


Bioscience

Colorado



2008-2009

DIRECTORY
OF COLORADO
BIOSCIENCE
COMPANIES
& RESOURCES
PAGE 38

**THE MONEY
GAME**
HEAR FROM
BAROFOLD
ARCA BIOPHARMA
SEQUEL VENTURES
SIERRA NEUROPHARMACEUTICALS
TALIGEN THERAPEUTICS
PAGE 6

**COLORADO'S
BIOSCIENCE
INDUSTRY**
BY THE NUMBERS
PAGE 12

**COLORADO
INVESTS
IN THE
BIOSCIENCES**
PAGE 33

Collaboration breeds innovation.

colorado science + technology park at fitzsims

Collaboration breeds innovation – and innovation becomes solutions and cures.

The Colorado Science + Technology Park at Fitzsimons is perfectly positioned to collaborate with the adjacent University of Colorado's Anschutz Medical Campus and The Children's Hospital. In fact, collaboration, cooperation and scientific advancement are the components that shaped the vision for the redevelopment of the 578-acre former Fitzsimons Army Medical Center in Aurora, Colorado.

And, that vision is in the process of becoming reality.

Forest City Science + Technology Group, in partnership with the Fitzsimons Redevelopment Authority, is developing the 170-acre park. The synergy created by the research and development of the private bioscience companies at the Colorado Science + Technology Park at Fitzsimons and the research and clinical endeavors of the University and The Children's Hospital, is definitely the catalyst for this successful scientific formula.

The Colorado Science + Technology Park at Fitzsimons is a place where the best and the brightest come together to take ideas from bench to bedside; a place where creativity and collaboration reach critical mass.



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Bioscience Colorado

In 2004 we published the first Bioscience Colorado magazine. The industry has evolved quite a bit in the last four years.

Since 2004, some 150 new companies were created. At the same time, many firms merged or were acquired. Also, Colorado's research institutions have increased the number of company spinouts five-fold since 2004. All this activity has brought the industry to the attention of state and local policy-makers, who are working to build the state's bioscience cluster. As a byproduct, we've seen the development of an active industry association.

As you can see from the magazine directory (Page 38), there are now 430 Colorado bioscience companies involved in the development of biotechnology, medical devices and bio-fuels. Colorado's companies are developing products for the pediatric population, for baby-boomers, to solve global health problems and as diagnostics.

Welcome to the 2008 edition of the Bioscience Colorado magazine. We hope you enjoy it.



33
COLORADO INVESTS
IN THE BIOSCIENCES

35
HEALTH CARE WITHOUT
BORDERS:
COLORADO COMPANIES
SHARE MEDICAL
TREATMENTS
WORLDWIDE

37
COLORADO SCIENCE AND
TECHNOLOGY PARK AT
FITZSIMONS BOOSTED BY
PRIVATE INVESTMENT AND
PUBLIC SCIENCE

38
BIOSCIENCE COMPANIES
AND RESOURCES
DIRECTORY

74
THE FUTURE OF
BIOSCIENCE:
EXECUTIVES SHARE THEIR
THOUGHTS

18
HEALTHY AT ANY AGE:
BABY BOOMERS' LUST FOR
LIFE DRIVES HEALTH-CARE
INNOVATION IN
COLORADO

22
COLORADO KNOWS HOW
TO GROW THE BIOSCIENCE
INDUSTRY:
NINE NEW COMPANIES
FORMED WITH \$2 MILLION
GRANT PROGRAM

30
DIAGNOSIS AS CURE:
METHODS FOR FINDING
DISEASE OFTEN PROVIDE
TREATMENT AS WELL

6
THE MONEY GAME:
SEASONED ENTREPRENEURS
SHARE INSIGHTS INTO HOW
THEY RAISED FUNDS

10
HEALTHY KIDS, HAPPY KIDS
COLORADO COMPANIES
BOOST CHILDREN'S HEALTH
THROUGH TREATMENTS,
SUPPLEMENTS

12
COLORADO'S BIOSCIENCE
INDUSTRY: BY THE
NUMBERS

Looking for a place to locate a bioscience company?
Put us under the microscope.



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. Ranked fifth in the nation for science and engineering graduate students, we offer bioscience 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.

THE MONEY GAME:

SEASONED ENTREPRENEURS SHARE INSIGHTS INTO HOW THEY RAISED FUNDS

EDITED BY RACHEL BRAND

If bioscience entrepreneurs have one thing in common, it's a concern about money. Who to ask for it, how to raise it, how to structure the deal and how to make the funds last. Fortunately, Colorado entrepreneurs can tap into a tight-knit community of local bankers, angel investors and venture capitalists. Here, company founders Dr. Michael Bristow, Dr. Dan Abrams, Dr. Woody Emlen and Dr. Lyndal Hesterberg talk with venture capitalist Dan Mitchell and Chris Shapard of the Colorado Bioscience Association about raising funds. Each founder has recently raised or is raising a significant sum of money.

“THE BEST WAY IS TO TRY TO NETWORK AND WORK THROUGH ANY CONTACTS THAT MIGHT HAVE CONTACTS WITH THE VCS.”

DR. MICHAEL BRISTOW



DAN MITCHELL

MITCHELL: The first question is, what is the most effective way to get in front of investors? Particularly VCs?

BRISTOW: The best way is to try to network and work through any contacts that might have contacts with the VCs. I think cold calls and sending a plan *de novo* is, I don't want to say a waste of time, but very unproductive.

MITCHELL: Do you find that getting a certain board member or another entrepreneur to call versus a VC — is there any difference?

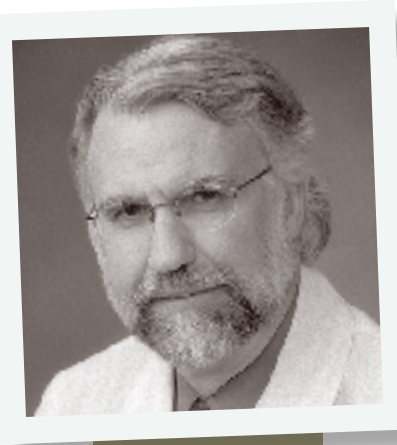
BRISTOW: The right person is important. It should be someone who really knows the VC, who the VC has trust in, who has made money for the VC before.

ABRAMS: For me it worked the best through a presentation. So the issue becomes, what's the timing to go in front of prospective investors? And it works well for us to use the state-sponsored competitive grants as a way of introducing ourselves to the local venture investors.

BRISTOW: Once you get in front of the VCs for a presentation, you've already gotten past the first hurdle. So any mechanism that will allow that to happen efficiently is a good thing.

SHAPARD: For entrepreneurs who are just starting out, are there any other ways to get the contacts?

EMLLEN: The presentation that Dan mentioned worked for us. We went to a local investor, and he helped get us in front of the proof-of-concept committee.



DR. MICHAEL BRISTOW

There were other investors there.

BRISTOW: In Colorado, we have this core group of VCs. Once they realize you've got something that may have some potential they — people like Dan — can make it happen.

MITCHELL: Next, what are one or two things that you think got investors interested in your deal? In terms of where the molecule was, or time-to-market. How did you control investor interest?

HESTERBERG: For us, it was a clearly differentiated pharmaceutical product with a pretty rapid time-to-market. Literally, from the time the first Series A preferred came through, our product was on market in four years. That was very attractive.

ABRAMS: People did respond pretty positively to the fact that even though ours was an early concept, the time to full development was fast. Also I think the fact that it was a platform technology attracted interest.

MITCHELL: That's interesting because the whole concept of platform technologies comes and goes.

BRISTOW: A recently-published article said that with the right science on the right fundamental platform, it's still a good play if you pick your spots and you are capital efficient.

EMLLEN: The typical response by investors is they want something from us monthly. But we have some unique science that has broad applications.

Investors, much to our surprise, wanted us to back



DR. DAN ABRAMS

off on the timing to explore more of a platform concept. And that's unusual because the more typical response is, “how quickly can you get to market?”

HESTERBERG: Is this due to your particular investors?

EMLLEN: Everything is related to particular investors. I mean that every investor has his or her own preferences.

BRISTOW: It just depends on what's happened to them and what they need in their portfolio. Maybe they just brought in some new partner and have some special interest.

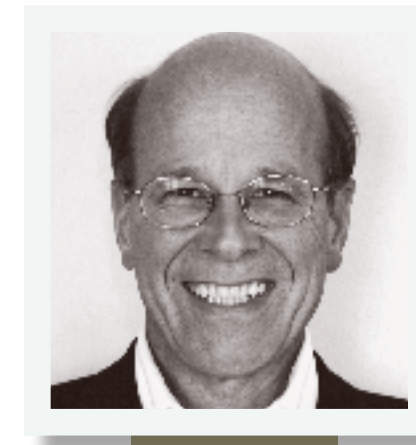
SHAPARD: Do you guys know ahead of time if the investors are going to point you in one direction or another?

EMLLEN: In my experience, you get as many different responses as you present to different investors.

HESTERBERG: It's hard to read in advance.

EMLLEN: I believe that, with a few exceptions, you can learn a lot from each presentation you do.

BRISTOW: It's like submitting a grant 20 times. If you're a scientist, you submit lots of grants. Each time I do it the grant gets better. And sometimes it's just a matter of making your presentation or your business plan better, so that the tenth time through you get funded.



DR. WOODY EMLLEN

MITCHELL: Here's another issue: there are funds that are really big. And they can write really, really big checks. On the one hand, you don't have to go to three people; you can go to one for most of your money. On the other hand, you've got somebody who is really going to dominate. They put two people on the board instead of one. And you get much more direction about how to run your company. Is there a net plus or a net minus for having investments from funds that big?

HESTERBERG: I'd rather deal with the management challenge of more funds and more individuals than giving one person, no matter how correct they think they are, that kind of control.

BRISTOW: There's safety in numbers.

HESTERBERG: Absolutely. Plus, there's some balancing influences in it. These paths that we're on are not exactly cookie-cutter.

BRISTOW: It never goes exactly the way you lay it out.

EMLLEN: I agree that it's good to have different board members and multiple investors and different input. But on the other side of the coin, raising money takes a huge amount of time, and if you can get investors who put more money in, you can potentially allow yourself to do more development. If you could get multiple



DR. LYNDALE HESTERBERG

investors with deep pockets, that would be the best. You get your input, but you don't have to go out every three months and start raising money again.

BRISTOW: In this business, the first company that you do is a bear and you spend a lot of time on financing. With Myogen, on Series C, we must've been in front of 50 companies. It was unbelievable. But now people come to us. We have to actually turn them down. So it gets a little easier as time goes on.

HESTERBERG: What I like about having multiple investors is that in the ideal world, they're all close to the same percent ownership. That forces, at the board level, a business rationale to drive the company, as opposed to a single fund's internal issues and priorities driving it. And then it's important to have non-VC board members to provide a little sanity too.

MITCHELL: What about corporate, or non-VC, investors?

HESTERBERG: We're thinking about that. We've been approached by a couple and while they would swallow our current valuation, they weren't thrilled with it. They required having one of their corporate officials on our board and access to all our information. One company said, “We'd love to invest, but here's our deal, we'll put X amount in, but we want

one of our guys in there to have access to all your data.” I said no. They wanted voting powers.

EMLN: It may be company-specific because we almost had a deal with a large company. And they were satisfied to have observer rights only and be in the room only at appropriate times. When it came time to have an exit strategy, we potentially had a good acquisition partner. We ended up not going with them.

BRISTOW: It can make sense to partner certain compartmentalized components of your operation. No company has just one asset. For example, at Myogen with our pre-clinical partner Novartis we offloaded a huge amount of the pre-clinical and R & D work. That was a really good thing. But that deal didn’t touch the later stage drug development business, so it didn’t hurt us at all.

ABRAMS: I thought you meant something different by that question. We’ve chosen other people with start-up expertise and CEO expertise for our board in order to guide the company. At least at this stage we thought it was a very important addition.

BRISTOW: Board composition is very important. In a perfect world you’d have some kind of combination of management on your board — one or two slots — as well as VCs and independents. VCs will be there regardless, so that will be two to four of your board slots. And then independent numbers are really critical, those with expertise in what you’re trying to do. It’s nice to have a mixture of those three worlds. And it’s also nice to outnumber the VCs with management and independents.

MITCHELL: In Colorado, there’s a lot of talk about trying to build up the angel community. Any experience with angel investors?

BRISTOW: It depends on the definition of angel. It’s really great to have people around who have started companies before, who will work for sweat equity, and then take something in series A or some common stock for their efforts. In that scenario, founders can shoestring or bootstrap the company along because it doesn’t take much capital. What’s harder is to find somebody who’ll actually work at this and knows how to do it, in exchange for equity in the company. If you call those angels, I think they are very important.

ABRAMS: Some angels offered us expertise and assistance in management, which we could take or not take as we went along. It wasn’t necessarily the money, but it was the education, the involvement and the Rolodex.

MITCHELL: What about the other end of the spectrum? What about cross-over funds and hedge funds? I’m finding there are pretty smart people in hedge funds and cross-over funds. Would you tell someone starting today

to include that in their first round?

HESTERBERG: It’s another viable avenue.

BRISTOW: At ARCA, we ended up on a B round in front of half a dozen cross-over and hedge funds. All of them are willing to invest. Basically, they gave the same terms as VCs. So we stayed with VCs, primarily because we thought we could get more help developing the company. The cross-over funds want to just put the money down and not play an active role in company development. Their value is when you’re headed for the IPO. They know the company, and they are in on the IPO buy. Early though, staying with VCs probably makes the most sense. But it would depend on the cross-over fund and the person involved. And they are certainly smart, no doubt about it.

“I’D RATHER DEAL WITH THE MANAGEMENT CHALLENGE OF MORE FUNDS AND MORE INDIVIDUALS THAN GIVING ONE PERSON, NO MATTER HOW CORRECT THEY THINK THEY ARE, THAT KIND OF CONTROL.”

DR. LYNDAL HESTERBERG

MITCHELL: Here’s a touchy question: What did you feel was best to get people to move to the next step? It’s really difficult to get a sense of urgency around deals. Any tricks or advice for entrepreneurs?

BRISTOW: What always works is, “if you don’t get in this now you’re not getting in.”

EMLN: You just need to keep after people, and you’ll know pretty quickly whether they’re really serious or not. And if they’re not, don’t waste your time there. But if you can generate competition, that’s great, but that can be difficult to do.

BRISTOW: The A round is always the high threshold round. But if you can do that, then things move pretty quickly. In later rounds, if you have VCs who are stepping up on the next round then they can basically say, hey look, if you don’t get this now I’ve got this guy, this guy, and this guy ready to go. You know people are pretty straight forward reacting to that kind of information.

MITCHELL: Have you ever had a problem where

you had more investors than you needed, and you had to go back and say that you can’t have a board seat — did you have that discussion with people?

EMLN: Yeah, we did, and the investors bowed out.

MITCHELL: Out of the round?

EMLN: Yes.

BRISTOW: Typically, in the early rounds, if they have a significant piece of the company, they want a board seat. And if you don’t give them a seat, it probably means you don’t want them on the board.

MITCHELL: It might also mean that you’re raising a big round, and you’ve got two people committed, and you’ve already got seats spoken for, and you still need another ten million. You’re going to face that problem.

BRISTOW: Then make a bigger board.

MITCHELL: How big is ARCA’s board?

BRISTOW: Our current board is nine, and that’s about as big as it ever needs to be. As chairman, it’s a lot of work to manage all that. It should never hit double digits.

EMLN: There’s a significant energy and activation to getting a lead investor because, with all due respect, VCs are a little like lemmings. We have a lot of people who are sincerely interested but waiting on the sidelines until someone jumps. So getting that first person to step up can be very difficult. In our case, we did this without a formal term sheet. We got a non-binding letter from one investor. And it moved things along. Then it turned out that investor didn’t come into the round. That first investor was just a catalyst.

ABRAMS: It’s too bad investors can’t make money just doing that. It would be a great business.

BRISTOW: Again, this is really where local venture capital firms can play an important role. Local VCs have a better opportunity to know and evaluate us; they can dig deeper on their due diligence. They also have a vested interest in something happening locally. So if you can get a local VC to go in, you are halfway there, if not 90 percent there. It’s then just a matter of time recruiting other VCs. That’s how Myogen and ARCA got done by leveraging local influence.

MITCHELL: Dan Abrams and I are currently in the middle of the Sierra Neuropharmaceuticals raise. We’re talking to a lot of people, and all of them want access to our KOLs (key opinion leaders — i.e. physicians who are on your board). Those are very important relationships. I was wondering, though, how do you manage that? Because I’d rather not have 15 different people calling my thought leaders at different institutions.

