtime to keep up with demand.
“There is a ton of energy in this place right now,” Duncan said. “We told people we would invest heavily in our pipeline, and we have done that. We told people we would make their job our top priority.”

**ACCERA**

For patients suffering from Alzheimer’s disease (AD), hope may come from a milkshake-style medicine that feeds hungry brain cells damaged by the disease.

A xona, a medical food product made by Broomfield-based Accera Inc., went on the market in February. The drug targets the metabolic defects and imbalances that characterizing AD, relying on new insights that diabetic-like changes in brain cells’ ability to use sugar play a role in some forms of memory loss. Special fatty acids in A xona offer an alternative food source to starved neurons.

Accera founders Steve Orndorff and Sam Henderson have been pursuing this unorthodox approach for six years, while most companies have been developing drugs that prevent gooey plaques called beta-amyloid from clogging AD patients’ brains.

If successful, A xona will be a home run for the privately held biotech, as well as for its dramatically different approach to AD.

“Both physicians and caregivers tell us, loud and clear, they are desperately seeking drugs with alternative mechanisms,” Orndorff said. “The ones out there today just don’t work.”

A xona causes the liver to act like the patient is starving, producing compounds called ketone bodies. Ketones become the brain’s new energy source. A similar process of ketosis takes place in people on high-protein, low-carb diets.

In a 2007 study of 150 patients with mild-to-moderate AD, taking A xona along with their regular medicines slowed the disease’s progression. Patients given a placebo on top of standard drugs steadily worsened. A xona was only effective in patients who don’t carry the AD gene ApoE4. Still, that’s about half of patients.

AD is incurable, affecting 26 million people globally and about 5 million in the United States alone. The current U.S. market for treatments is an estimated $4 billion, and the cost of caring for an aging, memory-impaired population is astronomical.

U.S. Food and Drug Administration-approved A xona is marketed as a medical food, available by prescription for $90 a month. It is intended to be used in addition to traditional therapy.

Medical food is a relatively new category of FDA-regulated “orphan drugs.” Medical foods are formulated to meet distinctive nutritional requirements for particular diseases and must be prescribed and administered under supervision of a physician.

A xona’s active ingredient is a semi-synthetic chemical found in some plants in very small amounts. This chemical has been recognized as safe by the FDA, easing A xona’s approval as a medical food.

Orndorff said he considered pursuing A xona as a traditional pharmaceutical, but the clinical tests would have cost $600 million to $800 million and taken 10 years. Developing the product as a medical food has cost $15 million.

“The medical food route allowed us to get to market faster, cheaper and with much less risk,” he said.

**SANDHILL SCIENTIFIC**

Thirteen years ago a world-renowned gastroenterologist mentioned in passing an untested technology involving impedance to a California engineer.

The engineer mulled over the concept with Rick Jory, president of Highlands Ranch-based medical device firm Sandhill Scientific Inc. Jory charged an employee to find out more about impedance. The employee dug up an obscure academic paper and flew to Germany to talk with the researcher.

Because of that chance conversation, today Sandhill Scientific is the world’s leading supplier of impedance technology for
Athough the company has no strong competitors, Jory fears hospitals and physician groups may put off purchasing new devices in a poor economy. Increased scrutiny of healthcare costs may also come during the new administration.

Sandhill is once again hunting for value. This year the firm will build a plant in Vietnam, cutting labor costs in half. To fund the expansion, managers sacrificed pay increases and bonuses in 2008.

"We have a management team that understands the seriousness of being in business in today's world," Jory said. "We understand our obligation, and we recognize we have to do whatever it takes to make sure we remain viable and healthy."

SOMALOGIC

A Boulder company hopes to launch a diagnostic test this year that can read previously inscrutable signs in patients' blood. SomaLogic's test would make it possible to find disease far before obvious symptoms such as a lump or pain, making early treatment possible.

Since its founding in 2000 SomaLogic Inc. has raised $115 million to create medical diagnostics using proteomics. Born of the genomics industry, proteomics is the study of protein levels, instead of genes, to observe health and illness.

Investors include Mitsui & Co. Ltd. and Sumitomo Bakelite Co., Ltd., both of Japan; Switzerland-based Lombard Odier; Maryland-based Skye Associates; France-based Société Générale Asset Management; New Jersey-based ProQuest Investments; and Denver-based NewWest Capital Partners.

The company has partnerships with Boston-based Archimex, Japan's Otsuka Pharmaceutical Co. and Madison, N.J.-based Quest Diagnostics.

"We are interested in ovarian cancer, lung cancer and many cardiovascular diseases," said SomaLogic founder, President and CEO Larry Gold. "These are the diseases—
general—where a person is asymptomatic until the symptoms get you into the doctor, at which point it is too late."

Traditional blood tests measure the presence of a single protein, such as human chorionic gonadotropin (hCG) for pregnancy. SomaLogic focuses on finding complicated protein arrangements, also called protein signatures, present in patients who later develop a disease.

To imagine how this might work, consider the recent news coming from Stanford University. Researchers compared the blood of two sets of patients with mild memory loss. Years later some patients developed Alzheimer’s disease, and some didn’t.

The researchers found that 18 signaling proteins predicted with 90 percent accuracy which memory-impaired patients would later develop A D.

“We have gotten blood samples from patients who have certain diseases and those who don’t,” Gold explained. “We have run thousands of experiments just looking for differences. The technology we have developed is simple, now that we have the platform.”

That platform is a method to analyze proteomes—the entire set of proteins in cells. But proteomes are incredibly complex. Proteomes change over time, as cells make different sets of proteins at various times and under different conditions. Heat can change their shape and make them difficult to recognize, for instance.

The established method of identifying and measuring proteomes employs antibodies, an expensive time-consuming process. SomaLogic uses single-strand nucleic acids called aptamers. These engineered aptamers are the basis for developing a single accurate test for thousands of proteins.

SomaLogic has developed a library of novel aptamers that target more than 500 human proteins along with more than 200 issued and pending patents worldwide. Partners such as Otsuka want to use this resource to validate targets for drug development, drug screening, and diagnostics development.

Due to the complexity of the task at hand, the firm’s scientific development has been slower than hoped, Gold admits. “From January 2000, I told everybody that we were two years away from a product. We have just faced one serious scientific obstacle after another.”

“I can’t help it if molecular biology is hard,” he continued. “We have a wonderful board, and when it was hard, we would say, ‘damn, that was hard, but it was worth doing.’”

Gold, a molecular biology professor at the University of Colorado at Boulder, is well-known in the bioscience arena. In 2007 he won the Colorado BioScience Association’s Lifetime Achievement Award. Prior to SomaLogic, he founded NeXagen Inc., which later became NeXstar Pharmaceuticals Inc. Before forming NeXagen, he founded and served as co-director of research at Synergen Inc., which was acquired by Amgen Inc.

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How Personalized Medicine is Changing Bioscience and Medicine

BY DOUG McPHERSON

The way Jack Wheeler sees it, personalized medicine is where we’re all headed. But like a long family vacation, shouts from the back seat of “Are we there yet?” can still prove annoying.

The answer, of course, is not yet. But some say Colorado is doing its part to ensure a timely arrival at what promises to be a game-changing destination.

“It’s true that the whole industry is slow right now,” says Wheeler, founder and vice president of business development at MicroPhage Inc., a Longmont company that develops rapid diagnostics products. “There’s a lot of talk, but when we talk about a particular diagnosis related to a prescription, we’re not there yet. It’s where everyone wants to go but it’s not often seen.”

Nevertheless, Wheeler and others say personalized medicine in Colorado is passing mileage markers. “There’s a huge opportunity going forward in the industry,” he says.

In early 2009 MicroPhage announced that its new bacterial identification test, which quickly shows if blood is infected with common hospital bacteria, completed its first multi-center clinical trial, moving the product closer to market.

In the first quarter of 2009, Accera Inc., a Broomfield biotech that focuses on therapies for central nervous system diseases, launched a new product called Axona, which manages mild-to-moderate Alzheimer’s disease.

ARCA biopharma Inc., a biopharmaceutical company, also in Broomfield, that develops genetically targeted therapies for cardiovascular diseases, is working on bucindolol, which treats chronic heart failure.

Denver-based National Jewish Health has created centers on bioinformatics, genetics, therapeutics and advanced diagnostics.

“Although National Jewish focuses on respiratory diseases, I believe the model will be carried to many other treatment providers in the Rocky Mountain region including the University of Colorado Hospital,” says Boris Tabakoff, a professor at the University of Colorado at Denver School of Medicine.

At Tabakoff’s company, Lohoca Research Corp., researchers are examining genetic and proteomic diagnoses of psychiatric and addictive disorders. Tabakoff says Lohoca has identified markers that characterize certain types of depressive disorders and the predisposition to alcohol and drug abuse.

In the academic setting, the University of Colorado Cancer Center has had success using gene expression array technology to characterize certain cancers, which led to what Tabakoff calls “optimal patient responses” to medication.

What’s more, the Colorado Clinical and Translational Sciences Institute (CCTSI) at CU-Denver is “transforming professional medical education” in a way that will “drive the next generation of clinicians to adopt and use the latest fundamental research and molecular tools in patient care,” says Rick Silva, director of CU-Denver’s technology transfer office.

CCTSI has also landed a $76 million grant to be used over the next five years to discover and adopt tools that “will make personalized medicine a reality,” Silva adds.

Slow traffic ahead despite the gains in personalized medicine, insiders say there are roadblocks to a faster trip.

According to Larry Gold, founder, president and CEO of Boulder-based Somalogic Inc., the first hurdle is, of all things, science.

Both genetics and the study of proteins for personalized medicine are still in their early stages, he says. “Even with strong science, the information technology infrastructure needed doesn’t exist.”

The entire system, with multiple payers, will be difficult to move, he adds. As for how to jump the hurdle, Gold says he’ll leave that to President Barack Obama’s administration. “Let’s hope Harold Varmus and Eric Lander (co-chairs of the President’s Council of Advisors on Science and Technology), two very smart people...
in the Obama administration, can help make this happen.

Another wrench in the cog is an outdated reimbursement structure of the diagnostics business, Silva says. “This structure basically reflects the technologies and practices of the 1970s and 1980s. Diagnostics back then were generally simple, nonproprietary, and didn’t need expensive clinical trials to validate.”

But the powerful diagnostic tools of today that predict drug response and measure multiple markers require “substantial investment” in clinical trials and approval from the Food and Drug Administration, Silva says. That generally doesn’t happen because the reimbursement structure will not allow recovery of those investments.

“The blockbuster drug development model is broken. Spending $800 million to get a one-size-fits-all, mass-market drug approved to compensate for the high percentage that fail simply isn’t viable in the long term,” Silva says. “The evolving drug development business model will require companies to minimize their investment, hedge their risks, and build options (or) checkpoints into their clinical development plans so they can fail early and fail cheap.”

Driving personalized medicine home

Regardless of the problems, progress in personalized medicine is inevitable. One catalyst for that progress, according to Tabakoff, is lessening the high expectations that “one test should identify, perfectly, success or failure” of a treatment.

“Personalized medicine should be thought of as another important set of tools that allows for better diagnosis of disease variants and the better targeting of drugs for these variants,” he says. “Think of it as another component of risk assessment, which together with a number of diagnostic modalities, brings the best qualities of life to an individual.”

Tabakoff predicts personalized medicine will be the paradigm by which diagnosis and treatment will be pursued in the not-too-distant future. “Individual differences in disease progression and response to medications are an accepted fact. We’re basically at the point of now trying to determine what to do about it.”

According to Tabakoff there are two opposing philosophies:

- All or nothing approach is too expensive, too invasive of an individual’s privacy, and does not add much to success in treatment.
- The second viewpoint is espoused primarily by “those who have a vested interest in the current medication marketing procedures,” Tabakoff says, and the position is “slowly but surely being debunked.”

“I believe the optimum situation lies somewhere between the two. We need better diagnostic tools and better approaches for matching patient to treatment, but it’s not necessary for the physician or anyone else to know the full genetic and environmental program that constitutes the generation of an individual.”

In Tabakoff’s eyes, the major contribution the bioscience industry in Colorado can make today is to meet the demand for diagnostic tests that target groups of individuals who may be better responders or worse responders to particular therapies. This will prove more useful than generating faster and cheaper means to know everything we can about an individual’s genome.

For Wheeler, another accelerant is better communication between the organizations in the biotech industry.

“There’s a very large number of companies that are leaders in the field, and if we can improve the way we learn what each one is doing—if we can increase the knowledge—we can get more predictive in what drugs should be used,” Wheeler says. “It’s a matter of putting foot to the pedal and getting the drugs out there.”
COLORADO SUPPORTS THE BIOSCIENCE INDUSTRY, THE INDUSTRY SUPPORTS COLORADO

The Bioscience Discovery Evaluation Grant Program (BDEGP) was created in 2006 by the Colorado legislature to foster development of the industry in Colorado, supporting both new business development and quality jobs for Coloradans. Grants have been available to develop technologies coming out of Colorado’s research institutions over the last three years.

In 2008, the state legislature and the Colorado Governor’s Office of Economic Development and International Trade decided to continue the program for another five years. Sponsored by Rep. Jim Riesberg and Sen. Bacon, House Bill 1001 expands the program for another five years with an average of five million dollars each year. The program continues to support technology transfer operations from Colorado’s research institutions, but now grants can be made directly to companies developing these new technologies. Strategic funds are also supporting the development of new infrastructure that will support Colorado’s growing bioscience industry.

Since the inception of the BDEGP, the state’s technology transfer has grown exponentially and has streamlined the commercialization process. Between 2002 and 2007, Colorado State University has created 13 new bioscience companies and the University of Colorado has formed 38 new bioscience companies. Through the support of the BDEGP, Colorado is guaranteed to see many more companies spin out of the innovation of research institutions and early-stage companies in the state.

The following research projects received funding through House Bill 1001.

COLORADO SCHOOL OF MINES

Stephen G. Boyes, PhD and Misty D. Rowe, PhD - Nanoscale Theragnostic Devices for Targeted Treatment and Imaging of Cancer

**DISCOVERY:** Novel surface modification technique allows the production of multifunctional gadolinium nanoparticles for the targeted imaging and treatment of cancer.

**GRANT FUNDED RESEARCH:** Development and in vivo testing of a nanoscale theragnostic device based on gadolinium nanoparticles (GdNPs) which have been surface modified with multifunctional polymers.

**PRODUCT POSSIBILITIES:** The novel polymer modified-nanoparticle platform technology will allow for the development of a targeted diagnostic imaging agent for MRI, coupled with molecular imaging and therapeutic capabilities.

**IMPACT:** Nanoscale theragnostic devices have the ability to impact nearly all areas of cancer detection, diagnosis, and therapy and, ultimately, improve the quality of life for patients and reduce mortality rates due to cancer.

NATIONAL JEWISH HEALTH

John Cambier, Ph.D. - Anti-CD79 antibody as a novel approach to therapy in autoimmune disease

**DISCOVERY:** Discovered that certain monoclonal antibodies against CD79a/b disable BCR signaling and suppress B cell function in the immune response. They believe that such anti-CD79 mAbs may be useful therapeutics, mediating reversible inhibition of BCR signaling and thus B cell function.

**GRANT FUNDED RESEARCH:** To test an improved therapeutic approach to treatment of the spectrum of conditions that respond to Rituxan (and perhaps others). This approach targets receptors for antigen (BCR) that are expressed by all B lymphocytes and must transduce signals for cell participation in autoimmunity. Rituxan reacts with CD20, a signal transducer expressed only by B cells, causing cell destruction by phagocytes.

**PRODUCT POSSIBILITIES:** Proof of concept generated in these studies will lead to production of anti-human CD79a/b mAbs that will be developed for therapeutic use in autoimmunity and lymphoma.

**IMPACT:** Market should approximate that for Rituxan; ~$2.4 billion/year.
Dennis R. Voelker, Ph.D. - Suppression of Respiratory Syncytial Virus infection by pulmonary surfactant phospholipids

**DISCOVERY:** Discovered that specific lipid components of pulmonary surfactant have potent anti-viral effects that can prevent and arrest the progress of Respiratory Syncytial Virus infections.

**GRANT FUNDED RESEARCH:** Determine the safety, dosing and efficacy of POPG as an anti-viral agent capable of either preventing RSV infection, or alleviating the deleterious effects of an established RSV infection. The goals of this project are to establish a therapeutic framework for use of POPG.

**PRODUCT POSSIBILITIES:** The long-term goals are to provide an inexpensive and effective new pharmaceutical to prevent RSV infections in the major vulnerable populations consisting of newborns, individuals with chronic asthma, and individuals with COPD.

**IMPACT:** The potential impact of this project is to have the first inexpensive and effective treatment for Respiratory Syncytial Virus. The virus is responsible for 300,000 hospitalizations each year, and the most vulnerable populations amount to about 40 million people.

Nichole Reisdorph, Ph.D. and Nathan Rabinovitch, M.D. - Validation and optimization of leukotriene E4 (LTE4) assay for asthma diagnosis and therapy

**DISCOVERY:** The measurement of leukotriene E4 (LTE4), a molecule targeted for asthma therapy, can potentially be used to identify likely responders to leukotriene modifying medications and to predict disease worsening.

**GRANT FUNDED RESEARCH:** The measurement of leukotriene E4 (LTE4), a molecule targeted for asthma therapy, can potentially be used to identify likely responders to leukotriene modifying medications and to predict disease worsening.

**PRODUCT POSSIBILITIES:** The measurement of leukotriene E4 (LTE4), a molecule targeted for asthma therapy, can potentially be used to identify likely responders to leukotriene modifying medications and to predict disease worsening.

**IMPACT:** The measurement of leukotriene E4 (LTE4), a molecule targeted for asthma therapy, can potentially be used to identify likely responders to leukotriene modifying medications and to predict disease worsening.
**Milen Saavedra, M.D. - A Method to Track Cystic Fibrosis Inflammation from Whole Blood**

**Discovery:** TLR2 protein is highly expressed in both blood and lung lymphocytes of cystic fibrosis (CF) patients, suggesting its utility as a potential circulating biomarker of inflammatory events in the lung. Variations in blood levels of this protein appear to correlate with therapeutic response.

**Grant Funded Research:** TLR2 protein is highly expressed in both blood and lung lymphocytes of cystic fibrosis (CF) patients, suggesting its utility as a potential circulating biomarker of inflammatory events in the lung. Variations in blood levels of this protein appear to correlate with therapeutic response.

