

Oklahoma Innovations Radio Show

Air Date: August 16, 2009

Guests: **Bert Davison**, Exerbotics, and **Richard Gajan**, i2E

[Music]

>> From the OCAST Radio Network, this is *Oklahoma Innovations*, a weekly science and technology radio magazine brought to you as a service of OCAST, the Oklahoma Center for the Advancement of Science and Technology. OCAST is the state's only agency whose sole focus is technology, its development, transfer, and commercialization. OCAST mission is to identify and fund promising research in technologies that allow Oklahoma to compete in a global market economy from our own backyard. This program features some of the state's most gifted and talented scientists, inventors, entrepreneurs, manufacturers, and business leaders who all have one common goal, developing technology-based economic growth for all Oklahomans. Now here are your hosts, Gary Owen and Steve Paris.

>> Welcome to another edition of Oklahoma Science Radio Magazine, *Oklahoma Innovations*. Delighted you're here with us this weekend. Gonna talk about some fun stuff this weekend. Exercise in technology.

>> That's exactly right Gary you now you hear the ads on TV, you see them and you wonder does that really work? Well in many cases it does not

>> Right.

>> But we've got an example today of some exercise equipment which is probably not the best way to describe it but some exercise equipment that has been tested, they've used technology and we're gonna hear more about that in just a few minutes.

>> Well just imagine a guy who would normally use weights to build muscle mass, this from what I understand is the world's first viable, fully computerized strength training system. That should be interesting to hear about.

>> Taken the world by storm.

>> It is. How's things at OCAST?

>> Hey things are great. I tell you what we've got a lot of training going on right now. When I talk about that I'm not talking about internally, I'm talking about workshops that we hold around the state for people who want to apply for our various programs and if you give me a little time I'll tell you about a few of those.

>> Go for it.

>> Ok. We have as of tomorrow when you hear this show on Monday, August 18th, I believe that's the right date. In Stillwater we're gonna have an OARS application preparation workshop. Now when I say OARS I'm talking the.

>> Not talking about the boat.

>> No not the things we have to keep both of them in the water. I'm talking about the Oklahoma Applied Research Support Program. Applied Research is what we call it for short. On August 20 we have another OARS application preparation workshop in Oklahoma City. These are all day

affairs. Well actually the one in Stillwater runs from 1:30 - 4:30 pm. The one in Oklahoma City 9:30-4:30 and we have a plant science workshop in Stillwater on September 8th from 10-12. Plant science workshop in Tulsa September 9 same time and another plant science workshop in Ardmore Oklahoma on September 10 from 10-12 pm. Now or from 10am to noon. Here' what you want to do. You want to look at our website at OCAST just put OCAST in your browser and you'll find us and you can sign up for these workshops online and if you had more questions there's telephone numbers that you can call, that you can see on our website that'll tell you can tell you exactly what you need to do; for instance if you have questions about the programs. Why we have these workshops is because not that it's that difficult but when we have solicitations for people to make application for the awards programs that we have they have to do them in a standardized way, so that everything is fair and so we teach the workshop attendance that this is the way you do it, this is the way that we'll consider it make sure that you're aware of these certain deadlines and so forth and so on and that's what that's all about. It's not required to go but you would be well advised to attend at least one of these.

>> The more prepared you are the better chance you have.

>> Exactly because you're gonna be competing against people who know you write these applications and you need to be able to compete with them.

>> Oh the paperwork man I'm telling you.

>> Well but we have to do that.

>> That's true.

>> You know we use peer review. We talked about that.

>> Those are out of state peer reviews aren't they?

>> Predominately we occasionally have had one or two and from someone instead but we look for people out of state so that we keep it fair so that there's no undue influence and that by the way is an internationally accepted method for figuring out how best to use public monies when you have research projects.

>> Very cool.

>> So that's our whole purpose.

>> Anything else on the board over there that you want to talk about?

>> Well yeah we've got, we've added something at OCAST that you may have already realized if you looked up our website but we along with the with a group, it's a state agency that provides service for agencies that want to create their own website and do some online activity and we're kind of rolling this out now, though we've been doing this for the most part for a little bit, a little bit of time but we started an online intern data base and a service provider network. In other words if you want to find out you know some of the people who can help you and conduct your research maybe an attorney. Maybe you need you know some other profession to help you out well that's gonna be available on our website and you can look at this data base at well <http://ocast.ok.gov>, just ocast.ok.gov that'll get you there. And the site features our audio broadcast, this radio program *Oklahoma Innovations* online registration for workshops that we talked about a little bit ago, the service providers, solicitation listings and internship opportunities. We have a program called the applied research, R&D intern partnership, research

and development intern partnership where we use students, university or college level students with special training, they have a faculty advisor and we try to recruit private sector companies who pay half of their salaries, we pay the other half and provide an intern opportunity. And we've had a lot of success with this over 500 students over the last several years have gone through his program and one of the things that we hope to gain by this is kind of keep em in Oklahoma. Once they work for some of these private sector companies then often times, not every time, but often times a job opportunity arises and so they

>> Interesting. > It's one of the ways that we hope well we help private sector companies be successful through technology but it also may be an opportunity to keep some of these bright minds in Oklahoma so that's our purpose for that program.