HESTERBERG: It hasn’t been an issue. In fact, for the very specific targets that we’re going after, they have their own stable of experts. In only a

couple of cases have theirs overlapped with ours.

BRISTOW: That’s true. They have their favorites. Which could be a problem. You need to know who those favorites are.

EMLN: You need to make sure that the key opinion leaders that you recommend the investors talk to — they’re well-coached and familiar with your technology and believe in it. Because investors will also go outside to their own people. So take care of the people you refer them to; warn them ahead of time before a call. That’s really important because one call goes wrong, you’ve lost an investor.

BRISTOW: Don’t leave it up to chance.

ABRAMS: I’m hoping that we can simmer it down to the two key opinion leaders that we think are the most interested in the technology. But I don’t want to burn them out. I’m being protective of them until I’m sure on the other side there’s a high level of interest.

EMLN: That’s appropriate, because they can easily get burned out.

MITCHELL: What do you think about getting financing in tranches, tranching your deal?

EMLN: Every investor that you talk to is talking about tranching. It’s simply the norm. You just need to make sure that the milestones are clearly executable and well laid out so you don’t trip yourself up. But if you communicate well during the due diligence process, it shouldn’t be a problem.

BRISTOW: It can work. You get a step up if you hit a milestone. Presumably you create value by reaching that milestone. On the other hand, if there’s some chance you’re not going to meet the milestone or you forget to meet the milestone...

EMLN: The VC’s aren’t stupid and are basically mitigating their risks. Do you frequently do deals that are not tranching?

MITCHELL: I do it both ways. I’m willing to take more risks than some folks because I know the hassles of having to go back to the well in the middle of something. If you’ve got really clear milestones, I guess it can make sense. If you get enough people at the table, though, I’d rather put all the money in and get to work.

EMLN: That would be nice, but I think that’s unusual.

ABRAMS: Our seed deal was tranching for a series A. So far I haven’t seen a problem, and it was a way to move the seed deal along with high-quality investors.

HESTERBERG: It depends on where your company is at in development. If there’s really a discovery component to your work, I would avoid tranching. If the company is ready to execute, where you already know the path and deliverables, then I’m comfortable with tranching.

MITCHELL: Well, anything else? I think we kind of hit all the main points on fundraising.

HESTERBERG: I probably shouldn’t say this, but I don’t think the biotech investment world is beating a path to the Denver and Boulder area. You’ve got to go out and get it, in other words, go to the coast to build the networks to get the introductions to get the investors to come back to this area. It’s a lot of work. We’re still disadvantaged.

BRISTOW: I don’t buy that. I just absolutely don’t buy that we’re disadvantaged here.

EMLN: Investors, I think, very clearly and quickly differentiate themselves as to whether they are willing to invest in Colorado.

BRISTOW: Exactly.

EMLN: And probably 25 percent of them won’t do it. Again, don’t waste your time. So if you take that 25 percent out, that’s something of a disadvantage. But there’s still plenty out there.

SHAPARD: Do you guys go to European or Asian investors at all?

HESTERBERG: We didn’t, but the Europeans are coming to us at this point. It’s been very surprising. The exchange rates are so favorable now to the euro.

MITCHELL: There’s also phenomenal lack of liquidity with deals in Europe.

SHAPARD: How do you all feel about the IPO market these days?

BRISTOW: Could be better. Right now it’s still on the downside, but you can still get out with really good stuff.



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"KIDS' BRAINS DEVELOP MOST RAPIDLY WHILE THEY ARE IN THE WOMB," SAYS BILL BARKLEY, MARTEK BIOSCIENCES CORP.'S CHIEF INTELLECTUAL PROPERTY OFFICER. "BUT UP UNTIL AGE 12 THERE'S STILL SIGNIFICANT GROWTH OF THE BRAIN."

a shot once a week or less. The company has completed a number of pre-clinical toxicology tests and is raising the \$250,000 to \$500,000 needed to get the product into Phase I clinical trials. "The goal is to get it into the clinic fourth quarter 2008 or first quarter 2009," Cox says. Despite the fact that he's working on an orphan disease, Cox thinks the market will embrace Bolder BioTechnology's product. "What child wants to have to take an injection every day?" Cox asks. "We think a lot of children would like to switch to an easier way to take the hormone."

It doesn't take an illness to stimulate pediatric health-related research and development. **Martek Biosciences Corp.** seeks to enhance children's health by incorporating DHA from a novel source into infant formula and toddler foods. Docosahexaenoic acid, known as DHA, is a polyunsaturated omega-3 fatty acid found throughout the body. It is a major structural fat in the brain and retina and is also a key component of the heart.

"Kids' brains develop most rapidly while they are in the womb," says Bill Barkley, Martek's chief intellectual property officer. "But up until age 12 there's still significant growth of the brain. DHA is very important in the structure and nerves junction of the nerves, and also for eye health." Martek isn't unique in promoting DHA in children's diets, but what is unusual is its source; while most DHA supplements are derived from fish oils, Martek's process extracts DHA from algae, fishes' original source. "Algae are incredibly

productive organisms," Barkley says. "We know how to trick them to make just the compound we want and to make large amounts of it." The 525-employee company was founded in 1985 when aerospace giant Martin Marietta began studying the beneficial use of algae in long-term space flight. Headquartered in Columbia, Md., Martek gained a research facility in Boulder in 2002 when it bought Boulder-based OmegaTech, which had also been deriving DHA from algae. Barkley, based at the Boulder facility, has been working on the technology for 25 years and is still excited by the research and its promise for healthy children.

"In the 1700s, our cows used to graze in the fields," he says, "and they would get the precursors to DHA. But when we mechanized agriculture and made food cheap by feeding our cattle corn, we took out those precursors to DHA. You believe it can do so much good if you can get into the diet, where it used to be naturally." Other research into cures for pediatric illnesses is taking place in Colorado at the **Children's Hospital**. Affiliated with the **University of Colorado Denver School of Medicine**, the Children's Hospital has pioneered research in the treatment of pediatric liver disease, infectious disease and vaccines, pediatric and adolescent HIV/AIDS, cystic fibrosis, pulmonary hypertension, pediatric cardiology and neonatology. Other Colorado companies working on improving pediatric health care include **Replidyne Inc.**, **Cochlear Americas** and **Roche Colorado**.

BY CARON SCHWARTZ ELLIS

Modern vaccines allow most children to avoid what used to be common killers: polio, measles and whooping cough. And with medical advances, vaccines are helping American kids forgo unpleasant, less lethal disorders such as rotavirus and even the common flu.

While that's great news for the battle against infectious diseases, the frontier of pediatric medicine has moved to rarer illnesses. And a number of Colorado companies are working on treatments in this area.

Spina bifida, a complex neuromuscular birth defect, affects as many as 70,000 Americans, according to the Spina Bifida Association. And two to three children per 1,000 have cerebral palsy, a group of chronic movement or posture disorders typically caused by birth trauma, according to the

"WHAT CHILD WANTS TO HAVE TO TAKE AN INJECTION EVERY DAY?" ASKED JOE COX, CEO OF BOLDER BIOTECHNOLOGY INC.

March of Dimes. To alleviate these disorders and other neuromotor problems, pediatric physical therapist Beverly Cusick and her husband, Lee Taylor, launched **TheraTogs Inc.** in 2006.

TheraTogs are an orthotic undergarment system made of water-based, millimeter-thick urethane foam that's "breathable and much more comfortable than traditional orthotics," CEO Taylor says.

Clinicians attach a customized system of straps to the foam, and the outfit operates like external muscles, positioning patients properly throughout the day. The system reduces kinesiological and biomechanical errors,

improves patient posture and enhances sensory input. Since the company was founded, TheraTogs are now used by thousands of physical and occupational therapists.

Some occupational therapists even use TheraTogs to treat children with autism. Taylor recalls how one therapist tried a TheraTogs tank top on a little girl with autism, and she was suddenly able to write her name.

"In many of those kids' cases, part of their difficulty is they don't process sensory input as effectively as someone outside the autism spectrum," Taylor says. "They are trying to find their body in space. (They) benefit from wearing TheraTogs

because (the garments) calm down their sensory input."

Bolder BioTechnology Inc. is tackling an even lesser-known illness — pediatric growth hormone deficiency, which affects some 10,000 to 15,000 children in the U.S. The disorder, which can lead to abnormal growth and muscle development, stems from a disruption in the production of certain hormones.

The gold-standard treatment is daily injections of growth hormone for five to 10 years, or until, as a teenager, the child stops growing, says Joe Cox, president of the Boulder-based company.

Bolder BioTechnology is developing a highly potent, long-acting growth hormone using the company's PEGylation technology, which extends the half-lives of proteins. Because of its extended half-life, Bolder BioTechnology's modified growth hormone lasts longer once injected, so kids only need



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COLORADO'S BIOSCIENCE INDUSTRY: BY THE NUMBERS

33
THE NUMBER OF
PUBLICLY
TRADED
COMPANIES
HEADQUARTERED
OR WITH
OPERATIONS IN
COLORADO

Every scientific researcher knows that while anecdotes are compelling, data tells the real story. In the case of Colorado's bioscience industry, the data is good. It shows that research institutions are spinning out new companies at unprecedented speed. It proves that work done in Colorado attracts international investment. And it confirms that our bioscience companies have a robust pipeline of drugs and devices in clinical trials.

While we don't pretend to scientific accuracy in compiling the lists that follow, we are beginning to benchmark the industry's growth. Read the story by the numbers.

PUBLICLY TRADED COMPANIES WITH HEADQUARTERS OR OPERATIONS IN COLORADO

Company Name	Colorado Location	Exchange	Symbol	Colorado Products	Colorado Employees	Global Employees
Accel8 Technology Corp	Denver	Amex	AXK	Instrumentation for medical diagnostics; basic research and drug discovery	10	*
AcuNetx Inc.	Louisville	OTCBB	ANTX	Devices to treat balance disorders	4	*
Agilent Technologies Inc., Nucleic Acid Solutions	Boulder	NYSE	A	Turn-key therapeutic oligo development	50	19,400
Allos Therapeutics Inc.	Westminster	Nasdaq	ALTH	Treatments for lymphoma and non-small cell lung cancer	59	*
Alpharma Animal Health Inc.	Longmont	NYSE	ALO	Animal and human pharmaceuticals	17	1,400
Amgen Inc.	Boulder, Longmont	Nasdaq	AMGN	Therapeutics for supportive cancer care, nephrology, inflammation and oncology	1,250	16,500
Array BioPharma Inc.	Boulder	Nasdaq	ARRY	Small molecule drugs for cancer and inflammatory disease	320	*
Aspen BioPharma Inc.	Castle Rock	Nasdaq	APPY	Diagnostic tests, primarily for the veterinary markets	20	*
Ceragenix Pharmaceuticals Inc.	Denver	OTCBB	CGXP.OB	Topical cream-based treatments for infectious disease and dermatology	5	*
Celgene Corp.	Boulder	Nasdaq	CELG	Treatments for multiple myeloma and other cancers	60	1,600
Cochlear Americas	Englewood	Australian Exchange	COH	Cochlear implants	300	1,600
Conmed Corp.	Centennial	Nasdaq	CNMD	Designs and manufactures RF electrosurgical generators and accessories	125	3,200
Corgenix Medical Corp.	Broomfield	OTCBB	CONX.OB	Diagnostic test kits for vascular diseases and immunological disorders	43	5
Covidien AG	Boulder	NYSE	COV	Electrosurgery equipment; pulse oximetry and ventilators	1,000	43,000
Dharmacon, part of Thermo Fischer Scientific Inc.	Lafayette	NYSE	TMO	Novel technologies for RNA interference	130	11,500
Encision Inc.	Boulder	Amex	ECI	Devices for minimally-invasive surgery	45	*
GE Analytical Instruments	Boulder	NYSE	GE	Manufactures instruments that measure total organic carbon (TOC) in water	175	327,000
Gilead Sciences Inc.	Westminster	Nasdaq	GILD	Treatments for pulmonary arterial hypertension	65	2,900
Heska Corp.	Loveland	Nasdaq	HSKA	Advanced veterinary diagnostics	300	N/A
Hospira Inc.	Boulder	NYSE	HSP	Manufactures specialty injectible generic pharmaceuticals	100	15,000
Insmed Inc.	Boulder	Nasdaq	INSM	Specializes in protein drug development	80	160
Integrated BioPharma Inc.	Denver	Nasdaq	INBP	Subsidiary InB:Hauser Pharmaceuticals Inc. extracts and purifies products from plant, marine and microbial sources	35	167
Integrated BioPharma Inc.	Boulder	Nasdaq	INBP	Subsidiary InB:Paxis Pharmaceuticals Inc. manufactures and markets generic paclitaxel	15	167
Martek Biosciences Corp.	Boulder	Nasdaq	MATK	Develops nutraceuticals from microalgae	30	515
Medtronic Inc.	Louisville	NYSE	MDT	Manufactures surgical navigation devices and hardware	300	38,000
Mesa Laboratories Inc.	Lakewood	Nasdaq	MLAB	Manufactures dialysis clinical supplies	100	*
OSI Pharmaceuticals Inc.	Boulder	Nasdaq	OSIP	Discovery and development of oncology, diabetes and eye disease therapeutics	135	550
QLT Inc.	Fort Collins	Nasdaq	QLTI	Discovery and development of dermatology and ophthalmology treatments	25	240
Replidyne Inc.	Louisville	Nasdaq	RDYN	Discovery and development of anti-infective products	50	4
Roche Colorado	Boulder	Swiss Exchange	RHHBY	Small-peptide manufacturing plant	340	74,000
Sandoz Inc.	Broomfield	NYSE	NVS	Division of Novartis that manufactures generic drugs, particularly anti-infectives and anti-arthritis	600	98,200
The Sorin Group	Arvada	Milan Exchange	SRN.MI	Therapeutic solutions in the treatment of cardiac disease	250	4,500
Spectranetics Corp.	Colorado Springs	Nasdaq	SPNC	Medical devices for minimally invasive cardiac surgery	300	16

