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THE WALL STREET TRANSCRIPT
Connecting Market Leaders with Investors

# Picomole Instruments Inc.

**JOHN CORMIER**, Founder and President of Picomole Instruments Inc., is an award-winning inventor and technology entrepreneur. He earned his PhD in Physics from the University of Toronto in 2002. His areas of expertise include infrared lasers and high-performance spectroscopic instrumentation. Dr. Cormier has been the recipient of several academic awards and scholarships. Following completion of his graduate work, he was awarded the prestigious National Research Council Postdoctoral Research Fellowship at the National Institute of Standards and Technology in Gaithersburg, Maryland. Dr. Cormier has academic, governmental, and industrial work experience, and is the author of several scientific publications. An engaging speaker, Dr. Cormier has been invited to speak in Canada, the United States, and overseas. He has lectured on entrepreneurship at the VenturePrize seminars and the University of Alberta School of Business.

**SECTOR – MEDICAL DEVICES**

**(AMN612) TWST: May we start out with a short history and overview of Picomole?**

**Dr. Cormier:** I founded Picomole in 2005 in order to develop and commercialize the infrared laser-based gas analysis technology I invented. I saw a big opportunity in clinical diagnostics, and especially point-of-care (POC) testing. POC testing is a $7 billion market segment that's been experiencing rapid growth in the last five years due to demographic factors, information technology and clinical needs. We believe our LifeSens technology is an excellent platform for POC tests using exhaled breath.

**TWST: What are the key elements in your strategy as you look out over the next 18 months to two years?**

**Dr. Cormier:** Our short-term objective is to get into a positive revenue situation. We want that not just because we realize that in the current financial crisis, it can be difficult and expensive to raise money with equity, but also because we want to develop in-house, the correct approach for dealing with customers. So we want to be a customer driven, investor focused company and getting us to positive revenues in that time frame. In terms of specific product applications we are targeting, our deliberate strategy is to cast our net wide in order to see where the strongest pull comes from.

**TWST: Let's talk about your LifeSens™ product. What is distinctive about this technology?**

**Dr. Cormier:** There is really nothing like LifeSens out there. Our portable instrument is easy to move around, it plugs into an ordinary electrical wall socket. Breath sampling is very patient friendly, there is absolutely no pain, discomfort or embarrassment to the patient whatsoever and the results can be generated within minutes. So something that would normally take a couple of days or more if your sample is in a queue at the lab, you

can get these results right away. That's very important for applications where there is a benefit to knowing right away what's going on, like infectious diseases: is it bacterial, is it viral? Or life threatening diseases, where early detection means earlier intervention. It's about taking lab quality tests and bringing them right to the patient or bedside in a way that's cost effective and easy to use for front-line healthcare workers who might not know much about gas analysis technology, but know how to collect a breath sample properly. Those are all attributes that I think make this a unique proposition.

technologies, just as we are. However, I would argue that they don't have the inherent advantages in their technologies that we have. For example, many of them are pursuing instrumentation that is limited to measuring single compounds. There are certainly applications outside of medicine for single compound instruments, but in breath analysis you may have to simultaneously measure dozens of compounds to see how metabolic profiles are altered by the presence of disease states. And so you really need an instrument that can look at that entire metabolic profile and that's what LifeSens is designed to do. So while it's

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**TWST: You are a big proponent of early detection and you have lamented the lack of commitment to early detection technology.**

**Dr. Cormier:** As a scientist, I like to approach problems logically, and this is certainly one where I think a fair amount of illogic has prevailed. In health care, we seem to have fallen into a trap where we're primarily focused on treating patients once they are in serious trouble, like collapsing in the emergency room. This is a very expensive way to run a healthcare system, and the outcomes are generally much lower than they would be than if you intervene at an early stage, and treated diseases proactively or preventatively. And that bothers me not only as a logical scientist, but also as someone with a financially conservative mindset. I believe in getting the best value for my dollar. And the way that health care is being delivered now, it is most definitely not delivering the best value for your dollar.