>> I have to tell ya I can't I'm not gonna say right now who it is but I had the opportunity to my voice is being involved in some research right now with a company that was a guest on our show in recent weeks and I'll tell you about that when I know I can release it, but it as really cool the research that was done and watch how they recorded my voice

>> Really?

>> in various frequencies

>> Yeah for this new technology coming out so I'll tell you about that later, pretty cool.

>> I'm anxious to hear the story.

>> In science and technology news this week. Well you know the big deal in transportation is how can we make transportation affordable, and go green, and save on gasoline and all of that. Well Nissan, Nissan's upcoming all electric car could outsell hybrids like Toyotas, Prius they say even though it can't drive more than 100 miles without stopping to recharge, that's because unlike more expensive hybrids owners of the 0 emission Leaf be able to save money while saving the environment. Nissan plans to sell the midsize Leaf hatchback for somewhere in the \$25,000-33,000 and they're saying the savings also will come in the cost of refueling. Even the most expensive electricity markets, now think about where those might be, New York and Los Angeles maybe. Most drivers should still be able to charge their Leaf at home for less than \$1 and Nissan is planning to introduce the Leaf to business and government fleet customers in the US, Japan and Europe next year. And they're saying that even if gasoline prices were to fall to a buck 10 a gallon, we'll never see that again, most vehicles will still cost more to fuel than the Leaf they say. So how about that?

>> Alright.

>> In space news this week NASA plans to use \$50 million of federal economic stimulus funds to see development of commercial passenger transportation service to space. Aspiring space ship operators will have 45 days to submit proposals which will be competitively evaluated. Awards for the commercial crew development program expected to be announced before the end of September. The United States as you already probably know have heard is retiring its fleet of space shuttles next year after seven more missions to complete construction of \$100 billion International Space Station. And it looks like that the main thing that the public should be taking note of is right now listen to this NASA is spending \$500 million to help these US firms Space Exploration Technologies which is a privately held company known as SpaceX and Orbital Sciences Corp to develop rockets and capitals to deliver cargo to the stations. Now where are

these astronauts gonna to get their rides? Here's the hook folks. After they retire the space shuttles the United States plans to buy rides for astronauts to and from the station from Russia.

>> Taxi service huh?

>> 1 of 16 nations involved in space programs. So basically we'll be relying on the Russians for space transport after 2010. How about that?

>> Good.

>> The orbiting Kepler telescope has spotted a Jupiter sized planet around another star sighting it demonstrates it can see earth like planets if they're out there. The planet called HAT-P-7b is already among the 300 or so known so called extra solar planets. The team led by the US space agency NASA has reported. But measurements by its orbit by Kepler show the telescope will be able to see smaller planets too. Kepler was launched in March with a specific goal of finding earth sized planets that might support life outside of our solar system. One other little health note here. Researchers have found specific nerve cells responsive for itchiness, a discovery they say could lead to better treatments for skin conditions. Experiments on mice show they nerve cells that convey only an itch sensation contradicting common wisdom that itch and pain are closely related and they're excited about this. In 2007 the researchers identified the first itch gene called gastrin-releasing peptide receptor and it was inactive in the spinal cord, Steve is already itching and he has our innovations in history

>> I do Gary. On August 2nd 1847 William A. Leidesdorff launched the first steam boat in San Francisco Bay. It was August 4th, 1952 that helicopters from the US Air Force air rescue service landed in Germany completing the first air transit Atlantic flight by helicopter in 51 hours and 55 minutes of flight time and the first Trans Atlantic cable was completed on August 5th, 1858. On that same date in 1914 the first electric traffic light signals were installed and in all places Cleveland Ohio. August 8th was the big day of innovation and in 1876 Thomas Edison received a patent for the mimeograph. And on the same date in 1899 the first household refrigerating machine was patented.

>> Wow.

>> Remember the mimeograph?

>> Oh yes.