*All employees are located in Colorado

Source: CBSA Research

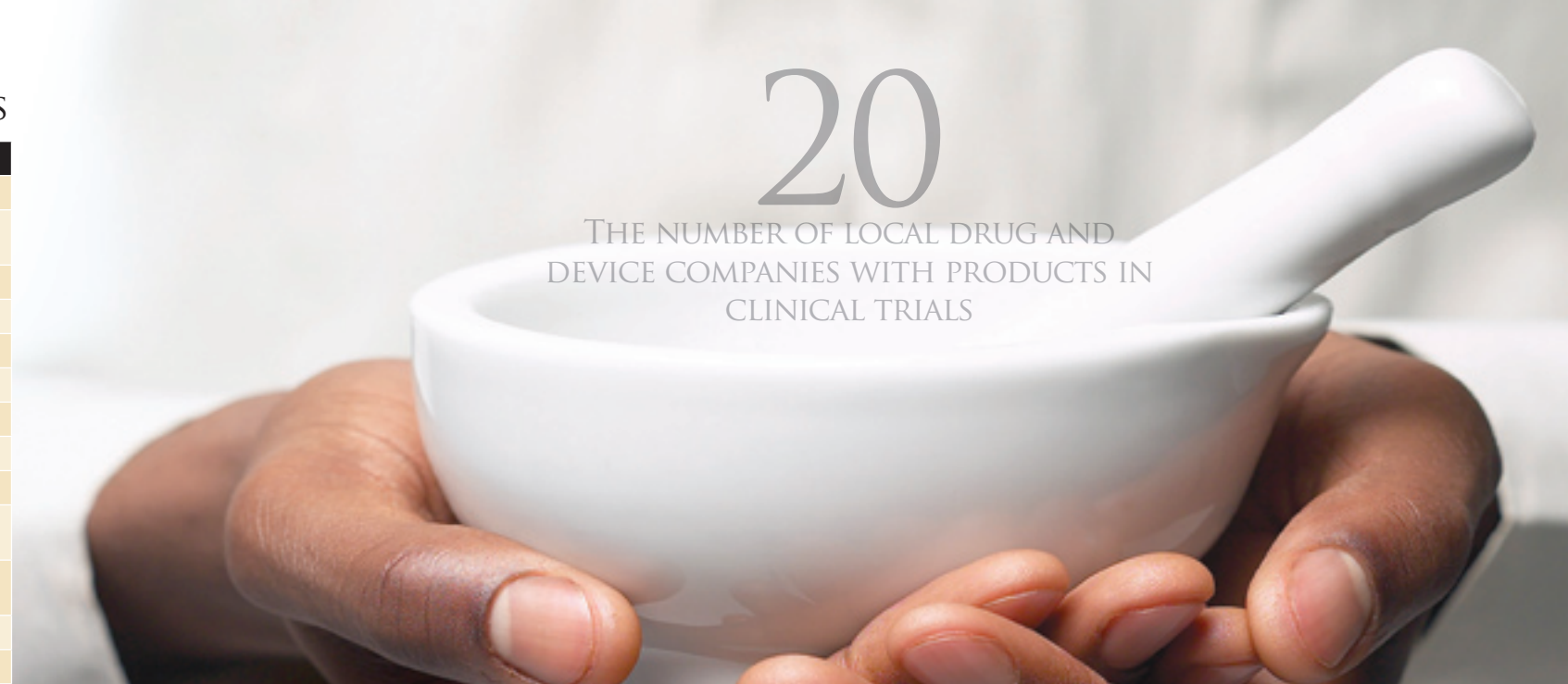
COLORADO COMPANIES WITH PHARMACEUTICALS IN FDA CLINICAL TRIALS

Company	Product	Medical indication	Phase
Accera Inc.	Ketaspyn	Mild-to-moderate Alzheimer's disease	I/II
Allos Therapeutics Inc.	efaproxiral	Lung cancer, in combination with chemotherapy and radiation	III
Allos Therapeutics Inc.	pralatrexate	Relapsed or refractory cutaneous T-cell lymphoma	I/II
Allos Therapeutics Inc.	pralatrexate	Non-small cell lung cancer patients	II
Allos Therapeutics Inc.	pralatrexate	Relapsed or refractory lymphoproliferative malignancies	I
Allos Therapeutics Inc.	RH-1	Advanced solid tumors or non-Hodgkin's lymphoma	I
Amgen Inc.	Aranesp	Chronic kidney disease, anemia, and type 2 diabetes	III
Amgen Inc.	Aranesp	Anemia in heart failure	III
Amgen Inc.	Denosumab	Prevention of bone metastases	III
Amgen Inc.	Denosumab	Bone loss induced by hormone ablation therapy in breast cancer or prostate cancer	III
Amgen Inc.	Denosumab	Prevention of cancer-related bone damage in breast cancer, prostate cancer and solid tumors	III
Amgen Inc.	Denosumab	Postmenopausal osteoporosis	III
Amgen Inc.	Denosumab	Multiple myeloma	II
Amgen Inc.	Denosumab	Rheumatoid arthritis	II
Array BioPharma Inc.	ARRY-142886	Cancer	I
Array BioPharma Inc.	ARRY-334543	Solid tumors	I
Array BioPharma Inc.	ARRY-380	Breast cancer	I
Array BioPharma Inc.	ARRY-520	Advanced leukemia	I/II
Array BioPharma Inc.	ARRY-520	Neoplasms	I
Array BioPharma Inc.	ARRY-797	Pain relief during molar extraction surgery	II
Array BioPharma Inc.	ARRY-886	Advanced melanoma	II
Biodesix Inc.	VeriStrat	Non-small cell lung cancer	III
bioNovo Inc.	BZL101	Advanced breast cancer	I/II
bioNovo Inc.	VG101	Postmenopausal vaginal atrophy	I/II
Celgene Corp. (formerly Pharmion Corp.)	MGCD0103 & Azacitidine	Lymphoma	II
Celgene Corp. (formerly Pharmion Corp.)	thalidomide	MALT lymphoma	II
Celgene Corp. (formerly Pharmion Corp.)	Vidaza	Myelodysplastic syndromes (MDS)	III
DMI BioSciences Inc.	DMI-3934	Metastatic cancers to the brain originating from breast, lung, melanoma, kidney or colon cancers	II
DMI BioSciences Inc.	DMI-5207	Macular degeneration, diabetic retinopathy and diabetic edema	I
DMI BioSciences Inc.	Zertane	Premature ejaculation	III
Gilead	ambrisentan	Pulmonary arterial hypertension	II/III
GlobeImmune Inc.	GI-4000	Non-metastatic pancreatic cancer	II
GlobeImmune Inc.	GI-5005	Hepatitis C	II
OSI Pharmaceuticals Inc.	OSI-906	Advanced solid tumors	I
OSI Pharmaceuticals Inc.	OSI-930	Advanced solid tumors	I
OSI Pharmaceuticals Inc.	Tarceva	Non-small cell lung cancer	III
OSI Pharmaceuticals Inc.	Tarceva	Ovarian and colorectal cancers	III
QLT Inc.	Aczone	Rosacea	II
QLT Inc.	GHRP	End-stage renal disease	II
QLT Inc.	Lemuteporfin	Severe acne	I/II
QLT Inc.	Lemuteporfin	Acne	I
QLT Inc.	Visudyne	Age-related macular degeneration	II

Source: www.clinicaltrials.gov; company Web sites

20

THE NUMBER OF LOCAL DRUG AND
DEVICE COMPANIES WITH PRODUCTS IN
CLINICAL TRIALS



COLORADO COMPANIES WITH MEDICAL DEVICES IN FDA CLINICAL TRIALS

Company	Product	Study purpose	Phase
CeraPedics Inc.	P-15 bone putty	To compare P-15 bone putty to DBX in patients with degenerative disk disease	IV
Covidien AG	Vascular sealant	To compare the safety and efficacy of using a vascular sealant with Gelform/Thrombin in vascular reconstructive surgery	I
Gambro	Polyflux HD-C4	To compare and contrast the Polyflux HD-C4 dialyzer with the Polyflux 210H dialyzer in routine dialysis	interventional
Gambro	Polyflux HD-C4	To determine if the performance of a dialyzer depends on how tightly the hollow fiber membranes are packed	interventional
Lexicor Medical Technology LLC	Neurolex EEG-based ADHD Assessment Aid	To examine the predictive ability of EEG in diagnosing patients with ADHD	observational
Medtronic Navigation	INFUSE bone graft/PEEK Spacer/Anterior Cervical plate	To determine the safety and effectiveness of these products in patients with symptomatic cervical degenerative disk disease	III
Medtronic Navigation	DIAM Spinal Stabilization System	To establish the safety and efficacy of the DIAM Spinal Stabilization System in the treatment of moderate, single-level lumbar degenerative disc disease	III
Medtronic Navigation	A-MAV Anterior Motion Segment Replacement	To collect safety and efficacy data about A-MAV as a treatment for patients with lumbar degenerative disc disease	III
Medtronic Navigation	MAVERICK Total Disc Replacement	To assess the safety and efficacy of using MAVERICK Total Disc Replacement as a treatment for patients with lumbar degenerative disc disease	III
Medtronic Navigation	PRESTIGE LP	To assess the safety and effectiveness of using PRESTIGE LP as a treatment for patients with symptomatic degenerative disc disease	III
Medtronic Navigation	PRESTIGE LP	To assess the long-term effectiveness of using the PRESTIGE Cervical Disc in the treatment of patients with cervical degenerative disc disease	IV
Medtronic Navigation	BRYAN R	To establish the safety and efficacy of the BRYAN R Cervical Disc in the treatment of single-level degenerative disc disease of the cervical spine	III
Otologics LLC	Otologics fully-implantable hearing device	To test its direct cochlear stimulation prosthesis	II
Spectranetics	CELLO - CLiRpath Excimer Laser System	To evaluate the safety and efficacy of the CLiRpath Photoablation Atherectomy System to create larger lumens for treatment of arteries above the knee	III
Spectranetics	Laser Thromboablation	To assess if using excimer laser coronary atherectomy before stenting leads to improved reperfusion rates	II
Synthes Inc.	Synthes Reamer-Irrigator-Aspirator (RIA)	To compare the quantity of fat released into the blood by reaming the femoral canal using two different reaming systems	interventional
Synthes Inc.	Synthes Reamer-Irrigator-Aspirator (RIA)	To study the composition of bone graft harvested during the RIA system in orthopedic trauma patients	interventional

Source: ClinicalTrials.gov; company Web sites

**\$2.9
BILLION**

THE AMOUNT CELGENE CORP.
PAID FOR COLORADO'S PHARMION
CORP. IN THE BIGGEST BIOSCIENCE
DEAL OF 2007

33

THE NUMBER OF
NEW COMPANIES
FOUNDED IN
COLORADO IN THE
LAST TWO YEARS

DEALS IN 2007 AND FIRST QUARTER 2008

Company	Technolog	Deal Type	Investor, Buyer, or Partner	Value
Allos Therapeutics Inc.	small molecule therapeutics to treat cancer	Secondary offering	Underwriters: Merrill Lynch, Banc of America Securities, JMP Securities	\$50.5 million
ARCA biopharma Inc.	next-generation vasodilator and beta-blocker for heart failure	Series B financing	Investors: Skyline Ventures, InterWest Partners, Atlas Venture, Peierls Foundation, Boulder Ventures	\$18 million
Aspen BioPharma Inc.	novel recombinant single-chain bovine products	Private placement	Investors: new and existing shareholders	\$18.2 million
Aspen BioPharma Inc.	novel recombinant single-chain bovine products	Licensing agreement	Licensor: Novartis Animal Health	undisclosed
BaroFold Inc.	protein processing technology that refolds recombinant proteins at higher concentrations	Series A financing	Investors: HBM Bioventures, Peierls Foundation, Boulder Ventures	\$12 million
Ceragenix Pharmaceuticals Inc.	EpiCeram, a prescription topical cream	Milestone payment	Partner: Dr. Reddy's Laboratories	\$1.5 million
CeraPedics Inc.	products for the orthopedic bone substitute market	Series A financing	Investor: OrbiMed Advisors	\$12.3 million
GlobImmune Inc.	discovery and development of potent, targeted molecular immunotherapies	Series C financing	Investors: Wexford Capital, Celgene Corp., Mellon Family Investment Company, Richard King Mellon Foundation, Eminent Venture Capital Corp., Boston Life Science Venture Corp., WRF Capital	\$41.2 million
Glucon Inc.	continuous real-time glucose monitoring technologies	Series D financing	Investors: 3i Group, Sequel Venture Partners, Quest Capital Partnership, Hunt Ventures, Giza Venture Capital, MKI, Infinity Venture Capital Fund, Ascend Technology Ventures	undisclosed
iBalance Medical Inc.	an improved method for an orthopedic procedure called high tibial osteotomy	Series A financing	Investors: Sutter Hill Ventures, Skyline Ventures	\$13.5 million
Lanx LLC	implants for spinal surgery	Series A financing	Investors: Chicago Growth Partners, Goldman Sachs, Oakwood Medical Investors	\$25 million
OPX Biotechnologies Inc.	using technology to rapidly screen and modify microbes used in producing renewable fuels	Series A financing	Investors: Mohr Davidow Ventures, X/Seed Capital Management	\$3.6 million
Pharmion Corp.	products to treat blood and solid tumor cancers	Acquisition	Buyer: Celgene Corp.	\$2.9 billion
Range Fuels	cellulosic ethanol	Series B financing	Investors: Passport Capital, BlueMountain, Khosla Ventures, Leaf Clean Energy Co., PCG Clean Energy and Technology Fund	\$130 million
SomaLogic	next-generation medical diagnostics based on protein signatures	not available	not available	\$35 million
Taligen Therapeutics Inc.	continuous real-time glucose monitoring technologies	Series B financing	Investors: Alta Partners, Clarus Ventures, Sanderling, High Country Venture, Tango	\$65 million

Source: CBSA Research

COMPANIES FOUNDED SINCE 01/01/2006

Company	Founder or Key Researcher	Technology and product
A2BE Carbon Capture LLC	Jim Sears, Jim Mettais and Mark Allen	Developing ways to capture and recycle carbon dioxide
Accuthera Inc.	John Cheronis, M.D.	Developing compounds for the treatment of sepsis-related inflammation
Advanced Headache Intervention Inc.	spin-off from Advanced Cosmetic Intervention	Developing medical devices for the treatment of migraine headache
Advanced Microlabs	Dr. Charles S. Henry	Analytical instruments
ApopLogic Pharmaceuticals Inc.	Richard Duke, Ph.D. and Donald Bellgrau, Ph.D.	Developing therapies that target apoptotic cell death pathways in cancer cells
ArcScan Inc.	Ed Wood	Developing a precision imaging system for the eye
Beacon Biotechnology LLC	Larry Lansing	Developing a diagnostic platform
Biodesix Inc.	David Brunel	Developing mass spectrometry-based molecular diagnostics
Caveo Therapeutics	Doug Graham, M.D.	Developing products to treat hematological disorders
Chemizon Inc.	Tony Piscopio, Ph.D.	Provides drug discovery and development capabilities to the drug industry
Clarimedix Inc.	John Dunning and Jim Brooks	Developing devices to treat pain and other chronic health problems
CycleGen Inc.	Larry Gold, Ph.D.	Developing methods of treating tumors through apoptosis
EndoShape Inc.	Harold Tyber	Developing shape memory polymer stents
Fluonic Inc.	Amir Genosar	Developing a disposable flow sensor for infusion therapy
Hiberna Corp.	Gordon Van Dusen and Tom Marr, Ph.D.	Identifying novel therapeutic targets for reversing metabolic disorders
Illumasonix LLC	Robin Shandas, PhD	Developing a non-invasive vascular disease detection procedure
KromaTiD Inc.	Susan Bailey, Ph.D., Joel Bedford, Ph.D., Ed Goodwin, Ph.D., Michael Kornforth, Ph.D., Andrew Ray, Ph.D.	Developing chromatid paints for the detection of chromosomal inversions
Lanx LLC	Michael Fulton, M.D.	Spinal and surgical equipment manufacturer
Locomotion Inc.	Rodger Kram, Ph.D.	Developing rehabilitation and physical therapy devices
mBio Diagnostics	Chris Myatt	Spinoff of Precision Photonics Corp. developing low-cost, high-sensitivity point-of-care diagnostics
Miragen Pharmaceuticals Inc.	Michael Bristow, M.D.	Discovering treatments for cardiovascular disease by harnessing the power of microRNA biology
NanoDisc Inc.	Michael Artinger, M.D.	Developing a proprietary nanoscale platform for delivery, imaging and diagnostics
OPX Biotechnologies Inc.	Ryan Gill, Ph.D. and Michael Lynch, Ph.D.	Developing a technology to rapidly conduct genome-level research
Peak Biosciences Inc.	Stephen Warren	Developing nanoscale radiotherapy products to treat advanced solid tumors
pico-tesla Magnetic Therapies LLC	Allen Braswell	Using low electro-magnetic fields to treat Parkinson's Disease
Pulmonex Inc.	Julie Imig	Developing a novel treatment for respiratory infections
Sierra Neuropharmaceuticals Inc.	Dan Abrams, M.D.	Reformulating medications for placement into an implantable pump to treat diseases of the brain
Snoasis Medical Inc.	Robert Tofe	Developing a soft tissue substitute for use in dental surgeries
Solix Biofuels	Doug Henston and Bryan Willson, Ph.D.	Developing massively scalable bioreactors to produce biodiesel from algae
Tissue Genetics Inc.	Jeff Holt, M.D.	Developing a tissue-based protein truncation test for cancer diagnostics
ValveXchange Inc.	Ivan Vesely, Ph.D.	Developing a two-piece bioprosthetic tissue heart valve
Ventrus Biosciences Inc.	Thom Rowland	Licensing and developing late-stage gastroenterology products
Vitrumed	Dave Schechter	Developing medical devices with a focus on minimally invasive surgery

Source: CBSA Research

HEALTHY AT ANY AGE:

BABY BOOMERS' LUST FOR LIFE DRIVES HEALTH-CARE INNOVATION IN COLORADO

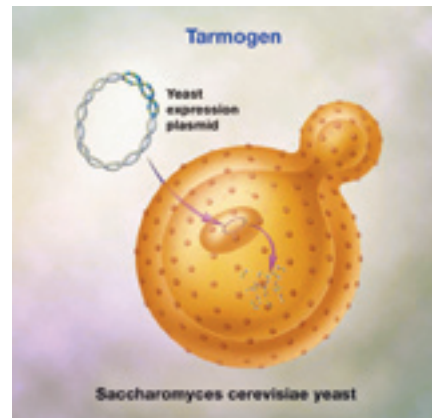
BY CARON SCHWARTZ ELLIS

Baby boomers are living longer than previous generations, and they are not satisfied by mere longevity. Matt Thornhill, founder of the Richmond, Va.-based market research firm The Boomer Project, dubs it “middle age of Aquarius.” The 78 million Americans born between 1946 and 1964 are not quietly transitioning to senior citizen status like their parents did, rather, life over 50 “remains something that they want to make sure continues to be experienced – and, if possible, not just experienced well, but experienced better.”