**TWST: Is there anyone doing anything similar to Picomole in the marketplace?**

**Dr. Cormier:** Sure, there are a number of small private companies that are working on commercializing breath analysis

encouraging to see that there are small companies out there that also perceive, as we do, that this is a tremendous growth area and one that's exciting and worth pursuing, I do happen to think that our technology has important advantages that are not shared by the others.

**TWST: I understand that the LifeSens technology can measure the compounds in mental illnesses such as schizophrenia. What other diseases would your technology apply to?**

**Dr. Cormier:** This is really the tip of the iceberg. Schizophrenia was one of the first that came to our attention through some research papers that I found. Apparently clinicians have known for a while that schizophrenic patients emitted odors that were not, for example, correlated to hygiene. And when I dug a little deeper and read about the specific markers that they found, I realized that we could detect all those with our instrument as well.

Since then we did a more comprehensive survey of the landscape of breath analysis going back nearly 40 years and found just an astonishing array of disease states that are all detect-

able using our LifeSens technology: asthma, diabetes, many kinds of cancer, cardiovascular problems, kidney disease, liver disease — a lot of things that tend to not get diagnosed early enough for intervention to be highly successful. These diseases all result in metabolic changes that are identifiable in exhaled breath samples. And what I think is really important about our technology, of course, it's important to detect any one of those, but what I think is really interesting about our technology is the fact that you can test someone not just for any one of those, but for all of those.

Foundation for Medical Research has provided financial support as has the Alberta Ingenuity Fund. So those are the examples of funding agencies recognizing that companies like ours that have a great idea, great team and great market potential, are worth supporting and we are deeply grateful for that support.

**TWST: In your discussions with investors, are there any misperceptions or any recurring questions? Do they tend to understand the Picomole story?**

**Dr. Cormier:** Definitely, I feel that Picomole's focus on early detection of cancer resonates with the angel investors we've spoken with. Time and again, I've done presentations to investor groups and afterward, you get a sense that there is a buzz about us. So I know that we do leave investors with a positive impression about our company and the problem we're tackling, and that's very encouraging. As far as misperceptions go, yes, there is something that stands out in my mind. Many investors are unfamiliar with the regulatory process as it applies to medical device companies and specifically non-invasive diagnostics. And I think they tend to assume that it is more or less equivalent to what they hear about or maybe have experienced with biotechnology companies. And as a result, they tend to have exaggerated views of the cost and timelines associated with bringing our products to market. And it can be sometimes difficult to combat this misperception.

One of the things that I would like to add is that, in our view, one of the big advantages of a medical device play for investors who seek opportunities in the life sciences is that you already know it works, that there is already an identifiable technology that does what it's supposed to do. So that if clinical trials produced results that were somehow unsatisfactory, the product could be redeployed to target another indication or another market altogether. You usually don't have that luxury with biotech. And so as a result, medical device plays tend to be less risky, less costly and the exits happen sooner.

**TWST: What are your major concerns? What could go wrong?**

*"A single-use diagnostic instrument has limited value, but this is a little like having an X-ray machine 100 years ago. The diagnostic potential was enormous. To be more specific, we think there is a great opportunity for our technology in breast cancer screening, a market that is worth hundreds of millions of dollars."*

**TWST: What is the potential in the marketplace for this product?**

**Dr. Cormier:** Because there are so many potential indications that can be targeted, it's essentially unlimited. A single-use diagnostic instrument has limited value, but this is a little like having an X-ray machine 100 years ago. The diagnostic potential was enormous. To be more specific, we think there is a great opportunity for our technology in breast cancer screening, a market that is worth hundreds of millions of dollars.

**TWST: Have you considered any strategic partnerships or collaborations?**

**Dr. Cormier:** We have started to have some preliminary discussions with groups that could potentially become strategic partners. We do realize that we don't have in-house the talent pool to fully realize the potential of this technology. And so we're actively looking for strategic partnerships to fill those gaps.