**Product Possibilities:** TLR2 protein is highly expressed in both blood and lung lymphocytes of cystic fibrosis (CF) patients, suggesting its utility as a potential circulating biomarker of inflammatory events in the lung. Variations in blood levels of this protein appear to correlate with therapeutic response.

**Impact:** TLR2 protein is highly expressed in both blood and lung lymphocytes of cystic fibrosis (CF) patients, suggesting its utility as a potential circulating biomarker of inflammatory events in the lung. Variations in blood levels of this protein appear to correlate with therapeutic response.

**University of Denver**

**Rahmat Shoureshi, PhD - Direct Brain Control of Prosthesis**

**Discovery:** The research team has developed a way to use brain imaging technology that will interact with the neural activities of the brain to control muscle function.

**Grant Funded Research:** This project aims to use a hybrid, non-invasive sensory and control system (the Brain Imager) that integrates Functional Near Infrared (fNIR) imaging, with electromyography (EMG) and electroencephalography (EEG) of the motor cortex to develop a non-invasive brain imaging technology that correlates neural activity to functions of muscle groups in limbs.

**Product Possibilities:** This project will enable those with artificial limbs to directly and more naturally control their prosthesis movements from their brain.

**Impact:** Provide prosthetic patients with the ability to have a more natural way to control the movement of their prosthetics.

**Colorado Institute of Molecular Biology**

**Bradley Olwin, Ph.D. - Stem Cell Repair of Skeletal Muscle [CU1687B]**

**Discovery:** This research team has developed a new procedure for transplantation of skeletal muscle stem cells and skeletal muscle satellite cells, enabling high-efficiency engraftment of cells into the muscle tissue.

**Grant Funded Research:** Provide proof of principle that human muscle stem cells are capable of repairing skeletal muscle tissue to ameliorate muscular dystrophy.

**Product Possibilities:** Develop a successful therapy for replacing pathological loss of muscle function.

**Impact:** Reverse, or stabilize, the progress of muscular dystrophy and other muscle injuries and disorders.

**Daniel Schwartz, Ph.D. - Liquid Crystal Read-out for DNA Microarrays [CU1915B]**

**Discovery:** This research group has developed methods for detecting hybridization of nucleic acids using liquid crystals (LC) without the need for complex diagnostic equipment.

**Grant Funded Research:** Develop an industrial-quality prototype of a DNA microarray device using liquid crystals that respond to DNA hybridization and the transmission of polarized light to detect the liquid crystal response.

**Product Possibilities:** Develop inexpensive DNA microarray device suitable for home, point-of-care or in the field.

**Impact:** Low-cost lab-on-a-chip for disease diagnosis.

**Timothy F. Scott, Ph.D. - Photodegradable shape memory polymers [CU2193B]**

**Discovery:** This research group is exploring the use of photodegradation as a mechanism for on-demand degradation of shape memory polymers for biomedical devices and implants.

**Grant Funded Research:** Develop photo-degradable shape memory polymer (SMP) materials suitable for a reversible trans-cervical sterilization device (TCD).

**Product Possibilities:** Development of a reversible trans-cervical sterilization device.

**Impact:** Reversible, non-hormone-based birth control.
Dawn Duval, Ph.D. - Generation of Caninized Monoclonal Antibodies for Cancer Treatment

**DISCOVERY:** Develop strategies for “caninizing” monoclonal antibodies developed in mice for use in the treatment of canine cancers.

**GRANT FUNDED RESEARCH:** The goal is to develop a canonized antibody targeting the canine IGF-1 receptor. The IGF-1 receptor is over expressed in a variety of human and canine cancers and stimulation of these receptors can contribute to cellular proliferation, invasion, resistance to apoptotic pathways, as well as promoting tumor angiogenesis.

**PRODUCT POSSIBILITIES:** 1) generating monoclonal antibodies targeting the extracellular domains of canine IGF-1R, 2) validating the ability of these antibodies to bind to canine cancer cells to inhibit the growth of cells in culture or tumor xenografts, and 3) caninizing the antibody by the chimerization of the variable regions of the active monoclonal antibody with canine antibody constant regions.

**IMPACT:** 1) develop strategies for “caninizing” monoclonal antibodies developed in mice for use in the treatment of canine cancers. 2) reduce the immune stimulatory character of these mouse antibodies by making them more closely resemble endogenous human antibodies. 3) goal is to develop a caninized antibody targeting the canine IGF-1 receptor.

Susan James, Ph.D. - Drug Eluting Osseointegrative Coatings for Reconstruction Implants

**DISCOVERY:** Develop new phospholipid (phosphatidylserine) and calcium coating systems for metallic orthopedic implants.

**GRANT FUNDED RESEARCH:** Project will improve the clinical outcomes for total joint replacement patients and cancer patients by developing a combined healing/bone attachment coating system for orthopedic implants. The proposed approach contemplates a two-layer application of specialized, novel biomaterials that are known to aid in bone healing and localized drug delivery.

**PRODUCT POSSIBILITIES:** Coating metallic orthopedic implants with new phospholipid and calcium will enhance bone integration into the implant and locally deliver antibiotics or chemotherapeutics.

**IMPACT:** Develop new phospholipid (phosphatidylserine) and calcium coating systems for metallic orthopedic implants that will enhance bone integration into the implant and locally deliver antibiotics or chemotherapeutics.
Kevin Lear, Ph.D. and Ric Slaydon, Ph.D. - Miniature Silicon Immunosensor for Tuberculosis Disease State Analysis

**DISCOVERY:** Demonstrate the ability of CSU-invented local evanescent array coupled (LEAC) immunosensor technology to rapidly and simultaneously detect clinically relevant levels of multiple selected TB related antibodies useful for disease state analysis on a prototype chip.

**GRANT FUNDED RESEARCH:** The hope is to develop a low-cost TB test.

**PRODUCT POSSIBILITIES:** 1) Optimize pulsed-pressure aerosol deposition of phosphatidylserine (PS) and PS-drug* coatings on implant surfaces by measuring the effects of process variables on coating characteristics; and 2) Characterize the in vitro cytotoxicity, in vitro osteocompatibility, and in vivo biocompatibility of the implant surfaces.

**IMPACT:** Design, simulate, fabricate, and test improved optoelectronic chips that allow electronic real-time readout of immobilized protein array based immunoassays.

Kevin Lear, Ph.D. and Douglas Thamm, Ph.D. - Microfluidic Cytometry for Detecting Circulating Cancer Cells in Biofluids

**DISCOVERY:** Further the development of a diagnostic technique, optofluidic intracavity spectroscopy (OFIS), for the detection of individual cancer cells in biofluids to permit early cancer detection. This technique relies on spectral analysis which looks for enlargement and increased protein density of the nucleus in cells as a sign of cancer.

**GRANT FUNDED RESEARCH:** The proposal focuses on using the technique to detect canine cancers, as a way to prove the technology for a lower cost and a market with lower regulatory hurdles. The specific objective of the project is to demonstrate that OFIS can accurately detect cells from a canine cancer, hemangiosarcoma (HSA) as a model of abnormal cells relative to peripheral blood mononuclear cells (PBMCs).

**PRODUCT POSSIBILITIES:** 1) Optimize the experimental apparatus using OFIS sensor chips with integral dielectrophoresis (DEP) traps and a custom optical microscope system that is capable of capturing repeatable data on hundreds to thousands of cells; revise the electrode design on OFIS sensor chips, and modify the fabrication to enhance the spectral distinctiveness of HSA. 2) Collect spectra from statistically significant pure samples of two HSA cell lines as well as the principal types of normal PBMCs; investigate the correlation between cell elasticity and its optical signature, i.e., spectra collected with OFIS sensor chip. 3) Numerically evaluate the ability of spectral analysis algorithms to detect HSA cells in the distribution of normal canine blood based on the spectra collected from HSA cell lines and PBMCs. 4) Experimentally validate the limit of detection for HSA in cell-by-cell binary classification and counting runs on samples of healthy canine blood spiked with varying concentrations of HSA.

**IMPACT:** The specific objective of the project is to demonstrate that OFIS can accurately detect cells from a canine cancer, hemangiosarcoma (HSA) as a model of abnormal cells relative to peripheral blood mononuclear cells (PBMCs).

Christopher Orton, Ph.D. - Solid-Phase Tissue Electrophoresis for Bioscaffold Decellularization

**DISCOVERY:** Develop biocompatible scaffolds upon which engineered replacement tissue constructs can be built. The technology under study here has application for a wide range of tissue or organ replacements.

**GRANT FUNDED RESEARCH:** The goal of this research is the development of a living tissue-engineered heart valve.

**PRODUCT POSSIBILITIES:** This provides an advancement on current heart valve replacement in that the replacement will have the ability to regenerate and repair itself. The technology proposed has potential application for any tissue-engineered construct that begins with an animal bioscaffold (the physical structure for a tissue or organ).

**IMPACT:** Potential application for any tissue-engineered construct that begins with an animal bioscaffold (the physical structure for a tissue or organ) in that the replacement will have the ability to regenerate and repair itself.

Ketul Popat, Ph.D. - Multifunctional Nanostructured Interfaces for Orthopedic Implants

**DISCOVERY:** Design implants that induce controlled and guided growth around the implant, as well as rapid healing [1-12]. In addition to the acceleration of normal wound healing, these implants should result in formation of a characteristic interfacial layer with adequate biomechanical properties.

**GRANT FUNDED RESEARCH:** This project aims to improve orthopedic implants by improving the tissue-material interface for better integration of the implant and allowing for the delivery of drugs at the site of implantation.

**PRODUCT POSSIBILITIES:** 1) Produce a well-controlled and characterized, highly reproducible biocompatible nanoporous biotemplate for osteoblast growth. 2) Investigate the effect of substrate architecture (array length, wall thickness, pore diameter) on osteoblast adhesion and proliferation. 3) Measure the influence of substrate architecture on bone matrix formation by assaying alkaline phosphatase and calcium production intracellularly and extracellularly. 4) Design strategies to fill bioactive molecules into titanium nanotubes. Investigate the diffusion rates of drugs and growth factors through nanotubular surfaces.

**IMPACT:** Control over the nanoscale interface can prove advantageous for applications in biomaterials and tissue engineering, particularly in orthopedic implant materials. Further these nanostructured interfaces of controllable architectures can also be used to delivery drugs locally at the site of implantation. Drugs such as antibiotics, chemotherapeutic, etc., are delivered systemically in patients.
F. Andrew Ray, Ph.D. and Susan Bailey, Ph.D. - Ultrabright FISH probes for Cancer Research

**DISCOVERY:** New oligonucleotide probe labeling strategy, to demonstrate the utility and cost effectiveness of such probes for several diagnostic applications and to test a high throughput application that would allow the future development of ‘early warning’ cancer detection assays.

**GRANT FUNDED RESEARCH:** This project aims to validate a new oligonucleotide probe labeling strategy to demonstrate the utility and cost effectiveness of such probes for diagnostic applications.


**IMPACT:** This project tests a high throughput application that will allow the future development of early warning cancer detection assays.

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K. Ulrich Bayer, Ph.D. (UC Denver) Development of an investigational new drug for therapy of stroke, global cerebral ischemia, and traumatic brain injury [CU1933H]

**DISCOVERY:** Glutamate excitotoxicity is a main cause of brain cell death after stroke, global cerebral ischemia (caused by suffocation or cardiac arrest) and traumatic brain injury. Researchers have generated a compound, tatCN21, that protects neurons from glutamate excitotoxicity, even when applied hours after insult; thus providing a clinically relevant window of therapeutic opportunity.

**GRANT FUNDED RESEARCH:** This project is focused on minimizing off-target effects of tatCN21 and conducting basic toxicology/safety pharmacology.

**PRODUCT POSSIBILITIES:** Drug to treat, or protect against, brain cell death after stroke, traumatic brain injury, or other disruption of the brain’s blood supply.

**IMPACT:** Treatment for (and protection against) stroke, traumatic brain injury and other disruptions of the brain’s blood supply.

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Mark W. Duncan Ph.D., Anthony D. Elias M.D., Tim Byers M.D., M.P.H. (UC Denver) - A multiplexed panel of protein biomarkers for the early detection of breast cancer [CU2200H]

**DISCOVERY:** This research group identified a panel of protein biomarkers that have the potential to identify early stage breast cancer.

**GRANT FUNDED RESEARCH:** The project aims to develop a clinical assay that will provide sufficient diagnostic power to correctly identify breast cancer based on identifying biomarkers in the analysis of a single blood sample from the patient.

**PRODUCT POSSIBILITIES:** The ultimate goal is to deliver a panel of biomarkers that offers high sensitivity and specificity in the early detection of breast cancer.

**IMPACT:** Early, accurate and low-cost detection of breast cancer, enabling earlier treatment and greater survival rates.
Heide L. Ford, Ph.D., Rui Zhao, Ph.D. - Targeting the Six1/Eya transcriptional complex for anti-breast cancer drug design [CU1748H]

**DISCOVERY:** Studies have demonstrated that Six1 induces tumorigenesis and metastasis in sites relevant to human breast cancer. Targeting the Six1 transcriptional complex offers significant grant-funded research.

**PRODUCT POSSIBILITIES:** Targeted compounds for use in chemotherapy to treat breast cancer.

**IMPACT:** Improved chemotherapeutic treatment of breast cancer, with reduced side effects.

Emily A. Gibson, Ph.D., Tim C. Lei Ph.D. (UC Denver) - A microfluidic cell sorter integrated with Coherent anti-Stokes Raman Spectroscopy for medical diagnostics [CU2192H]

**DISCOVERY:** This research group has developed a technique for the integration of nonlinear optical spectroscopy with microfluidic devices.

**GRANT FUNDED RESEARCH:** Develop a novel high-throughput cell sorter based upon microfluidics technology and nonlinear optical spectroscopy.

**PRODUCT POSSIBILITIES:** This device would have commercial potential for clinical diagnostics and as a commercial research laboratory instrument.

**IMPACT:** Enhanced bioscience research; improved and inexpensive medical diagnostics.

Robin Shandas Ph.D. (UC Denver; CU-Boulder) - Shape Memory Polymer-Based Prosthetic Venous Valves [CU2196H]

**DISCOVERY:** This project proposes to use the latest research in prosthetic heart valves and shape memory polymers to develop a next generation, minimally invasive solution to the problem of venous valve incompetence.

**GRANT FUNDED RESEARCH:** Create a gently self-expanding conduit that contains the valve without the risk of dissecting through the fragile vein, the ability of the conduit to conform to the typically large changes in vein size and shape that occur due to leg movement, the need for a fully hemocompatible valve material that will not clot, and the ability to deliver the valve using small catheters.

**PRODUCT POSSIBILITIES:** Improved prosthetic venous valves.

**IMPACT:** Improved treatment of venous diseases.


**DISCOVERY:** This research group has developed a new technique to create bio-inspired nanofiber woven textures.

**GRANT FUNDED RESEARCH:** Develop multilayer bionanocomposite material, as an enabling technology, to construct early and long-term vascular access for hemodialysis patients. The eventual goal of the device is that cells in vivo will replace graft material over time, and form natural vessels—meaning there will be no need for graft replacement.

**PRODUCT POSSIBILITIES:** Provides advancement to expanded polytetrafluoroethylene (ePTFE) arteriovenous (A/V) grafts which are the norm for hemodialysis patients.

**IMPACT:** Enhanced quality of life for patients on long-term dialysis.

Linda R. Watkins Ph.D. (CU-Boulder) - A unique approach for treating chronic pain & increasing the clinical efficacy of opioid analgesics [CU1869B]

**DISCOVERY:** Opioids are used in treatment of chronic pain, but fail to help 60-80% of patients. While opioids target neurons, the researchers have discovered that non-neuronal cells, called “glia”, are critical in both chronic pain and decreasing opioid pain control.

**GRANT FUNDED RESEARCH:** The research team has discovered a receptor, TLR4, which can be targeted by compounds that can selectively block the glial activation receptor, and have no effect on neurons. The compounds of focus are analogs of naloxone as well as novel small molecule TLR4 inhibitors.

**PRODUCT POSSIBILITIES:** Development of targeted and effective drugs for chronic pain.

**IMPACT:** Enhanced treatment of chronic pain, with reduction of side effects, dependency and withdrawal.
EARLY-STAGE COMPANY GRANT RECIPIENTS

ADVANCED MICROLABS, LLC
A advanced M icroL abs LLC is a chemical analytical instrumentation company dedicated to pioneering microchip measurement techniques. A dvanced MicroLabs is currently operating as a research stage company and is anxious to partner with established organizations to accelerate the commercialization of its significant scientific developments.

APOPLOGIC PHARMACEUTICALS, INC.
A ppopLogic Pharmaceuticals, LLC is a startup phase biopharmaceutical company focused on the discovery, development and commercialization of therapeutic products that target apoptotic cell death pathways found in cancers, leukemias and lymphomas. The Company was formed in 2006 to capitalize on the intellectual property of its Founding Scientists and University of Colorado Cancer Center members. Put most simply, A ppopLogic is inducing rapidly dividing cells to commit suicide.

BIOAMPS INTERNATIONAL
BioAMPs International is a Colorado-based biotechnology company that discovers and develops proprietary, structurally-guided antimicrobial peptides that are designed to target bacterial cell membranes while sparing human blood and tissue cells. The de novo peptides are structurally designed to alter hydrophobicity characteristics, thus creating a unique mechanism of action that targets the bacterial cell membrane, providing broad-spectrum activity and circumventing all known routes of drug resistance experienced by traditional antibiotics.

ENDOSHAPE, INC.
EndoShape, Inc. is focused on delivering revolutionary advances in minimally invasive medical devices through its pioneering efforts in novel shape memory polymer technologies. EndoShape devices are in development for select peripheral vascular, nonvascular, and neurovascular indications that are difficult to treat with conventional metal based technologies. The company utilizes patent-protected materials and products initially developed at the University of Colorado that enable it to solve key and heretofore unsolved clinical issues in the minimally invasive medical device market.

QGENTA INC.
Q Genta Inc. is a Colorado company spun out of the University of Colorado. This project involves developing lead compounds for indolequinone classes to pinpoint a promising molecule for cancer treatment. Lead indolequinones when targeted at the thioredoxin/thioredoxin reductase system will inhibit cell growth, induce cell death, and block angiogenesis. The primary focus is pancreatic cancer, but the compounds also holds promise for treating colon, melanoma and renal cancers.

HIBERNA CORPORATION
Hiberna Corporation, founded in 2007 and located in Boulder, CO, is pursuing drug development efforts based on novel model organisms that exhibit extreme metabolic regulation. Hiberna’s drug development strategy is based on the work of Dr. Leslie Leinwand and colleagues at the University of Colorado. This company is looking at the potential for treating heart failure by restoring heart function. The goal is develop new drugs that enhance function in patients with cardiac enlargement (hypertrophy).