A number of Colorado companies are developing medical devices and pharmaceuticals to help make those 20 or 30 years past retirement happier, healthier and more active.

Louisville-based **GlobeImmune Inc.** is developing a drug for a devastating disease that many 50-somethings don't even know they have — Hepatitis C.

“Baby boomers form the largest population of chronic Hepatitis C,” says Kirk Christoffersen, senior director of corporate development for the Louisville-based company. “They turn 45, 50 or 55, and in a routine exam they discover by chemical markers there is something going in the liver. They feel otherwise normal and healthy, but patients with chronic Hepatitis C have a liver that's filled with the virus.”



“GlobeImmune Inc.’s Tarmogens (Targeted Molecular Immunotherapy) are whole, heat-killed recombinant *S. cerevisiae* yeast that express one or more disease-related proteins. Tarmogens generate activated killer T cells capable of locating and destroying any cell with the same disease protein.”
Courtesy GlobeImmune Inc.

Untreated, people with the disease will typically have no symptoms until age 70, when they might be diagnosed with cirrhosis or cancer, Christoffersen says.

Today’s standard-of-care treatment for Hepatitis C is a year-long regimen of interferon and ribavirin that prevents the virus from replicating. But it has severe side effects including anemia, depression and flu-like symptoms.

“And you have a 50 percent chance of a cure,” Christoffersen says. Many simply forgo treatment; of the 4 million Americans who have this disease, only 3 percent get

treated every year.

GlobeImmune’s GI-5005 Tarmogen (Targeted Molecular Immunogen) is in Phase II clinical trials, with the first efficacy results expected at the end of 2008. The drug, which turns on the body’s immune response to get rid of the virus, is given in addition to the standard of care.

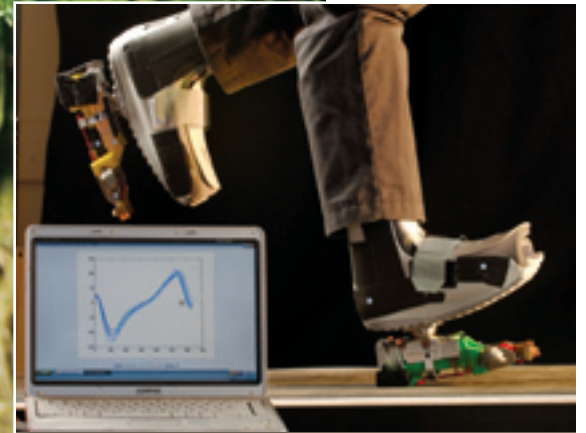
GI-5005 can improve baby boomers’ lives in two ways, Christoffersen says. “We hope to take the current cure rate and raise it significantly. But our ultimate goal is to reduce the amount of time patients need to be on interferon.”

As the obesity epidemic spreads across the United States, the incidence of complications – particularly diabetes – increases as well. According to the Centers for Disease Control, 10 percent of Americans aged 40 to 59 have diabetes, and the number jumps to 20.9 percent in those 60 and over.

Colorado remains the country’s leanest state and has a lower incidence of diabetes than other part of the country. But evidence shows that Coloradans are getting fatter, and the state may see an increase in cases of the endocrine system illness.

Tensegrity Prosthetics Inc. is addressing one of diabetes’ side effects by developing a medical device that should help baby boomers with the disease stay more active – a better prosthetic foot.

“Three-quarters of all lower limb amputees are over 65 and diabetic,” says Jerome Rifkin, president of Louisville-based company. Diabetes is characterized by poor



The Tensegrity foot helps amputees walk more easily, for a longer period of time and at more than one speed. COURTESY TENSEGRITY PROSTHETICS INC.

circulation and fragile skin in the extremities. “So with that combination of conditions if you’ve got a really stiff carbon-fiber foot that needs a lot of force to move, people can get ulcerations and not feel it, and it makes the condition worse.”

Tensegrity’s foot bends like a normal foot and ankle, conforming to the terrain being walked on. It also provides greater stability, and has a “big toe” to help with balance and agility.

Besides fitting and feeling better, the more life-like foot helps amputees walk more easily, for a longer period of time and at more than one speed. And that can have financial implications, Rifkin says. A prosthetic foot that allows users do more than simply walk at a slow, steady pace will entitle the company to a higher reimbursement rate from their insurance carrier or Medicare.

The Tensegrity foot has been in clinical trials for more than a year, and Rifkin says the data is good. He’s working with Synchroness, a Westminster-based company, to develop a commercial product that should be available in 2009.

Likewise, an Aurora company is working

on medical device to help baby boomers with cardiovascular disease stay more active.

ValveXchange Inc. holds patented technology on a two-piece bioprosthetic tissue valve that resolves the long-standing compromises between conventional mechanical and animal-tissue heart valves.

“Over the 40-year history of heart-valve replacement bovine pericardium has established itself as one of the very suitable materials for heart valves,” says ValveXchange founder and Chief Scientific Officer Ivan Vesely. “Over the years manufacturers have tried to mimic the shape of the aortic valve with bovine pericardium and a stent.”

In fact, Vesely says, the technology is so good that ValveXchange “blatantly copied” the industry-leading Edwards Lifesciences’ animal-tissue valve, which is now off-patent. “We don’t have to prove to the world that our valve is better,” he says.

Although the design is the same, the ValveXchange version comes in two pieces – a “docking station” and “leaflet tissue” – making it easier for surgeons to implant. When the leaflets wear out, which inevitably happens, “you don’t have to dig everything out of the

patient. You snap out the leaflets and avoid an hour and a half procedure where the patient is on bypass.”

Vesely, a biomedical engineer, says he is able to complete the surgery on animals in 26 seconds, and “doctors can do it faster in humans,” performing the operation while the heart is beating using minimally invasive surgical techniques.

The primary benefit of the new valve is that younger baby boomers will be able to get a better heart valve that can be repaired rather than replaced when it breaks down. Today younger patients don’t tend to choose a tissue valve because it will need to be replaced in 10 or 15 years, meaning another open-heart surgery. So they opt for a mechanical heart valve, and it lasts the rest of their life. The problem is clots can form around the plastic device, and they need to take anticoagulation medicine.

“Basically, you’re living the life of a hemophiliac – a really constrained lifestyle with no more activities,” Vesely says.

The valve is still in development, and the company expects to do human trials in 2009. “Our timeline suggests that we can be selling



ON CAREER DAY, NOAH ADAMS WANTED TO HEAR THE REGULATORY AFFAIRS PROFESSIONAL.

NEEDLESS TO SAY, THE FIREMAN IN THE NEXT ROOM GOT A LARGER AUDIENCE. BUT WE GOT NOAH.

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in Europe in two years or so, with the U.S. after that," Vesely says.

One of the most frightening prospects for active, involved baby boomers is Alzheimer's disease, which today afflicts more than 5 million Americans and is predicted to affect 30 million or more by 2050. **Aurogen Inc.**, a Fort Collins-based biopharmaceutical company, is working on innovative treatments for the devastating disease.

The company's technology comes out of the lab of Colorado State University biomedical professor Douglas Ishii, who along with other researchers considers Alzheimer's "a diabetic state of the brain," explains Aurogen Chief Executive Officer Robert Caspari. With both diabetes and Alzheimer's certain hormones are extremely low.

Aurogen's core technology is insulin-like growth factor, or IGF-1, a key protein in the growth of neuron connectors, which both Alzheimer's and many diabetic patients lack. Many people with diabetes develop peripheral neuropathy in which nerves in the extremities die. Alzheimer's is marked by the death of synapses, the connectors in the brain that transmit information.

Ishii has been working on the technology with animals since 1992, and Caspari joined the company in 2007 to commercialize it.

"I have joined because it's more than time to take the work to the next level, to bring this through human trials and approved through the FDA," Caspari says.

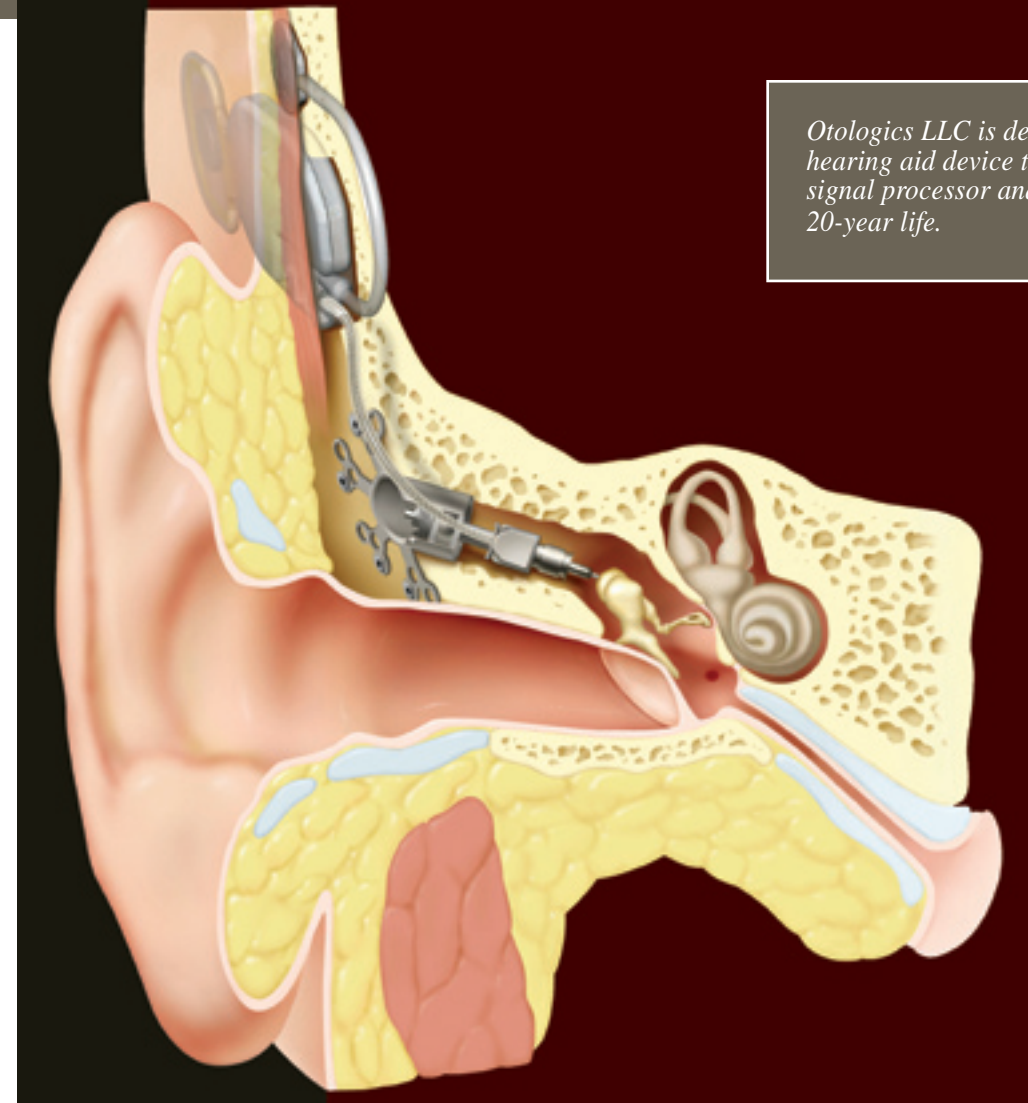
Because of Ishii's years of animal testing and awarded patents, Caspari thinks Aurogen's drug can get into Phase II trials more quickly than most new compounds. "We have a lot of safety and dosing information, which you don't have with a lot of new drugs. I think we know a lot about giving this drug to humans."

The company is seeking investors and corporate partners to get the drug to market. Speed is important, Caspari says.

"There is a societal side to this," Caspari says. "Patients can't wait. If you've got something that looks promising, there's an imperative to get it tested."

But it's not only life-threatening diseases that baby boomers face. Time and gravity take their toll on even the most beautiful people, and Colorado companies are addressing quality-of-life concerns as well.

Nothing symbolizes senior citizenship more than hearing aids, yet hearing loss isn't limited to great-grandparents; AARP reports those between 45 and 64 have more hearing loss than those older than 65. And only one in five individuals who need hearing aids are buying them, says José H. Bedoya, president



Otologics LLC is developing Carina, a surgically implanted hearing aid device that contains a microphone, digital-signal processor and rechargeable battery with a projected 20-year life.

Courtesy Otologics LLC

"THERE IS A SOCIETAL SIDE TO ALZHEIMER'S DISEASE," SAYS AUROGEN CHIEF EXECUTIVE OFFICER ROBERT CASPARI. "PATIENTS CAN'T WAIT. IF YOU'VE GOT SOMETHING THAT LOOKS PROMISING, THERE'S AN IMPERATIVE TO GET IT TESTED."

and CEO of Boulder-based **Otologics LLC**. Further, he says, of those who buy hearing aids, only 80 to 85 percent actually use them, and of those, just 75 percent say they are "modestly satisfied."

To help those who won't wear hearing aids for aesthetic or poor sound quality reasons, or can't due to certain ear sensitivities, Otologics is developing the Carina, a surgically implanted hearing aid device. The device, which contains a microphone, digital-signal processor and a rechargeable battery, isn't noticeable and has better sound quality than conventional hearing aids. Hearing aids on the ear or in the ear canal pick up background noise as well as feedback from sound waves bouncing off the eardrum. The Carina stimulates the bones of the middle ear rather than the eardrum, reducing extraneous noise as well as distortions.

Otologics is in the final stages of the FDA approval process and expects to conclude clinical trials in the U.S. in 2008, and to be on the market in 2009. The Carina is already approved and in use in Europe.

"It will be convenient, not apparent, and not indicative of any handicap or age-related

condition," Bedoya says. "I think it's exactly what we need. We've seen other devices go in this direction – knee implants, defibrillators – all evolving so by looking at an individual you can't tell they have this apparatus."

Despite its hefty price tag – about \$20,000 – the device is actually cost-effective, Bedoya says. The Carina lasts about 20 years, and as the technology improves the price should come down significantly, he says.

No matter how young one feels on the inside, age eventually bestows double chins, love handles and flabby thighs on even the fittest baby boomer.

Out of the 11 million cosmetic plastic surgery procedures performed in the U.S. in 2006, close to 5 million were performed on women and men aged 40 to 54, according to the American Society for Aesthetic Plastic Surgery. Patients 55 and older had 2.8 million cosmetic procedures.

Louisville-based **Sound Surgical Technologies LLC** developed and markets a product that makes one of the most popular procedures – liposuction – less invasive and traumatic while producing better results.

During traditional liposuction, a plastic

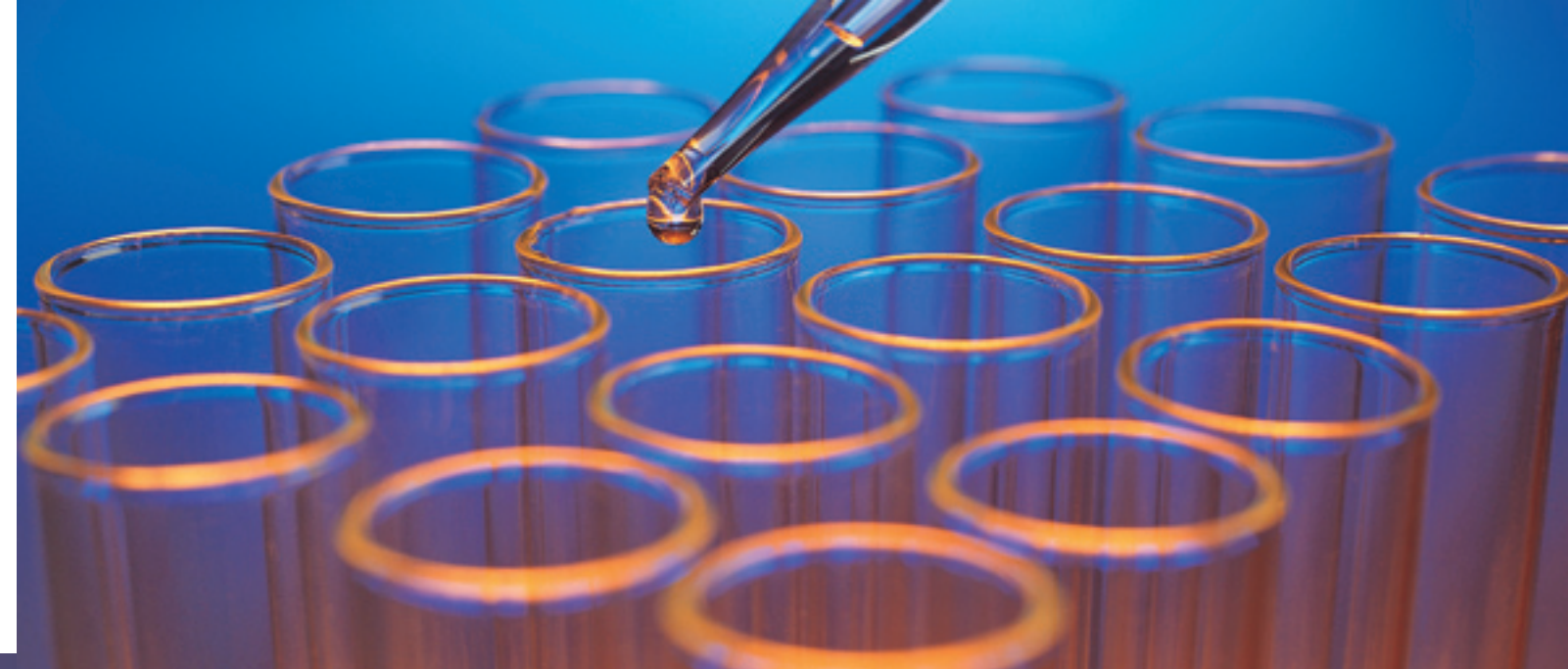
surgeon injects diluted local anesthetic and epinephrine under the patient's skin. The doctor then uses a cannula to suction out the fat. During what Sound Surgical calls "LipoSelection," a plastic surgeon inserts a "VASER," a rapidly vibrating metal probe that ruptures or liquefies the fatty layer, before suction removal.