**TWST: What has been Picomole's funding history? Are there any funding or financing items on the agenda?**

**Dr. Cormier:** We began much like other companies do, by investments from family and friends. Since then, we have received a lot of support from angel investors, especially in our province of Alberta, where they have been very supportive of the exciting work that we're doing. We've also had a number of grants and awards. The National Research Council of Canada has a program called Industrial Research Assistance Program and they were early believers in Picomole. The Alberta Heritage

**Dr. Cormier:** The biggest fear that I have is that because it's a disruptive technology, we will be all dressed up with no place to go. In other words, we could find ourselves in position where we're ready to launch our product, but the market still hasn't figured out how to break from current practices and make the best use of our offering. So the market risks are probably the biggest risks that I see. However, with any innovative technology there are tremendous opportunities, and to be successful you have to be open to having your product viewed through different lenses. I think there's a good chance our product will be used in ways that we are currently not imagining. We don't have in our company a strong ideological bias of how you are going to go out and do this. We are very flexible and open to new ideas. And I think that's a bit of an advantage, because we can look at opportunities that might get dismissed by others who think — oh, this has never been done before. But with a disruptive technology, particularly in a bad economy, being open to positioning things in unconventional ways can sometimes be what wins the day. So yes, we certainly do have our work cut out for us, because I realize that there are vested interests that are not going be happy that we have appeared on the scene. But on the other hand, we have an excellent value proposition, and I think that decision makers will ultimately understand that having this kind of technology deployed in the marketplace can be tremendously powerful at delivering effective cost savings to the healthcare system.

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**TWST: Tell us about your background and experience as well as some of the key members of your team.**

**Dr. Cormier:** I have a PhD in Physics from the University of Toronto and my research program was in the specialty of atmospheric physics. So in my prior work I was primarily interested in climate change, global warming and these kinds of issues. The progenitor experiment of our current technology was originally developed for a different purpose. I developed the original experiment to make measurements of an anomalous infrared property of water vapor that has implications for our understanding of the climate system.

Other people on the team have diverse backgrounds. One of our engineers has a really interesting manufacturing background. I say that because he is a pretty young guy, so I was amazed to learn that he had spent three and half years in China, in Shanghai, leading a photonics manufacturing facility. Our Vice President of Technology Development also has a PhD in Physics, but his specialization was with space satellite instrumentation and data analysis, so a very complementary and valuable skill set to my infrared laser expertise. Another one of our team members had his own little company building line-of-sight gas sensors. So we were able to leverage his design experience when he joined our team. We also have someone who has served in senior business development roles in several biotech and clinical diagnostics companies here in Alberta.

So it's a fairly mixed team. We are pretty lean. We outsource wherever possible, because that's just the way that we keep our overhead low. And yet we are a very well integrated team. We work really well together. And I have to say — this has been really the best job I have ever had because of the team. The team is so focused on results and not ego driven. It's really nice to see that.

**TWST: What are the elements in your background that have led you to this?**

**Dr. Cormier:** I think I was always interested in medicine. I can recall in high school talking about being a heart surgeon. And when you think about it, that might not be a good career choice for someone who is not particularly fond of the sight of blood. But those are the kinds of notions that I had about myself at that time, and I think I almost saw physics as a diversion. Physics in high school was easy for me. The decision to sign up for the physics program happened the day I was signing up for my undergraduate courses. I got intrigued, because the fellow at

the physics course sign-up desk had grease up to his elbows and I figured he really got his hands in some cool machinery. I found out after the fact that he'd actually been changing the transmission in his truck. But that fateful encounter at the physics course sign-up desk made me see physics in a whole new light. At that time, I was really interested in something hands-on. I felt that that was the best way to approach science and so it resonated with me. I pursued it.

I actually started a grad program in medical biophysics and lasted all of two months before I dropped out because it just wasn't a good fit for me. I didn't belong in that setting. They had labs on site in a hospital and there was a lot of stuff to do with the hospital hierarchy that I didn't really understand well at that time. I just wanted to be a normal grad student like the other grad students I knew. So I dropped out and then returned into physics after a couple of years of discovering what it was I really wanted to do at that time. I was highly motivated by issues like pollution and climate change and related big-issue problems.