ILLUMASONIX, LLC
Illumasonix LLC is a Colorado company spun out of the University of Colorado in partnership with Allied Minds. Illumasonix will develop and commercialize a new non-invasive vascular disease detection procedure. This process will easily and non-invasively provide near real-time assessment of detailed blood flow patterns within the cardiovascular system. Our exclusive patent-pending technology will be developed and sold to doctors, hospitals, and clinics worldwide. Illumasonix’s technology is being developed by Dr. Robin Shandas, a Professor in the Department of Mechanical Engineering and Pediatric Cardiology at the University of Colorado.

SIERRA NEUROPHARMACEUTICALS, INC.
SierraNeuro is a biopharmaceutical company focused on the development and commercialization of centrally administered small molecule therapeutics for the treatment of severe CNS diseases refractory to oral medications. Sierra has addressed problems with the current model through a proprietary development process that reformulates highly effective but systemically toxic oral medications, enabling placement into an implantable drug delivery pump for direct administration in the fluid around the brain. This innovative delivery approach will expand treatment options in refractory CNS diseases including Epilepsy, Schizophrenia, Bipolar Disorder, Anxiety Disorders and Major Depression.
Colorado's infrastructure: a broad welcome mat for bioscience startups

BY DOUG MCPHERSON

Biologist Torsten Eckstein is glad he lives in Colorado.

He's just started his own biotech company, Eckstein Diagnostics, which specializes in diagnostics for infectious diseases. But what really has him—and many other biotech entrepreneurs—excited is the infrastructure Colorado is adding to grow bioscience technology and commercialization.

Eckstein is particularly bullish on the new Research Innovation Center (RIC), a 72,000-square-foot, $53 million facility at Colorado State University in Fort Collins.

When it opens in April 2010, RIC will include an incubator to help startup companies get their technologies to market.

“This kind of infrastructure is important, especially to startup companies like mine that need incubator space to finalize product development and conduct additional research,” Eckstein says. “RIC’s lab and office space will let us operate the business effectively at an early stage.”

CSU officials say the center, which will include 10 labs, is all about bridging the gap between research and businesses.

“RIC will offer a remarkable opportunity to establish public-private collaborations with CSU’s world-class infectious disease research community, and provide a framework for outside enterprises to access CSU’s extensive infectious disease infrastructure,” says Terry Opgenorth, chief operating officer of CSU’s research foundation.

Eckstein says with RIC he’ll have access to CSU’s resources related to infectious diseases, which is difficult to find in other incubator settings and traditional biotech parks. “Being close to CSU will make it much easier to operate the business. And RIC will have fully equipped lab space at affordable prices, which will be lower than for well-established companies.”

Another organization that’s good news for startups is the Rocky Mountain Innovation Initiative (RM12), a nonprofit that offers business incubation, capital formation, advisors, forums, industry cluster initiatives, entrepreneurial resources and marketing.

“A’s northern Colorado becomes better known for innovation—its high patent counts, high startup counts, CSU research and industry cluster strength—more and more emphasis is going into supporting local companies,” says Kelly Peters, RM12’s chief operating officer. “We want to keep companies growing and rooted in the region’s back yard.”

In 2008, RM12 companies brought in 58 full-time jobs at an average wage of $79,000, and raised more than $14 million in equity and grants, Peters says.

Officials add that RM12 plans to open a new building to house all current incubator clients in North Fort Collins by mid-2010.

CIMB on Board

At the University of Colorado at Boulder, the Colorado Institute for Molecular Biology (CIMB) is a new project where Nobel laureate and former head of the Howard Hughes Medical Institute Dr. Tom Cech will be paving new trails in bioscience.

The school has launched a $350 million campaign to continue growing CIMB into a world-class organization that will pursue breakthroughs in genomics, proteomics, molecular and cellular imaging, biophysics, mathematical analysis, materials engineering and chemical synthesis—areas leading the way for fundamental changes in experimental sciences.

CIMB Director Leslie Leinwand says the future of biotechnology will depend on interdisciplinary approaches to complex medical problems. “CIMB will be integral to the state of Colorado in making discoveries that will lead to therapeutics, diagnostics and devices as well as educating the workforce for biotechnology.”

Cech adds, “Because of its interdisciplinary research emphasis, CIMB will generate discoveries and inventions at the interface of engineering, chemistry, computer science and medicine that will then be developed in Colorado companies.”

CIMB also seeks to improve core research in molecular technologies applied to biosciences; bridge disciplines by combining research and teaching and promoting interdisciplinary collaborations; and support biotechnology development along Colorado’s Front Range.

Officials say CU recruited Cech back to Colorado because of the school’s desire to build a new model for discovery and to develop and commercialize therapies to address global health problems.

Denise Brown, a Colorado-based biosciences consultant and former executive director of the Colorado BioScience Association, notes that CU’s faculty ranks among the top in the country and receives more than $250 million annually in grants and contracts.

“In the last five years, CU faculty have founded 15 bioscience companies, and that clearly demonstrates the commitment to move science beyond discovery to services and products that improve life and cure disease,” Brown says.

The world-renowned faculty includes four Nobel laureates, 21 members of the National Academy of Sciences, four Howard Hughes Medical Institute investigators and seven MacArthur fellows.

According to Brown, the current and 20 new faculty to be hired specifically for CIMB will be housed in a new $170 million facility to foster partnerships with bioscience companies and support academics.

Students, both science and business majors, will be a key part of CIMB, Brown adds. “We want to help business students learn more about how to transfer technologies into the marketplace. That will be an essential part of CIMB.”

Cech agrees. “CIMB will ramp-up the training of students in biotechnology and entrepreneurship, enriching a talent pool that will make Colorado an even more competitive location for startup companies.”
One dream, 18 million square feet

One of the largest medical development projects in the country is right in our own back yard: the 570-acre public-private partnership converting the former Fitzsimons Army Medical Center in Aurora into the Fitzsimons Life Science District. The park includes:

- The Colorado Science + Technology Park at Fitzsimons
- The Anschutz Medical Campus, which includes the University of Colorado Denver’s Health Sciences schools and the University of Colorado Hospital
- The Children’s Hospital
- The proposed Veterans Affairs Hospital

It adds up to more than $5 billion in redevelopment of a square mile dedicated to patient care, medical education, life-science research, and the development and commercialization of academic and industry efforts.

The developer, Forest City Enterprises, a national real estate company known for its medical-related developments, finished more than 6 million square feet in 2008. A another 3.3 million square feet are slated to be completed by 2013, with another 8.8 million square feet following that for a total of 18 million square feet.

Jill Farnham, executive director for the Fitzsimons Redevelopment Authority, says despite a tepid economy, she expects four projects will go up in 2009: a hotel and conference center, retail banking office, large office facility and another biosciences building.

The Colorado Science + Technology Park is a 184-acre business park with 6 million square feet of planned development dedicated to life-science companies. So far the park has two bioscience incubator buildings totaling 80,000 square feet, with 30 bioscience startups as tenants.

Among the advantages for bioscience companies to locate in the park are:

- State-of-the-art buildings, laboratory facilities and infrastructure
- Immediate proximity to Anschutz Medical Campus, The Children’s Hospital, future Veterans Affairs Hospital and University of Colorado lab facilities
- A collaborative biotechnology cluster
- A high concentration of top-tier life-science talent that’s highly educated, culturally diverse and a well-trained workforce
- A business development program designed specifically to help bioscience companies succeed

The park is now developing a business plan for the Colorado Drug, Diagnostic and Device Development Institute, a new program to help ventures in the preclinical phase grow into an actual bioscience companies, Farnham says.

Next door to the park is Anschutz Medical Campus, the first comprehensive academic health center located next to a bioscience research park west of the Mississippi. The campus features the University of Colorado at Denver’s health sciences programs, bioscience research and the University of Colorado Hospital.

“It’s an exciting time for bioscience in Colorado,” Farnham says.
Sitting at the base of the Rocky Mountains lies a bioscience cluster that contains the resources and talents to become world renowned. Colorado’s growing bioscience industry is poised to become an international biotech hub. This will show the world that Colorado does not only have beautiful scenery, but also the ability to compete in the bioscience arena on an international level.

While many states are itching to grow their own bioscience cluster, Colorado has more than 20 years of experience in this sector which others are beginning to notice. As a result of a variety of state-led business incentives and investment funds, Colorado’s research institutions have begun spinning out new companies each year. These programs are also designed to attract more businesses to the Rocky Mountain region.

Here is a look into some of these programs.

THE BIOSCIENCE DISCOVERY EVALUATION GRANT PROGRAM

The Bioscience Discovery Evaluation Grant Program (BDEGP), originally funded for $4.5 million over the past two years, will receive another $26.5 million over the next five years in Colorado. The funds will be disbursed through the Colorado Office of Economic Development and International Trade (OEDIT).

The BDEGP provides 30 percent of the funds for “proof of concept” matching grants through the OEDIT to Colorado technology transfer offices to accelerate commercialization of bioscience technologies up to $150,000 per research project. Evidence of a dedicated, matching source of monies that is equal to the amount applied for under the program is required and cannot be used to supplement the funding of research scope of the project.

Another 30 percent of the funds are provided as matching grants to early stage Colorado-based bioscience companies that have licensed a technology from a state research institution. These state matching funds will be given to companies that have received less than $5 million dollars from grants and third-party investors and that employ fewer than 20. The grants shall be for no more than $250,000 over the lifetime of the company. Evidence of a dedicated matching source of monies that is equal to the amount applied for under the program is required.

Lastly, up to 40 percent is dedicated to support partnership efforts between the bioscience industry and research institutions to build infrastructure that supports the commercialization of therapeutic and diagnostic products, devices or instruments to improve human health, agriculture and biofuels.

For more information on the Bioscience Discovery Evaluation Grant Program or to apply, please visit www.AdvanceColorado.com.

THE JOB CREATION PERFORMANCE INCENTIVE FUND

Companies that maintain new positions with salaries at least 110 percent above the average salaries in their counties for one year will be awarded with a performance-based incentive. Three million dollars will be distributed annually by The Economic Development Commission (EDC) with administrative support from the Office of Economic Development and International Trade. The goal of this program is to foster new business development, business expansion and relocations that generate new jobs within the state.

Companies located in rural areas must hire at least five new full-time employees in six months and companies in urban areas must hire 10 new full-time employees in six months. Businesses with multiple locations in Colorado may combine locations to meet the minimum requirements. Contact Colorado’s Office of Economic Development and International Trade at www.advancecolorado.com

BIOTECHNOLOGY R&D SALES AND USE TAX REFUND

Colorado’s biotechnology industry has the ability to recover the sales and use taxes paid in the preceding year on equipment and supplies purchased to conduct biotechnology research and development. The biotech company may seek a refund every year for all Colorado sales and use taxes they paid on purchases of tangible personal property used directly in research and development of biotechnology. Qualified applicants must submit a refund claim between January 1 and April 1 to the Colorado Department of Revenue. The refund helps promote the biotechnology industry in the state, aiding both start-up and established companies.

During the 2009 legislative session, the Colorado state legislature is seeking to expand the Biotechnology R&D Sales and Use Tax Refund to include both medical device and cleantech companies.

To find out more information or to submit a refund claim, contact the Colorado Department of Revenue or visit www.revenue.state.co.us.

MANUFACTURING EQUIPMENT EXEMPTION FROM COLORADO SALES AND USE TAX

The purchase of machinery or machine tools and parts are exempt from state sales and use tax when the machinery will be used in manufacturing. The machinery must be used to manufacture tangible personal property for sale or profit in Colorado. The tax exemption includes tangible personal property that will be used for one year or more and limits qualifying purchases of used equipment to a maximum of $150,000 annually.
For more information, contact the Colorado Department of Revenue at www.revenue.state.co.us.

CERTIFIED CAPITAL COMPANIES (CAPCOS)

The Certified Capital Companies Program was created by the Colorado legislature with the goal of making venture capital funds available to new or expanding Colorado small businesses. The CAPCO Program is expected to create new employment opportunities within the state and to stimulate economic growth. Colorado has six independently operated CAPCOS that provide loans and equity to Colorado businesses. Investments generated from a CAPCO generally range from $100,000 to $3.3 million.

To receive funding you must contact the CAPCOS directly. To view a list of CAPCOS please visit http://www.state.co.us/oed/business-finance/capco-list.cfm.

VENTURE CAPITAL AUTHORITY

The Colorado General Assembly in 2004 passed legislation that established the Colorado Venture Capital Authority (VCA), and in 2005 High County Venture was selected as the fund manager to establish the first fund. Colorado Fund 1 will make seed- and early-stage capital investments in businesses. The VCA anticipates the establishment of a second fund of approximately $25 million in 2010.

High Country Venture is independently operated and generally makes independent funding decisions. State approval is limited to ensuring that businesses receiving funding meet minimum specified requirements. Investments range from $250,000 to $3.375 million.

For more information or to submit a funding request, please visit www.Coloradofund1.com.

ECONOMIC DEVELOPMENT COMMISSION

The Economic Development Commission (EDC) was created by the legislature to promote economic development in Colorado. The EDC approves loans and grants from the economic development fund to help existing businesses expand and new companies locate in Colorado. It also implements marketing programs to support ongoing business activities. All policy and funding decisions are made by the nine commission members. The commission is also responsible for policy decisions concerning the state enterprise zone program.

For more information on the Economic Development Commission please visit www.AdvanceColorado.com

ENTERPRISE ZONE

Colorado’s enterprise zone program provides tax incentives to encourage businesses to locate and expand in economically distressed areas. Criteria for the establishment of zones include higher-than-average unemployment rates, low per capita incomes, and/or a population base of less than 80,000. There are 18 enterprise zones and subzones in Colorado. Businesses making qualifying investments and creating jobs in these zones are entitled to various incentives, including ten different enterprise zone tax credits.

To view the enterprise zones or for more information on tax incentives, please visit www.AdvanceColorado.com.

JOB TRAINING GRANT FUNDS

The Colorado First and Existing Industry grants are jointly administered by the OEDIT and the Colorado Community College System. Colorado First grants are provided to companies relocating to Colorado or existing companies undertaking a major expansion. The Existing Industry grants are designed for Colorado companies implementing new technology in order to remain competitive and retain local jobs.

Both grants assist with the cost of employee training. The grant-funded training must be for permanent full-time positions that require substantive and company specific training. Training must occur within the fiscal year that funds are awarded, and the company must pay a minimum of 40 percent of the total cost of training. The grant applications are reviewed on a rolling basis throughout each fiscal year, and the grants generally fund up to $800 per employee.

To apply for the grants or for more information, please visit www.AdvanceColorado.com.

LOCAL INCENTIVES

Your local community may also provide business development incentives. For additional information, contact your local economic development organization. A list can be found at www.advancecolorado.com.

Go to www.coloradopropects.com to find more information on Colorado’s business incentives.
ACCEL8 TECHNOLOGY CORPORATION  
Denver  
www.accel8.com  
Develops medical diagnostic technologies for research and clinical applications. The primary focus is rapid, integrated bacterial analysis system designed to identify, count, and provide complete antibiotic susceptibility data by bacterial species within a few hours of sample injection without prior culturing.

ACCU-TUBE CORPORATION  
Englewood  
www.accutube.com  
Manufactures standard and custom size stainless steel hypodermic medical tubing.

ACTALL SECURITY PRODUCTS  
Denver  
www.actallsp.com  
Engineers, manufactures and markets wireless systems for hospital and pharmaceutical company facilities.

ADA TECHNOLOGIES, INC.  
Littleton  
www.adatech.com  
Designs and manufactures prosthetic and orthotic components.

ADVANCED COSMETIC INTERVENTION  
Centennial  
www.acisurgery.com  
Develops innovative devices and minimally invasive techniques for the medical and cosmetic industry.

ABOUT PACKAGING ROBOTICS  
Thornton  
www.aboutpackagingrobotics.com  
Produces robotic package handling systems. The products are engineered to open, fill, transport, seal, code and label a variety of pre-made pouches and bags. Their line of packaging and systems for on demand product identification are currently used in the medical, industrial and food industries.

ABLEILITIES UNLIMITED  
Colorado Springs, Denver  
www.auiop.com  
Provides artificial limbs and custom orthopedic appliances.

ABLE PLANET  
Lakewood  
www.ableplanet.com  
Provides products for people with all levels of hearing loss.

ABLELINK TECHNOLOGIES  
Colorado Springs  
www.ablelinktech.com  
Addresses the need for well-researched cognitive support technologies for individuals with intellectual disabilities.

ACCELLENT  
Arvada, Englewood  
www.accellent.com  
Offers a comprehensive menu of outsourcing solutions to the medical device market, including innovative design, integrated engineering, precision component production, finished goods assembly, and complete supply chain management.
**ADVANCED MICROLABS, LLC**  
*Fort Collins*  
www.advancedmicrolabs.com  
Researches and develops chemical analytical instruments in ‘Lab-on-a-chip’ format.

**ADVANCED RESEARCH INSTRUMENTS CORPORATION**  
*Golden*  
www.aricorp.com  
Produces preamplifiers for PMT’s and electron multipliers, high voltage power supplies, counters and timers, precision rate meters, and image analyzers for scanning electron microscopes.

**AEROPHASE INC**  
*Longmont*  
www.aerophase.com  
Researches and develops technologies that improve healthcare including a meter dose inhaler and an improved aerosol therapy for lung cancer.

**AESTHETIC TECHNOLOGIES**  
*Golden*  
www.atimed.com  
M manufactures and sells Parisian Peel® brand microdermabrasion systems and accessories along with skin care products to medical, and spa professionals.

**AESTIS, INC.**  
*Boulder*  
www.aestis.com  
Develops a treatment for obesity through controlled hypoxia technology. The two principal components are the air separation unit and proprietary control system.

**AGILENT TECHNOLOGIES**  
*Fort Collins*  
www.agilent.com  
Provides core electronic and bio-analytical measurement tools to advance life science research.

**AERILIFT UNLIMITED, INC.**  
*Evergreen*  
www.aerilift.com  
Develops and manufactures soft-sided oxygen carriers.

**ALLISON MEDICAL INC**  
*Littleton*  
www.allisonmedical.com  
Develops products to assist specialists in the medical and veterinary industries, and have designed and provided essential syringes, needles and custom items for various industries.

**ALLOSOURCE**  
*Centennial*  
www.allosource.com  
Develops, processes and distributes life-enhancing bone and tissue allografts to the medical community.