"By doing that we significantly reduce the trauma of the aspiration phase," says company President William Cimino. "The idea is if you can make it less traumatic, you will have a faster, less painful recovery."

Because it's more effective, LipoSelection is also safer for older patients. But Cimino says LipoSelection is safer all patients. "There's always potential for surgical problem," he says. "You have to be safe at every age."

Other Colorado companies addressing the health concerns of aging baby boomers include: **Martek BioSciences Corp., Efficas Inc., Allos Therapeutics Inc., Covidien, Array BioPharma, Accera Inc., Arca Biopharma Inc., Able Planet Inc., iBalance Medical LLC, Sierra Neuropharmaceuticals, Aqueous Biomedical and Cochlear Americas.**

COLORADO KNOWS HOW TO GROW THE BIOSCIENCE INDUSTRY: NINE NEW COMPANIES FORMED WITH \$2 MILLION GRANT PROGRAM



In 2006, the Colorado BioScience Association and the Colorado Office of Economic Development and International Trade drafted legislation to help develop the commercial potential of bioscience technologies under investigation within Colorado's research institutions. Sponsored by Rep. Jim Riesberg and Sen. Ron Tupa, House Bill 1360 provided \$2 million in matching grants.

In 2007, the program helped fund 26 proof-of-concept research projects in six Colorado research institutions. The

projects will lead to new therapeutics, diagnostics or devices to improve human or animal health or agriculture. Projects included technology related to life sciences, engineering, material sciences, computer sciences, photonics and nanotechnology.

The investment resulted in decreasing the time it takes to assess technologies, a more accurate valuation of the technology, better information to attract early stage investors to startups created to advance the technology, and earlier weeding out of less-than-promising technologies.

The program has been very successful. Out of the 26 funded technologies, nine will be spun out into commercial entities during 2008.

The following research projects received funding as a result of HB1360.

UNIVERSITY OF COLORADO

Gary Brodsky, Ph.D. (CU Denver) - In vivo analysis of a cardiac and skeletal muscle stem cell activator

DISCOVERY: Proteolytic processing prelamin A peptide is associated with defective muscle regeneration from stem cell pools

GRANT-FUNDED RESEARCH: Manufacture the drug agent and show that it works in valid animal disease models.

PRODUCT POSSIBILITIES: Drug and stem cell therapy for muscle and heart diseases such as heart attacks and muscular dystrophy.

IMPACT: There are 500 new cases of muscular dystrophy per year in the U.S. Myocardial infarction is the leading cause of death in the U.S., with an incidence of 800,000 new cases annually.

Karen Stevens, Ph.D. (CU Denver) - A new treatment for ineffectively treated schizophrenia patients: pre-clinical validation for centrally administered clozapine

DISCOVERY: Recognition that delivery of psychotropic drugs into the brain limits toxic side effects associated with systemic delivery.

GRANT-FUNDED RESEARCH: Reformulate the current standard of care for schizophrenia for direct delivery into the brain and show therapeutic concentrations.

PRODUCT POSSIBILITIES: New drug formulations designed for less toxic schizophrenia therapy.

IMPACT: Some 2.2 million people suffer from schizophrenia in the U.S.

Tad Koch, Ph.D. (CU Boulder) - New targeted drugs for the treatment of lung cancer

DISCOVERY: Enzymes overexpressed in certain cancer cells can be used to convert nontoxic prodrugs into the more toxic active drug with reduced systemic toxicity.

GRANT-FUNDED RESEARCH: Manufacture the drug agent and show that it works in valid animal disease models of lung cancer.

PRODUCT POSSIBILITIES: Novel drugs to treat lung cancer without toxic side effects of standard chemotherapy agents.

IMPACT: There are 250,000 cases of lung cancer annually in the developed world.

Dr. Edward "Jack" Dempsey (CU Denver) - Moving bryostatin-1 from the lab to the clinic for the treatment of pulmonary hypertension

DISCOVERY: Loss of protein Kinase C epsilon in mice is associated with pulmonary vascular disease phenotypes.

GRANT-FUNDED RESEARCH: Show that the drug works in valid animal disease models of pulmonary hypertension.

PRODUCT POSSIBILITIES: A new drug for the treatment of pulmonary hypertension.

IMPACT: It is estimated that tens of millions of people are diagnosed with pulmonary hypertension each year.

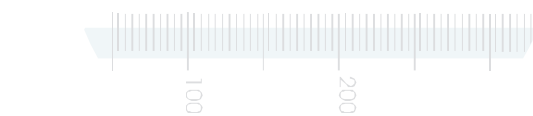
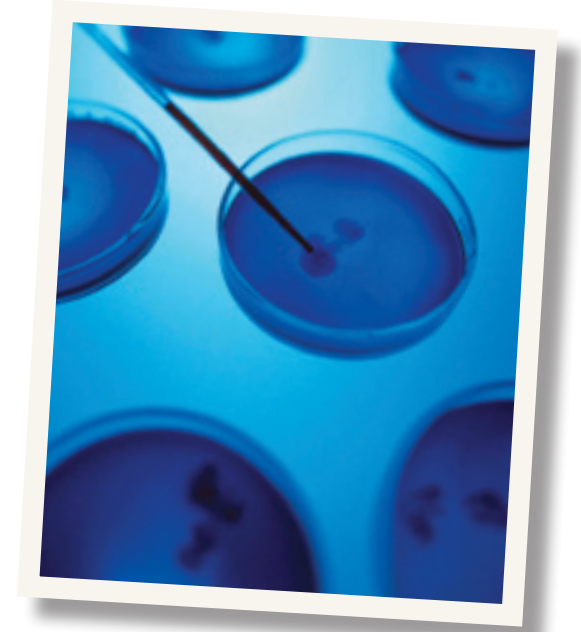
Dr. Leland Shapiro (CU Denver) - Infusion of alpha-1-antitrypsin (AAT) to suppress human immunodeficiency virus type-1 (HIV) replication in patients

DISCOVERY: Alpha-1 Antitrypsin can inhibit viral replication in cultured human cell lines (ex vivo).

GRANT-FUNDED RESEARCH: Obtain the drug and show that it reduces viral load in HIV patients.

PRODUCT POSSIBILITIES: Use an existing drug to reduce HIV viral load in drug-resistant patients, providing an alternative to the side effects of current anti-HIV therapies.

IMPACT: Each year in the U.S., 40,000 people are newly infected with HIV. Some 2 million people suffer from AIDS.





Dr. Douglas Graham (CU Denver) - A novel biologically targeted agent for the treatment of non-small cell lung cancer

DISCOVERY: The extracellular, soluble domain of Mer receptor tyrosine kinase reduces the proliferation properties of Gas-6γ in cancer cell lines.

GRANT-FUNDED RESEARCH: Manufacture the drug agent and show that it works in valid animal disease models of lung cancer.

PRODUCT POSSIBILITIES: A new biologic drug for the treatment of the most common type of cancer, non-small cell lung cancer.

IMPACT: There are 250,000 cases annually in the developed world.



David Ross, Ph.D. (CU Denver) - Hydroquinone ansamycin prodrugs as novel anticancer Hsp90 inhibitors

DISCOVERY: Observation of reduced toxicities of geldanamycin derivatives when substitutions occur at specific “hot spots” on the molecular backbone of geldanamycin.

GRANT-FUNDED RESEARCH: Manufacture the drug agent and show that it works in valid animal disease models of cancer.

PRODUCT POSSIBILITIES: A new, nontoxic derivative of a new drug class being used to treat cancer.

IMPACT: There is an incidence of more than 500,000 cases and a prevalence of more than 2.5 million cases of the five target solid tumors, those in the lung, colon, skin, kidney and pancreas.

Stephen Hunsucker, Ph.D. (CU Denver) - Protein biomarkers to differently diagnose follicular thyroid carcinoma and follicular thyroid adenoma

DISCOVERY: Certain protein patterns were evident in the blood of patients with confirmed head and neck cancers, but absent in patients with no cancer.

GRANT-FUNDED RESEARCH: In a clinical trial, results show that candidate blood markers are predictive of which patients have head and neck cancer and which patients do not as verified by biopsy.

PRODUCT POSSIBILITIES: A diagnostic tool to reduce the need for biopsies when diagnosing head and neck cancers.

IMPACT: There are 40,000 new cases of head and neck cancers diagnosed each year in the U.S.

Robert Hodges, Ph.D., Kay Holmes, Ph.D. (CU Denver) - Validation of SARS coronavirus antibody technology to influenza virus

DISCOVERY: A protein structure in X-ray crystallographs is required for corona viruses (the SARS virus specifically) to enter and infect the host cells.

GRANT-FUNDED RESEARCH: Show that a biochemical feature of SARS virus is also a feature in influenza; make a vaccine against the feature and show that mice can generate an immune response to the feature and thus the virus.

PRODUCT POSSIBILITIES: A new rapid recombinant vaccine for influenza.

IMPACT: There were 100 million flu vaccine doses shipped in the U.S. in 2006.

Michael Larson, Ph.D. (CU Colorado Springs) - A device for laser fusion of septal tissue

DISCOVERY: Lasers can denature proteins in tissue, resulting in a biological “glue” from a patient’s own tissue that can hold a wound together without staples or sutures.

GRANT-FUNDED RESEARCH: Build a prototype and look at fusion performance in cadaver and living animal tissue.

PRODUCT POSSIBILITIES: Laser technology to create a device for welding nasal tissue after the repair of a deviated septum.

IMPACT: Currently about 2.2 million people suffer from a deviated septum in the U.S.

Steve Anderson, Ph.D. (CU Denver) - Suppression of irradiation-induced salivary gland dysfunction by IGF-1

DISCOVERY: Akt activation (induced by insulin growth factor-1) protects salivary glands from apoptosis during irradiation.

GRANT-FUNDED RESEARCH: The project will help determine appropriate dosage, investigate alternative delivery methods, determine long-term efficacy and explore other animal models in order to take the product to market.

PRODUCT POSSIBILITIES: Treating side effects of radiation therapy in head and neck cancer.

IMPACT: There are 40,000 new cases of head and neck cancers diagnosed each year in the U.S.

Dr. Jeffrey Holt (CU Denver) - Biomarker enabled development of PARP inhibitors for cancer therapy

DISCOVERY: Faulty phosphorylation of BRCA-1 and BRCA-2 is correlated with susceptibility. Current standard of care is to measure mutations in the respective genes at key phosphorylation sites. The new test will look directly at the BRCA protein in tumor tissue.

GRANT-FUNDED RESEARCH: Show that the diagnostic test can predict whether mice with breast and ovarian cancers will benefit from treatment with PARP inhibitors.

PRODUCT POSSIBILITIES: A diagnostic test to choose patients for a new class of cancer drugs.

IMPACT: Each year, 1.2 million cases of breast cancer and 50,000 cases of ovarian cancer are found worldwide.

Christopher Bowman, Ph.D. (CU Boulder) - Redux-initiated radical chain polymerization for the detection and amplification of biological recognition events

DISCOVERY: Use of photopolymerization for the amplification and detection of molecular recognition events, in particular a relatively small number of events, based on amplification of the signal due to each molecular recognition event.

GRANT-FUNDED RESEARCH: Use of radical chain polymerization to develop a rapid, inexpensive and sensitive diagnostic for the advanced detection of lung cancer biomarkers. The necessary reactions utilize inexpensive and stable non-biological compounds under mild conditions.

PRODUCT POSSIBILITIES: New rapid, inexpensive point-of-care diagnostic tools for lung cancer.

IMPACT: Lung cancer is the leading cause of cancer deaths worldwide. There is a dismal 15 percent five-year survival rate due to asymptomatic conditions in the disease’s early stages.



COLORADO STATE UNIVERSITY

Eric Monnet, DVM, Ph.D., Christopher Orton, DVM, Ph.D., Susan James, Ph.D. - External device to control functional mitral valve regurgitation

DISCOVERY: Functional mitral valve regurgitation or leakage of blood within the heart, if diagnosed along with chronic heart failure, significantly worsens.

GRANT-FUNDED RESEARCH: The initial animal study will implant an external epicardial device and the effect on the heart will be studied with an electrocardiogram.

PRODUCT POSSIBILITIES: A modular form of an epicardial device that can be built in the thoracic cavity will allow it to be implanted using minimally invasive surgery.

IMPACT: Chronic heart failure is the primary cause of death of humans in Western countries. It has been estimated that congestive heart failure afflicts nearly 4 million Americans, with 500,000 new cases each year.

Randy Bartels, Ph.D. - Development of a novel nonlinear microscope for infectious prion detection

DISCOVERY: Development of a prototype scanning microscope using an Er: fiber based laser system with a simple, robust and relatively inexpensive design.

GRANT-FUNDED RESEARCH: Simulations of this process are being conducted and demonstration experiments are being performed.

PRODUCT POSSIBILITIES: This technique will enable a new class of nanoscale imaging. It may enable low-cost, rapid screening for bovine spongiform encephalopathy (mad cow disease), ensuring the safety of the food supply and the viability of beef exports.

IMPACT: This imaging modality may have novel applications in cancer treatment, cancer biology, histopathology and proteomics.



Christian Puttlitz, Ph.D. - Development of an instrumented cervical distractor

DISCOVERY: An improvement to the Caspar pin distractor, which is commonly used in anterior cervical discectomy with fusion surgery.

GRANT-FUNDED RESEARCH: Three clinical trials are being performed using a modified commercial cervical disc distractor and customized electronic collection system to collect displacement and strain data.

PRODUCT POSSIBILITIES: A better Caspar pin distractor with an internalized strain gauge and linear variable displacement transducer incorporated into it, which will connect to conveniently packaged hardware and software via minimal wiring.

IMPACT: This improved device has the potential to be more attractive to use in the operating theater than the original Caspar device and will improve the outcomes of patients with degenerative disc disease.

Bill Dernell, DVM - Evaluation of lymphatic drainage and uptake following intra-cavitary chemotherapy administration for mammary carcinoma

DISCOVERY: Sustained release of anticancer chemotherapy agents from biodegradable polymer systems placed into a wound bed following conservative surgical removal of breast tumors.

GRANT-FUNDED RESEARCH: The animal study evaluates the amount of chemotherapy that reaches the local lymph nodes through this method.

PRODUCT POSSIBILITIES: Local polymer delivery of chemotherapy for breast cancer, which may also be adapted to other cancers and non-cancer diseases that preferentially spread to the lymphatics.

IMPACT: Despite the increase in early detection, advanced breast cancer still results in high mortality, with a 26 percent 5-year survival rate for breast cancer with distant metastases.



UNIVERSITY OF DENVER

Rahmat A. Shoureshi, Ph.D., Corinne Lengsfeld, Ph.D., Ian Welch - Smart shoe insole for elderly fall prevention

DISCOVERY: A novel smart shoe insole, using a thin layer of embedded electronics and an artificial intelligence system, which helps the elderly know their stability condition.