>> Oh boy I'd like to forget it. It was August 9, 1859 when the escalator was patented. However, the first working escalator appeared in 1900 manufactured by the Otis Elevator company for the Paris exposition. It was installed in Philadelphia in an office building on the following year. The first complete self contained electric washing machine, I believe that's the one I still have at home. It was patented on August 9, 1910. August 10, 1909 Leo Fender inventor of the mass produced electric guitar, that's the first one he invented was in 1909. We've all heard of the Fender guitar. And here's one that revolutionized transportation for ever. It was August 12, 1908 Henry Ford's first Model T rolled off the assembly line and the first coin operated telephone was patented by William Gray August 13, 1889 and that Gary is our Innovations in History for August.

>> Cool stuff.

>> Cool stuff.

>> August was a big month for innovations.

>> Yes it is.

>> Wow that's great. Well we're going to talk about the biggest advancement in strength training innovation when we return with our guest Bert Davison on *Oklahoma Innovations*.

[Music]

>> The waving wheat can sure smell sweet when the wind comes right behind the rain. But what happens when the rain doesn't come? Wheat growers across Oklahoma know too well the impact that a poor growing season can have on crops and markets. Drought, disease and poor soil are just a few of the things to keep farmers up at night but what if those issues were a thing of the past. In labs funded by the Oklahoma Center for the Advancement of Science and Technology, researchers are finding new ways for producing better plants that can withstand unfavorable conditions, creating opportunities and improving the economy. That's what OCAST is all about. OCAST is looking for small business owners serious about investigating new products, services, and processes. For more information call OCAST toll free at 866-265-2215 or visit their website at ocast.ok.gov. In a state deeply rooted in agriculture, plant science helps Oklahoma farmers

>> You're listening to Oklahoma Science Radio Magazine. *Oklahoma Innovations* on the OCAST Radio Network.

[Music]

>> I'm working out really hard this morning to keep my voice as low as I possibly can but I don't have to use weights to do that. Ladies and gentlemen I just work the throat muscles ok. We're talking about exercise this week and it is unique. If those of you, by the way want to bring special attention to our listeners in Tulsa territory on our affiliate KRMG. This is a Tulsa based company, a new technology that as our guest describes it a real show stopper in weight training and or I guess that's what we would say right? And we have two guests. We have first of all the president of Exerbotics Bert Davison and we also have Richard Gajan is that correct? And Richard is with i2E. Now with Steve we talk about i2E quite a bit on this program.

>> Yes we do they're one of our strategic partners, very important part of what we do is to work in trying to commercialize technologies that are in Oklahoma and Richard is Director of Enterprise services with i2E located in the Tulsa office.

>> Indeed.

>> And he gets around has done a lot of good work with a lot of our clients over the last several years and we're gonna hear more about that here in just a bit. Let's get right into Bert Davison though if we could. Bert is as you mentioned is President of Exerbotics. I'm gonna make a little comment here. You know there's things like championship wrestling that we all know is fake, oh I shouldn't have said that. But there's also a lot of pretty light weight, pretty questionable devices that we see on late night television that have to do with exercise and I think you know has some questions about some of those. This is different. Exerbotics is a different kind of company because you've actually applied technology. You didn't do it just you know to mass produce these but you've got some key elements here that I think we need to hear about but before we get into that I want to know about, I want to know about Bert Davison. Where did you come from Bert?

>> Well Steve I grew up about six miles across the boarder north of Guymon Oklahoma. A lot of people probably don't know.

>> You're liberal.

>> Yeah Guymon is in the Oklahoma panhandle. A lot of people don't know that there is a panhandle.

>> Oh yeah. We love the panhandle.

>> But I grew up about six miles a little town called Roland Kansas. Up there I actually was on the Guymon High School Rodeo Team because we didn't have a high school rodeo association like in Kansas and growing up so close to Oklahoma I kind of learned to speak the language pretty early on so you can probably tell I can pass for an Oklahoman today.

>> Yeah you sound like one of us.

>> I grew up on a farm and a ranch out there and went to Fort Hays State University in western Kansas and got a degree in animal science which of course I've never used like most people and that lead to a career in commercial banking of course.

>> Oh my.

>> It's interesting the roads that we travel and I've always been a little bit of an entrepreneur, a little bit of that pioneer blood I think and the commercial banking has been a very unique field because you get to see every business in the world. You get to meet a lot of entrepreneurs. I've always said that entrepreneurial sprit I just couldn't quite squelch and ended up in Oklahoma working for First United Bank based out of Durant Oklahoma. It's a fabulous organization,

>> A long ways from Guymon.

>> A long ways from Guymon. I was a senior vice president there in commercial banking as well as managed their venture capital company and have lived in Oklahoma since '01.

