

## Oklahoma Innovations Radio Show

Air Date: June 21, 2009

Guests: **David Albert**, Lifetone Technology

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>> 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. It's development, transfer, and commercialization. OCAST mission is to identify and find promising research and 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.

>> We welcome you to this week's edition of Oklahoma Innovations, Gary O the voice, Steve Paris, the brains, and we are here this week with some exciting technology. If you or someone you know has some hearing lost, the technology we're going to talk about today could be life saving for you. We're going to talk about these in just a little while.

>> And you know the gentleman who created this technology who's our guest today, Dr. David Albert, has a unique history in Oklahoma research and in Oklahoma itself because of his connection to his late father, former Speaker of the House Carl Albert.

>> No kidding.

>> Steve: That's right. We'll talk about that here in just a little bit. An interesting part, and I'll just continue with this, David has a very, very strong connection with what we call the pre-OCAST days. That's been more than 22 years ago.

>> Gary: Hard to believe.

>> Steve: We'll talk about that. We'll ask him about that here in just a little bit.

>> Gary: That's hard to believe.

>> Steve: It should be an exciting show.

>> Gary: It is. We're going to be on the road our next show. We're going to be attending the Oklahoma aerospace conference in Tulsa, and that should be an interesting show. Don't you think?

>> Steve: I think it'll be fantastic, Gary. Of course, the Oklahoma aerospace technology is going to be held at the in downtown Tulsa at the Crown Plaza Hotel. And we're going to be there as you mentioned, and we're going to be interviewing several guests who will talk about aviation technology, the aerospace industry, what it means for the state of Oklahoma. And without going to any details at this point and just understand this. Aviation has a major impact on this state whether it be through military aviation or through commercial aviation, or private aviation. And we have a rich history, and we'll talk a little bit about that and talk about our future in aviation, because I think it holds a lot of promise.

>> Gary: For Oklahoma, it certainly does. What else is going on in the Oak Cast world?

>> Steve: Gary, I don't know if you heard or not. I saw it just in last week's Oklahoman. But Oklahoma City based Selexys Pharmaceuticals which is one of our partners. They have received a seed funding grant of 3.5 million dollars, and that's quite an accomplishment.

>> Gary: Yea.

>> Steve: In this economy because seed funding and venture capital. Those types of investments in R&D were a little bit harder to come by when the economy is down, and we all know the national and the world economy is suffering right now. And I have great hope that it's going to get better pretty soon, but part of that funding came from the Oklahoma Seed Capital Fund, and that was about a million dollars worth. And another two-and-a-half million came from private investors, angel investors. And by virtue of the fact there are angel investors, I don't know who their names are. And we're not supposed to know those names are, because most of them. When they invest they have a tendency to try to maintain some level of confidentiality and don't want the whole world to know what they're doing not because of any bad reasons other than it's just their businesses. So the important thing though is that Oklahoma has a seed capital fund, and, of course, OCAST gets to manage that under contract with i2e. They contract with us, and that organization is charged with commercializing technology and, of course, we always love it when a company like Selexys gets some funding to continue their research to develop their business plan to actually improve their position as a bona fide business, an up and running business in Oklahoma that has receipts, that employs people, and brings more capital into the state. So we can be proud about that.

>> Gary: Absolutely. That's marvelous. Couple of interesting stories in the news in the last week or so. A couple of stories I thought would be of interest to our audience. Do you know there's been some earthquakes reported in Oklahoma lately?

>> Steve: Yea, over in Lincoln County.