GRANT-FUNDED RESEARCH: Smart shoe prototypes have been used on healthy young adults to monitor their balance and determine key factors contributing to the maintenance of balance. Development of alarms based on a real-time data collection and artificial neuron-fuzzy networks will also aid in the efficacy and effectiveness of these insoles.

PRODUCT POSSIBILITIES: The device could be used in a wide variety of applications including fitting of prosthetic legs, diagnosis of foot ailments, monitoring of joint replacements, fatigue analysis and drug interactions, design of personalized athletic shoes, and as an insole for type-II diabetic patients with loss of sensation in extremities to prevent ulceration and neuropathy.

IMPACT: Reducing the number of falls experienced by the elderly will not only improve their quality of life, it will reduce medical bills and hospital stays.

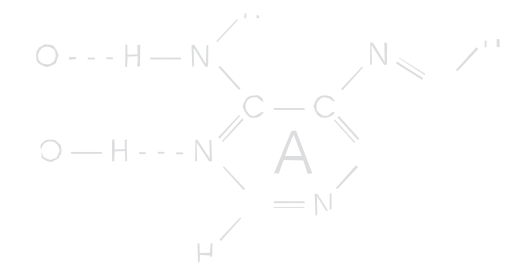
Andrei Kutateladze, Ph.D. - Encoding and screening of solution phase combinatorial libraries for drug candidates

DISCOVERY: High throughput combinatorial chemistry has become a leading technique in drug discovery, and optimizing the processes for generating and screening millions of drug candidates has become critical.

GRANT-FUNDED RESEARCH: Researchers on this project have developed and demonstrated a new method of screening of solution phase combinatorial libraries (SPCL).

PRODUCT POSSIBILITIES: SPCL technology creates a library of drug candidates, each of which is uniquely identified by a chemical tag.

IMPACT: This technique has significant advantages over conventional screening techniques, with no known deficiencies.



NATIONAL JEWISH MEDICAL AND RESEARCH CENTER

Willi K. Born, Ph.D. - Inhaled anti-T-cell-receptor antibodies for the treatment of airway hyper-responsiveness and inflammation

DISCOVERY: Injecting anti-T cell receptor antibodies in mice results in the specific and systemic depletion of the subsets of T cells that can be the driving force in the development of airway hyperresponsiveness and airway inflammation. Born's team has found that these antibodies also function when they are inhaled.

GRANT-FUNDED RESEARCH: Testing will show if the antibodies have similar effects and efficacy in allergic nonhuman primates, and therefore will move this potential therapy closer to clinical trials in humans.

PRODUCT POSSIBILITIES: Treatment of asthma; only T cells in the lungs and airways are affected, leaving an organism's disease-fighting ability intact.

IMPACT: The prevalence of asthma in industrialized nations has been increasing over the last 30 years with about 10 percent of the population affected now.

Brian J. Day, Ph.D. - Development of novel therapies to treat chronic lung disease

DISCOVERY: A number of lung diseases are associated with abnormally low levels of glutathione (GSH). The team hypothesizes that therapeutic manipulation of the lung's own GSH levels would provide a novel therapeutic approach.

GRANT-FUNDED RESEARCH: Two lead compounds will be tested in an acute lung inflammatory animal model as a pre-clinical proof of principle.

PRODUCT POSSIBILITIES: Treatment of idiopathic pulmonary fibrosis, acute respiratory distress syndrome, cystic fibrosis, and lung transplantation.

IMPACT: A novel treatment for a wide variety of lung diseases using an existing protective mechanism in humans.

Dr. Erwin W. Gelfand - Heat shock proteins modify lung allergic inflammatory responses

DISCOVERY: Allergic diseases including asthma are believed to be the result of an imbalanced immune response, skewed away from what is known as Th1 in favor of a Th2 response. In an animal model of allergen-induced asthma, administration of one such heat shock protein provided significant protection against the development of allergen-induced airway hyperresponsiveness and airway inflammation.

GRANT-FUNDED RESEARCH: This study proposes to show that administration of one hsp can reduce allergic reactions in an animal model of allergic asthma by shifting the immune response away from Th2 toward Th1.

PRODUCT POSSIBILITIES: Treatment of asthma.

IMPACT: A new therapeutic approach to asthma treatment with the potential to modify existing disease and prevent progression.

Dr. Jerry A. Nick - A method for the prevention and treatment of Pseudomonas biofilm infections

DISCOVERY: Infections by the bacteria pseudomonas aeruginosa (PA) are serious and often life-threatening events, particularly when the bacteria forms a biofilm. The team has discovered a class of non-toxic compounds that appears to disrupt and even prevent the formation of pseudomonas biofilms in the laboratory.

GRANT-FUNDED RESEARCH: The team will first custom design and synthesize a unique compound with enhanced bioavailability. They will test the candidate products in the context of bacterial keratitis, a biofilm infection caused by PA on the eyes of contact lens wearers. The third phase of this project will be to utilize two animal models to provide pre-clinical data on the use of this product.

PRODUCT POSSIBILITIES: A treatment for PA infections.

IMPACT: PA infections are serious and often life-threatening conditions. In clinical settings, these infections are particularly difficult (or impossible) to treat.

Rebecca O'Brien, Ph.D. - Use of soluble gamma/delta T cell receptors in reducing inflammatory damage

DISCOVERY: Gamma/delta T cells have been shown to be important in regulating inflammatory responses. This project hypothesizes that injecting a soluble T-cell receptor (TCR) into a mouse can reduce inflammatory damage caused by a bacterial infection by binding to and soaking up all the molecules that would normally activate inflammation-promoting gamma/delta T cells.

GRANT-FUNDED RESEARCH: O'Brien's team intends to perform experiments to show whether a soluble gamma/delta TCR can be used to block specific gamma/delta T cell responses in a disease model (listeria infection) in mice, and if so, whether blocking this response reduces inflammatory damage.

PRODUCT POSSIBILITIES: Soluble gamma/delta TCRs may be useful as drugs that can alter the inflammatory response and perhaps prevent tissue damage. In this way, they could be helpful in treating a wide variety of diseases, including rheumatoid arthritis, inflammatory bowel disease, multiple sclerosis, systemic lupus, psoriasis, COPD, sepsis, and heart disease.

IMPACT: Control of inflammation is becoming central to the treatment of a wide variety of diseases and current pharmacologic treatments are not always effective.

UNIVERSITY OF NORTHERN COLORADO

Stephen Mackessy, Ph.D. - New compounds from snake venoms: A proteomics approach toward the development of drugs from toxins

DISCOVERY: Snake venom is comprised of protein compounds which may be useful to treat human diseases and disorders. Very preliminary results suggest that a small protein from the venom of the Puerto Rican racer may inhibit cell proliferation in cultured breast cancer cells.

GRANT-FUNDED RESEARCH: The team is characterizing these molecules and purifying additional compounds for ongoing evaluation of the use of venom toxins as drugs.

PRODUCT POSSIBILITIES: A new drug to treat breast cancer.

IMPACT: The chance of developing invasive breast cancer at some time in a woman's life is about one in 12. It is estimated that in 2008, about 182,000 new cases of invasive breast cancer will be diagnosed among women in the U.S.

BONFILS BLOOD CENTER FOUNDATION

Dr. Daniel Ambruso - Transfusion related acute lung injury (TRALI) identification kit

DISCOVERY: An increase in blood transfusions has also led to an increase in adverse transfusion events, some of them fatal.

GRANT-FUNDED RESEARCH: To validate different platforms using standard blood components and samples from patients sustaining transfusion-related acute lung injury (TRALI).

PRODUCT POSSIBILITIES: Development of a test kit that will be used by physicians to determine if their patients are suffering from TRALI.

IMPACT: TRALI is the No. 1 cause of death related to blood transfusions.



DIAGNOSIS AS CURE:

METHODS FOR FINDING DISEASE OFTEN PROVIDE TREATMENT AS WELL



BY CARON SCHWARTZ ELLIS

Many Colorado companies are developing novel diagnostic and drug delivery tools – using technologies borrowed from the non-medical community – to determine the causes of and deliver treatments for ailments ranging from heart disease to cancer.

One such company, **mBio Diagnostics**, is using laser technology developed by parent company **Precision Photonics** to create low-cost, easy-to-use diagnostic chips.

“We are measurement folks,” explains Chris Myatt, co-founder and CEO of both Boulder-based companies. “We were looking for opportunities for our technology, and saw a fair amount of overlap (between our lasers) and what you would need for a very sensitive detector of proteins or viruses.”

The new company is developing a chip that can detect biological markers in a blood sample when a laser shines on it.

“We stain (the samples) with fluorescent dyes,” Myatt says, “and with our overall detection scheme you can pick out markers that say HIV or Hepatitis C.”

Myatt estimates it will take two or three years to get through FDA testing and bring the device to market. Precision Photonics supplies the personnel and office space, while grants from the National Institutes of Health and the National Institute of Standards and Technology (NIST) worth \$5 million are funding mBio Diagnostics’ product development.

BiOptix LLC is also using photonics technology originally intended for a non-medical application. It employs a technology known as “surface plasmon resonance-enhanced common path interferometry” or

SPR-CPI, developed by Nobel laureate Jan Hall of NIST and the University of Colorado. The technique combines SPR – an optical method for measuring the refractive index of very thin layers of material adsorbed on metal – and interferometry, or superimposing two or more light waves to detect differences in their polarity.

Hall’s innovation is single-beam interferometry, in which the different polarizations of light are able to travel together in one beam.

“Because of the physics of single beam interferometry,” said BiOptix President and CEO Misha Plam, “it’s a much simpler, smaller, less expensive, more user-friendly instrument.”

Another benefit, he adds, is BiOptix’s technology doesn’t require samples dosed with fluorescent dye. “We don’t attach anything,” Plam says. “The fluorescent



The AlphaSniffer 207B1 can be used to detect very small particles including microRNAs, some of which have been linked to cancer and heart disease. BiOptix President and CEO Misha Plam (pictured at right) says the technology could be used to quickly diagnose heart attacks in hospital emergency rooms. COURTESY BIOPTIX INC.



method requires several hours of prep work and is prone to errors.”

The company first thought to use SPR-CPI to solve the military’s need for a portable, low-power device to detect chemical and biological warfare agents. But with the March 2008 addition of former Myogen CEO William Freytag as chairman, the company is now targeting the medical diagnostic market. Its technology can be used to measure microRNAs, or single-stranded RNA molecules. Certain microRNAs have been linked to cancer and heart disease. BiOptix’s technology, Plam says, could be used to quickly diagnose heart attacks in the emergency room.

“It takes days to measure one microRNA,” Plam says, “And present techniques are prone to errors... we can hope we can measure microRNAs in

under a half an hour time frame with fewer errors.”

Mass spectrometry is a fairly common analytical technique to determine a physical sample’s composition by measuring the mass-to-charge ratio of its ions. Boulder and Steamboat Springs-based **Biodesix Inc.** is using the proteins found using this technique for molecular diagnostics and personalized medicine.

There’s a big difference between tests based on genes and those based on protein analysis, says Biodesix CEO David Brunel. For women with a family history of breast cancer, a genetic test can determine if they have an altered BRCA1 or BRCA2 gene, but it doesn’t reveal the presence of the disease.

“In a protein assay,” Brunel says, “we might look to see if the disease has

“WE ARE MEASUREMENT FOLKS,” EXPLAINS CHRIS MYATT, CO-FOUNDER AND CEO OF MBIO DIAGNOSTICS.

“(WE) SAW A FAIR AMOUNT OF OVERLAP (BETWEEN OUR LASERS) AND WHAT YOU WOULD NEED FOR A VERY SENSITIVE DETECTOR OF PROTEINS OR VIRUSES.”

started by looking for particular proteins to show if cancer does exist."

Biodesix's first product, VeriStrat, is a blood test that provides additional information to oncologists treating non-small cell lung carcinoma (NSCLC). In its early stages,

NSCLC is treated with surgery. But if the cancer has spread, patients get chemotherapy. Most patients will eventually show some resistance to chemotherapy, and the disease will progress. New "targeted therapies" are available, which attack specific proteins that

are involved in the growth of the cancer.

VeriStrat, in Phase III clinical trials expected to finish in 2009, can help doctors determine the most effective treatment. It tests patients to show whether a targeted therapy like Tarceva will work for them, or whether another round of a different kind of chemotherapy would be more appropriate. "The idea is to get the right treatment to the right patient at the right time," Brunel says.

Centennial-based Cell>Point is developing molecular imaging agents for the diagnosis and treatment of cancer and cardiovascular diseases. The agents are better diagnostic tools than CT or MRI scans because they are disease-specific, says President F. David Rollo.

"We give a radioactive injection that looks for the cells that have specific characteristics," Rollo says. "The receptor on breast cancer would be different than that on lung cancer."

A primary advantage of the company's Ethylenedicycysteine (EC) technology -- Tc-labeled glucosamine (^{99m}Tc-EC-G) -- is the specific diagnosis. Today, if a person goes to the doctor with shortness of breath, bloody sputum and chest pain, he might get a CT. If it reveals a potentially cancerous lesion, he would get surgery. Once under the knife the surgeon might discover the lesion is tuberculosis or an infection that could have been treated with an antibiotic. "It would help avoid unnecessary, inappropriate procedures," Rollo says, "You could have treated it right if you knew what it was."

Another advantage is that the technology finds out if cancer has spread; ^{99m}Tc-EC-G will reveal all instances of cancer throughout the body as well as the primary lesion. "Most metastases are so small you don't see them on the CT or MRI. If you knew it had already spread you would use a different procedure," Rollo says.

For cancer that has spread, Cell>Point's In-Situ Hydrogel is being developed as a site-specific regional chemotherapy and radiotherapy delivery system. Intravenous chemotherapy not only kills cancer cells, it affects healthy organs such as the heart, kidneys and brain. Cell>Point's therapy is given as one injection and goes only to the disease, "like a guided missile," Rollo says. "So I can tell you 'you have lung cancer and it's spread.' This is a terrible thing. But the good news is that the agent that goes to the cancer can also be used for therapy, so the therapy only kills the cancer."

Other Colorado companies developing diagnostic tools include: **MicroPhage Inc.**; **SomaLogic Inc.**; **Sciona Inc.** and **Source MDx Inc.**

COLORADO INVESTS IN THE BIOSCIENCES

BY LEAH KIENZT

A bioscience cluster with world-renowned resources and talents sits at the base of the Rocky Mountains. Colorado's growing bioscience industry proves that this skier's paradise has not only beautiful scenery but also internationally competitive research facilities, investors and bioscience firms.

While many states are itching to grow their own bioscience clusters, the Colorado state government has been nurturing this sector for 20 years. As a result, there are a variety of state-led business incentives and investment funds for bioscience firms. These incentives help Colorado's research institutions spin out a handful of new companies a year and bring more business to the Rocky Mountain region.

Here is a look at the programs:

THE BIOSCIENCE DISCOVERY EVALUATION GRANT PROGRAM

The Bioscience Discovery Evaluation Grant Program (BDEG), originally funded for \$4.5 million over the past two years, will receive another \$26.5 million over the next five years from the state legislature to help grow the bioscience industry in Colorado. The funds will be disbursed through the Colorado Office of Economic Development and International Trade (OED).

The BDEG program provides 30 percent of the funds for "proof of concept" matching grants through the OED 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 the 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 in their counties for one year will be awarded 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 OED at www.AdvanceColorado.com

ENHANCED INCENTIVE FUND

The Enhanced Incentive Program provides additional performance-based incentives to companies that qualify under the Colorado Job Creation Performance Incentive Fund and have created jobs with wages that exceed the average wage rate in their county by more than 120 percent. The program is designed to support and promote highly desirable, high-impact job creation opportunities. The EDC allocates the funds available until available funds in a given year have been expended. Contact OED 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 paid on purchases of tangible personal property used directly in research and development of biotechnology. Qualified applicants must submit a refund claim by between January 1 and April 1 to the Colorado Department of Revenue. The refund helps promote the biotechnology industry in the state, aiding



HEALTH CARE WITHOUT BORDERS: COLORADO COMPANIES SHARE MEDICAL TREATMENTS WORLDWIDE

A child with diarrhea receives an oral rehydration solution at Instituto Especializado de Salud del Niño (Children's Hospital) in Lima, Peru. Ventria Biosciences manufactures nutritional drinks containing lactoferrin and lysozyme, proteins found in human breast milk that rehydrate and help children heal quickly from diarrheal disease. COURTESY VENTRIA BIOSCIENCES

it for 5 cents, you are probably going to do it," says company founder and President Kathy Callender.