>> Outstanding. Well I mean I'm familiar with the panhandle I've spent a lot of time out there. You may not know this but then again you may, Guymon is the county seat of Texas county Oklahoma which is in the top 20 agricultural producing counties in the nation as far as sales receipts go. Most of them are in California. But in Oklahoma you put Texas, and a lot of it has to do with the big feed lots out there and more recently the pig farms and the swine operations. Tremendous but it's an area, a center of economic activity. So yes I'm very much familiar with Guymon it's a great place. So you have started a company called Exerbotics. Give us a little bit of the history of the creation of Exerbotics and what you were thinking when you started it.

>> Exerbotics is really a unique company. Basically when we talk about revolutions in business or revolutions in industry, I think that Exerbotics is probably the greatest revolution in fitness and exercise ever. And I know that is a very strong statement but I truly believe that it's probably what I would call a C change in technology and basically exercise has been one of those things where a lot of people have attempted that and never successfully made that move over but basically we have changed the method and mode for strength training for all walks of life that are a part of that and that sort of fitness as well as medical rehabilitation, athletics and so on. The history of Exerbotics goes back, like a lot of companies I think when something comes on the market most people have the inclination to think about wow that's such a new and fresh idea and

you hear the terms overnight success or that just came out over night and I think like most things it's been around for awhile.

>> It's only been around for about 30 years. In the dream and conceptual form and basically Exerbotics started back in 1979 and it was the dream of two gentlemen who were getting their doctorate degrees and the University of Wyoming. One's Dr. Kent Noffsinger who's a physics professor and the other one was Dr. William Kraemer who's went on to become the preeminent exercise physiologist literally in the world. Back then those guys had a dream that something had to be done to improve strength training. Strength training is very, very inefficient. Most people don't understand that but it stays very, very time consuming, very inefficient and they had a dream to make something that would make that much quicker, much better results. And they actually produced an archaic machine back then that was probably high technology at the time cause it had several computers but it also had like a rear end from a Carmengia car. Underneath it locomotive eccentric wheels on the sides of it and very closely resembled some kind of medieval torture chamber.

>> Oh my goodness.

>> And basically the thing that really kept it from happening is technology just wasn't there to make it economically feasible both cost wise and you know in a technological manner. So literally technology has only been around for probably for the last three or four years in which we developed it to allow this to really operate in the manner that's it does today.

>> Outstanding we've got just a little less than a minute left. I want to ask you about your target market because you're not one of these companies that's gonna be advertising at 3:00 in the morning like a lot of them do. You guys have a very specific marketing plan. Touch on that. What is your target market?

>> Well it's, it's a little hard honestly Steve in this manner because it does touch every mark there is out there. It basically will work for any method of strength training. Our initial target market is actually multi fold but we're starting out with NFL teams.

>> Ok.

>> We're actually moving equipment next week to the Seattle Seahawks. Our equipment is it does two or three things that are very unique. One is its much more effective than strength training anything else out there. You can do more than 20 minutes than you can do it in a hour and a half lifting weights.

>> Wow!.

>> The other is it gives the first accurate strength assessment of anybody that's ever been done.

>> We've gotta take a little break. We'll come back and talk more with our guest Bert Davison with Exerbotics when we return on *Oklahoma Innovations*.

[Music]

>> Now in its 13th year. This is *Oklahoma Innovations* on the OCAST radio Network.

>> The stress of finding a job after college is compounded for recent graduates entering a tough job market but thanks to the Oklahoma Center for the Advancement of Science and Technology more students connect with the states most advances technology companies while earning income and valuable on the job training. Through the OCAST R&D Intern Partnerships Program

students gain experience in the industry, work with mentors and operate specialized instruments. Intern training leads to starting salaries 12% higher than Oklahoma's average per capita income. OCAST is investing in Oklahoma's best and brightest; creating jobs, investing in our future that's what OCAST is all about. OCAST is seeking intern partnership opportunities that will allow Oklahoma students to gain hands on experience in science and technology careers. For more information call OCAST toll free at 866-265-2215 or visit their website at ocast.ok.gov. The future of Oklahoma looks bright

>> Imagine not being able to see your daughter on her wedding day or experiencing your grandchild's first smile. An estimated one and three quarter million American's over age 50 have developed a loss of vision or blindness due to age related macular degeneration and of the more than 200,000 Oklahoman's living with diabetes, 90% will develop eye disease. With the support of the Oklahoma Center for the Advancement of Science and Technology an Oklahoma company is developing innovative treatments for blinding eye diseases. The research will improve the lives for people across the nation, create new treatments that are more comfortable for patients and prevent vision loss. OCAST is looking for Oklahoma researchers serious about investigating new treatments and products that improve the quality of life and the economy for Oklahomans. For more information call OCAST toll free at 866-265-2215 or visit their website at ocast.ok.gov. Investing in science and technology, it's good for your health.