It was during my post-doc at NIST that I happened to read an article in some trade magazine about breath analysis. This was my first awareness that that this kind of thing even existed; this is going back about five or six years now. It piqued my curiosity, and so I dug a little deeper and found out that, yes, people had been researching breath for quite a while. In fact, the ancient Greeks knew something about breath odors and their relation to disease states. And as I read more, I just got more and more fascinated. It finally allowed me to close the loop, connecting my abilities in physics with my love of medicine. The question that obviously came to my mind was, why isn't this available now, why can't I go to my doctor and get this?

As I absorbed the scientific literature on breath analysis, I came to realize that there were a lot of limitations to the analytical technologies that they had at their disposal that hampered attempts at bringing it to market. The kind of equipment that is needed for breath analysis research has been very bulky and expensive. It's difficult to use and requires a lot of training. And here I was, sitting in my lab and looking at my apparatus and thinking, okay right now it's bulky, expensive and pretty hard to use too. But I can't see any fundamental reason why this can't be bundled in a portable box and sold to someone. And before long I made the decision to start Picomole.

**TWST: What are the key points that you will be making to future investors to consider first round funding for Picomole? What are the convincing arguments that you plan to make?**

**Dr. Cormier:** What we have is a really attractive value proposition for investors. I've mentioned some of the points already. We have a very highly motivated team. It is not ego driven. We have a very low fixed burn rate. Because we have a platform technology, there are many different ways that you can extract value from it. If somebody doesn't like the mission that we are on, we can say look, what are the other options that are going to work for you? So we are very pragmatic. This is a company, and at the end of the day it is about generating revenues. Based on what we know now, we think that there is a terrific opportunity in clinical diagnostics to fill an unmet need by providing easy-to-use, rapid diagnostic tests using non-invasive breath analysis.

For the most part, I try and stay out of the way of the terrific work that goes on in the lab, because I have people who are working with me now who are much better at lab work than I ever was. My job is to relate what we do to the rest of the world, and especially keep our investors updated about all the exciting progress we are making. I think our investors agree with that. We had many of our investors reinvest in the company and not once have I ever asked them to. It's always been a pleasant surprise to me when it happens. I think this suggests that maybe we are having some success at being what we've set out to be, which is an investor-focused company. We work very hard to build value for our investors and I think that they recognize that and continue to support us because of it.

**TWST: BioAlberta named you Emerging Company of the Year for 2008. Would you bring us up-to-date on the awards that you have received?**

**Dr. Cormier:** I think the turning point for us was in May 2007 when Picomole won the VenturePrize business plan competition. This is actually the largest business plan competition in Canada, so it was really quite significant. The award was worth over $100,000, but I think equally valuable was the media attention that started to come our way as a result of winning this award. And I think that because the competition obviously involved the due diligence of several screeners and judges, a lot of angel investors who had heard about our story and were very interested in what we do started to come around the table. So once we won VenturePrize, we set out to raise half a million. We ended up having to close the round quickly because we were way oversubscribed. For the first time, we had money in the bank to actually start executing our plan. We had an idea, but up until this point in time we never had the resources we needed to build a working proof-of-concept apparatus. I had gone into the VenturePrize competition with a plywood and plexiglass model of what I wanted to build so at least the judges could get a sense of the size of the proposed LifeSens instrument.

But with resources in place, we hunkered down in the lab and worked hard and in October 2008, we announced that we had a working portable prototype of LifeSens. The following month, in November, we were awarded the BioAlberta Emerging

Company of the Year award. That was very nice because it's recognition from our peers, the life science companies in Alberta. That same month, we were also named one of the Top 10 Canadian Angel Capital Companies at an event hosted by the National Angel Capital Organization. I brought along one of our angel investors from Silicon Valley to act as a champion and we pitched the opportunity to them. I really appreciate that award as well, because it comes from angel investors who were not even invested in our company.