The Golden-based company has developed a family of patented needle-free injection technologies that deliver liquid medicines through the skin. The sterile, plastic tool is designed for a single use, and the injector, made of high-grade plastic and stainless steel, can be used thousands of times. In 2004, PharmaJet received its first 510(k) marketing clearance from the FDA, with designation as a class II medical device.

According to Callender, PharmaJet pushes drugs into the body as if through a "garden spray," hitting more cells than a needle. She thinks this makes the delivery system more effective. Studies have shown that vaccines introduced this way induce higher antibody production.

"In dogs we used half the amount of vaccine and got the same amount of antibody production as the full amount," Callender says. Because of this, vaccine expenditures could be reduced, better utilizing vaccine resources.

The tenth-of-a-second procedure is also less painful than a needle, Callender says. "Most people say they feel much less discomfort, or nothing."

In 2008, the system will enter human clinical trials. In Brazil, the company will test all the common childhood vaccines along with yellow fever, and in Hong Kong, it will test HPV (human papillomavirus).

Aktiv-Dry LLC is addressing measles, an illness that has been virtually eradicated in the United States, but that the World Health Organization estimates kills more than 2,000 children daily in poor nations. Because these children live in parts of the world with no electricity, liquid vaccines are out of the question because they require refrigeration. To

In today's global economy, not only are goods and services readily shared across borders, but diseases are as well. The good news is that treatments for those diseases are also being distributed globally. Colorado companies are working on providing remedies to developing countries whose economies are further along than their health-care facilities.

Ventria Bioscience is developing treatments for diarrhea. The ailment is rarely life threatening in the U.S., but kills about 4,500 children a day in regions that lack clean water and basic sanitation facilities. The company manufactures nutritional drinks containing lactoferrin and lysozyme, proteins found in human breast milk that rehydrate children and help them heal.

Ventria, which relocated to Fort Collins from Sacramento, Calif. in 2008, creates these proteins from a special variety of rice with no known allergens. This rice is processed by Ventria's proprietary technology platform, ExpressTec.

Ventria doesn't only manufacture the end product, but has created a closed production system. It owns the U.S. and South American farms where the rice is grown as well as the Kansas production facility.

The product, which Ventria hasn't branded yet, will be released in the U.S. in late 2008 or early 2009. Ventria will then market it globally.

"In developing countries like China and India, we'll work with the governments (to bring it to market)," says Chief Executive Officer Scott Deeter. "In emerging countries it will (be funded) through foundation support. In those markets we don't seek a profit; it's more a humanitarian benefit."

PharmaJet Inc. is fighting a big problem in the developing world – needle reuse.

"If you only make 30 cents a day, and you have the opportunity to grab a needle and sell

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 EDC 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 OED 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 that are 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 about Colorado's business incentives.

provide loans and equity to Colorado businesses. Investments 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 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 Country 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 EDC was created by the legislature to promote economic development in Colorado.

both start-up and established 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

Colorado

Investing in Bioscience Development

430 bioscience companies call Colorado home, employing 18,000 in the state.

In 2008, the State of Colorado passed long-term legislation designed to promote the growth and sustainability of the Bioscience sector. Programs will provide matching proof-of-concept grants to Colorado's research institutions, and funding to early stage companies.

Contact us to see how we can invest in your company.

Office of Economic
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COLORADO SCIENCE AND TECHNOLOGY PARK AT FITZSIMONS BOOSTED BY PRIVATE INVESTMENT AND PUBLIC SCIENCE

BY CARON SCHWARTZ ELLIS

With more than 6 million square feet of scientific possibilities, Colorado's largest biotech and medical community is rising like a phoenix from the ashes of a former army medical center.

Forest City Science + Technology Group, in partnership with the Fitzsimons Redevelopment Authority, is developing the Colorado Science + Technology Park at Fitzsimons. The park is part of the 578-acre former Fitzsimons Army Medical Center in Aurora. Next-door neighbors include the University of Colorado Denver Anschutz Medical Campus and the Children's Hospital.

The synergy created by the research and development conducted by private bioscience companies and the research and clinical endeavors at these two medical facilities is the spark that makes this vision come to life. This bench-to-bedside concept has proven successful around the world.

Forest City Science + Technology Group understands how to build bioscience labs and offices and has been developing science and technology parks for more than 20 years. Achievements include University Park at MIT, Illinois Science + Technology Park, Translational Research Lab at the University of Pennsylvania and the Science + Technology Park at Johns Hopkins.

"This large parcel of land in Aurora provides an opportunity to expand upon the existing Colorado life science industry and grow it into an even more significant industry for the state," said Jim Chrisman, Forest City's senior vice president of development.

The Colorado Science + Technology Park's next 65,000 square foot multi-tenant office and lab building is scheduled to begin construction in 2008. Other developments planned for this year include a 40,000 square-foot, privately owned lab building; a 175,000 square-foot office building; a credit union facility and a 200-room hotel and conference center. The park's total capacity is more than 6 million square feet.

"The buildings at the Colorado Science+Technology Park at Fitzsimons will be designed to be flexible in order to meet the needs of a life science community that values

proximity to the Anschutz Medical Campus and the Children's Hospital," Chrisman said. "Our plan is to construct lab and office space to anticipate companies' needs, because we understand the importance of having space readily available for bioscience companies as they expand or relocate."

According to Forest City's 2008 urban design guidelines for the park, "the buildings, open space and streetscapes will be seamlessly designed and interconnected with Fitzsimons Commons, The University of Colorado Medical Campus and the adjacent neighborhoods and regional park system.

"Carefully considered design of these elements will enrich the experience for the park tenants and visitors alike and will encourage them to stay within the park environs beyond the hours of the normal workday," the guidelines state. "Public open spaces will foster a collegial atmosphere and provide workers with a place to meet and converse.

"Outdoor café settings will inspire informal gatherings where workers can share

ideas or discuss plans. Park tenants and visitors alike will be encouraged to utilize these parks."

In addition, park buildings will be constructed in line with Forest City's core value of sustainability, including xeriscaping, energy efficient building materials and other components that meet LEED® building standards.

Sustainability is ingrained in the culture of Forest City Enterprises and is one of the company's eight core values.

"The built environment has profound impact on our natural environment, economy, health and productivity. The Urban Design Guidelines call for all real estate development to address broad sustainable design and construction principles and practices," according to the guidelines.

There are two bioscience buildings currently at Fitzsimons: Bioscience Park Center and Bioscience East. These buildings are designed to house early-stage life-science companies and are currently home to 30

companies, said Vicki Jenings, director of business relations for the Fitzsimons Redevelopment Authority.

"To date, we have graduated about 10 companies that have gone on to larger facilities. We look forward to growing companies in buildings right here on the site," Jenings said.

What will become the state's largest bioscience cluster is 15 minutes from downtown Denver and Denver International Airport, has close interstate access and will have future light rail access. The park is also adjacent to Forest City's redevelopment of the former Stapleton International Airport as a master planned community of homes, commercial space, shops, schools and parks.

The Colorado Science + Technology Park's \$2 billion redevelopment is a 30-year project expected to add at least 10,000 high-paying jobs to the Denver metropolitan area.

For additional information, please call Forest City Enterprises at 720.941.7100 or visit www.FitzScience.com.



Aktiv-Dry LLC creates both dry, inhalable vaccines and devices to deliver them. When squeezed the PuffHaler releases the vaccine so kids simply breathe it in. "It's very simple, and key thing is they are human-powered. You don't need electricity or power or anything, which is very important in developing economies," says President Brian Quinn.

COURTESY AKTIV-DRY LLC

launched by the Bill and Melinda Gates Foundation in 2003.

Fort Collins-based **Inviragen Inc.** is fighting to prevent the 15 million deaths worldwide each year from infectious diseases prevalent in developing nations. The company is creating recombinant viral vaccines to protect against threats such as dengue fever, avian flu and plague/smallpox.

The company's lead product is DENVax, a vaccine for dengue fever. Dengue viruses are endemic throughout the world's subtropical and tropical regions. According to the Pediatric Dengue Vaccine Initiative (PDVI), every year the mosquito-borne illness threatens more than 3.5 billion people and infects about 100 million. DENVax is being developed through an exclusive licensing agreement with the Centers for Disease Control and Prevention's Fort Collins lab. The vaccine will enter Phase I clinical trials in 2008.

If everything goes well, President and CEO Dan Stinchcomb says, Inviragen will launch the product in 2012.

The research is being funded by the PDVI, the Bill and Melinda Gates Foundation, the

Rockefeller Foundation and the government of the Republic of Korea. In 2007 the company also received a two-year, \$600,000 grant from the National Institutes of Health to develop a bird flu vaccine, a disease that since 2003 has infected 355 individuals, 206 fatally. Research is being done in collaboration with the University of Wisconsin.

Roche Colorado, the Boulder-based facility of Basel, Switzerland pharmaceutical giant F. Hoffman-La Roche Ltd., manufactures Fuzeon, an anti-HIV drug that blocks the virus' entry into healthy T cells. Although readily available in the U.S., the cost of the drug is out of reach for many in Africa and other developing regions. According to the Joint United Nations Program on HIV/AIDS, in 2007 in Africa alone there were 32.8 million people living with HIV, 2.5 million new HIV infections and 2 million deaths from AIDS.

To make Fuzeon affordable, "We have a policy to sell it at no profit to 63 countries and (throughout) sub-Saharan Africa," says Maria Vigneau, Roche's director of access and sustainability. Roche also doesn't file patents on antiretroviral drugs in certain developing areas.

"We've removed both patents and profits from these medicines where they are needed most," Vigneau says.

The company also gives employees the opportunity to take three- to 18-month paid sabbaticals to work on health-care projects. "Our focus is on making a long-term sustainable difference and sharing knowledge and expertise where it is needed most," Vigneau says.

Other Colorado companies addressing global health care needs include: **Gilead Sciences Inc. and Oberon FMR Inc.**



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Contact us at 720-746-1190 or visit www.cbrintl.com for more information

AURORA

Realize the Possibilities

Aurora is home to Fitzsimons, one of the largest bioscience redevelopments in the United States. The 578 acre project is undergoing a \$4.3 billion transformation that will result in over 15 million square feet of space dedicated to patient and clinical care, education, research and development.

The Aurora Economic Development Council is the economic development agency responsible for packaging incentives, off-site infrastructure and transportation issues that are related to Fitzsimons. Contact us and realize the possibilities.

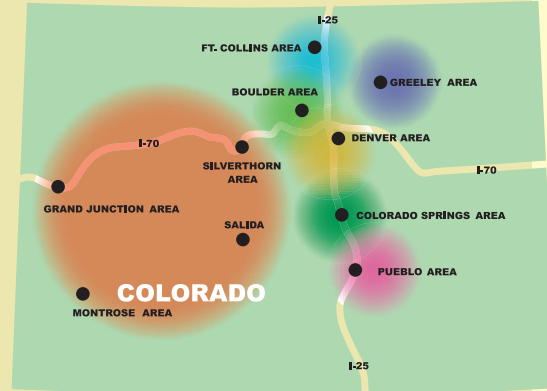


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DIRECTORY

INDEX

- 38 Medical Device and Related Companies
- 52 Biotechnology, Pharmaceutical and Related Companies
- 63 Biofuels and Related Companies
- 65 Research & Education Institutions
- 68 Foundations
- 69 Service Providers



MEDICAL DEVICE AND RELATED COMPANIES

ABILITIES UNLIMITED

Colorado Springs, Denver
www.aviop.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.

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.

ACCELLENT

Arvada, Englewood
www.accelent.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.

ACCEL8 TECHNOLOGY CORPORATION

Denver
www.accel8.com

Develops medical diagnostic technologies for research and clinical applications. The primary focus is a 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.

ADVANCED HEADACHE INTERVENTION INC.

Centennial
www.PainZap.com

Develops a special purpose electrosurgery generator and probe for use in the therapeutic treatment of migraine headaches.

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 health care including a meter dose inhaler and an improved aerosol therapy for lung cancer.

AESTHETIC TECHNOLOGIES

Golden
www.atimed.com

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 the proprietary control system.

AGILENT TECHNOLOGIES

Fort Collins
www.agilent.com

Provides core electronic and bio-analytical measurement tools to advance life science research.

AIRLIFT UNLIMITED INC.

Evergreen
www.airlift.com

Develops and manufactures soft-sided oxygen carriers.

ALLISON MEDICAL INC.

Littleton
www.allisonmedical.com

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www.allosource.com

Develops, processes and distributes life-enhancing bone and tissue allografts to the medical community.

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Broomfield

www.allpro dental.com

Produces a large selection of non-latex prophylaxis cups, prophylaxis 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.analogscientific.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

Manufactures and sells ultrasound pregnancy detectors and ovulation predictors for livestock breeding.

APDYNE MEDICAL COMPANY

Denver

www.apdyne.com

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

Redevelops 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) and 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 and 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.

BEAM ONE 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 immunocytochemistry, flow cytometry and microbiology.

BELL DENTAL PRODUCTS LLC

Denver

www.bell dental.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 of 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.

BIOPTIX LLC

Boulder

www.bioptix.com

Develops technologies to detect trace amounts of bacteria, viruses, proteins, nucleic acids, antibodies and human micro RNAs.

BIO-LOGISTICS PRECLINICAL INC.

Pierce

www.bio-logistics.com

Offers engineering and regulatory support and preclinical strategic development to the medical device industry.

BIOVISION TECHNOLOGIES INC.

Golden

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 micro-endoscope solutions are integrated to reduce incision size and speed healing.

BIOZHENA CORPORATION

Bellvue

vaclavkirsner@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

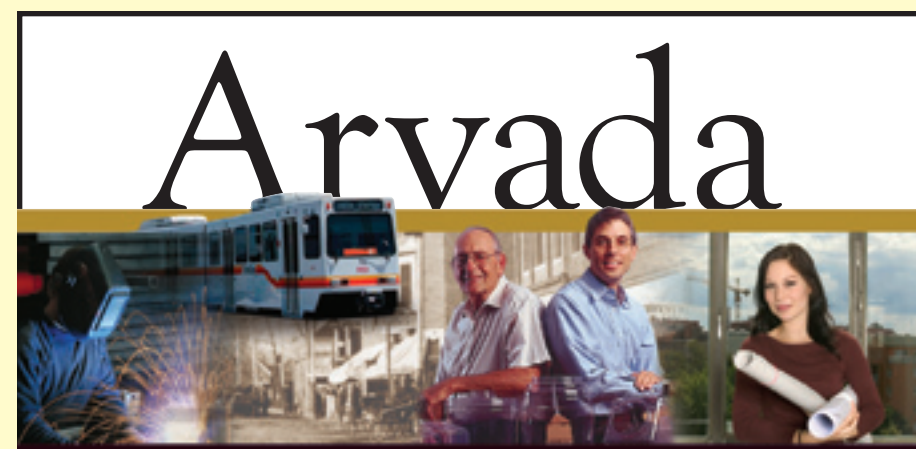
Provides diagnostic point-of-care coagulation management systems that have a positive impact on patient outcomes in hospital, outpatient and home health care venues.

BROADWEST CORPORATION

Denver

www.broadwest.com


Develops and manufactures ergonomic mammography viewing equipment.



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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 GAMBRO 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.

CAROPA 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 substitute 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.

Provides 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 laser engraving technology, CO2 laser cutting services and metal photographic reproduction to the medical device industry.

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.

COMEG U.S.A. ENDOSCOPY INC.

Denver

www.comeg.de/eng

Develops and manufactures high-grade endoscopes and accessories.

CONFI-DENTAL PRODUCTS COMPANY

Louisville

www.confidental.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

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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 of the spine.

CYTOLOGIC

Fort Collins

www.cytologic.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.

DELPHI 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.eyeprosthesis.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 clean room facilities.

DIRECTED ENERGY SOLUTIONS

Colorado Springs

www.denergysolutions.com

Develops advanced laser and optical device solutions for medical applications.

DNTLWORKS EQUIPMENT CORPORATION

Centennial

www.dntlworks.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.

E.N. MURRAY

Denver

www.enmurray.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 EMCAST UV adhesives, epoxies, sealants, encapsulants and coatings. EMI also offers room temperature, thermal and visible light cure adhesive systems.

ELLAB INC.

Centennial

www.ellab.com

Manufactures 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 AEM® Laparoscopic Instruments to improve electrosurgery and reduce the chance of 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

Manufactures surgical and medical instruments focusing on shape memory polymer devices for endoluminal 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.

EXTREME DIAGNOSTICS

Boulder

www.extremediagnosics.com

Develops noninvasive measurement systems, including optical systems such as custom holographic 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 health care 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

Manufactures instruments used to measure total organic carbon (TOC) in water for pharmaceutical applications and medical research.