>> Gary: And it was a story that popped up out of Texas that I thought was kind of interesting. This is out of Claiborne, Texas. Now this is a town that has not had an earthquake. Let's see, the first recorded earthquake I guess was about 140 years. Is that what they said? Yea. It has a 140 year history before the first recorded earthquake in that area. And recently there have been four small earthquakes. Not very big, magnitude greater than, nothing greater than 2.8. But one of the recent ones came about June second. As a matter of fact, the city council was meeting, and they were concerned about these earthquakes. And so they decided to hire a geology consultant to try and answer the question on everybody's mind, is natural gas drilling causing these earthquakes. Natural gas drilling began about 2001, has brought great prosperity to the Claiborne area, and they are just concerned that because of these recent quakes, perhaps, drilling was causing the problem. And so I guess they call it fracking. Is that the term they use? In which water is injected into the ground at a pressure high pressured to frack to the layers of shale. Now this community sits on the Barnett Sale, a geological formation that is perhaps the nation's richest natural gas field. The area is estimated to have 30 trillion cubic feet of recoverable gas and provides about 7% of the country's supply. And so the community is really concerned that the drilling is causing these earthquakes. Well, the scientists have no consensus yet. They're not sure whether this theory is related to drilling or not, but it will be interesting to follow up on that. Now imagine sitting at your desk looking out an 11th floor window and all of a sudden you see some clouds that don't look like the normal cumulus we're used to seeing in particular thunderstorm situations

or perhaps just a heavy cloudy day. Well, a lady named Jane Wiggins, and she was looking out her 11th floor law office, and she said it looked like Armageddon. So this is out of Cedar Rapids, Iowa, and she saw these really dark ominous looking clouds hovering outside, and said it was unlike anything she'd ever seen before. The shadows of the clouds, the lights, and the darks, and the greenish yellow backdrop, they seemed to change. Well, they dissipated within 15 minutes, but she took some snapshots. She captured these back in 2006, and after exposing these they have stumped a group of dedicated weather watchers and who are now pushing weather authorities to create a new cloud category, something that hasn't been done since 1951.

>> Steve: Really?

>> Gary: Yea. So some scientists argue. They are a little skeptical. Could have just been the way the sunlight was and so forth, so it's like they feel they've just to jump on this. One scientist says by this stage, they think it's sufficiently interesting to explore, but optimistic about the information that they may have received, so I don't know. Well, you know for almost a half of century the United States has dominated the exploration of Mars from the first grainy black and white pictures. Remember all those really funky pictures we saw? To the more recent discovery of ice. Well, now much due to budget woes, NASA is pushing toward a joint exploration venture with Europe. And they're saying by 2016 the U.S. might unite with the European space agency for future Mars trips, a move that would mark a significant shift for NASA. And here is one for the books. You ever heard of Alaska's Rat Island?

>> Steve: Never have.

>> Gary: Never have. Well, this is an interesting story. Rats have ruled this little island since 1780 when they jumped off a sinking Japanese ship and terrorized all but the largest birds on the island. The incident introduced the non-native Norway rat, also known as the brown rat, to Alaska. And it took about two-and-a-half million dollars, a joint effort between the U.S. Federal Government, and the Nature Conservancy and Island Conservation, one of the world's most ambitious attempts to remove destructive alien species from an island .and according to the U.S. Fish and Wildlife Service, guess what? They think that after dropping poison from a helicopter hoisted from buckets, they feel like that after 229 years, Alaska Rat Island is finally rat free.

>> Steve: Well, let's just give them a new name then.

>> Gary: And that would be?

>> Steve: I don't know. [Laughter]

>> Gary: Rat Free Island. I don't know. We could call it Rodent Island. I just thought that was very cool. Anyway, sorry it took 229 years to do that, but apparently the rats were, you know, able to grab birds and stuff. It was crazy. Steve has our innovations in history.

>> Steve: I do, Gary. Thank you. Pioneer 10 passed the orbit of Neptune 26 years ago this month becoming the first earthly object to leave the solar system. A plaque on the side of the American spacecraft shows who, what, and where we are. June 13, 1944, Marvin Cameras patented the wire recorder. It was the first real revolution audio technology, a recording technology, since Edison's wax cylinder. June 14, 1881, John M. Tammany of Cambridge, Massachusetts, received a patent for the player piano. This week marks the 58th anniversary of the computer age as UNIVAC 1, the first commercial electronic computer was unveiled, demonstrated, and dedicated at Philadelphia. June 15, 257 years ago, our old buddy Ben Franklin set out to prove his theory

that electricity could be captured and sent down a wire. He did it by flying a kite in a thunderstorm, and we've all heard that story.

>> Gary: Oh yea.