**ALLPRO**  
*Broomfield*  
www.allprodental.com  
Produces a large selection of non-latex prophy cups, prophy angles and other dental products.

**ALPHA MOLD WEST**  
*Broomfield*  
www.alphamoldwest.com  
Plastic injection mold-making facility for the medical industry.

**ANALOG SCIENTIFIC, LLC**  
*Louisville*  
www.analogsscientific.com  
Commercializes devices that will reduce and discourage anesthetic/narcotic analgesic abuse.

**ANIMAL CARE SYSTEMS**  
*Littleton*  
www.animalcaresystems.com  
Provides innovative rodent caging systems for the life-science industry.

**ANIMARK**  
*Aurora*  
www.animark.us  
M manufactures and sells ultrasound pregnancy detectors and ovulation predictors for livestock breeding.

**APDYNE MEDICAL COMPANY**  
*Denver*  
www.apdyne.com  
M manufactures and distributes the Apdyne Phenol Applicator Kit used to anesthetize the tympanic membrane during in-office myringotomy procedures.

**AQUEOUS BIOMEDICAL**  
*Colorado Springs*  
www.aqueousbio.com  
Develops biocompatible materials and geometric designs that can be applied to stents, shunts, artificial organs and drug delivery devices. Their first product, the Oculieve™ shunt, is designed to control over-pressurization inside the eye caused by glaucoma.

**ARCSCAN, INC.**  
*Morrison*  
www.arcscan.com  
Re-develops and sells the new Artemis 3 ArcScanner for refractive surgery and implants.

**ARP MANUFACTURING, LLC**  
*Centennial*  
www.arpwave.com  
Uses a patented bio-electrical current, simultaneously with active range-of-motion and other exercise techniques, to significantly speed up the body’s natural recuperative ability.

**AURI-STIM MEDICAL**  
*Denver*  
www.net1device.com  
Offers an alternative therapy for migraine headaches, hormonal migraine, chronic headaches, premenstrual syndrome (PMS), nicotine and narcotics addictions using the NET-1000 device.
AVANTES  
Broomfield  
www.avantes.com  
Produces, develops and sells spectrometers, light sources, fiber optic multiplexer, fiber optic cables, software, fiber optics, accessories to the medical device industry.

BAL SEAL ENGINEERING  
Colorado Springs  
www.balseal.com  
Produces seals and canted-coil springs for sealing, holding, latching, and electrical contact in a variety of applications throughout the medical market.

BAXA CORPORATION  
Englewood  
www.baxa.com  
Develops and manufactures products for preparing, handling, packaging and administering fluid medications.

BEACON BIOTECHNOLOGY  
Denver  
www.beaconbiotechnology.com  
BP Proteomics, ProLume Ltd, and Black Forest Engineering, LLC have come together to create Beacon Biotechnology to pursue new opportunities that build upon their respective scientific expertise.

BEAMONE, LLC  
Denver  
www.beam-one.com  
Offers electron beam sterilization for medical and pharmaceutical devices.

BECKMAN COULTER  
Fort Collins  
www.beckmancoulter.com  
Develops and produces instruments for the diagnostic industry. Specializes in the fields of immunochemistry, flow cytometry, and microbiology.

BELL DENTAL PRODUCTS, LLC  
Denver  
www.belldental.com  
Designs, develops, and manufactures precision dental equipment based on electric motor technology.

BIOCARE SYSTEMS, INC.  
Parker  
www.biocaresystems.com  
Designs, develops and markets patent-protected, FDA cleared, new health-care devices (LumiWave™) that use deep-tissue light therapy to decrease pain, accelerate healing and improve quality of life.

BIODESIX, INC.  
Boulder  
www.biodesix.com  
Provides clinically reliable methods for the early detection, diagnosis, therapeutic guidance, and monitoring in cancer and degenerative diseases.

BIOFEEDBACK SYSTEMS, INC.  
Boulder  
www.users.qwest.net/~pitchj  
Designs, manufactures, sells and services a line of biofeedback hardware and software including subliminal and supraliminal audio self-help cassette programs. The company is an FDA registered medical device manufacturer.

BIO-LOGISTICS PRECLINICAL, INC.  
Pierce  
www.bio-logistics.com  
Offers engineering and regulatory support and preclinical strategic development to the medical device industry.

BIOLOGISTICS, INC.  
Fort Collins  
www.biovisiontech.com  
Develops and manufactures micro-visualization solutions that enable endoluminal and minimally invasive medical procedures in both human and veterinary medicine. The imaging technologies and customized microendoscope solutions are integrated to reduce incision size and speed healing.

BIOZHENNA CORPORATION  
Bellvue  
valovkirsner@yahoo.com  
Develops devices and informatics products focused on female reproductive health management, including conception aid, birth control, ovulation, screening for cancer and other conditions of the female reproductive system.

BOULDER INNOVATION GROUP, INC.  
Boulder  
www.boulderinnovators.com  
Develops and manufactures image-guided surgical navigation digitizers and industrial 3D capture and modeling equipment.

BRAUN BIOSYSTEMS  
Centennial  
www.braunbiosystems.com  
Provides diagnostic point of care coagulation management systems that have a positive impact on patient outcomes in hospital, outpatient, and home healthcare venues.

BROADWEST CORPORATION  
Denver  
www.broadwest.com  
Develops and manufactures ergonomic mammography viewing equipment.

CS MEDICAL WERKS  
Grand Junction  
www.csmedicalwerks.com  
Offers ceramic manufacturing, materials expertise, and custom engineering support to prototype and commercialize designs and patents to orthopedic companies for hip, spinal and dental implants.
CANBERRA INDUSTRIES
Greenwood Village
www.canberra.com
Manufactures and supplies analytical instruments, systems and services for radiation detection and radiation monitoring.

CARE ELECTRONICS, INC.
Boulder
www.medicalshoponline.com
Offers a range of electronic monitoring and alarm equipment for the home health and long term care markets.

CARIDIAN BCT (FORMERLY GAM BRO BCT)
Lakewood
www.caridianbct.com
Develops and manufactures automated blood collection systems and related information systems. Developing cancer therapies and vaccines through therapeutic apheresis and cell therapy. Developing pathogen reduction technologies.

CAROBA PLASTICS, INC.
Englewood
www.caroba.com
Provides custom injection molds and specializes in the needs of the medical and high technology industries.

CARSAN ENGINEERING, INC.
Golden
www.carsaneng.com
Designs and manufactures products for several of the leading OEMs in the medical, dental, industrial, semiconductor, entertainment, and video projection markets.

CEA TECHNOLOGIES, INC.
Colorado Springs
www.ceatechnologies.com
Provides product development and complete product assembly and packaging services to the medical industry.

CERAPEDICS, INC.
Lakewood
www.cerapedics.com
Develops and commercializes products for the orthopedic bone substitutes market.

CERTOL INTERNATIONAL, LLC
Commerce City
www.certol.com
Provides cleaning, disinfection and sterilization products and solutions to address the complicated infection control challenges within the medical and dental markets.

CHALFANT RESEARCH AND DEVELOPMENT
Colorado Springs
(719) 473-7499
Manufactures electronic controls, semiconductors and medical devices. Control circuit design and fabrication for semiconductor, medical, printing and machining industries.

CHART DENVER
Denver
www.cryenco.com
Provides contract manufacturing services to the medical equipment industry.

CLARIMEDIX, INC.
Boulder
(303) 905-6163
Develops quantum devices for the temporary relief of minor muscle and joint pain, arthritis, muscle spasms and stiffness.

CLEAN ROOM DEVICES, LLC
Westminster
www.cleanroomdevices.com
Manufactures products that are engineered specifically for “clean room” environments.

COBE STERILIZATION SERVICES
Lakewood
(303) 205-2564
EtO (ethylene oxide) sterilization facility with services offered to third party customers. Has fulfilled requirements for EPA, FDA, ISO and OSHA compliance.

COCHLEAR AMERICAS
Englewood
www.cochlearamericas.com
Designs, manufactures and distributes hearing implants including the Nucleus Freedom and Baha implants.

COLORADO LASER MARKING, INC.
Colorado Springs
www.coloradolasermarking.com
Provides YAG laser engraving technology, as well as CO2 and YAG laser cutting services.

COLORADO PRECISION PRODUCTS, INC.
Boulder
www.coloradoprecision.com
Provides diamond turned and polished optics/parts. Fabricator of X-ray telescope optical components. Produces and offers air bearing LVDT contact linear measurement systems, .05 microinch resolution.

COME G U.S.A. ENDOCOPY, INC.
Denver
www.comeg.de/eng
Develops and manufactures high-grade endoscopes and accessories.

CONFI-DENTAL PRODUCTS COMPANY
Louisville
www.confi-dental.com
Manufactures dental cements, composite resins and injection molded plastics.

CONMED ELECTROSURGERY
Centennial
www.conmed.com
Designs and manufactures RF electrosurgical generators and accessories for use in surgical procedures.

COORSTEK
Golden
www.coorstek.com
Manufactures over 150 ceramic blends for use in implant procedures. Also, offers over 18,000 plastic materials for projects including high-temperature polymers, thermoplastics, fluoropolymers, and bioresorbables and provides custom machined and injection-molded metals.
CORGENIX MEDICAL CORPORATION
Broomfield
www.corgenix.com
Develops and manufactures innovative medical diagnostic products in the hemostasis, autoimmune and vascular areas.

COVIDIEN
Boulder
www.covidien.com
Offers an extensive product line, including pulse oximetry and airway and temperature management devices, ventilators, vessel sealing, and electrosurgery equipment.

CROSSTREES MEDICAL, INC.
Boulder
www.xtreesmed.com
Develops surgical instruments for the treatment of Vertebral Compression Fractures (VCF) of the spine.

CYTOLOGIC
Fort Collins
www.cytoplogic.com
Develops a medical device to treat solid tumors. UNLEASH™ Immunotherapy selectively removes blood-borne inhibitors that protect tumors from the body’s own immunological defenses.

DALSA COLORADO SPRINGS
Colorado Springs
www.dalsa.com
Designs, develops, manufactures and markets digital imaging products and solutions. Products are components in equipment for digital x-ray equipment and DNA based laboratory test equipment.

DARKHORSE TECHNOLOGIES
Boulder
bparks@colorado.edu
Commercializes a patented technology for affordable, hand-carried, battery operated instruments for on-site genetic detection using Polymerase Chain Reaction (PCR).

DATAWAVE TECHNOLOGIES CORPORATION
Berthoud
www.dwavetech.com
Manufactures a wireless and battery-free device for acquiring and transmitting data from electrodes and other biosensors to a receiver placed meters away for electrophysiology, neurophysiology and physiology related research on both humans and large animals.

DBMEDX
Littleton
www.dbmedx.com
Specializes in complex electromechanical devices, catheters and vascular devices, Ultrasound technology, LED-based products, and FDA Design Controls.

DEPHI MEDICAL SYSTEMS
Longmont
www.delphimedical.com
Manufactures infusion, respiratory and vital signs monitoring equipment.

DENVER INSTRUMENT COMPANY
Denver
www.denverinstrumentusa.com
Designs and manufactures analytical balances, electrochemistry instruments, moisture analyzers, and titration controllers.

DENVER OPTIC COMPANY
Englewood
www.eyeprothetics.com
Specializes in the fitting and fabrication of two types of ocular prosthesis.

DESERT GLASS WORKS
Colorado Springs
www.dgw.com
Manufactures quartzware for the medical and research industries.

DIE CUT TECHNOLOGIES, INC.
Northglenn
www.diecuttech.com
Offers precision material conversion, skilled assembly and manufacturing efficiencies, including cleanroom facilities.

DIRECTED ENERGY SOLUTIONS
Colorado Springs
www.denergysolutions.com
Develops advanced laser and optical device solutions for medical applications.

DNTLWORKS EQUIPMENT CORPORATION
Centennial
www.dnltworks.com
Manufactures portable, mobile and self-contained dental systems.

DPIX, INC.
Colorado Springs
www.dpix.com
Produces high-resolution amorphous silicon (a-Si) sensor arrays for medical X-ray imaging.

E-I MEDICAL IMAGING
Loveland
www.eimedical.com
Develops veterinary diagnostic ultrasound.

EJ BIOMED
Fort Collins
www.eldonjames.com
Supplies parts to the medical and pharmaceutical markets through a global distribution chain.

E.N. MURRAY
Denver
www.e nmurray.com
Develops cellular foam technology for the medical device industry.

ELDON JAMES CORPORATION
Loveland
www.eldonjames.com
Designs and manufactures a diverse line of plastic and stainless steel hose fittings with a single-barb design.
ELECTRONIC MATERIALS, INC.
Breckenridge
www.emiuv.com
Offers a complete line of EM CAST UV adhesives, epoxies, sealants, encapsulants and coatings, EM I also offers room temperature, thermal and Visible light cure adhesive systems.

ELLAB, INC.
Centennial
www.ellab.com
M anufactures thermal validation solutions for food and pharmaceutical industries.

EMPIRICAL TESTING CORPORATION
Colorado Springs
www.empiricaltesting.com
Provides medical device testing services that add value throughout the product development cycle, with a focus on spinal implant device testing.

ENCISION, INC.
Boulder
www.encision.com
Designs and manufactures innovative surgical devices. Developed A EM ® Laparoscopic Instruments to improve electrosurgery and reduce the chance for patient injury in minimally invasive surgery.

ENCYNOVA INTERNATIONAL
Greeley
www.encynova.com
Designs and manufactures fluid control systems for a broad range of metering and dispensing applications

ENDOSHAPE, INC.
Boulder
www.endoshape.com
M anufactures surgical and medical instruments focusing on shape memory polymer devices for endolumenal application.

EVERGREEN RESEARCH, INC.
Golden
www.evergreenresearch.com
Offers a complete range of development services from product definition and feasibility studies through detailed design to pilot-run and low-volume production to the medical device industry.

EVEIA MEDICAL
Boulder
www.eveiamedical.com
Development stage company focused on creating a bioanalytical system designed to conduct immunassay tests. Ky attributes include; lowfemtomolar sensitivities, short essay development cycles and results in 10-20 minutes. The product consists of the instruments, software and reagents required for analyte measurement.

EXTREME DIAGNOSTICS
Boulder
www.extremediagnostics.com
Develops noninvasive measurement systems, including optical systems such as custom horticographic and interferometric instruments. Specializes in structural health monitoring, nondestructive testing, and materials processing.

FIREFLY MEDICAL, INC.
Fort Collins
www.fireflymedical.com
Designs and develops innovative durable medical equipment for clinical healthcare markets.

FISCHER MEDICAL TECHNOLOGIES, INC.
Northglenn
www.fischermti.com
Designs, manufactures, and markets imaging systems for the screening and diagnosis of breast cancer.

FLUONIC
Boulder
www.fluonic.com
Develops infusion therapy systems with disposable sensors for OEM and proprietary pumping systems.

GAMBRO
(FORMERLY GAMBRO RENAL PRODUCTS)
Lakewood
www.usa-gambro.com
Develops and supplies hemodialysis, peritoneal dialysis and acute dialysis products, therapies and services.

GE ANALYTICAL INSTRUMENTS
Boulder
www.geinstruments.com/ionics
M anufactures instruments used to measure total organic carbon (TOC) in water for pharmaceutical applications and medical research.

GENESEE BIOMEDICAL, INC.
Denver
www.geneseebiomedical.com
M anufactures cardiac surgery instruments and devices.

GLOBAL MED TECHNOLOGIES
Lakewood
www.wyndgate.com
Develops and supplies blood bank management information systems and services for blood centers and hospitals.

GLOBAL THERAPEUTICS
Broomfield
www.gtcardio.com
A Broomfield-based Cook Medical company that specializes in cardiology, was give the go-ahead on a new coronary stent.

GNATHODONTICS, LTD.
Wheat Ridge
www.gnatho.com
Specializes in functional dentistry, advanced implant work, precision partial dentures, combination cases and metal-free fixed restorations.

GREAT BASIN SCIENTIFIC
Boulder
www.gbscience.com
Founded to provide healthcare professionals with fast, accurate, cost-effective and easy-to-use diagnostic test in the point-of-care setting.
Manufactures and distributes analytical instruments and reagents used to test the quality of water and other aqueous solutions.

Develops and manufactures high performance components, medical software, medical devices, and non-medical products. Produces microcircuits and subsystems for hearing and medical applications.

M manufactures precision-machined and assembled components for the medical industry.

M manufactures syringes and packaging products for the medical community.

Develops a solution for knee malalignment that preserves and restores natural knee surfaces. The Axial Knee Realignment System (AKRFX) comprises both a new surgical technique and an anatomic-based, knee implant system.

Develops and manufactures biomedical instruments including molecular diagnostic assays, virus measurement systems and detection technologies for micro-arrays.

M manufactures long-distance and continuously-focusable microscope technology, macro systems, internal-focusing devices and other lenses.

Provides molding, assembly and design of medical components and fittings for OEM device manufacturers. Class 100,000 cleanroom molding and assembly available.

M manufactures precision temperature controllers and microscope hot stage systems for temperature cycling, food sciences, materials characterization, forensics, polymers and liquid crystals and microbiology.

Produces precision metal products for the medical industry.

Designs and manufactures instruments which are used in the animal health field including specialty instruments, surgical suture, and veterinary equipment.

Researches and develops projects, provides consulting, contract development of patient monitoring systems, and other medical technologies.

Develops surgical spinal technologies.

Develops and distributes healthcare solutions based upon high energy laser technologies that direct high level, monochromatic, continuous-wave optical radiation to pathological tissue to restore and improve function.

Offers testing, inspection and certification of products, commodities and systems for medical devices. Performs FDA 510(k) reviews, electrical safety certification including CE Marking, testing to the MDD and IVDD, risk analysis, E M C and performance testing.

A assembles and packs medical products.

Offers microscopes and custom-engineered products ranging from small modifications on a microscope stand that accommodate specific applications, to large specialized systems, such as an optical comparison bridge for forensic science.
LENOX MACLAREN SURGICAL INSTRUMENTS
Louisville
www.lenoxmaclaren.com
Manufactures precision orthopedic and neurological surgical instruments.

LEXICOR MEDICAL TECHNOLOGY LLC
Boulder
www.lexicor.com
Develops neuropsychiatric medical devices.

LIGHTSTREAM MEDICAL TECHNOLOGIES
Longmont
www.lightstreamphotonics.com
Our unique, patented LED Packaging Technology channels heat away via state-of-the-art Micro Heat Pipes (MHP’s) that perform far more efficiently, and in a much more compact space, than conventional heat-sink technology.