>> Research and development, technology transfer and commercialization, creating high paying jobs in Oklahoma is what OCAST is all about. This is *Oklahoma Innovations* on the OCAST Radio Network.

[Music]

>> Using computer controlled movements, Exerbotics has become one of the most exciting fitness applications for strength and body composition in our time and a fact it's so revolutionary Muscle and Fitness magazine picked up on it and did an article and really has launched this technology. We'll talk about that here momentarily. Our guest Bert Davidson who's the President of Exerbotics out of Tulsa and Richard Gajan who is the Director of Enterprise Services for i2E. Steve.

>> Thank you Gary. You know before we went into the break we ere talking about the history of Exerbotics and it's not a brand new company, it's been around for three decades and you've got some special equipment, maybe that's an understatement, it's very special devices that have been created by you and the others in your company, many engineers I'm sure are involved and I think we need to know exactly what that exercise equipment does, what you call it, what kind of advantages it has and we need to point out you know you said earlier the Seattle Seahawks has bought a set of theses and that's no small price about 50K for the five different pieces is that right?

>> Yes, Yes.

>> OK. Well tell us about what this equipment does for you.

>> Basically there's three things that make this very unique and really the concept came about to basically cure the problems people have with general weight training and those are mainly two-fold. One is inertia. When you move a weight, when you pick it up and you get it moving it actually weighs less, so if you pick up a 20 lb weight and get movement to it weighs less than that 20 pounds, so inertia comes into play. A lot of times people will pick up a weight and then

they'll drop that weight in half the rep and that does no good but you'll see people do that all the time. The largest point and this is with strength training is when you're lifting weights the biggest problem is what we call a sticking point or a weak point. Any lift you do, any time you lift a weight you can't lift more than you can get past your weakest point, so if anybody's lifted weights you can remember this once you let's say you've done a bench press when you're moving that weight up off your chest that's the weakest point you have in that lift and what that means is you can't lift anymore than that. The problem is in the rest of that range of motion you're much stronger than that, so people are much more capable in 75% of that exercise is lifting more weight but physically you just can't change that you got a static amount of weight. What our equipment does its computer controlled strength equipment there are no weights, there are no hydraulics, there are no pneumatics, it's totally controlled by computers, robotic motors. But it automatically adjusts to every individual. So it adjusts to your strength levels throughout the entire range of motion. So what it allows you to do is recruit maximum muscle throughout the entire movement which is very very unique. And the best example I can give today is just if you can envision somebody doing a bench press and let's say that the max lift they can do, the most they can lift is 150 pounds because that's all they can get past that weak point. So as they're pushing that bar off their chest they have that weak 150 pounds, that's all they can do. On our equipment that same individual he would hit that same 150 pounds but then it would automatically adjust and as he pushes that weight up and he extends his arms he may go as high as 240 pounds and then when the weight comes back down in what we call the negative or eccentric side of that lift this is where you gain 75% of your strength is in that side of the lift. He may hit 320 pounds coming down. So what that means is it's much, much more effective your body is getting exercise and your muscles are getting exercise where they're capable of, so that's very, very unique and because it allows you to automatically get maximum muscle recruitment you can do so much more, it's better results less time.

>> So does that mean Steve I guess this means that I finally found a system where I can develop my body as big as my voice?

>> There you go. Well you're talking about efficiency. We all know it takes less energy to keep a car in motion than it does to get it started which is that efficiency that you're talking about plus you're getting the benefit from it, from by that's the reason you can do in 20 minutes what it would take an hour to do with lifting equipment

>> Absolutely when people lift weights normally they're doing several sets, it's very common to do three or four sets and between 10 and 12 reps and the reason is you're trying to fatigue those muscles where they're strongest but it's very, very hard to do because you're not lifting enough weight where you're capable of doing so and basically what we find is about 30 minutes twice a week is an extremely effective workout where somebody might be spending three or four hours so the results of that are phenomenal. If you're an athlete it's less time spent in the gym

>> Right.

>> but more commonly if you're a you're a I'm not gonna pick on Steve or Gary either one but I'll just say I'm 51 and you know you get our age and it's hard to go find those three or four hours. I'm a little over the [laughter]

>> Well not only that but there's a safety factor where you start getting up, there's risk of hurting yourself.

>> Exactly.

>> When you're not really sure of what your limits are. With a machine like this I assume it's probably better control and reduce the risk of damaging your back or something.