>> Steve: I don't recommend doing that by the way those of you out there at home. The cork centered baseball was patented on June 15th, 1909. On June 15th 1844, Charles Goodyear received the patent for strengthening rubber through a process called vulcanizing. He never benefited from the invention or the tire company that still bears his name. And Mr. Goodyear died in poverty in 1860.

>> Gary: Wow! That's a sad story.

>> Steve: It is. It may not seem possible, but it was 21 years ago this month that Microsoft released MS Dos 4.0, its newest computer operating system. Seemed like it was yesterday, and look where we are now – k Microsoft Windows Vista, Windows Media Player 11, and so much more. On June 18, 1928, American aviatrix, Amelia Earhart, became the first woman to fly across the Atlantic. She had a little trouble on the other side of the ocean making across the Pacific. Ironically on the same day 26 years ago 33 year-old physicist and pilot Sally Ride flew aboard the space shuttle, Challenger becoming the first American woman in space. And those, Gary, are just a few of our remarkable innovations in history for the month of June.

>> Gary: and when you read stories like the shuttle, you just think you're getting ready to retire those.

>> Steve: I know. 2010.

>> Gary: Isn't that something.

>> Steve: It's supposed to be over. Of course they've been going on 20 something years now I guess and had two major mishaps so unique history that have accomplished a lot.

>> Gary: They're still working on the space lab, you know.

>> Steve: They are?

>> Gary: The space station rather.

>> Steve: I heard from NASA on television just the other day that the future spacecraft for that purpose, for the purposes they're using in the space shuttle, they're going to use much smaller spacecraft because they don't need to carry out the heavy stuff that they have been doing the past several decades.

>> Gary: Well, and you hope that they get all the bugs worked out with the panels on the exterior of these spacecraft. You hope they get the fuel bugs out. You would think was technical. Of course, they've been using these spacecrafts. It's kind of like a used car, you know. They just keeping band aids on them, and you keep thinking could we just get one more flight out of it. One more, that would be something well, I don't want to introduce our guest yet because we've only got about 30 seconds, and so. But what we're going to talk about is the technology that could save a family member's life. This is something that if you have a smoke alarm or fire alarm in your house, this is something that you're going to want to listen to. It's a new technology that is designed for those who have hearing disabilities. If you can't hear high frequencies, this is really fascinating technology. We're going to be talking with Dr. David Albert. He's the chairman

of Lifetone Technology, and we're going to give you a website where you can go check this out. So don't go away. We'll have more to come on Oklahoma Innovations.

[ Music ]

>> 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 Americans over the age 50 have developed a loss of vision or blindness due to age related macular degeneration. And of the 200,000 Oklahomans 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 of people across the nation, create new treatments that are more comfortable for patients and prevent vision loss. OCAST is looking for Oklahoma researchers. If you're serious about investigating new treatments and products that improve the quality of life and the economy for Oklahomans, call OCAST toll free at 866-265-2215 or visit their website at [ocast.ok.gov](http://ocast.ok.gov). Investing in science and technology, it's good for your health. [Background music]

>> Now in its 14th year, this is Oklahoma innovations on the OCAST Radio Network.

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>> Gary: If you know someone who has difficulty hearing, this program today is going to enlighten you about some new technology which you'll really be interested to find out about it. It could save someone's life in the near future. Our guest is Dr. David Albert. He's chairman of a company called Lifetone Technology. And it's a new fire alarm technology that is supposed to be very affective in waking up people, even more than I guess traditional fire alarms, particularly if they've got hearing loss. We're going to talk about this, but Steve, let's find out a little bit about David.

>> Steve: Let's do, Gary. I'm trying to decide which way to go. There's so many ways we can approach this and talk about this interesting gentleman who has developed this unique technology. But I think I've decided I just want to just introduced Dr. David Albert, and simply because he comes from a family that is so well-known in Oklahoma. He is the grandson of, excuse me. He is the son, so many years go by I just get them all mixed up. He's the son of former Speaker of the House, U.S. Speaker of the House, Carl Albert from Bugtussel, Oklahoma, which is down by McAlester. A unique part of Oklahoma history is connected with his family, and I just want to introduce David and just tell you, you know, I'm just ready to let ago and just take the whole show, David, because you've got a lot of things to talk about. But let me kind of guide you a little bit. Let's talk about your family, how you got into technology, your area of research, and eventually we want to get around to some of your earlier connections with something very near and dear to me, OCAST. You know, the Oklahoma Center for the Advancement for Science and Technology, because you were kind of around working in this area before OCAST became.