LOCOMOTION, INC.
Nederland
(303) 596-5141
Develops a patented technology addressing a critical need in the process of providing walking therapy to brain injury patients.

LOGISENS CORPORATION
Fort Collins
www.logisens.com
Develops biosensor and software technology, enabling a significant breakthrough in real-time measurement and reduction of stress.

MAGNELAB, INC.
Longmont
www.magnelab.com
Manufactures magnetic components (transformers/inductors) for the medical field.

MASSIVELY PARALLEL TECHNOLOGIES, INC.
Louisville
www.massivelyparallel.com
Develops software that allows researchers to conduct protein searches 26x faster than jobs submitted through the National Center for Biotechnology Information’s web site.

MBIO DIAGNOSTICS
(A DIVISION OF PRECISION PHOTONICS CORPORATION)
Boulder
www.precisionphotonics.com
Develops a low-cost, high sensitivity, multi-pathogen detection system for diagnostics.

MEDEFFICIENCY, INC.
Westminster
www.medefficiency.com
Specializes in total contact casting products for off-loading diabetic foot ulcers.

MEDICAL MODELING, INC.
Golden
www.medicalmodeling.com
Produces highly accurate 3-D physical models of human bone structure from imaging such as CT or MRI.

MEDIVANCE, INC.
Louisville
www.medivance.com
Produces therapeutic temperature management systems.

MEDTRONIC NAVIGATION
Louisville
www.medtronicnavigation.com
Delivers surgical navigation and intra-operative imaging solutions.

MEINHARD GLASS PRODUCTS
Golden
www.meinhard.com
Produces nebulizers for use in all major ICP instruments.

MESA LABORATORIES, INC.
Lakewood
www.mesalabs.com
Provides dialysis meters and related supplies to dialysis clinics world wide.

METAFLUIDICS, INC.
Golden
www.metafluidics.com
Delivers cytometry and cell sorting solutions using optical trapping, fluorescence detection and fluid control technology.

METAMATRIX, LLC
Boulder
www.zorbent.com
Manufactures an all-purpose absorbent called Zorbent.

MICROPHAGE, INC.
Longmont
www.microphage.com
Produces high-speed bacteria detection technologies to commercialize in markets including: food safety, water safety, clinical and veterinary diagnostics and detection applications.

MIKRON CORPORATION DENVER
Aurora
www.mikron.com
Supplies transfer machining systems for complex parts, cutting tools with high performance standards, self medication and diagnostic devices.

MIND STUDIOS
Colorado Springs
www.mind-studios.com
A full service product design and research studio housed within the University of Colorado at Colorado Springs. Offers concept generation, advanced prototyping, engineering and consumer research, human factors design and manufacturing solutions.

MKS INSTRUMENTS, MEDICAL ELECTRONICS
Colorado Springs
www.mksinst.com
Manufactures power generators and amplifiers for medical applications.

MOUNTAINSIDE MEDICAL
Boulder
www.mountainsidemed.com
Specializes in the contract manufacturing of medical device components and instruments, including electrosurgical and laparoscopic instruments and jaws, orthopedic implants, endoscopy devices.
NANOPRODUCTS CORPORATION
Longmont
www.nanoproducts.com
Provides performance-oriented product engineering, followed by manufacturing and delivering nanoscale materials, dispersions and related products for medical materials.

NEUROQUEST THERAPEUTICS
Grand Junction
www.neuroquesttherapeutics.com
Develops an electrical brain stimulating device to deliver neuromodulation treatments to address the unmet therapeutic needs of nervous system disorders, stroke recovery, chronic pain and behavioral disorders.

NORGREN, INC.
Littleton
www.norgren.com/usa
-produces miniature valves, pressure regulators, proportional technology, medical gases and liquids for the medical device industry.

NSPIRE HEALTH, INC.
Longmont
www.nspirehealth.com
Develops, manufactures and markets respiratory care products and services focused on cardiopulmonary diagnostics, respiratory core lab services, and disease management solutions.

OLYMPUS SOFT IMAGING SOLUTIONS CORPORATION
Lakewood
www.soft-imaging.de
-produces microscopes and other imaging equipment.

OPTIBRAND LTD., LLC
Fort Collins
www.optibrand.com
-provides a fraud-resistant system to positively identify animals from birth and throughout the food processing chain. The Secure Identity Preservation system helps assure food safety and control the spread of animal disease.

OTOLOGICS, LLC
Boulder
www.otologics.com
-develops and commercializes surgically implantable alternatives to conventional “in the ear” hearing aids.

OVAL WINDOW AUDIO
Nederland
www.ovalwindowaudio.com
-produces induction loop assistive listening systems and visual and vibrotactile technologies that help deaf and hard of hearing individuals.

PARE SURGICAL, INC.
Englewood
www.paresurgical.com
-develops surgical instruments such as the Quik-Stitch endoscopic suturing system.

PARKER MEDICAL
Englewood
www.parkermedical.com
-provides airway management products.

PARTICLE MEASURING SYSTEMS
Boulder
www.pmeasuring.com
-designs, manufactures, and services precision microcontamination monitoring instrumentation and software used for detecting particles in aerosols, liquids, slurries, gas streams and vacuum processing environments as well as surface molecular contamination monitoring.

PCC/ADVANCED FORMING TECHNOLOGY
Longmont
www.pcc-aft.com
-offers thixoforming and metal injection molding for the medical device industry.

PEAK ROBOTICS, INC.
Colorado Springs
www.peakrobotics.com
-manufactures robots, special equipment, and turnkey automated systems for a variety of industries including: biotech, electronics, medical, semiconductor, etc.

PEDDLE MASTER, INC.
Johnstown
www.peddlemaster.com
-designs and manufactures handicapped driving aids.

PERNICKA CORPORATION
Fort Collins
www.pernicka.com
-offers analytical testing that meets or exceeds the requirements of MIL-STD 750/883 method 1018 and 45662A for companies in the semiconductor, aerospace, basic & applied research, surface analysis, thin film deposition, laser technology, and medical products industries.

PHARMAJET, INC.
Golden
www.pharmajet.com
-develops a needle-free technology that has a low cost, single use, disposable polypropylene vial or cartridge, suitable for the delivery of common vaccines and standard dose injectable liquid medicines.

PICO-TESLA MAGNETIC THERAPIES
Littleton
(303) 795-3222 or allen_braswell@mac.com
-manufactures, markets and supports proprietary medical device technology designed to treat the signs and symptoms of neurological disorders like Parkinson’s disease, Alzheimer’s, migraines and epilepsy.

PLEXUS CORPORATION
Louisville
www.plexus.com
-provides integrated product development, manufacturing, and sustaining services of medical products.
PORTA-LUNG, INC.
Lakewood
www.portalung.com
Provides non-invasive ventilator support for long-term patients who need more portability than the iron lung allows, while maintaining the same level of ventilating efficiency.

PRECISION DIAGNOSTIC INSTRUMENTS
Westminster
www.pdimeters.com
Designs and manufactures professional quality, affordable test equipment.

PRECISION GLASSBLOWING
Centennial
www.precisionglassblowing.com
Provides custom and OEM scientific glass for custom synthesis, pharmaceutical, environmental, petrochemical, research, commercial, government and medical laboratories.

PREFERRED MEDICAL PRODUCTS, INC.
Englewood
www.pmpcolorado.com
Manufactures stainless steel medical components for hypodermic needles and lancet type products.

PRESCOTT’S, INC.
Monument
www.surgicalmicroscopes.com
Provides reconditioned operating microscopes and allied accessories that function as intended by the original equipment manufacturer.

PROBETRONIX, LLC
Colorado Springs
www.probetrionix.net
Manufactures oscilloscope probes.

PRODUCTS GROUP INTERNATIONAL, INC.
Lyons
www.productsgroup.com
Researches, develops and engineers ultrasound medical and veterinary equipment.

PROTOGENIC, INC.
Westminster
www.protogenic.com
Manufactures prototypes and conceptual models using stereolithography (SLA) and Laser Sintering (LS) rapid prototyping technology.

PROTOMED, INC.
Arvada
www.protomed.net
Creates accurate anatomical models from CT scans by using the latest imaging software and laser driven technology.

PROTOTYPE CASTING, INC.
Denver
www.protcast.com
Manufactures non-ferrous prototype parts for the medical industry, specializes in RPM (Rubber Plaster M old) casting, sand casting and rapid investment casting.

PTA CORPORATION
Longmont
www.ptacorp.com
Manufactures aluminum and steel molds for projects with lifetime runs of 5,000 to 250,000 pieces for medical applications.

QUEST PRODUCT DEVELOPMENT CORPORATION
Wheat Ridge
www.quest-corp.com
Helps bring to market medical products and analytical systems for small start-ups to research universities and international corporations. Has received numerous SBIR/STTR grants from NIH, DOD, NA SA and NIST.

RADIATIONAL IMAGING TECHNOLOGY
Colorado Springs
www.radimage.com
Provides clinical and research physicists with a high precision automated QA tool for advanced radiation therapies. Received FDA clearance on RIT 113 radiation therapy film dosimetry.

RAND-SCOT, INC.
Fort Collins
www.easypivot.com
Designs and manufactures products for persons with disabilities including BBD Cushions and Mattress Overlays, EasyPivot Patient Lifts, and Saratoga Exercise Products.

RAPID PROTOTYPING CORPORATION
Longmont
www.rapidepro.com
Offers engineering and design and other manufacturing services for the medical device industry.

RJD MACHINING
Parker
www.rjdmachining.com
Specializes in precision production runs and some prototype work for OEM’s in the medical industry.

ROCKY MOUNTAIN BIOSYSTEMS, INC.
Wheat Ridge
(303) 277-1140
Develops a tissue sealing technology that activates a specially formulated adhesive to bond tissue and achieve a uniform seal in seconds. The systems temporarily or permanently modify tissues for transdermal and deposition drug delivery, and for cosmetic skin resurfacing.

ROCKY MOUNTAIN INSTRUMENT COMPANY
Lafayette
www.rmico.com
Designs and manufactures optics and coatings (ultraviolet through far infrared) for the medical industry.

ROCKY MOUNTAIN ORTHODONTICS, INC.
Denver
www.rmortho.com
Serves all areas of orthodontics including pediatric orthodontic prevention, interceptive pediatric orthodontics, mixed dentition orthodontics, adult orthodontics, reconstructive dentistry orthodontics, TMJ orthodontics, surgical orthodontics and breathing/sleep problem related orthodontics.
SAMSON DESIGN ASSOCIATES, INC.
Boulder
www.samonsondesign.com
Provides full service product development ranging from concept to production specifications, with many products for the medical field.

SANDHILL SCIENTIFIC
Highlands Ranch
www.sandhillsci.com
Designs, manufactures and distributes diagnostic products focused on gastroenterology.

S CIENTECH, INC.
Boulder
www.sciotech-inc.com
Manufactures analytical instruments: semi-micro balances, analytical balances, semi-analytical balances, and toploading balances for the medical industry.

SCOTT ORTHOTIC LABS, INC.
Fort Collins
www.scottorthoticlabs.com
Manufactures orthotic and prosthetic products.

SEalcon
Centennial
www.sealconusa.com
Manufactures cable management components, including liquid tight strain relief fittings, flexible conduit, M 23 circular connectors and related products for the health care industry.

S HIPPERT MEDICAL TECHNOLOGIES
Centennial
www.shippertmedical.com
Manufactures and distributes medical disposable products and instruments. Serves the ear, nose and throat, plastic surgery, cosmetic surgery, emergency/trauma care, family practice, pediatric, ophthalmology and dermatology fields.

SIенко, INC.
Arvado
www.sienco.com
Manufactures and distributes Class II medical devices, disposable supplies, reagents and accessories for in-vitro diagnostic use. Also, provides tools for hemostasis monitoring and viscoelastic evaluations.

SNOASIS MEDICAL
Denver
www.snoasismedical.com
Develops dental regenerative products derived from discarded tissues and cells.

S OMALOGIC, INC.
Boulder
www.somalogic.com
Uses aptamer array technology and bioinformatics capabilities to discover disease-specific biomarkers and protein signatures. Develops medical diagnostics based on these signatures.

SONORA MEDICAL SYSTEMS, INC.
Longmont
www.4sonora.com
Provides high quality products and services to the diagnostic ultrasound and MRI markets. ISO 9001 certified and FDA registered.

SONTEC INSTRUMENTS
Centennial
www.sontecinstruments.com
Provides a broad line of instruments as well as custom instrument manufacturing and in-house repair service.

SORIN GROUP (FORMERLY COBE CARDIOVASCULAR)
Arvada
www.cobe.com
Develops and produces cardiovascular and autologous transfusion therapy products.

SOUND SURGICAL TECHNOLOGIES, LLC
Louisville
www.vaser.com
Offers ultrasonic technologies and related techniques for aesthetic surgery.

SOURCE MDX
Boulder
www.sourcemedicine.com
Develops RNA-based biomarkers to create companion diagnostics for inflammation related therapeutic areas including oncology, cardiovascular, autoimmunie and infectious diseases.

S PECTRANETICS
Colorado Springs
www.spectranetics.com
Develops, manufactures and markets single-use medical devices used in minimally invasive surgical procedures within the cardiovascular system along with its CV X-300® excimer laser system.

S PECTRUM LASER AND TECHNOLOGIES, INC.
Colorado Springs
www.spectrumlaser.com
Provides contract design and manufacturing services for the medical industry.

ST CARDIO TECHNOLOGIES, LLC
Broomfield
www.stcardio.com
Designs, develops, and manufactures electronic medical devices for use in electrophysiology cardiac cath labs. Our Z6 Cardiac Stimulator is our first product and has FDA 510(k) clearance.

STRIONAIR, INC.
Louisville
www.strionair.com
Manufactures and markets a product that uses disposable media and that can be installed in any air handler or HVAC system.

STROKE RECOVERY SYSTEMS, INC.
Denver
www.strokeaid.com
Develops the AutoMove AM800 that teaches healthy parts of the brain after a stroke to take over lost functionality.
SUMMA DESIGN  
Montrose  
www.summa-design.com  
Contract design and development company focused on the medical device market.

SUMMIT DOPPLER SYSTEMS  
Golden  
www.summitdoppler.com  
Manufactures ultrasound Doppler systems used to detect fetal heartbeat and to monitor peripheral arterial and venous blood flow.

SUNRISE MEDICAL INC  
Longmont  
www.sunrisemedical.com  
Provides home healthcare products including wheelchairs, respiratory, daily living aids, and speech augmentation devices.

SUPREME CABLE TECHNOLOGIES, INC.  
Thornton  
www.supremecable.com  
Manufactures quality custom cable assemblies and wire harnesses.

SURGICAL PIONEERING  
Monument  
303-333-4333  
Develops instrumentation and methods to improve surgery with an emphasis on cardiac surgery.

THE SYNAPTIC® CORPORATION  
Aurora  
www.synapticus.com  
Develops Synaptic®, a patented pain control technology that works without drugs. Marketed in accordance with FDA regulations for the treatment of acute and chronic pain.

SYNTHERICS, INC.  
Monument  
www.syntherics.com  
Develops, produces and markets instruments, implants and biomaterials for the surgical fixation, correction and regeneration of the human skeleton and its soft tissues.

T.R.S., INC.  
Boulder  
www.oandp.com/products/trs  
Develops, manufactures, and markets body-powered prosthetic devices. Designs and builds technology for persons missing hands.

TAPELESS WOUND CARE PRODUCTS, LLC  
Englewood  
www.tapelesswoundcare.com  
Manufactures and distributes a system of patented secondary wound dressing retention devices, offering an alternative to traditional secondary wound dressings, for both human and animals.

TARTAN ORTHOPEDICS, LTD  
Northglenn  
www.tartanortho.com  
Manufactures sacro lumbar belts, dorsal lumbar belts (corsets and moldable inserts), Ottenberg style elbow splint, pelvic traction belts, arm slings, cervical collars, acromioclavicular splints, and ankle supports.

TDA RESEARCH, INC.  
Wheat Ridge  
www.tda.com  
Provides automated catalyst testing equipment to large chemical companies and national laboratories.

TECH-X CORPORATION  
Boulder  
www.txcorp.com  
Specializes in scientific and engineering software, including visualization and algorithm development.

TENSEGRITY PROSTHETICS, INC.  
Boulder  
www.tensegrityprosthetics.com  
Develops a prosthetic foot that mimics the functional biomechanics of the human foot in walking.

THE HARLOFF COMPANY  
Colorado Springs  
www.harloff.com  
Manufactures and sells a line of crash carts, medication carts and other specialty carts for hospitals, nursing homes, clinics and surgery centers.

THE PHOENIX GROUP  
Denver  
www.labacolnline.com  
Designs and builds high quality, innovative quadriplegic seating systems and accessories (Falcon Rehabilitation Products, LaBac Seating Systems, Gel Ovations).

THERATOGS, INC.  
Telluride  
www.theratogs.com  
Produces an orthotic undergarment and strapping system that gives clients with sensorimotor impairment a new modality for improving postural alignment and stability.

TISSUE GENETICS, INC.  
Aurora  
www.tissuegenetics.com  
Molecular diagnostics company with unique technology for improving the care of patients with genetic diseases using biomarkers to identify patients with hereditary diseases and to determine the course of care.

TMJ IMPLANTS, INC.  
Golden  
www.tmj.com  
Designs and manufactures alloplastic implants for the treatment of temporomandibular joint disorders and injuries.

TOLTEC INTERNATIONAL, INC.  
Lakewood  
www.toltec.biz  
Provides medical device R&D engineering services that are compliant with US FDA and international regulatory standards.
TOUCH OF LIFE TECHNOLOGIES, INC.
Aurora
www.toltech.net
Develops procedural simulators in the areas of orthopaedics, gastroenterology, rheumatology, radiology, ophthalmology, and general surgical procedures.

TRANSTRACHEAL SYSTEMS, INC.
Englewood
www.tto2.com
Develops and manufactures innovative respiratory therapy products that advance medical therapy for persons requiring continuous supplemental oxygen, including the SCOOP transtracheal oxygen therapy system.

TRELLEBORG SEALING SOLUTIONS MOUNTAIN
Broomfield
www.trelleborg.com/en
Supplies high-quality products and solutions for industrial sealing and bearing systems. Activities are focused in many business areas including the food and pharmaceutical industries, as well as medical engineering.

ULTRATHERA TECHNOLOGIES, INC.
Colorado Springs
www.ultrathera.com
Created the Vestimumax, a machine that turns, twirls and shifts its’ occupant in two directions, so they can spin horizontally and vertically at the same time. Uses include treatment for cerebral palsy-related symptoms - problems with inner-ear balance and torso strength for sitting, crawling and standing.