GENESEE BIOMEDICAL INC.

Denver

www.geneseebiomedical.com

Manufactures 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.

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 health care professionals with fast, accurate, cost-effective and easy-to-use diagnostic test in the point-of care setting.

HACH COMPANY

Loveland

www.hachultra.com

Manufactures and distributes analytical instruments and reagents used to test the quality of water and other aqueous solutions.

HEI ADVANCED MEDICAL OPERATIONS

Boulder

www.heii.com

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

HIRSH PRECISION PRODUCTS INC.

Boulder

www.hppi.com

Manufactures precision-machined and assembled components for the medical industry.

HOSUK AMERICA

Aurora

www.hosuk.net

Manufactures syringes and packaging products for the medical community.

IBALANCE MEDICAL INC.

Boulder

www.ibalancemedical.com

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.

INDEVR INC.

Boulder

www.indevr.net

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

INFINITY PHOTO-OPTICAL COMPANY

Boulder

www.infinity-usa.com

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

INJECTECH LLC

Loveland

www.injectech.net

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

INTEC INC.

Boulder

www.intec.com

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

INTEGRITY MANUFACTURING

Colorado Springs

(719) 381-4380

Produces precision metal products for the medical industry.

INTERTEK

Boulder

www.intertek.com

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, EMC and performance testing.

IPAX INC.

Englewood

www.ipaxinc.com

Assembles and packs medical products.

JORGENSEN LABORATORIES INC.

Loveland

www.jorvet.com

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

KESTREL LABS INC.

Boulder

www.kestellabs.com

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

KIMBLE PRECISION INC.

Loveland

www.kimble-precision.com

Provides general machining, short run production of existing products, prototyping of new products, as well as fixturing and tooling.

LANX LLC

Broomfield

www.lanx.us

Develops surgical spinal technologies.

LASER NEUROTHERAPY DEVELOPMENT LABS INC.

Colorado Springs

www.laserneurotherapy.com

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

LEEDS PRECISION INSTRUMENTS INC.www.leedsmicro.com

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.

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 26 times 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.

MEEFFICIENCY INC.

Westminster

www.mefficiency.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 worldwide.

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 and 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.nqtherapeutics.com

Develops an electric 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, markets and sells image acquisition and processing software and hardware for all areas of electron microscopy.

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 and others.

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 and 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.probetronix.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.protogetic.com

Manufactures prototypes and conceptual models using stereolithography) and Laser Sintering 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 Mold) 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.

RADIOLOGICAL 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 RIT113 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.rapidpro.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 OEMs 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.samsondesign.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.

SCIENTECH INC.

Boulder

www.scientech-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, M23 circular connectors and related products for the health care industry.

SHIPPERT 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.

SIENCO INC.

Arvada

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.

SOMALOGIC INC.

Boulder

www.somalologic.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, autoimmune and infectious diseases.

SPECTRANETICS

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 CVX-300® excimer laser system.

SPECTRUM LASER AND TECHNOLOGIES INC.

Colorado Springs

www.spectrumlaser.com

Provides contract design and manufacturing services for the medical industry.

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

Longmont

www.sunrisemedical.com

Provides home health care 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.synapticusa.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.

SYNTHESES INC.

Monument

www.synthes.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 who are 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 splints, 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.labaonline.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 by 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 FDA and international regulatory standards.

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.

VALVEXCHANGE INC.

Aurora

www.valvexchange.com

Develops a bioprosthetic heart valve with a percutaneously-exchangeable leaflet set that provides lifetime service without anti-coagulation 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 the 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 care professionals.

WESTONE LABORATORIES

Colorado Springs

www.westone.com

Designs and manufactures custom earmolds for hearing health care and other applications.

WI 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.

ACCERA INC.

Broomfield

www.accelerapharma.com

Discovers and develops innovative therapeutic treatments for neurodegenerative diseases, such as Parkinson's disease, Alzheimer's disease and other age-related memory loss disorders.

ACCUTHERA INC.

Conifer

(303) 697-1427

Develops therapeutics for acute and critical care indications. Initial clinical indication is acute lung injury caused by trauma and/or serious infectious pathogens.

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.

ADVANCED METABOLIC LABORATORIES LLC

Aurora

www.AdvancedMetabolicLabs.com

Researches metabolic parameters of diabetes, obesity and aging. Offers nutritional supplements for the treatment of these conditions.

AFFINITY BIOREAGENTS

Golden

www.bioreagents.com

Offers over 35,000 research reagents for 43 research areas as well as custom antibody production services.

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™.

APOLOGIC PHARMACEUTICALS LLC

Aurora

www.apologic.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.

ASPENBIO PHARMA INC.

Castle Rock

www.aspenbioinc.com

Discovers, develops, manufactures and licenses products primarily for animal health care 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.

ASTELLAS PHARMA US INC.www.astellas.us

Researches and develops pharmaceuticals for select therapeutic areas, including urology, immunology, dermatology, cardiology and infectious diseases.

ATRIUS BIOSCIENCE

Boulder

(303) 531-5955

Researches the use of systems biology, enabled by metabolomics and 3-dimensional tissue biology to support discovery efforts. The biomarker discovery platform is directed toward development of small molecule treatment modalities and metabolic therapies, as well as predictive diagnostics, applied to complex disease states.

AUROGEN

Fort Collins

www.aurogen.com

Produces a pharmaceutical treatment for diabetic neuropathy, with a second invention showing that neurotrophic hormones can act across the blood-brain barrier to treat various brain disorders.

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.

BIONOVO

Aurora

www.bionovo.com

Discovers and develops drugs for women's health, including menopause, osteoporosis and cancer.

BIORESPONSE LLC

Boulder

www.bioresponse.com

Researches, develops and commercializes dietary supplements and functional foods.

BIOERVE 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.biotest.net

Manufactures and distributes dietary supplements.

BIOXEL PHARMA INC.

Lafayette

www.bioxelpharma.com

Manufactures and distributes taxane pharmaceutical ingredients including paclitaxel, docetaxel, 9-DHB and 10-DAB, used in oncology for the treatment of cancer, including breast, lung, ovarian, stomach, prostate and head and neck cancers.

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 and is 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.

**SPEEDING TECHNOLOGIES TO THE GLOBAL MARKETPLACE**

"Colorado State University creates value for society by developing talent and technology through scholarship. Through technology transfer and successful start-up companies, society realizes the benefits of this scholarship and innovation in the form of new products and services. As a 21st-century land-grant institution, Colorado State University invites industry partners to engage with us in local research and technology development to solve global problems."

– William H. Farland
Vice President for Research
www.vpr.colostate.edu

MicroRx and NeoTRES are divisions of CSU Ventures, Inc., a proud affiliate of Colorado State University.

MicroRx[™]

Global Health Solutions
www.microrx.org

Colorado State
University

NeoTRES[™]

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www.neotrex.org



We are an academic research organization (ARO) dedicated to improving health through clinical research and integrating scientific evidence into community prevention programs.

CPC incorporates a unique quality intervention program into every trial, which minimizes endpoint variability. This translates into definitive signals and clearer results.

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- Biostatistics and Data Management
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- Management of:
 - Steering Committees
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 - Clinical Endpoint Committees
- Core Laboratory Services
 - ECG/TQT
 - Treadmill
 - Wound assessment
- Recruitment Call Center
- Scientific Writing

Colorado Prevention Center
789 Sherman Street, Suite 200
Denver, CO 80203
303-860-9900

www.cpcmed.org

For more information e-mail: research@cpcmed.org

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.

CEVAN INTERNATIONAL INC.**Longmont****www.cevan.com**

Delivers vitamins, minerals and botanical extracts as well as specialty nutraceutical formulations and antioxidants.

CHATA**Fort Collins****www.chatasolutions.com**

Manufactures blended reagents, HPLC mobile phases, standards, buffers and dissolution media.

CINPATHOGEN INC.**Boulder****www.cinpathogen.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.

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.

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**www.elisatech.com**

Provides immuno assay services and goods to researchers including immuno assays for the measurement of cytokines, growth factors and lipid inflammatory mediators such as prostaglandins and leukotrienes.

EUROFINS MEDINET**Aurora****www.eurofins-medinet.com**

Provides bioanalytical testing and support services to the pharmaceutical, food, environmental and consumer products industries and to governments.

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.

GENETHERA INC.**Wheatridge****www.genetheranet.net**

Develops and markets assay tests and vaccines to radicate 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**

Specialized 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.

GLOBAL PEPTIDE SERVICES LLC**Fort Collins****www.globalpeptide.com**

Offers peptides and polyclonal antibodies to both academia and industry.

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.

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.

HEMOGENIX

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 hemotoxicity testing.

HESKA CORPORATION

Loveland

www.heska.com

Develops advanced diagnostics and specialty products for veterinary practices that focus on companion animals.

HIBERNA CORPORATION

Boulder

www.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 injectable 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 research, process development, analytical services, manufacturing, compliance services and consulting to produce compounds from natural raw materials for the pharmaceutical, dietary supplement and fine chemical industries.

INB: PAXIS PHARMACEUTICALS INC.

Boulder

www.paxispharma.com

Manufactures and markets the generic active pharmaceutical ingredient paclitaxel as well as other naturally derived taxanes.

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 virus, 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.

LOHOCLA RESEARCH CORPORATION

Aurora

www.lohocla.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.

MEDIRAL INTERNATIONAL INC.

Denver

www.mediral.com

Develops, manufactures and sells homeopathic pharmaceuticals.

MIRAGEN THERAPEUTICS

Boulder

www.miragentherapeutics.com

Focuses on microRNA biology to discover innovative treatments for cardiovascular disease.



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INSMED scientists, with experience working on over 50 therapeutic proteins, are taking the lead in meeting unmet medical needs. We develop therapies to treat orphan diseases including Myotonic Muscular Dystrophy. We're also looking to the future of biotechnology and the future of medicine. Insmed is poised to be a leader in follow-on biologics in the United States, an industry that will save both lives and money. Join us at: www.insmed.com

INSMED Incorporated

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. Product 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 biochemicals to the research community, contract research, models for tuberculosis research and other BSL3 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.

NAVIGANT 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

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.

OSI PHARMACEUTICALS

Boulder

www.osip.com

Develops and commercializes high-quality and novel pharmaceutical products for patients with cancer, diabetes and obesity.

OXONICA INC.

Silverthorne

www.oxonica.com

Developed the NANOPLEX™ biomarker detection platform that enables detection of multiple disease markers, providing clinical laboratory performance and real time information at the point of care.

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.peakbiosci.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 disease 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 diseases 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 Acute Renal Failure.

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.rmdiagnosics.com

Provides immunodiagnostic assays and reagents for biogenic amines, research reagents, a CLIA-certified reference laboratory and contract manufacturing services.

ROCKY MOUNTAIN INSTRUMENTAL LABORATORIES

Fort Collins

www.rockylab.com

Provides contract chromatographic and mass spectrometric analysis of pharmaceuticals (both traditional drugs and biotechnology products, such as proteins and peptides and oligonucleotides), veterinary and human endocrinology and forensic toxicology.

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 and psychotherapeutics.

SCIONA INC.

Boulder

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).

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.

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.

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.uspharmcal.com

Researches, develops and sells topical pharmaceuticals for the senior community.

UPSHER-SMITH

Denver

www.upsheer-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.

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

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.bbibiobiofuels.com

Offers consulting services, including feasibility studies, market analyses, site and 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.

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.

FRONT RANGE ENERGY LLC**Windsor****www.fronrangeenergy.com**

Ethanol producer since 2006. Will process approximately 40 million gallons of ethanol and 396,000 tons of wet distillers' grain annually.

GEVO INC.**Englewood****www.gevo.com**

Develops advanced biofuels such as isobutanol, a butanol that will provide a sustainable path to the replacement of petrochemicals such as 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 whether 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 provides consulting services to oil and gas clients and locally 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****www.powerecalene.com**

Produces Ecalene™, an 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.sanjuanbioenergy.com**

Sells sunflower oil into food markets and biodiesel for fuel, also produces 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.bsccs.org**

A non-profit 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 health care partners including supplying rare blood units or helping to determine the best cross-matched unit to ensure 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 (DVVID) is part of the U.S. Centers for Disease Control and Prevention (CDC). CDC is the lead federal agency responsible for protecting the health and safety of people at home and abroad. DVVID 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 (CSM)**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 (CSU)**Fort Collins, Pueblo****www.colostate.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 (DSST)

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.therapeutichiology.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* magazine as one of the top 10 scientific advances of the year.

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Becca Morgan, Study Coordinator
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NATIONAL JEWISH MEDICAL AND RESEARCH CENTER (NJC)

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.njilabs.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 (NREL)

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), 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

www.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.

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The University of Colorado Technology Transfer Office is seeking Front Range businesses and professionals to volunteer as advisors for new companies.

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Lindsay Polak lindsay.polak@cu.edu

UNIVERSITY OF COLORADO (CU)

Boulder, Denver, Aurora, Colorado Springs

www.cu.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 non-profit 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 Center for Pharmaceutical Biotechnology 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 (DU)

Denver

www.du.edu

DU 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 (UNC)

Greeley

www.unco.edu

University of Northern Colorado 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.

FOUNDATIONS

COLORADO STATE UNIVERSITY RESEARCH FOUNDATION (CSURF)

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.

THE CHILDREN'S HOSPITAL FOUNDATION

www.imaginemiracles.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

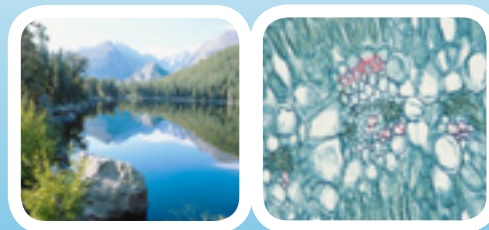
Boulder

www.cufund.org

The University of Colorado Foundation is a privately governed non-profit 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.



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WE ASKED EXECUTIVES TO DESCRIBE THE FUTURE OF BIOSCIENCE. HERE'S WHAT THEY SAID:

What will be the coolest bioscience job titles in five years?

"Personalized Medicines Manager / Diagnostics and Therapeutics Integration Manager,"

— DON FITZGERALD
PRESIDENT
ROCHE COLORADO

"Chief Strategy Officer. That is the key in this space — knowing how to set up your strategy to take advantage of all of these issues,"

— RYAN GILL, MANAGING DIRECTOR
COLORADO CENTER FOR BIOREFINING AND BIOFUELS (C2B2)

"Director of Discovery or Chief of Innovation,"

— BILL BARKLEY, CHIEF INTELLECTUAL PROPERTY OFFICER,
MARTEK BIOSCIENCES BOULDER

"Personal Robotist,"

— LEE TAYLOR
CHIEF EXECUTIVE OFFICER
THERATOOLS

Which bioscience breakthrough will impact our lives most dramatically in the next decade?

"Transitioning to a bio-based economy. ... We need to transition to an economy that is based on plants, the sun and the wind,"

— ED LEHRBURGER
CO-FOUNDER, PRESIDENT AND
CEO OF PUREVISION TECHNOLOGY

"Laparoscopic and robotic surgery. Heart surgery has always been open chest. I think surgery will be accelerated with actuators (the fingers on robots) and imaging (miniature cameras) so you can do surgery with a closed chest,"

— IVAN VESELY
FOUNDER AND CHIEF SCIENCE OFFICER
VALVEXCHANGE

"Profiling the human genome,"

— KIRK CHRISTOFFERSEN
SENIOR DIRECTOR CORPORATE DEVELOPMENT
GLOBEIMMUNE

"A better means of arresting diabetes,"

— JOSÉ H. BEDOYA
PRESIDENT AND CHIEF EXECUTIVE OFFICER
OTOLOGICS

"Access to personalized medicinal therapies for a wide array health conditions,"

— DON FITZGERALD
PRESIDENT
ROCHE COLORADO

"RNAi technology — very simply the ability to turn on and turn off genes,"

— BILL BARKLEY
CHIEF INTELLECTUAL PROPERTY OFFICER
MARTEK BIOSCIENCES BOULDER

"All the information from the genome,"

— JOE COX
PRESIDENT
BOLDER BIOTECHNOLOGY

"Cellular energy generation. Some day we should be able to capture energy from motion and use it to power our homes,"

— LEE TAYLOR
CHIEF EXECUTIVE OFFICER
THERATOOLS

"Molecular diagnostics. A much more detailed understanding of (disease) detection and the personalized administration of therapies will see a huge advance. One size doesn't fit all, and it will make medicine much more specific,"

— DAVID BRUNEL
CHIEF EXECUTIVE OFFICER
BIODESIX



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