>> David Albert: Well, thank you Steve, and thank you Gary for inviting me on Oklahoma Innovations. The history goes back to the fact that I grew up in two worlds. The worlds of south eastern Oklahoma, Little Dixie, and the world of Washington D.C. And that gave me some unique perspectives, and from an early age I knew I wanted to be a physician. And I went to college in one of those towns you mentioned earlier, Cambridge, Massachusetts, a place called Harvard, and went to duke medical school in North Carolina, and went to biomedical

engineering graduate school at Duke. And while I was in medical school my father who had had a heart attack, they were telling him that he needed to exercise and measure his heart rate. And today that's nothing. We put these straps on. We put things on our fingers. You can measure your heart rate. But 30 years ago, that was a challenge and it was certainly a challenge for my father. So I was working in a laboratory doing cardiovascular research at duke, and I had an idea for a heart rate monitor. I received my first patent on that heart rate monitor in 1981, and ended up in licensing discussions with Timex, the watch company. And that began my odyssey in technology, medical technology, and then technology in general. When I returned from Duke back to Oklahoman to the University of Oklahoma Medical Center, I continued in the biomedical engineering space working with a number of people in the cardiovascular area at the OU Medical Center and started my first company; a company called Corazonix, that developed really the first successful EKG microscope. And in those efforts, I first became involved with the Oklahoma Science and Technology Council, the predecessor to OCAST.

>> Steve: That's exactly right.

>> David: And I was on both Oklahoma City Chamber of Commerce, and then later Governor Bellman was the governor at the time, former senator, and former governor and then again Governor Bellman, asked me to be on a committee, and I accepted. And trying to bring Oklahoma some diversity after the oil bust of the early 1980s.

>> Steve: Right.

>> David: And, you know, OCAST rose from those efforts, and has done a yeoman's work and magnificent job at how fostering a technology industry in Oklahoma, and I'm us very proud to be a part of it.

>> Steve: Well, that's kind of you to say. We're proud to that you're a part of it. I know that you're one of the first names I heard back in 1991 when I first became associated with OCAST, and I was told a little about your technology and didn't get to know you that well because you were onto other things, I think, at that point. But I half way followed your career to some extent, and it's good to see you back where we're talking again about new technology. Let's talk about some recent events that are kind of connected to what's going on here. You were just like a week or so ago, were honored by the Oklahoma Intellectual Property Law Association. If I understand correctly, you were name Oklahoma Innovator of the Year by that group.

>> David: Steve, that is correct. I am humbled by that group. My patent attorney here in Oklahoma nominated me and told me that my unique story for the inventive idea that formed Lifetone Technology swayed the judges, and we can go into that because it really is a unique story. And over the last two years, 2008 and now half way through 2009, I've received ten United States patents, which is a significant number, although I have 28 in total since that first one I got in 1981.

>> Steve: 28 patents.

>> David: That's correct.

>> Steve: For one individual. I know it's not unheard of, but it's still a veer unique group who can accomplish that and earn that many patents, and as I look at you it can't be too long a life here we're talking about it, any way so.

>> David: well, I have two children in college. So it's been long enough. I can tell you that, but thank you. And I look forward to many other Oklahoma Innovations in the near future.

>> Steve: Outstanding and we want to follow every one of them. We're down about a minute this segment. I'm going to read something very quickly, and maybe this will help you get into it. It was ten years when Dr. David Albert was in the basement of his Crown Heights Home working on a wireless heart monitor he had planned to use during surgery for his daughter, Katherine, when she noticed the fire alarm was chirping. That's just a start. When we come back I guess, Gary, we're about to go into the next break. We come back we're going to pick up on that and then tell your story.

>> Gary: More to come as we visit with Dr. David Albert with Lifetone Technology on Oklahoma Innovations.

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>> 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.

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>> Gary: Our guest this week is Dr. David Albert, and we're going to be talking about his technology that is Lifetone Technology. It has to do with hearing and it has to do with smoke alarms or fire alarms. So we're going to talk about those, Steve.