VALUE PLASTICS, INC.
Fort Collins
www.valueplastics.com
Designs and manufactures plastic tubing fittings and connectors.

VALVEEXCHANGE, INC.
Aurora
www.valveexchange.com
Develops a bioprosthetic heart valve with a percutaneously-exchangeable leaflet set that provides lifetime service without anticoagulation therapy.

VIBE TECHNOLOGIES
Greeley
www.vibemachine.com
Offers a vibrational integrated bio-photonic energizer device that brings the vibrational level of a person’s body back to its natural state.

VITRUMED, INC.
Boulder
www.vitrumed.com
Focuses on improving methods of soft tissue management in surgery specific to resection and biopsy of pathologic tissue.

WALKMED INFUSION, LLC
Wheat Ridge
www.walkmed.net
Offers solutions for ambulatory infusion therapy and pain management.

WESTMED, INC.
Greenwood Village
www.westmedinc.com
Designs, manufactures and markets medical devices to anesthesia and respiratory professionals.

WESTONE LABORATORIES
Colorado Springs
www.westone.com
Designs and manufactures custom earmolds for hearing healthcare and other applications.

WIRELESS ENGINEERING, INC.
Englewood
www.wiinc.net
Designs and engineers medical devices.

XIMEDIX, INC.
Colorado Springs
www.ximedix.com
Manufactures and sells single patient use medical products for the anesthesia, respiratory care, critical care and emergency medicine applications.

YAMATO CORPORATION
Colorado Springs
www.yamatocorp.com
Manufactures and sells weighing equipment and systems for medical facilities.

ZETEK, INC.
Aurora
www.zetek.net
Manufactures the OvaCue family of ovulation prediction products.

ZYNEX MEDICAL, INC.
Littleton
www.zynexmed.com
Offers electrotherapy products, utilizing various methods of non-invasive muscle stimulation and electromyography technology, Interferential Current (IFC) and Transcutaneous Electrical Nerve Stimulation (TENS).
BIOTECHNOLOGY, PHARMA AND RELATED COMPANIES

3QMATRIX
Boulder
www.3QMatrix.com
Focuses on the development and commercialization of novel wound healing products as well as transdermal and subcutaneous slow release drug delivery.

ABR-AFFINITY BIOREAGENTS (PART OF THERMO FISHER SCIENTIFIC)
Golden
www.bioreagents.com
Offers over 35,000 research reagents for 43 research areas as well as custom antibody production services.

ACERA, INC.
Broomfield
www.accerapharma.com
Discovers and develops innovative therapeutic treatments for neurodegenerative diseases, like Parkinson’s, Alzheimer’s and other age-related memory loss disorders.

ACCUTHERA, INC.
Denver
www.accutherainc.com
Develops and commercializes small molecule therapeutics for the treatment of cancer.

AGILENT TECHNOLOGIES
Boulder
www.agilent.com
Agilent Nucleic Acid Solutions develops and manufactures therapeutic oligonucleotide in a multi-product, 33,500 square foot facility.

AGRIPRO COKER
Berthoud
www.agriprowheat.com
Develops and delivers superior wheat seed genetics in North America.

AKTIV-DRY
Boulder
www.aktiv-dry.com
Provides dry powder processing solutions for the vaccine, pharmaceutical, and biotechnology industries.

ALBANY MOLECULAR RESEARCH, INC (AMRI)
Denver
www.amriglobal.com
Assists pharmaceutical companies on the molecular level with the development and manufacturing for new small molecule prescription drugs.

ALLOS THERAPEUTICS, INC.
Westminster
www.allos.com
Develops and commercializes small molecule therapeutics for the treatment of cancer.

ALPHARMA, INC.
Longmont
www.alpharma.com
Manufactures generic liquid and topical pharmaceuticals including nutritional supplements, water-soluble pharmaceutical products and disinfectants for veterinary use.

AMERICAN ALLIED BIOCHEMICAL, INC.
Aurora
www.aablabs.com
Specializes in the purification and distribution of restriction endonucleases enzymes.

AMGEN, INC.
Boulder, Longmont
www.amgen.com
Discovers, develops, manufactures and markets human therapeutics based on advances in cellular and molecular biology. Amgen Colorado is one of the company’s key operations centers, providing EPOGEN®, Aranesp® and Kepivance™.

ANIMAL HEALTH OPTIONS
Golden
www.animalhealthoptions.com
Since 1990, Animal Health Options has been offering high quality nutritional supplements that meet or exceed industry standards and provide a noticeable benefit to dogs, cats and horses.

ADMEQUANT BIOANALYTICAL SERVICES
Colorado Springs
www.admequant.com
Specializes in bioanalytical and metabolism research studies for the pharmaceutical and biotechnology, animal health, and agricultural industries.

APOLLOGIC PHARMACEUTICALS, LLC
Aurora
www.apoplogic.com
Develops biotech drugs that take advantage of understanding the receptors and ligands that control natural cell death (apoptosis).

APRO BIO-PHARMACEUTICAL CORPORATION
Englewood
(303) 867-3415
Develops novel drugs that may be effective against bioweapon attacks and other bacterial infections.

AQUATIC BIOSYSTEMS
Fort Collins
www.aquaticbiosystems.com
Specializes in the production and distribution of freshwater and marine organisms for aquatic toxicology, biomonitoring and other research activities.

ARCA BIOPHARMA
Broomfield
www.arcabiopharma.com
Specializes in developing and commercializing genetically-targeted therapies for heart failure and other cardiovascular diseases.
ARRAY BIOPHARMA
Boulder, Longmont
www.arraybiopharma.com
DisCOVERS, develops and commercializes targeted small molecule drugs to treat debilitating and life-threatening diseases such as cancer.

ASDX BIOSYSTEMS CORPORATION
Longmont
www.asdxbio.com
Specializes in the development of immunoassays for environmental agents, foodborne pathogens, infectious diseases and oncology biomarkers using luminescence detection technologies and dedicated luminometer instrument systems.

ASPENBIO PHARMA, INC.
Castle Rock
www.aspembioinc.com
Discovers, develops, manufactures, and licenses products primarily for animal healthcare with a growing pipeline including recombinant hormones and diagnostic tests.

ASPIRE BIOTECH, INC.
Colorado Springs
www.aspirebiotech.com
Provides contract services for all phases of product development from concept to launch, and produces its own skin sealant and wound-closure adhesives.

ASTERLAS PHARMA US, INC.
www.asterlas.us
Researches and develops pharmaceuticals for select therapeutic areas, including Urology, Immunology, Dermatology, Cardiology, and Infectious Diseases.

AVIDITY, LLC
Aurora
www.avidity.com
LicEnses the patented biotin-accepting peptides (AviTag) technology which exploits the tight interaction of avidin or streptavidin with biotin for immobilizing, purifying and visualizing proteins.

BAROFOLD, INC.
Boulder
www.barofold.com
Discovers, develops and commercializes protein biologics. The pipeline contains therapeutics with an immunology focus, including Multiple Sclerosis, Rheumatoid Arthritis, and Asthma.

BIONIMBUS, INC.
Fort Collins
www.bionimbus.com
A newly incorporated company providing solutions for emerging biotech, pharmaceutical and life science companies.

BIONOVO
Aurora
www.bionovo.com
Discovers and develops drugs for women’s health, including menopause, osteoporosis and cancer.

BIORESPONSE, LLC
Boulder
www.bioreponse.com
Researches, Develops and commercializes dietary supplements and functional foods.

BIOSERVE SPACE TECHNOLOGIES
Boulder
www.colorado.edu/engineering/BioServe
Researches space life science with a wide range of biotechnology applications involving animals, plants and microorganisms.

BIOSYNTRX, INC.
Colorado Springs
www.biosyntrx.com
Develops nutraceuticals to address the micronutrient needs of the dry eye, cataract, macular degeneration, glaucoma and diabetic retinopathy patient.

BIOTEST LABORATORIES, LLC
Colorado Springs
www.biocent.net
Manufactures and distributes dietary supplements.

BOLDER BIOPATH, INC.
Boulder
www.bolderbiopath.com
Contract pathology and pharmacology research company that specializes in inflammatory disease models with emphasis on models of arthritis.

BOLDER BIOTECHNOLOGY, INC.
Boulder
www.bolderbio.com
Uses advanced protein engineering technologies to create proprietary human protein pharmaceuticals with enhanced therapeutic properties.

BOULDER SCIENTIFIC COMPANY
Mead
www.bouldersci.com
Provides organometallic compounds to the pharmaceutical, polymer, and specialty chemical industries.

BROTICA
Bellvue
www.interval33.com
Produces Interval33, a termite attractant which works by producing the precise level of CO2 that has been shown to attract termites, all natural and animal safe.

CAP BIOTECHNOLOGY
Golden
www.capbio.com
Develops advanced calcium phosphate materials and devices for biomedical and biotechnological applications.

CARGILL RESEARCH
Denver, Englewood, Fort Collins
www.cargill.com
Develops, processes and markets science-based, health promoting ingredients for food and dietary supplement industries worldwide.
CATALENT PHARMA SOLUTIONS, INC.
Boulder
www.catalent.com
Designs, manufactures and distributes specialized medical products for fluid management of pleural effusion and ascites.

CAVEO THERAPEUTICS
Aurora
www.caveotherapeutics.com
Discovers and develops innovative biopharmaceuticals to treat and cure hematologic conditions. Provides two research reagents, highly specific monoclonal antibodies to the Mer receptor tyrosine kinase.

CBL BIOPHARMA
Boulder
www.cblbiopharma.com
CBL Biopharma is engaged in the discovery, development and supply of starting materials, intermediates and active ingredients for peptide pharmaceuticals.

CEDUS
Fort Collins
www.cedusinc.com
Develops technology for sterilizing companion animals with a single injection.

CELGENE
Boulder
www.Celgene.com
Focuses on acquiring, developing and commercializing innovative products for the treatment of hematology and oncology patients in the United States, Europe and other international markets.

CELL>POINT
Centennial
www.cellpointweb.com
Develops novel radiopharmaceutical imaging agents, radiotherapeutic agents and local regional radio/chemotherapeutic drug delivery systems for the diagnosis, treatment and post therapy assessment of cancer, cardiovascular disease, infectious disease and metabolic diseases.

CERAGENIX PHARMACEUTICALS
Denver
www.ceragenix.com
Engages in the discovery, development and commercialization of a portfolio of innovative products for dermatology and infectious disease applications.

CÉVAN INTERNATIONAL, INC.
Longmont
www.cevan.com
Delivers vitamins, minerals and botanical extracts as well as specialty nutriceutical formulations and antioxidants.

CHATA
Fort Collins
www.chatasolutions.com
Manufactures blended reagents, HPLC mobile phases, standards, buffers and dissolution media.

CINPATHGEN, INC.
Boulder
www.cinpathgen.com
Brings together clinical operations, diagnostic laboratories and access to a large tissue bank to support diagnosis and conduct protocol-driven research on the etiology, pathogenesis and treatment of disease.

CLINIMMUNE LABS
Aurora
www.clinimmune.com
Provides clinical HLA typing and cross matching in support of kidney, bone marrow, heart, lung and pancreas transplant programs.

COLORADO GENETICS, INC.
Loveland
www.coloradogenetics.com
Provides livestock embryo-transfer research, artificial insemination, embryo collection, freezing and transfer, and international import and export services.

COLORADO HISTO-PREP
Fort Collins
www.histoprep.com
Produces high quality slides, clinical chemistry and hematology data and fully integrated and detailed seamless pathology reports.

COLORADO SERUM COMPANY
Denver
www.colorado-serum.com
Supplies veterinary biologic vaccines, instruments, laboratory reagents and serums for the veterinary industry.

CYCLEGEN, INC.
Boulder

CYTOMATION GTX, INC.
Fort Collins
www.cytomationgtx.com
Develops a sensitive and rapid genotoxicity assay in mammalian cells using flow cytometry.

CYTOSKELETON, INC.
Denver
www.cytoskeleton.com
Offers kits for drug screening, signal transduction and cytoskeletal research specializing in the production of purified proteins and easy-to-use kits to study biochemical and cellular processes.

DAVITA
Lakewood
www.davita.com
Online resource for information on dialysis and chronic kidney disease.

DHARMACON, INC. (A THERMO FISHER SCIENTIFIC COMPANY)
Lafayette
www.dharmacon.com
Develops 2’-ACE RNA technology as the standard for RNA synthesis and to advance RNA oligo-dependent applications and technologies. Provides RNA oligos to the research community.
DMI BIOSCIENCES, INC.
Aurora
www.dmibio.com
Discovers and develops therapeutic options to treat men’s health, ophthalmology, and oncology with earlier-stage NCE programs in autoimmune, cardiovascular and oncology.

EFFICAS, INC.
Boulder
www.efficas.com
Develops bioactive products that offer natural relief from asthma and allergies in both humans and animals.

ELISA TECH
Aurora
www.elisatech.com
Provides immunoassays for the measurement of cytokines, growth factors, and lipid inflammatory mediators such as prostaglandins and leukotrienes.

EUROFINS MEDITNET
Aurora
www.eurofins-meditnet.com
Provides bioanalytical testing and support services to the pharmaceutical, food, environmental and consumer products industries and to governments.

EVEIA MEDICAL
Boulder
www.eveiamedical.com
Development stage company focused on creating a bioanalytical system designed to conduct immunoassay tests. Key attributes include: low femtomolar sensitivities, short assay development cycles and results in 10-20 minutes. The product consists of the instruments, software and reagents required for analyte measurement.

EVOLUTIONARY GENOMICS
Lafayette
www.evolgen.com
Identifies genes with a high likelihood of commercial value for downstream validation through their proprietary Adapted Traits platform.

FEIGER HEALTH RESEARCH CENTER
Lakewood
www.feigerresearch.com
Private research facility specifically focused on clinical trials for medication to treat depression.

GEL ANALYTICS, LLC
Golden
www.gel.com
Offers expertise in the field of mass spectrometry and provides chemistry, radiochemistry, radiobioassay and bioanalytical analysis.

GENE CHECK, INC.
Greeley
www.genecheck.com
Develops, produces and markets reagents and kits for research and offers veterinary genotyping tests for sheep.

GENESIS LABORATORIES, INC.
Wellington
www.genesislabs.com
Provides services to clients in the agrochemical and pharmaceutical industries, rodenticide research and development, as well as invasive species, zoonotic disease, and conservation research.

GENITHERA, INC.
Wheatridge
www.genethera.net
Develops and markets assay tests and vaccines to eradicate the threat to humans of diseases transmitted up the food chain by cattle, elk and deer.

GENETIC TECHNOLOGIES LIMITED
Fort Collins
www.gtg.com.au
Specializes in licensing, genetic testing and research programs around the world using “noncoding” DNA.

GILEAD COLORADO, INC.
Westminster
www.gilead.com
Discovers, develops and commercializes medicines focusing on antivirals (HIV/AIDS and chronic hepatitis), cardiovascular conditions (pulmonary arterial hypertension and resistant hypertension) and respiratory diseases (influenza and cystic fibrosis).

GLAXOSMITHKLINE
Denver
www.gsk.com
Produces medicines that treat six major disease areas – asthma, virus control, infections, mental health, diabetes and digestive conditions as well as vaccines and new treatments for cancer.

GLOBEIMMUNE, INC.
Louisville
www.globeimmune.com
Discovers, develops and manufactures potent, targeted molecular immunotherapies called Tarmogens for the treatment of cancer and infectious diseases.

GREFFEX, INC.
Denver
www.greffex.com
Develops and produces new therapeutics for immune suppression in humans to prevent transplant rejection, improve gene therapy and develop novel approaches to the treatment of autoimmune diseases.

HARD NUTRITION (HEALTH ADVANTAGE RESEARCH DEVELOPMENT)
Wheat Ridge
www.hardnutritionwater.com
Health based enhanced beverages that would truly deliver on both their nutritional and functional promises as well as the all critical hydration factor.
HAUSER LABORATORIES, DIVISION OF MICROBAC
Boulder
www.hauserlabs.com
Provides research, development, and testing to the pharmaceutical, natural products, dietary supplement, and medical device industries.

HEMGENIX
Colorado Springs
www.hemogenix.com
Private contract research service and assay development laboratory specializing in developing predictive in vitro assay platforms for primary human and animal target cells and stem cell hemotoxity testing.

HESKA CORPORATION
Loveland
www.heska.com
Develops advanced diagnostics and specialty products for veterinary practices that focus on companion animals.

HIBERNATION CORPORATION
Aurora
http://hibernapharma.com
Researches life saving therapeutics from natural models of extreme metabolic regulation.

HIGH QUALITY RESEARCH, LLC
Fort Collins
www.hqrlc.com
Provides contract research in a wide range of in vivo studies utilizing several different animal models.

HOSPIRA
Boulder
www.hospira.com
Supplies injectably generic and specialty pharmaceuticals. The Colorado site specializes in the supply of active pharmaceutical ingredients for both internal and external markets.

IHCTECH, LLC
Aurora
www.ihctech.net
Offers custom histopathology services, antibodies, probes and biosensors tested in tissue. Specializes in immunohistochemistry and in situ hybridization.

IMUTEK LABORATORIES, INC.
Fort Collins
www.imutek.com
Develops and markets bovine colostrums for the nutrition and health products industry.

INB: HAUSER PHARMACEUTICALS SERVICES, INC.
Denver
www.inbhauser.com
Provides turn-key manufacturing and development of active pharmaceutical ingredients (API’s) derived from synthetic, semi-synthetic and natural processes for the pharmaceutical and nutraceutical industries. Specifically, Hauser provides research, process development, analytical method development, QA/QC, stability, CMC support and milligram-to-commercial API manufacturing under US-based cGMP’s.

INB: PAXIS PHARMACEUTICALS, INC.
Boulder
www.paxispharma.com
Manufactures and markets the generic active pharmaceutical ingredient (API) Paclitaxel as well as other naturally derived taxanes.

INDEVR, INC.
Boulder
www.indevr.net
Dedicated to the invention, development, and manufacture of high quality biomedical instruments. It is our mission to discover and apply innovative new technologies to problems in clinical and biochemical analysis with the goal of developing and manufacturing instruments that provide accurate information at lower cost and reduced complexity.

INSMED THERAPEUTIC PROTEINS
Boulder
www.insmed.com
Pursuing a dual path strategy involving entry into the follow-on biologics arena and advancing their proprietary protein platform into niche markets with unmet needs.