>> Exactly there is no weight hanging over your body, there's no weight hanging over your head. It's what you're doing is that the machine controls a movement so the movement is very controlled, range of motion is controlled and the user actually supplies the force so there is no weight hanging out there. If you felt uncomfortable or felt you're over exerting yourself you simply just stop exerting force.

>> So you don't have 150 pounds of weight over the head of a football player who's making 12 or 15 million a year right?

>> Exactly, exactly. And they're very excited about that.

>> That's called cost savings.

>> Yes and that happens unfortunately I know Oklahoma State had an injury at one time a year ago, a young athlete and it was just one of those things that happens

>> Exactly

>> but you just hate to see that happen so it's very safe. Now the other things that are very unique about our equipment is every second somebody's on there all that data is captured.

>> Yeah

>> And what this does is it provides an exact blueprint through that data of an individual strength levels and we went to the national strength conditioning association conference about two weeks ago and this is the academic side of strength training, this is where all the college professors came out of as well as strength coaches across the world are all part of this and the president J Hoffman of NSCA said that is the best assessment tool I have ever seen in my life.

>> Wow! Wow!

>> And you've gotta understand that's never been available. There's never been an accurate way of judging ones strength before and for us to give an exact blueprint of any muscle group on the body is a phenomenal thing with phenomenal uses capabilities.

>> Cuts out the fibbing for the strength coach you have on a football team.

>> You can't cheat. It is a very very true picture.

>> We got about three minutes I want to get Richard Gajan in here he's the Director of Enterprise Services for i2E, that stands for Innovation 2 Enterprise and he's in the Tulsa office of i2E. And to do something like this takes \$. You have to have investment capital. You have to raise different levels of funding so that you can accomplish the different steps that need to be taken for success. Richard walk us through that. What's happened with Exerbotics and the and the investment community?

>> Yeah well Exerbotics is the good case here. They had raised quite a bit of money to do a lot of the development over the last three or four years and it had gotten to the point where they were getting ready to sell it in the open market. They pretty much figured it out and they got the cost down to a really manufacturable amount and they just needed another you know couple \$100,000 to bring it to market and the timing was horrible and they came to us around November

of last year and the capital markets had just dried up. The investors had pulled back. In what might have been an easier sell two years ago now became a lot more difficult and so we work with them with our client services that are funded by OCAST to commercialize technology and create jobs. Technology based economic development and we worked with Bert on the market opportunity and really honed down the business plan to what we thought was the most marketable presentation we could do. Bert came and talked to an i2E luncheon and then put together a presentation and our seed fund made an investment in Exerbotics along with some co investors and some angles in the community and so we've just closed on a significant fund raising event here.

>> Very good. I'm showing 2.2 million in equity funding with an additional of 700,000 of convertible debt financing from existing investors. Is that what you're taking about? And the seed fund, the seed capital fund is money provided by the legislature for this specific purpose and of course i2E operates under contract with OCAST to get that money out there and for the benefit of Oklahoma businesses.

>> Absolutely it's a great program. We try to do about four or five deals a year. In Exerbotics case, we did about 400,000 and 300,000 with co investment. That's one of the requirements from the state is to make sure it's the real deal.

>> Right.

>> Co investors are there. > There are a lot of restrictions, a lot of rules but the rules are good and if everything is done properly it's a tremendous benefit or Oklahoma business. A lot of states don't have that and you know.

>> Very, very few.

>> Here's another success for the company. You had a debut of the equipment at the 2009 International Health Racket and Sports Club Association Convention and I'm sure you got that was well received there wasn't it.

>> It was phenomenal Gary. I think one of the most exciting things was it's got a little bit of an Oklahoma tie which is kind of interesting but Muscle and Fitness Magazine their editor and scientific staff came by and were just blown away. Chris Lockwood who is the Editor in Chief Muscle and Fitness Magazine interestingly enough is just receiving may have done it a couple of weeks ago, got his doctorate from OU.

>> Hold that thought. We gotta take a little break here. Don't lose that thought ok. We'll come back and take more about that. Bert Davison President of Exerbotics , our guest along with Richard Gajan of i2E. More to come on *Oklahoma Innovations*.

>> This is Oklahoma Science Radio Magazine. *Oklahoma Innovations* with Gary Owen and Steve Paris on the OCAST Radio Network.

[Music]

>> As you drive across Oklahoma you can see 1000s of gas wells sprinkled throughout the country side. Many of these wells don't produce enough natural gas to justify pipe lines but without this access 1000s of well sites are abandoned. With the support of the Oklahoma Center for the Advancement of Science and Technology, one company is creating a portable device transported on a flatbed truck to process natural gas at well sites. This technology optimizes the amount of gas that can be captured and releases no by-products into the atmosphere. This idea

provides new opportunities for small oil and gas producers while bringing us one step closer to energy and dependence. Supporting innovation, that's what OCAST is all about. OCAST is looking for small business owners serious about investigating new products, services and processes. For more information call OCAST toll free at 866-265-2215 or visit their website at ocast.ok.gov. Investing in research and development. It pumps new life into Oklahoma's economy.