>> Steve: Yes, we are, Gary. And we kind of set it up just before the break about what happened about 10 years ago in your home in Crown Heights in Oklahoma City, and I'm going to let you pick it up from there and tell about the development of this technology. We'll throw some questions in, but we want to hear from you.

>> David: Well, Steve, Gary, it was a very interesting time. My daughter was going to have surgery on her back, and I developed a heart monitor in my second company Data Critical. And as we were getting ready to test that monitor on my daughter, kind of show her how she'd be monitored during surgery, we heard a chirp. And she said, "Dad, the smoke detector battery is low." And everybody out there in the radio audience, that should tell you go change that battery.

>> Steve: Yea.

>> David: So I went upstairs and got a nine-volt battery, came down, and changed it, and it went beep, beep, beep. I came back to the device and my daughter said, "Hey, Dad, you know your heart monitor picked up the smoke alarm." That was the inventive moment, and from that idea today we have our Lifetone HL fire alarm and clock. And what happened over the ensuing ten years is that it became knowledge about five years ago with many television stations here in Oklahoma City as well as around the country running stories that fire alarms don't wake up children. That Consumer Product Safety Commission is now stated that fire alarms, the ones in your home, will not reliably awaken anyone under the age of 16. I was in discussions with those people at the Consumer Product Safety Commission, and they said to me, "That's important, but a bigger concern of ours are people over the age of 60 who lose their hearing, because they don't have parents to take care of them." They live by themselves, and as you all my know, the demographics of our population is the people over the age of 60, that population will double in the next 20 years. The grain of American, the retiring of the baby boomers. And so what we know now from the fire statistics is that people between the age of 60 and 70 are twice as likely to die in a fire as people under the age of 60. People between 70 and 80 are three times as likely to die in a fire, and people over the age of 80 are four times as likely to die in a fire as people that are under the age of 60. So this is a major potential problem representing what will be many tens of millions of people. So from that original idea with my daughter and from work that I became involved in five years ago with the National Fire Organization called the NFPA, I became involved in a group much like my early OCAST experience to push for research that was funded by the U.S. Fire Administration, by Uncle Sam, to discover what is the best awakening technology for people with hearing loss, for senior citizens, and by the way, for children also. And what we discovered was that a low frequency alarm significantly different than the current alarms that you can buy in a store that are installed when your home is built is far more effective at awakening people who wear hearing aids, senior citizens in general, and pre-teen children than the current alarms we have. That combined with the idea that I could detect the audio alarm from a current alarm led to our Lifetone HL, led to the formation of this company, and led to the product we introduced about six weeks ago that is really receiving outstanding reception among the hearing loss population in the United States.

>> Gary: You've been getting a lot of press about his lately.

>> David: Well, we've just started. We introduced the product six weeks ago, and we've gotten some early press here in Oklahoma. But in September a magazine people have heard about, Popular Science, has interviewed me and will be running an article.

>> Gary: Great.

>> David: And I think we'll be receiving significant amount of publicity. Last week the National Fire Protection Association had its annual meeting in Chicago, and on Thursday they unanimously passed a change to the United States Fire Alarm Code resulting from the research I participated in which will mandate this new low frequency alarm for all residential and commercial sleeping areas for people with hearing loss. And our product is the first that actually meets that new code, so it's a very exciting time for us as all the hard work of four or five years of building this company.

>> Gary: Now this is a bed side product, is that right?

>> David: As a matter of fact, Gary, it's an alarm clock which hears an existing smoke alarm and then out the bad side produces a eye low frequency alarm and shakes the bed shaker for those people who are dead.

>> Gary: Oh, really?

>> David: Yes so it is a multi-sensorial alerting device.

>> Steve: So it vibrates like a cell phone.

>> David: Very much more powerful.

>> Steve: Yes, of course.

>> David: And it's a fully functional alarm clock, so it wakes you up everyday. As we say it'll wake you up everyday, and it'll also provide you the most important wakeup call you may ever receive.