INSTITUTE FOR THERAPEUTIC BIOLOGY
Denver
www.therapeuticbiology.org
Research organization studying the Role of T-Cell maturation in Immunology.

INVIRAGEN, INC.
Fort Collins
www.inviragen.com
Develops vaccines for emerging infectious diseases worldwide, including dengue fever, west nile, plague, smallpox and avian influenza.

ISOGENIS, INC.
Denver
www.isogenis.com
Develops therapies for organ transplantation and genetic disease with products based on the veto effect which occurs when specific T-cells programmed to destroy a transplant are all permanently inhibited.

JOHNSON & JOHNSON/ORTHO BIOTECH
Denver
www.jnj.com
Manufactures a broad selection of health care products, as well as a provider of related services, for the consumer, pharmaceutical, and medical devices and diagnostics markets.

KEEN INGREDIENTS, INC.
Louisville
www.keeningredients.com
Develops process to de-bitter and stabilize quinoa naturally.
KEETON INDUSTRIES, INC.
Wellington
www.keetonaqua.com
Researches and develops biological water treatment, aeration, ozone aeration, solids removal, biofiltration and other new technologies.

KIMBALL GENETICS, INC.
Denver
www.kimballgenetics.com
Genetic testing laboratory specializing in DNA analysis for common genetic disorders that are preventable or can be treated.

KROMATID, INC.
Fort Collins
505.662.5626
Develops a method and kit using chromatid paints to improve detection of chromosomal inversions. The improvement is important to medical applications such as cancer and birth defects.

LABS, INC.
Denver
www.labs-inc.org
Provides laboratory testing services focused on donor eligibility determination and final product safety; infectious disease, microbiology, histocompatibility and environmental monitoring.

LEGACY BIODESIGN, LLC
Loveland
www.LegacyBioDesign.com
Conducts peptide and protein formulation and assay development work for biopharma companies. The company also specializes in drug delivery and process development of biotechnology-based products.

LIFEVANTAGE CORPORATION
Greenwood Village
www.protandim.com
Develops nutraceutical products, including Protandim® a supplement that is formulated to fight free radical damage on a cellular level.

OHOCLA RESEARCH CORPORATION
Aurora
www.hocla.com
Develops diagnostics and therapeutics focused on pain, psychiatric and addictive disorders such as alcoholism, depression, smoking cessation and chronic pain.

MACLEOD PHARMACEUTICALS, INC.
Fort Collins
www.macleodpharma.com
Develops and manufactures anti-bacterial pharmaceuticals for the veterinary industry.

MANTIC BIOTECH
Loveland
www.manticbiotech.com
Develops proprietary technology and software to accurately represent and model protein conformations as discrete structures.

MARTEK BIOSCIENCES BOULDER CORPORATION
Boulder
www.martekbio.com
Develops, manufactures and sells products from microalgae. Products include nutritional supplements and food ingredients which play a role in promoting mental and cardiovascular health.

MBC PHARMA, INC.
Aurora
www.mbcpharma.com
Biopharmaceutical company focused on discovering and developing drugs for bone diseases such as cancer and osteoporosis.

MEDIMMUNE
www.medimmune.com
Strives to provide better medicines to patients, new medical options for physicians, and rewarding careers to employees.

MIRAGEN THERAPEUTICS
Boulder
www.miragentherapeutics.com
miRagen Therapeutics was founded in 2007 to improve patients’ lives by developing innovative microRNA (miRNA) based therapeutics for the treatment of cardiovascular and muscle disease. miRNAs are a recently discovered class of small RNA's encoded in the genome, are short, single-stranded RNA molecules.

MOLECULAR BIOSCIENCES, INC.
Boulder
www.molbio.com
Manufactures products such as water soluble biotinylation reagents, vitamin derivatives, crosslinking reagents, lipophilic probes, fluorophores, radioiodination reagents, and dendritic cores for preparing oligomers.

MONSANTO COMPANY
Englewood
www.monsanto.com
Develops technology to produce healthier foods, better animal feeds and more fiber, while reducing agriculture’s impact on our environment. Products lines include seeds and traits and agricultural productivity.

MYCOLOGICS, INC.
Aurora
www.mycologics.com
Specializes in the development of therapeutic and prophylactic vaccines against fungal and parasitic pathogens.

MYCOS RESEARCH, LLC
Loveland
www.mycosresearch.com
Provides mycobacterial derived biochemistries to the research community, contract research, models for tuberculosis research, and other BSL 3 organisms, and novel monitoring or vaccine products in the area of mycobacterial infection.
N30 PHARMACEUTICALS, LLC
Boulder
www.n30pharma.com
A clinical stage biopharmaceutical company focused on modulating s-nitrosothiols to treat respiratory diseases.

NANODISC, INC.
Boulder
www.nanodiscinc.com
Develops and commercializes Nanodiscs that permit the functional solubilization of membrane-associated proteins (MAPs) as both drug targets and as drugs themselves.

NAVI GANT BIOTECHNOLOGIES, INC.
Lakewood
www.navigantbiotech.com
Develops techniques to improve safety of the blood supply by reducing the pathogens found in donated blood.

NOVARTIS PHARMACEUTICALS CORPORATION
Littleton
www.novartis.com
Researches and develops products to protect and improve health and well-being with core businesses in pharmaceuticals, vaccines, consumer health, generics, eye care and animal health.

NOVUS BIOLOGICALS, INC.
Littleton
www.novusbio.com
Develops, tests and markets antibodies for research of human diseases such as cancer, cardiovascular and neurological disorders.

NUTRACEUTIX, INC.
Lafayette
www.nutraceutix.net
Offers probiotic organisms (powders) and finished probiotic supplements. Specializes in custom crafting dietary supplements with advanced delivery technologies.

OBERON FMR
Idaho Springs
www.oberonfmr.com
Researches and develops the production of single cell protein (SCP) from un-utilized food processing by-product streams. Supplier of high-quality SCP destined for use in animal feed diets.

OPTIBRAND LTD., LLC
Fort Collins
www.optibrand.com
Provides a fraud-resistant system to positively identify animals from birth and throughout the food processing chain. The Secure Identity Preservation system helps assure food safety and control the spread of animal disease.

OSI PHARMACEUTICALS
Boulder
www.osip.com
Develops and commercializes high-quality and novel pharmaceutical products for patients with cancer, diabetes, and obesity.

PAMBEC LABORATORIES, INC.
Loveland
pambec@aol.com
Researches drug discoveries in the field of AIDS.

PARAGON ANALYTICS
Fort Collins
www.paragonlabs.com
Environmental and radiochemistry testing laboratory offering radiochemistry, mixed waste, explosives, organics, metals, and general chemistry analyses.

PEAK ANALYTICAL, INC.
Golden
www.peaklab.net
Specializes in materials and chemical analysis. Performs a variety of molecular and atomic level spectroscopic techniques to identify failures and defects.

PEAK BIOSCIENCES, INC.
Fort Collins
www.peakbiosciences.com
Specializes in developing and commercializing nanoscale (ultra-localized) radiotherapy products to treat cancer.

PFIZER PHARMACEUTICAL COMPANY
Centennial
www.pfizer.com
Discovers, develops, manufactures, and markets prescription medicines for humans and animals.

PHOSPHOSOLUTIONS
Aurora
www.phosphosolutions.com
Designs and produces phosphoproteins solutions using phosphor-specific antibodies. Phosphoproteins are thought to be critical elements in neurological diseases such as Alzheimer’s and in cancer.

PISCES MOLECULAR
Boulder
www.pisces-molecular.com
Applies molecular biology to problems in the aquatic environment.

PR PHARMACEUTICALS, INC.
Fort Collins
www.prpharm.com
Develops, manufactures and commercializes bioactive compounds in long acting injectable formulations to treat chronic disease, in animals and humans, such as diabetes and hypertension.

PREMIER LABORATORY, LLC
Boulder
www.premierlab.com
Contract research laboratory that offers both standardized and specialized preclinical pharmacology, histology and pathology services.

PROTEOME RESOURCES
Englewood
www.proteomeresources.com
Manufactures ubiquitin-proteasome enzymes and proteins and offers antibodies, and custom protein and peptide services.
PROVIDENT PHARMACEUTICALS, LLC
Colorado Springs
www.providentpharma.com
Provides product development, manufacturing and packaging, and laboratory services for the pharmaceutical industry.

PULMONEX, INC.
Boulder
www.pulmonexinc.com
Developing a therapeutic product for tuberculosis.

PYXANT LABS, INC.
Colorado Springs
www.pyxant.com
Specializes in GLP bioanalytical chemistry development support for life sciences clients.

QLT USA, INC.
Fort Collins
www.qltinc.com
Discovers, develops, commercializes and manufactures innovative drug therapies to create products for ophthalmology and dermatology.

QUARK PHARMACEUTICALS, INC.
Boulder
www.quarkpharma.com
Discovers and develops siRNA drug candidates for treating Age-related Macular Degeneration and prevention of A cute Renal Failure.

QUASAR MEDICAL CO., LLC
Golden
www.quasargroup.com
Focus is on the development of high-value, niche market, diagnostic and therapeutic medical products that can be manufactured and marketed more cost effectively by the Quasar Group than by huge multi-national pharmaceutical companies.

R&D BIOPRODUCTS
Fort Collins
www.rndbioproducts.com
Provides research grade, patented peptide products to investigators for therapeutic research purposes.

REGENERATIVE SCIENCES, INC.
Broomfield
www.regenexx.com
Advances stem cell therapies through development of Regenexx™, an injection procedure to treat a wide variety of painful conditions.

REPLIDYNE, INC.
Louisville
www.replidyne.com
Focuses on discovering, developing, in-licensing and commercializing innovative anti-infective products.

ROCHE COLORADO
Boulder
www.rochecolorado.com
Develops manufacturing processes for complex pharmaceutical compounds in the Colorado manufacturing facility, a resource for small to large-scale peptide manufacturing.

ROCKY MOUNTAIN DIAGNOSTICS, INC.
Colorado Springs
www.rmdiagnostics.com
Provides immunodiagnostic assays and reagents for biogenic amines, research reagents, a CLIA certified reference laboratory and contract manufacturing services.

ROCKY MOUNTAIN REAGENTS, INC.
Englewood
www.rmreagents.com
Manufactures stains, culture media and chemistry solutions for the medical industry, as well as titration reagents, indicators, acids, bases, and a variety of chemicals for industrial uses.

SANDOZ
Broomfield
www.us.sandoz.com
Focuses on pharmaceuticals, consumer health, generics, eye care and animal health. Therapeutic categories include anti-infectives, anti-arthritis, cardiovasculars, gastrointestinal agents & psychotherapeutics.

SCIONA, INC.
Aurora
www.mycellf.com
Applies evidence-based genetic information to develop personalized products that help individuals achieve their health goals.

SENTRY BIOSCIENCES
Greenwood Village
(720) 488-4725
Discovers and develops compounds that regulate the process of programmed cell death (apoptosis).

SHARKLET TECHNOLOGIES
Centennial
www.sharklet.com
Engineers surface technologies (Sharklet™) that controls the growth of dangerous bacteria.

SIERRA NEUROPHARMACEUTICALS, INC.
Denver
www.sierraneuro.com
Discovers, develops and commercializes therapeutic products for diseases of the brain. Produces reformulated oral medications to be delivered directly into the fluid around the brain for treatment of epilepsy, schizophrenia, bipolar disorder, anxiety disorders and major depression.
SPECTRADIGITAL, INC.
Fort Collins
www.spectradigital.net
Specializes in the use of cell-based approaches to evaluate biological systems and solve real-world problems.

STA LABORATORIES
Longmont
www.stalabs.com
Agricultural product testing laboratory that offers seed quality, genomics, plant health and diagnostic services and products.

SUMMIT PLANT LABS, INC.
Fort Collins
www.plantlabs.com
Applies laboratory plant cloning and greenhouse technologies to produce planting stocks for breeders, greenhouses, and field crop producers.

TAIGA BIOTECHNOLOGIES, INC.
Aurora
www.taigabiotech.com
Develops cellular, biologic and small molecule approaches to treat hematological diseases, including cancers, immunodeficiencies and autoimmune conditions.

TALIGEN THERAPEUTICS, INC.
Aurora
www.taligentherapeutics.com
Focuses on the treatment of serious inflammatory diseases including asthma, macular degeneration and immune kidney disease.

THERMOSFISHER SCIENTIFIC
Lafayette
www.thermofisher.com
Working to bring you the highest quality brands and products available, including electrophoresis and protein labeling products from Amersham, illustra™ purification kits and a full line of Affinity Chromatography products.

TOLMAR, INC.
Fort Collins
www.tolmar.com
Specializing in the development, manufacturing and worldwide distribution of a wide variety of pharmaceutical and OTC products.

US PHARMACAL COMPANY, INC.
Erie
www.uspharmacal.com
Researches, develops and sells topical pharmaceuticals for the senior community.

UPSHER-SMITH
Denver
www.upsher-smith.com
Develops, manufactures and markets a vast range of prescription and over-the-counter products for cardiology, dermatology, women’s health and other areas.

VENTRIA BIOSCIENCE
Fort Collins
www.ventria.com
Develops a protein expression technology platform called ExpressTec with a product pipeline in human nutrition and therapeutics.

VENTRUS BIOSCIENCES, INC.
Greenwood Village
www.ventrusbio.com
A specialty pharmaceutical company focused on the late-stage development and commercialization of gastroenterology products.

VERDANT BIOSCIENCES CORPORATION
Denver
www.verdantbio.com
Develops plant biochemical regulators that provide superior plant performance and unlock the productive power of plants in markets from floriculture to industrial agriculture.

VITRO DIAGNOSTICS, INC.
Aurora
www.vitrodiag.com
Develops and commercializes products derived from human cell line research with a focus predominantly in stem cell R&D related to diabetes.

VITROLIFE, INC.
Englewood
www.vitrolife.com
Develops, manufactures and sells products and systems for the preparation, cultivation and storage of human cells, tissue and organs. Product areas include fertility, transplantation and stem cell cultivation.

WARREN ANALYTICAL LABORATORIES
Greeley
www.warrenlab.com
Specializes in food microbiology, molecular biology, food chemistry, residue chemistry and nutritional labeling.

WESTERN STATES BIOPHARMACEUTICALS, INC.
Aurora
www.WesternStatesBioPharma.com
A newly formed drug discovery and development biopharmaceutical “start-up” company which was founded in June 2008 within the State of Colorado. WSBI was formed from proprietary science discovered in the UCD laboratory of WSBI’s Founder Dr. Carl Edwards.

WILDLIFE PHARMACEUTICALS, INC.
Fort Collins
www.wildpharm.com
Providing pharmaceuticals for the safe and humane care of non-domestic and exotic wildlife species.

WINDOM PEAK PHARMACEUTICALS
Boulder
www.windompeak.com
Develops novel antibiotics to treat infectious diseases.
WYETH
Lakewood
www.wyeth.com
Offers products in the areas of women’s health care, neuroscience, musculoskeletal disorders, cardiovascular therapy, vaccines and infectious disease, hemophilia, immunology and oncology.

YEWSAVIN, INC.
Fort Collins
www.ajorganica.com
Develops chemical and biochemical technologies.

ZEOPONIX, INC.
Boulder
www.zeoponix.com
Develops NASA originated technology to produce a soil amendment/fertilizer zeoponic material that utilizes nutrients more efficiently and reduces nutrient leaching into the environment.

**BIOFUELS AND RELATED COMPANIES**

**A1 ORGANICS**
Eaton
www.a1organics.com
Composts and recycles organic by-products from various waste: yard trimmings, wood, biocides, agricultural by-products, manure, brewery by-products, construction debris and food residuals.

**AEROPHASE**
Longmont
www.aerophase.com
Develops an efficient extraction system for biodiesel.

**AGRO MANAGEMENT GROUP, INC.**
Colorado Springs
www.agromgt.com
Researches, develops and markets vegetable based motor oil for use in 4 cycle engines.

**BBI INTERNATIONAL**
Salida
www.bbibiofuels.com
Offers consulting services, including feasibility studies, market analyses, site & resource assessments, economic impact studies, business plans, industry benchmarking and industry surveys to the biofuels sector.

**BIOENERGY OF COLORADO, LLC**
Denver, Commerce City
www.bioenergyofamerica.com
Produces biofuel alternatives. Current product line includes Biodiesel (Gold and Green™) and BioHeat.

**BIOFUEL ENERGY CORPORATION**
Denver
www.bfenergy.com
Constructs large scale ethanol production facilities in cooperation with Cargill.

**BIOMASS ENERGY FOUNDATION**
Golden
www.biomassenergyfoundation.org
Researches alternative fuels such as dried fruit pits, vegetable oil, wood, coffee grounds and the methods to produce biofuels.

**BLUE SUN BIODIESEL**
Westminster
www.gobluesun.com
Distributes premium agricultural and renewable fuel products. Blue Sun Fusion™ alternative diesel fuel, is available at numerous retail pumps throughout Colorado, Wyoming, New Mexico, Nebraska, Utah, and Idaho.

**CENTER FOR BIOREFINING AND BIOFUELS (C2B2)**
CU, CSU, Mines, NREL
www.c2b2web.org
A cooperative research and educational center devoted to the conversion of biomass to fuels and other products.

**CH2M HILL (FORMERLY VECO)**
Greenwood Village
www.ch2m.com
One of the world’s leading firms in the design of biochemical and biofuels facilities. Provides engineering, procurement, construction, management, consulting and sustaining services for biochemicals, ethanol, cellulosic ethanol, and biodiesel plants.

**COMMUNITY POWER CORPORATION**
Littleton
www.gocpc.com
Develops, commercializes and markets modular biopower systems to meet the needs of distributed energy consumers in both developing and developed countries.

**COPERNICAN ENERGY, INC.**
Boulder
www.copernicanenergy.com
Produces fuels and chemicals from renewable feedstocks through the application of solar-thermal energy.

**DELTA DYNAMICS, LLC**
Denver
www.deltadynamicsenergy.com
Constructs and installs small-scale biomass plants.

**CENTRAL SOLAR, INC.**
Boulder
www.centralsolar.com
Develops and produces solar thermal energy systems. Central's direct heat solar power systems generate clean, renewable electricity through the use of solar thermal collectors that convert the sun’s energy into heat to power steam turbines.

**CENTRISOL, INC.**
Wheat Ridge
www.centrisol.com
Develops and produces concentrating solar power systems for the generation of electricity and hydrogen using parabolic troughs.
FRONT RANGE ENERGY, LLC  
Windsor  
www.frontrangeenergy.com  
Ethanol producer since 2006. Will process approx. 40 million gallons of ethanol and 396,000 tons of wet distillers' grain annually.