[Music]

>> Technology, the wave of the future as always. Always something coming out that makes our lives better. You're learning about Exerbotics on this week's edition of *Oklahoma Innovations*. Gary Owen and Steve Parish your hosts. Glad you're with us this week and this is this is so revolutionary. I tell you now I'll be honest with you anybody that knows me or seen me knows that I'm not a guy that works out or exercises but there's a lot of people out there who do it for athletics for professional life there's a lot of people who just enjoy being fit. The problem is when you do traditional weight training it can be strenuous, it can really you know and it's hard to keep regular.

>> Might even hurt ya.

>> That's right might even hurt ya.

>> Now our guest Bert Davison before the break you were talking about.

>> We were talking about a major trade show we went to and we were fortunate enough to have Chris Lockwood Editor and Chief...

>> That's right.

>>... of Muscle and Fitness Magazine you know just mentioning is getting his doctorate from OU in physiology as a side note but great guy and we got him on our equipment and he was literally just blown away. His two comments, which he wrote an article about that, and his comments where you have just made all other types of weight training totally obsolete. And this is the gem of the future and it was amazing. So we've had two articles and a couple of videos that came out of Muscle and Fitness because of that. They actually asked us in September we're going to the Mr. and Miss Olympia contest...

>> Oh alright.

>>... that they host and we're going because they wanted to put our equipment in their tradeshow booth for Muscle and Fitness magazine.

>> Wow.

>> They thought so unique. So it's just going to be fun for us.

>> So once people see this, once they understand how it operates and the benefits of it it's your marketing effort is pretty much underway isn't it?

>>It is very much. I think the benefits of it; the benefits of strength training are so important and not just for athletes but every walk of life. Maintaining muscle mass, bone density is more and more important especially as we get older as we talked earlier Steve you didn't actually say I'm 51, he wouldn't divulge his age but it's [laughter]

>> I think I've said it before.

>> It is extremely important and I think you know the breath of our market is shown by where our equipment is going. We mentioned earlier we're going to the NFL teams. They're going to be early adopters.

>> That's the next question I want to ask cause you mentioned a few places where this equipment is being used and is going to be used very quickly, relatively soon and you had a whole range of locations from hospitals to retirement centers.

>> Our KMG listeners listen to this cause there's some places in Tulsa that

>> Tell us about this.

>> Well we've had our own facility located in [inaudible] called Exerbotics Premier Fitness Studios and primarily our purpose for that was it's used for a beta test site for equipment and it's a phenomenal place and we've had tremendous results there. I wish I could share some of the stories we've had

>> Yeah the testimonials.

>> Oh they've been fabulous. We are looking at several different insulations for us here right away though. One of them is going into the St. Johns Siegfried Wellness Center at St. Johns Hospital in Tulsa; we're very excited about that. The director of that came over got on our equipment and she said I've never seen anything like this and she said I'm gonna need to use it for awhile. We said oh come over and work on our equipment for two months, see what you think. Week and a half and she said we have got to have this in our facility. > All be.

>> So that's going in very quickly. We also have an installation there going into a facility called Inverness Retirement Village and our equipment is unbelievably adaptable to senior citizens it's so simple to use. There's no weight stacks, no pins, nothing to remember. Literally you just put in just a four digit pin number and everything's pre programmed you don't have to think of anything. It just leads you through your exercise as well as keeping track of all that data to be able to show you how your doing and getting along and we have installations going into fitness clubs in Texas which is pretty exciting for use also. We also have a lot of research going on. OU Medical School is starting a study this week on our equipment with senior citizens. We also have equipment KU is doing studies as well as Tulsa University starting studies this fall for us.

>> One thing we haven't done guys is we have not described to our audience how the thing physically works. Give us a mental description if you will.

>> Oh absolutely. I think you always start this off with technology transfer was one of the words you've used in the show.

>> Use that a lot.

>> This is probably the best examples of that you'll ever see. Basically what we've done is just wonderful technology transfer we've utilized robotics and electronics to make this machine work and it's a very very simplistic machine. Basically what it is, is we have an electric actuator. So we have a linear actuator that is a robotic motor and our machines have that. We have an onboard computer on every machine. Motor controllers and sensors that may get that machine and basically what it does it moves an appendage, let's say a bar if you can envision a chest press it will move that chest press bar. So the bar is moving, it's powered by the machine and basically what the user does is try to exert force to overcome that motion.