>> Steve: Wow! Well, you're reading my mail. I mean, I have an 85 year-old mother who lives alone. And I'm sure there are million of people who can say the same thing, and, you know, as we talked about the baby boomers, you're again reading my mail, because, you know, I'm going to hit that magic number here like this week. But anyway, this is a fantastic technology, and it has the potential of saving many, many lives.

>> David: Well, we in Oklahoma, Steve and Gary, that a year ago in December of 2007 we had our severe ice storm here in Oklahoma, and my old neighborhood of Crown Heights, was without power for over a week.

>> Gary: Right.

>> David: and what I will tell you is our product has seven days of batter backup. Underwriters laboratory last August required that any fire alarm product go from having 24 hours of battery to seven days of battery, and that was because people died three and four days after Katrina. They had no power, and they started cooking with wood, and they had fire deaths without fire alarms. And so I will tell you our product is also the first to meet those new underwriters laboratory requirements. It is truly a life safety product that looks like an alarm clock.

>> Gary: Now how are you making this product available to the public?

>> David: Well, it is available through number of distributors. It is available online. It's in a number of catalogs. And it is available through our website as well as the website of over a dozen other companies. It'll be in various organizations. We haven't gone retail yet, although, we're planning it.

>> Gary: I'm sure that'll be it. By the way the website just for note and we'll mention it again at the end of the program is lifetonesafety.com. Lifetonesafety.com. All one word there.

>> Steve: Very good, David, you have described so well the types of problems people have that most of us just I think we accept or we ignore or we may not know the numbers. But you're talking about 70 million Americans who have high frequency hearing loss. And, you know, you've addressed that. Now how do we get the word out?

>> David: We're going to try, and I can tell you what we've learned is that it's not jus senior citizens.

>> Steve: Yea.

>> David: there have been several significant sorties on our veterans coming back from Iraq and Afghanistan.

>> Steve: Oh, yea.

>> David: 40% nearly of the veterans coming back have significant hearing loss.

>> Gary: Sure.

>> David: Because IEDs. They give home hearing plugs, but you can't hear the sergeant. You can't here the lieutenant.

>> Gary: Right.

>> David: So we have significant numbers since we're working with the Department of Defense and with the Veterans' Administration to help provide our technology to both current active duty military who have haring loss and are still on active duty as well as the veterans both old and the newly created veterans coming back from our Middle East engagements who need this technology.

>> Gary: Talk about he waking effectiveness of the study you were involved with. >>David: Well, actually the National Fire Protection Association and the U.S. Fire Administration conducted three studies, Gary. One was on senior citizens who they tested the hearing on. These people did not wear hearing aids. One was on people who wore hearing aids for a documented hearing loss, and one was on college students under the influence of alcohol. Not that college students ever do that.

>> Gary: Of course not. [Laughter] No.

>> David: Well, actually it's a major problem, so these three groups are at increased risks of dying in fires. And what was found was in all three studies the low frequency audio alarm was the best method for awakening them to a fire emergency at night.

>> Gary: Interesting.

>> David: And last year in 2008 we had ten college students who died in fires with working smoke alarms, and unfortunately they were nine out of ten under the influence of alcohol. So this is a problem and obviously a tragedy in those young people with their lives ahead of them. We hope to address that problem.

>> Steve: You know, we'd be remised if we didn't talk about your daughter who began the story, Katherine. How old is she now?

>> David: Well, she's 23 and will be a senior at Harvard. She is pre-med, and is co-inventor on several of the patents, and without her insight I will tell you that actually Lifetone started, you heard the genesis. We can hear the alarm and detect, actually what happened later was she was getting ready to go to college. We were brain storming, family brain storming, and I said, "How can we use our idea of detecting an alarm to help children?"

>> Gary: Let's answer that question when we come back. We're talking with Dr. David Albert with Lifetone Technology. More to come on your science radio magazine Oklahoma Innovations.

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>> This is Oklahoma Innovations on the OCAST Radio Network. [Background music]

>> 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 state's most advanced technology companies while earning income and valuable on the job training. Through the OCAST R&D intern partnership program, students gain experience in the industry, work with mentors, and operate specialized instruments. Intern training leads to start 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 Oklahoma students to gain hands on experience in science and technology career. For more information call OCAST toll free at 866-265-2215 or visit their website at [ocast.ok.gov](http://ocast.ok.gov). The future of Oklahoma looks bright.