**TWST: Is there anything you would like to add?**

**Dr. Cormier:** I think our company is trying very hard to do all the right things and be taken seriously, and we appreciate having the opportunity for our story to be told in new markets. I think that visibility is very important for companies at our stage of development, and in light of all the other stuff that is going on these days with this financial crisis, it sometimes feels like small companies like ours are invisible. Everyone is talking about the auto deal and big banks being bailed out, with billions being thrown around here and there, but I'm not hearing much at all about small or medium enterprises. And I think getting a little attention is really important at this stage because I don't know what the statistics are like in the US, but in Canada some 50% to 60% of all employment comes from small and medium enterprises.

If I could just leave you with a final thought, it's that in times of crisis, great opportunities are born. Our company represents a great opportunity and we look forward to showing the world what we can do.

**TWST: Thank you. (KL)**

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**OUR VISION**
We believe every patient has a right to diagnostic tests that are painless, affordable, and give immediate results. We believe healthcare professionals need better diagnostic tests that improve patient outcomes and save lives.

**OUR COMPANY**
Picomole Instruments Inc. is an award-winning company with an ultra-sensitive gas analysis technology. The company's flagship product, LifeSens™, is an instrument designed for rapid point-of-care testing using exhaled breath samples.

**OUR MISSION**
Our mission is to develop and commercialize point-of-care screening tools that enable early detection and real-time management of cancer and other life-threatening diseases.

**AWARDS**
- BioAlberta Emerging Company of the Year (2008)
- Top 10 Canadian Angel Capital Company (2008)
- VenturePrize Grand Prize Winner (2007)

**TECHNOLOGY**
At the heart of Picomole products is a revolutionary patent-pending platform technology called LISA™, which is an acronym for Laser Infrared Sample Analysis.

In LISA, a gas or liquid sample is introduced in an optical cavity and probed with a sequence of laser pulses along a well-defined grid of infrared wavelengths.

The optical cavity lengthens the interaction time of the sample with the laser pulse by a thousand-fold or more, dramatically increasing the sensitivity of the technology to trace compounds.

Careful selection of the wavelength grid ensures that accurate quantitation is possible for more than 90% of all volatile compounds of interest.

The net result is that LISA is both fast and powerful, permitting sample analysis down to parts-per-billion (ppb) levels and below within minutes. Instruments built using LISA technology are portable and easy to use.

LISA solves a host of problems that has limited the performance of traditional technologies in analytical chemistry:
- Pre-concentration techniques, which adversely affect accuracy, are not required to detect trace compounds.
- Results are obtained within minutes, instead of hours.
- LISA does not require highly trained personnel to operate.
- LISA differentiates isomeric compounds without difficulty.
- LISA-based instruments are wholly self-contained and inherently self-calibrating.
- No need for elaborate and time-consuming pre-conditioning of samples.

Because LISA technology is portable and easy to use, it is easily deployed outside of traditional laboratory settings, enabling new applications to be targeted, including:
- Point-of-care disease screening.
- Metabolic wellness profiling.
- Veterinary medicine.
- Law enforcement.
- Workplace drug testing.
- Security inspections.

Picomole Instruments welcomes the opportunity to work with industrial partners to develop commercial products based on LISA technology. For further information, please contact the company directly.

**LifeSens**
LifeSens is a portable wheeled instrument designed for rapid point-of-care testing using exhaled breath samples. Breath analysis has been shown to painlessly and non-invasively diagnose and manage a wide variety of diseases at the earliest stages, including breast cancer, lung cancer, colorectal cancer, kidney disease and many other medical conditions.

LifeSens will offer patients and physicians huge advantages:
- patient friendly (non-invasive and painless)
- fully automated, turnkey
- results within minutes
- detects hundreds of breath metabolites
- ultra-sensitive (less than ppb)
- no bio-hazardous samples
- cost-effective

LifeSens will also be utilized to measure biomarkers in the drug development process including:
- surrogate endpoints
- safety indicators
- identification of patient sub-populations