>> Resistance.

>> Resistance. As the bar is moving away from you, you push and try to make it go faster so the person is providing the resistance. The bar will turn around and come back towards you and you continue to push on that. So in that way it emulates a weight. You're using what we call a positive and negative portions of a weight movement but because of this it's user defined so it doesn't matter who gets on it. We can have 350 pound line backer on there. In Health and Fitness Magazine article you'll see a picture of a 370 pound world champion bench presser using our equipment. Now he go on there and got off exhausted in about a minute and a half about to die and you could have an 80 year old woman get on it right behind him and do a very light workout you know. So it's got unbelievable uses there.

>> The examples that you gave to me are validation of the efficacy of this equipment. You know you look at this and you wonder alright why didn't we think of this before? Obviously there's things you have to go through to make this happen, engineers have to come into play and you have to do the testing, you have beta testing as you indicated but this equipment is I keep going back to this and you probably cringe when I do this but obviously from the validation that we've just heard this is not the kind of equipment that you're gonna get for 29.95 off an infomercial at 3:00 in the morning. I mean and we know those things don't work.

>> Well it's probably too big to put in the house isn't it?

>> No actually they're very small footprints

>> Are they?

>> because there's no weight stack or anything most of the equipment is probably you know maybe 30 inches wide and maybe four or five feet long and very light weight compared to weight stack machines or something like that, 250-300 pounds the machine. But it is because of the technology in it it's not inexpensive.

>> You talked about OU and KU but you were talking about some of the research they were doing. Have any of these or do you have plans for any of these to be in with the athletic departments in the big 12 for instance?

>> Actually we do. If there's anybody listening out there, I have already had a donor who is willing to pay for a suite to go into OU and I don't actually have a contact with the athletic department there but they have a donor who would place a free set there if somebody has a contact there. We also have lined up a donor to place some in Oklahoma State so that's pretty exciting cause I felt kind of bad saying that you know our first placement with this equipment is KU.

>> Well hey strike while they are in type, that's the business you're in.

>> Dynakinetic that's the term and you've been describing I suspect dynakinetic exercise here just the last few minutes.

>> You know dynakinetic is literally a coin term that we use. You know some people are familiar with isokinetic and that's probably the most similar to that less exerting force on a set speed of a moving object. Ours is very different because we have the ability to change the speed, change the range of motion, do much more than that so we've dynakinetic means powered movement basically.

>> There you go.

>> Gary and I always do this toward the end of our most of our shows especially if we're talking to someone with a product like yours but you know we like to look down the road 5, 10 years down the road and I want to ask Richard about this too from an economic standpoint but let's look at very quickly where do you see yourself five years down the road?

>> I think that our equipment you've heard the term nautilus obviously Stairmaster those are historic terms, Exerbotics will probably surpass those...

>> Ok.

>>...basically because it is such a seed change and so unbelievably more effective at its purpose in strength training.

>>Outstanding.

>> I think it will be a very strong household name.

>> Richard Gajan talk to use about the economic part of it.

>> Well as far as OCAST goes and i2E I think what we're looking at is \$100 million in revenue and 150 employees.

>> That's not bad for Oklahoma, especially Tulsa Oklahoma. Outstanding. So there's a bright future for this product and by the way we want to hear more as time goes on and you perfect this and the business model proves itself we want to hear more about it; Exerbotics in the future.

>>By the way they have a website if you want to check it out. It's www.exerbotics.com. That e-x-e-r-b-o-t-i-c-s, [exerbotics.com](http://www.exerbotics.com) and I assume there's a photo on there like what we've seen here.

>> Yes there is.

>> Ok great.

>> You can get a lot of information.

>> You can get a lot of information about that. So by the way anybody at OU that wants to you know raise a flag out there pass it on.

>> Or OSU

>> Or OSU either one

>> Or TU

>> Or TU that's right. Or ECU.

>> Alright Bert Davison is the president of Exerbotics and Richard Gajan from i2E, nice to have you aboard as usual and thank you for listening to this week's edition of *Oklahoma Innovations* and Steve

>> See you Gary.

>>See you next week. Have a good week.

[Music]

>> You have been listening to *Oklahoma Innovations* brought to you by OCAST, the Oklahoma Center for the Advancement of Science and Technology. To learn more about OCAST and to hear a repeat broadcast of today's show anytime online, visit our website by typing OCAST in the search window of your web browser. Once you've located our website just click on the radio link. Join us at the same time next week and discover how Oklahoma's investment in science and technology is building a better economy for all Oklahomans. This program is a production of the OCAST Radio Network.