[ Music ]

>> Gary: You wouldn't believe it but 70 million Americans have high frequency hearing loss. High frequency hearing loss inhibits you from hearing everyday sounds, from consonants, such as a S or an F, to children's or women's voices, even a smoke alarm. And that's what we're talking about today is a new technology from Lifetone Technology, and it's called the Lifetone HL bed side fire alarm and clock. It utilizes a pent sensor to hear your existing smoke alarm, and one of the things we were talking about during the break, David, is an issue we haven't touched yet on and that's people who take sleeping aids or prescriptions to help them sleep. Boy when those people are out, man, I mean, they're out. So talk about how your technology will help those people.

>> David: Well, that's right, Gary. Last year in the United States some 40 million prescriptions were written for sleeping medication to help people get sleep, which you need for your healthy living. And the unfortunate side effect of those medications are that once you take them, your ability to wake to a conventional alarm is seriously diminished and so the Lifetone HL is designed to help awaken people whether they're under the influence of sleeping medication or under the influence of alcohol. And they both clearly increase the risks of a bad outcome in a fire emergency.

>> Steve: Okay, before we went into the break you were telling a story, David, that was very fascinating and we had to stop for time purposes. And let's pick up that story.

>> David: Well, that story was simply that several years ago as I was thinking about starting this company, my daughter and I brain stormed and I said, "How can we use our idea?" At the time I was thinking how can I use it to help wake up these children that all the news sorties were on that

don't wake up the smoke alarms. And my daughter said very matter of factly, "Well, Dad, I awake up to an alarm clock everyday. So why don't we put it in a alarm clock right by my bedside and you know I've had loud obnoxious clock." And that really we the genesis for our current product, and again, it has received really outstanding feedback from customers. We've sold hundreds in this first month, and we look forward to taking that idea in a number of directions in the coming years.

>> Steve: And you're giving me a lot of ideas for Mother's Day presents and birthday presents, and maybe something even a little quicker than that. Let's talk about your family just a minute. You were on the subject of you daughter. It sounds to me like you all have something that maybe some families don't do. You get together and you think and you talk it over and discuss it. Is that a formal process in you family?

>>David: No, it's a dinner table process like all Americans. You sit there and you just talk about how's everybody's school day and summer vacation for college students. How's the job going? And parents are sitting there always looking for that surprise.

>> Steve: Oh yea.

>> David: But, you know, we try to engage in current events and get them to think because obviously we Americans, you don't have to open the newspaper or turn on the television. Understanding we have challenges. The ageing of American's, the baby boomers, Medicare, these are all challenges that they're going to have to solve.

>> Steve: And for questions that we don't get answered on Oklahoma Innovations today we will, again, mention your website. We'll let you do that.

>> David: Well, it's [lifetonesafety.com](http://lifetonesafety.com).

>> Steve: [Lifetonesafety.com](http://Lifetonesafety.com). Very good. Now you know, you'd don't do this in a vacuum. It takes resources. You have to have some level of investment. Often times a major level of investment to get these ideas off the ground to do the R&D, to go ahead and develop the company. All those steps that I skipped over, so easily. You've been involved with an organization that we're very close to, i2e, Innovations to Enterprise. Talk to us a little bit about that process.

>> David: As you mentioned earlier in this show, like Selexys, of the Oklahoma Seed Capitol funding who together with both other venture funds and Oklahoma Angels have invested several million dollars in Lifetone Technology to enable us to develop and bring to market our product. And so I would tell you that the people at i2e from Tom Walker on down, and before him Greg Main, are outstanding people who are attempting Oklahoma diversify. And not just diversify but augment what has been our energy and agriculture centric and economy

>> Steve: There you go. Diversification.

>> David: Absolutely.

>> Steve: And I think this has been a subject of discussion here of late. With the downturn in the economy, Oklahoma seems to be weathering quite well compared to other parts of the county; although we too are having or difficulties.

>> David: We've suffered less.