GEOSYNFUELS, LLC  
Golden  
www.geosynfuels.com  
Develops a low-cost method to convert cellulosic biomass into fuel. The technology uses biological mechanisms set in a solid-state fermenter (“SSF”) to convert the biomass into ethanol and/or methane.

GEVO, INC.  
Englewood  
www.gevo.com  
Develops advanced biofuels like isobutanol, butanol that will provide a sustainable path to the replacement of petrochemicals like gasoline, diesel and jet fuel.

GREAT PLAINS OIL, LLC  
Eads  
www.greatplainsoil.net  
Manufactures and distributes new vegetable oil based products processed from natural materials, including sunflower oil, soybean oil, and canola oil.

GREAT WESTERN ETHANOL  
Greeley  
www.greatwesternethanol.com  
Produces Ethanol/DDGS/CO2.

INTERMOUNTAIN CHP CENTER  
Boulder  
www.intermountainCHP.org  
Provides neutral, objective and unbiased expert opinions about if Combined Heat Power (CHP) is cost-effective and technically feasible.

LUCA TECHNOLOGIES, INC.  
Golden  
www.lucatechnologies.com  
Researches the ability of naturally occurring microorganisms to convert under-utilized domestic oil, organic-rich shale and coal resources to clean, renewable energy.

MERRICK & COMPANY  
Aurora, Colorado Springs, Commerce City  
www.merrick.com  
Provides engineering, construction management, and development services for biomass conversion-to-ethanol projects, also providing consulting services to oil and gas clients and local regulated utilities.

OPX BIOTECHNOLOGIES, INC.  
Boulder  
www.opxbiotechnologies.com  
Uses a synthetic biology platform to custom design the microbes used to make biofuels.

POWER ECALENE FUELS, INC.  
Arvada  
http://powerecalene.com  
Produces Ecalene™, alternative fuel that can be produced from any material containing carbon and hydrogen.

PUREVISION TECHNOLOGY, INC.  
Fort Lupton  
www.purevisiontechnology.com  
Develops a carbon-neutral biomass fractionation technology that converts cellulosic biomass into sugars, energy and fiber that are bio-based raw materials to make many industrial and consumer products.

RENTECH, INC.  
Denver  
www.rentechinc.com  
Develops technology and projects to convert biomass into ultra-clean fuels and chemicals.

SAN JUAN BIOENERGY  
Dove Creek  
www.sanjuambioenergy.com  
Sells sunflower oil into food markets and biodiesel for fuel, as well as producing its own renewable heat by burning sunflower hulls and glycerine.

SOLIX BIOFUELS  
Fort Collins  
www.solixbiofuels.com  
Develops massively scaleable photo-bioreactors for the production of biodiesel and other valuable bio-commodities from algae oil.

STERLING ETHANOL, LLC  
Sterling  
www.sterlingethanol.com  
Produces 42 million gallons of ethanol annually.
RESEARCH AND EDUCATION INSTITUTIONS

AIMS COMMUNITY COLLEGE
Greeley, Loveland, Fort Lupton
www.aims.edu
One of the largest and most comprehensive two-year colleges in Colorado. Since 1967 Aims has established four campuses, constructed 18 buildings, expanded curriculum to 2,000 day, evening and weekend courses and taught more than 300,000 students.

AMC CANCER RESEARCH CENTER
Denver
www.amc.org
AMC is a national, not for profit research institute dedicated to the prevention and control of cancer and other chronic diseases. AMC is conducting innovative and important research in the areas of cancer causation and prevention, behavioral research, nutrition, clinical and community studies and health communication.

BIOLOGICAL SCIENCES CURRICULUM STUDY (BSCS)
Colorado Springs
www.bscs.org
A nonprofit corporation that endeavors to improve all students' understanding of science and technology by developing exemplary curricular materials, supporting their widespread and effective use, providing professional development, and conducting research and evaluation studies.

BONFILS BLOOD CENTER
Denver Metro
www.bonfils.org
One of the nation's leading community blood centers through their commitment to quality service, innovation, research and technology. They offer a full range of blood products and services to healthcare partners including supplying rare blood units or helping to determine the best cross-matched unit to endure the best possible patient outcomes.

CENTERS FOR DISEASE CONTROL AND PREVENTION/DIVISION OF VECTOR-BORNE INFECTIOUS DISEASES
Fort Collins
www.cdc.gov/ncidod/dvbid
The Division of Vector-Borne Infectious Diseases (DV BID) is part of the U.S. Centers for Disease Control and Prevention (CDC). CDC is the lead federal agency for protecting the health and safety of people at home and abroad. DV BID serves as a national and international reference center for vector-borne viral and bacterial diseases, such as West Nile virus, Lyme disease, plague, tularemia, yellow fever and dengue. It coordinates national disease monitoring activities, conducts field and laboratory research, responds to epidemic situations, develops strategies for disease prevention and control, provides diagnostic reference and epidemiologic consultation, and conducts technical assistance and professional training activities.

COLORADO SCHOOL OF MINES
Golden
www.mines.edu
A public research university internationally recognized for its leadership in engineering, applied science and related disciplines, with a special emphasis on the Earth and its resources. These programs, with strong interdisciplinary linkages across the campus, have led to the integration of bioscience and biotechnology into educational and scholarly activities. CSM has created a Bioengineering and Life Science Program that draws upon faculty and students from all of the academic units.

COLORADO STATE UNIVERSITY
Fort Collins, Pueblo
www.colorado.edu
As one of the nation's leading research universities, Colorado State University is committed to realizing its vision as a 21st century land-grant university. CSU leads the world in such areas as infectious disease research, atmospheric science and environmental science. Its faculty members are tackling such issues as the reemergence of tuberculosis, the brown cloud of air pollution in Asian cities, severe weather forecasting, nutrition and wellness, and bioterrorism. In addition to its excellent programs in those areas, CSU offers among the very best professional programs in the United States in areas like veterinary medicine, occupational therapy, journalism, agriculture and construction management. Its programs in the arts, humanities and social sciences are also outstanding.

COMMUNITY COLLEGE OF AURORA (CCA)
Aurora
www.ccaurora.edu
CCA provides lifelong educational opportunities, prepares the current and future workforce, and promotes excellence in teaching, learning and service. CCA offers a unique Biotechnology Technician Research and Development Certificate designed to train highly skilled lab personnel for the biotech industry.

DENVER SCHOOL OF SCIENCE AND TECHNOLOGY
Denver
www.scienceandtech.org
Is dedicated to providing a diverse student body with an outstanding liberal arts high school education with a science and technology focus. By creating a powerful learning community centered on core values and a shared commitment to academic excellence, DSST will increase the number of underrepresented students (women, minorities and economically disadvantaged) who attain college science and liberal arts degrees.

FRONT RANGE COMMUNITY COLLEGE
Fort Collins, Longmont and Westminster
www.frontrange.edu
Front Range Community College, Colorado's largest community college, provides instruction, in both general education and occupational areas, which may lead to a certificate, an associate degree, or transfer to a four-year institution. The college also provides college preparatory education, non-credit instruction for personal and professional development, and workplace skill development. With campuses located in
Fort Collins, Longmont and Westminster, the college is proud of its many partnerships to provide quality programs that are responsive to the needs of its local communities.

**INSTITUTE FOR THERAPEUTIC BIOLOGY**
Denver  
www.therapeuticbiology.org  
A non-profit research institute for drug discovery in the field of immunology.

**KEYSTONE SYMPOSIA ON MOLECULAR AND CELLULAR BIOLOGY**  
Silverthorne  
www.keystonesymposia.org  
A non-profit organization that serves as a catalyst for the advancement of biomedical and life sciences by connecting scientists within and across disciplines at conferences and workshops held at venues that create an environment conducive to information exchange, generation of new ideas, and acceleration of applications that benefit society.

**NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)**  
Boulder  
www.nist.gov  
NIST is a non-regulatory federal agency that operates eight different science and advanced technology research divisions in Colorado. NIST’s list of research accomplishments includes a NIST senior scientist winning the Nobel Prize in 2001 for creating the world’s first Bose-Einstein condensate. In 2003 another NIST scientist won a MacArthur Fellowship for discovering a new quantum gas and was named by Science as one of the top ten scientific advances of the year.

**NATIONAL JEWISH MEDICAL AND RESEARCH CENTER**  
Denver  
www.njc.org  
The number one respiratory hospital in the U.S., is also one of the most influential independent biomedical research centers in the world. More than 100 faculty members conduct basic, translational, and clinical research in immunology, respiratory medicine, allergy, cancer, and cell and molecular biology. NJC ranks among the top ten percent of all institutions for NIH support and for the impact of its research papers in the fields of Molecular Biology, Genetics, and Biology and Biochemistry. NJC manages a technology portfolio of more than 100 investors.

**ADVANCED DIAGNOSTIC LABORATORIES (ADX) AT NATIONAL JEWISH MEDICAL AND RESEARCH CENTER**  
Denver  
www.njlabs.org  
ADx offers cost-effective and timely pre-clinical, clinical and non-clinical trials and helps customers select, customize, perform, interpret and report clinical tests. Their reference laboratory provides solutions for the rapid development of custom assays, consultation, clinical strategy assessments and innovation within the areas of the National Jewish expertise. ADx operates under GLP guidelines when applicable and the laboratories are fully accredited by the College of American Pathologists (CAP) and the Clinical Laboratory Improvement Act (CLIA), as well as others.

**NATIONAL RENEWABLE ENERGY LABORATORY**  
Golden  
www.nrel.gov  
The nation’s primary laboratory for renewable energy and energy efficiency research and development (R&D). NREL’s mission and strategy are focused on advancing the U.S. Department of Energy’s and our nation’s energy goals. NREL’s R&D areas of expertise are: renewable electricity (solar, wind, biomass, geothermal), renewable fuels (biomass, hydrogen), integrated energy system engineering and testing (buildings, electric systems and transportation infrastructures), and strategic development and analysis (economic, financial, and market analysis, planning and portfolio prioritization).

**POUDRE VALLEY HEALTH SYSTEM**  
Loveland, Fort Collins  
www.pvhs.org  
Poudre Valley Health System operates as a private, not-for-profit organization providing a regional network of health care services for the people of northern Colorado, western Nebraska, and southern Wyoming. The system is comprised of the Poudre Valley Hospital, the Medical Center of the Rockies, as well as several community clinics that provide primary and specialized medical services. Poudre Valley Hospital was named one of the nation’s top 100 hospitals for the fifth year, has been considered a Magnet Nursing Practice since 2000 and has been presented with the American Nurses Association’s highest award for sustained overall excellence in nursing quality.

**UNITED STATES GEOLOGICAL SURVEY (USGS) CENTER FOR BIOLOGICAL INFORMATICS**  
Denver  
http://biology.usgs.gov/cbi  
The Center for Biological Informatics, at the Denver Federal Center, operates the national Biological Information Infrastructure (NBII). This is the first comprehensive electronic gateway dedicated exclusively to biological science data and information from sources throughout the world.
The University of Colorado Technology Transfer Office is seeking Front Range businesses and professionals to volunteer as advisors for new companies.

Contact: Lindsay Polak 303-735-5518 lindsay.polak@cu.edu

UNIVERSITY OF COLORADO
Boulder, Denver, Aurora, Colorado Springs
www.uco.edu

The University of Colorado System’s 52,000 students and 28,000 faculty and staff contribute to every facet of life in Colorado. The state’s economic vitality, educated workforce, entrepreneurial climate, cultural capital, health care delivery, and scientific explorations all rely on the driving force of a vigorous state university. By working with other CU academic and research units, as well as local, state, and federal funding agencies, commercial business, and nonprofit organizations, CU is creating a collaborative synergy in important areas that will better the wellness of society.

The CU Institute of Bioenergetics, the Colorado Initiative in Molecular Biotechnology, the Center for Computational Biology, and the Initiative in Molecular Biotechnology will attract intellectual strength to Colorado, provide new educational opportunities, and inspire innovative health care advances. Research and teaching hospitals affiliated with the University of Colorado include: The University of Colorado Hospital, The Children’s Hospital, National Jewish Medical and Research Center, Denver Health and the VA Medical Center.

UNIVERSITY OF DENVER
Denver
www.du.edu

Strives to provide the most modern educational and research facilities in the life sciences. Their history spans the Denver Research Institute’s development of the first NASA life monitoring sensors, the establishment of a state-of-the-art forensics laboratory, to the 2003 acquisition of the Eleanor Roosevelt Institute with pioneering efforts in genomics and bioinformatics. In 2004, the School of Engineering and Computer Science unveiled Colorado’s first undergraduate program in Bioinformatics and a master’s degree in Bioengineering. The interdisciplinary mission of the University enabled the Department of Biology to launch new emphases in Bioengineering, Biophysics and Cognitive Neuroscience designed for molecular biology majors. In addition to strong and quality curricula, bioengineering and life sciences at DU carry multimillion-dollar-a-year research studies in the creation of new knowledge and leading edge biotechnologies to improve quality of life for a worldwide community.

UNIVERSITY OF NORTHERN COLORADO
Greeley
www.unco.edu

University of Northern Colorado (UNC) is a multipurpose institution with a wide range of graduate and undergraduate programs. The university’s mission is to prepare individuals for advanced study, professional careers, and positions of leadership.

THE CHILDREN’S HOSPITAL FOUNDATION
Aurora
www.imaginethemiracles.com

The Children’s Hospital Foundation is the fundraising arm for TCH programs and operations. Since 1978, the Foundation has raised more than $200 million for the hospital and today is in the middle of a fundraising campaign to financially support the building of a new hospital at Fitzsimons, as well as Children’s programs and services.

POUDRE VALLEY HEALTH SYSTEM FOUNDATION
Loveland, Fort Collins
www.foundation.pvhs.org

The Poudre Valley Health System Foundation philanthropically supports and promotes the health interests of Poudre Valley Hospital, the Medical Center of the Rockies and the community by raising and distributing funds for programs that target prevention, education, research, health promotion, wellness and disease management.

UNIVERSITY OF COLORADO FOUNDATION
Boulder
www.cufund.org

The University of Colorado Foundation is a privately governed nonprofit corporation whose mission is to support the University of Colorado. As a valued and trusted partner, the University of Colorado Foundation generates the private support needed in perpetuity for CU to achieve international preeminence as a public research university. Our donors enable CU to reach its full potential to transform lives world-wide through education, research, clinical care and community service.

COLORADO STATE UNIVERSITY RESEARCH FOUNDATION
Fort Collins
www.csurf.org

CSURF is a private, not-for-profit Colorado Corporation established (in 1941) to aid and assist the University campuses (Colorado State University and recently Colorado State University Pueblo) governed by the Board of Governors of the Colorado State University System in their research and educational efforts. Functions include patent and licensing management; equipment leasing and municipal lease administration; financing of equipment, real estate and buildings through mortgage debt obligation(s); and land acquisition, development and management.
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Who Are Your Bioscience Heroes?

Margaret Sanger and Marie Curie
"I like Margaret Sanger more for her pioneering work in feminism than for her biological aspect. And I choose Marie Curie because of the sacrifices she made for her scientific work (including her life)."
—Marian Robinson
Vice President of Marketing
Baxa Corp.

Bob Collins and Bob Anderson
"Both were entrepreneurs that built the two ‘foundational’ medical device companies in Colorado: Cobe Laboratories and Valleylab. Collins started with some gardening shears and plastic tubing and made ‘heart lung perfusion packs’ in his kitchen, helping to provide products during the initial days of open-heart surgery. The story is told that he told people if he ever had ‘12 employee’ he’d feel like the company would be big enough to survive! From its humble beginning his company grew to well over 1,200 employees and over $100 million in revenues.

"I worked for Bob Anderson for about three years at Valleylab. Bob was a no-nonsense, no-bureaucracy, ‘just get it done’ individual!"
—Rick Jory
President and CEO
Sandhill Scientific Inc.

Philipp Bozzini, Dr. Ryuzo Yanagimachi and Dr. M.C. Chang
"My daughter Melanie Pryor, is alive and the mother of a baby girl thanks to these three scientists. Melanie was diagnosed with a germinoma of the pituitary 22 years ago. Dr. Kevin Lillihei at the University of Colorado performed transsphenoidal surgery to remove the tumor, successfully avoiding complications that often arise from intracranial surgery.

"Philipp Bozzini developed the first endoscope, which for the past 30 years has been used for the treatment of diseases of the sinus and ... in the surgical treatment of pituitary tumors.

"As a result of damage to the pituitary, Melanie was never expected to be able to have children. However, thanks to groundbreaking research by Dr. Ryuzo Yanagimachi and Dr. M.C. Chang, Callie Paige Bowman was born Jan. 19, 2009.

—Linda Pryor
Director of Government Relations and Public Affairs
Pfizer

Marvin Caruthers
"He very early on realized the value of moving technologies from the lab into the marketplace through the creation of for-profit companies, and he has become a role model through his efforts and successes. Some examples: Synergen, Amgen, Genomica, Applied Biosystems, NeXstar, Ribozyme and Array Biopharma. Moreover, he and his wife have given their time and talent to their family foundation and to the University in so many other ways that he has become a true inspiration and role model for the complete faculty member in a modern university."
—John Eckstein
Director
Fairfield and Woods PC

Bill Rutter, Dave Goeddel, Carl Woese and Charlie Yegian
"I picked Bill Rutter for building a great academic department at University of California, San Francisco and starting Chiron; Dave Goeddel for being Genentech’s most productive scientist and for starting Tularik; Carl Woese for teaching everyone that one can only understand biology through an evolutionary perspective; and, on my mind these days, Charlie Yegian who, before he died 30 years ago, caused his friends to say about him: ‘When he did an experiment, it stayed done.’"
—Larry Gold
Chairman and CEO
SomaLogic Inc.
The BioScience Industry in Colorado

Colorado’s biosciences industry is poised to become one of the most exciting and advanced industry clusters in the country. The state is currently home to a thriving industry comprised of over 400 biotechnology, medical device, pharmaceutical, health care providers, research institutions, and those businesses that provide critical services and products to bioscience companies.

Opportunities for growth in the biosciences industry

The pipeline of new technologies and new companies coming out of Colorado’s research institutions is strong; the number of Colorado bioscience related companies and their employees are growing much faster than the national average. At the center of this exciting growth is the Colorado BioScience Association (CBSA), shaping the policies and developing the programs to help Colorado’s companies grow and prosper.

Be a part of this worldclass bioscience cluster. Join the CBSA. For more information visit www.CoBioScience.com

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