>> Steve: We've suffered less simply because, well, for several reasons. We've had a good energy business, but we've also diversified. And we did that many, many years ago. And that's part of our whole strategy in surviving and thriving in these down times. We know they're going to come again. They always do, and so this is Oklahoma's way of dealing with that. So your company has received angel investment, and let's talk a little about angel investors. First of all, we can't identify them because most of us don't know who they are. And that's on purpose, because they're the kind of people who don't want everybody to know their business. But they have a passion for investing. They have the capacity to invest, and once you identify them, which is a good job that i2e has accomplished in Oklahoma's identifying many of the angel investors in the state then they're showing your technology. And you had to go before these people and convince them that this was worthy of their investment

>> David: that's right, Steve, and I will tell you it helps if like me, you've done it before.

>> Steve: Right.

>> David: You've made money for the investors, and so that was always useful. But it's your job as not just an inventor but as a salesman. And you're selling your idea to these investors, and convincing them that your idea, that your ability to build a business, not just create a product, is one worth investing in. And so I would tell you that I applaud i2E's seed step angel program, and I think it will bring great fruit. You know there's risk in investment.

>> Steve: Sure there is.

>> David: There's certainly great risk in seed investment. So you have to applaud these people that are willing to take their hard earned in many instances entrepreneurially earned money and invest it in other people's idea.

>> Steve: You know, you just described a big of the genesis of this program. Legislature told us 22 years ago, 23 years ago, that not only did we want you to invest in R&D in the state, but we want you to explain to our fellow citizens why we invest in R&D. And not just change the culture but to help people understand that yes, we invest in energy. Yes, we invest in agriculture, but we also invest in R&D. That's the thing that's going to sustain us far into to the future. Your company is a prime example and I assume you're domiciled right here where you're at in the health foundation.

>> David: that's correct. And where we have a really what's beginning to be a really critical mass of young technology, biotechnology center companies and, you know, I think it speaks well for the future. We are a big leagued city and a big leagued state now. And I see that as adding to the attraction to be able to bring new scientist to our great universities, OU and OSU, University of Tulsa. And all of those things combined will continue to improve Oklahoma's environment.

>> Gary: Now ladies and gentleman, our listener now you have a good understanding. We mentioned this periodically on Oklahoma Innovations why getting our young people educated in biotechnology science. This is a perfect example of where they can go, and the kinds of technologies that can evolve from being in bioscience.

>> Steve: Called STEMS. Science technology, engineering, and math.

>> Gary: There you go.

>> Steve: And it's something most states need to do more of this, but Oklahoma especially. It's our interest here. We need to promote STEM so that students grow up understanding that yes, I

can do science. Yes, I can accomplish things in math. I think that in the past we've suffered from a mindset that we can't do those things. Well, yes we can. It's just a matter of making it an emphasis and applying ourselves

>> Gary: And remarkably we have good talent in our state.

>> Steve: Yes, we do.

>> Gary: Rearing up the education process.

>> Steve: A lot of people did not understand 25 years ago that we had people like David Albert here and others like him who do the good Rand D and who create the company that sustains us. Now always brings up the question, David, we're getting close to the end of this how. And I know it went very fast for me. We always ask our guest look five, ten years down the road. Where do you see this technology going? Where do you see your company?

>> David: well, I can tell you we believe that the technology that we've brought out will be included in many kinds of devices. you can imagine that your regular smoke alarms will ultimately produce the type of more effective alarm that the science discovered. And I see that happening. As a matter of fact, we're doing it now. So we're going to bring more effective scientifically proven technology to alerting something near and dear to Oklahoma. Tornado alerts, the type of technology that the federal government is funding. We are now integrating into Noah weather radios so that people in the middle of the night can be awakened not just to a fire but to weather emergency.

>> Gary: I want to give the product again. It's the Lifetone HL bed side fire alarm and clock. If you'd like to find out more information, go to [lifetonesafety.com](http://lifetonesafety.com). That's [lifetonesafety.com](http://lifetonesafety.com). David, you've been a great guest, and we look forward to having you back on in the future.

>> David: Thank you, Steve.

>> Steve: David, It's been fun.

>> David: Thank you very much Steve, Gary. I appreciate it.

>> Gary: See you next week on Oklahoma Innovations. Have good week.

[ Music ]

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