



# The Innovators

Conversations

on the *Cutting Edge*

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## Interview with Marnie LaVigne, PhD

**Director, Business Development  
Center of Excellence in Bioinformatics &  
Life Sciences, New York State**



Marnie is responsible for creating industry/government/academia partnerships and commercialization linkages that facilitate the transfer of technology coming from the region's premier research institutions in a 'bench to the bedside' approach. She has spent more than 20 years creating new products and start-up businesses involving innovative applications of technology in healthcare and life sciences across a range of industry sectors.

Marnie holds a BS in neuroscience and a PhD in clinical psychology from the University of Rochester. She is on the Board of Directors for Niagara Falls Memorial Medical Center, Buffalo and Erie County Workforce Investment Board, Women's Business Center at Canisius College, and Life Science Industries Council Executive Council at the Buffalo Niagara Partnership. She also serves as an editorial board member for two journals: *Biotechnology Healthcare and Disease Management*. Marnie can be reached at [lavigne2@buffalo.edu](mailto:lavigne2@buffalo.edu)

Interview conducted by Doug Berger, INNOVATE [doug@innovate1st.com](mailto:doug@innovate1st.com)

Doug: Why don't you start us off by giving us an overview of the Center of Excellence in Bioinformatics & Life Sciences?

Marnie: The mission for the Center of Excellence is somewhat unique in that it blends a focus on translational research and economic development in the life sciences. We are looking to create new discoveries and inventions, which will have an impact on this community in terms of new products, services, revenues, companies and the ultimate win - creating new private sector jobs.

This mission became very personal and relevant for this region when we took a look at our history, which includes some groundbreaking innovations such as development of the prostate-specific antigen test, or PSA test, at Roswell Park Cancer Institute. This is the most commonly used test for detecting prostate cancer, yet new companies were not created in New York State to actually develop that test. This is just one example, and there are others as well, where our region created an innovation on the research side, but did not see that connection to driving economic impact in our region, or anywhere in New York State, for that matter.

We are truly proud of the fact that we've improved the quality of life and healthcare through our discoveries. Given our region's transition from traditional industries, such as automotive and steel, we had the need and now have the opportunity through our assets here to go after the innovation economy that everybody's seeking. I grew up in Buffalo, so this mission is a very personal and relevant one for me.

Doug: What are your foundational strategic pillars by which you're going to accomplish your mission?

Marnie: The overarching theme is to understand how our assets and the resources come together as commercial business opportunities. From that perspective, the interdisciplinary interaction of all of our elements is critical. For me, it's taking a new look at what has been here, perhaps even for decades. It's an awareness of what else is happening in the global economy, understanding how we bring different pieces together, and what new elements we have to seek, i.e. funding, expertise, partners in industry, and/or other institutions. This blending of assets and how that translates itself into day-to-day activities is really a pillar.

People are familiar with the technology transfer function associated with university-based innovation. While the standard activities of intellectual property are a key part of the work done in our research institutions, that's only the beginning. We take a broad approach, where we marry technology commercialization and innovation to three pathways: creating new startup firms, growing existing firms in the region, and attracting firms and investment to this region. Each of those has a unique blend of the different assets necessary for those opportunities to work.

I can tell you that every one of those pathways requires us to work extremely closely with the faculty at universities and institutes, as well as with our community partners from economic development, workforce development, industry, and government. We have heard from companies like IBM that the key to commercial innovation is this important pillar of interdisciplinary collaboration, and we have embraced this principal in our efforts.

Doug: How does the Center of Excellence promote new growth in large established firms?

Marnie: One of our informatics companies, CTG, formerly known as Computer Task Group, is now co-located here in the Center of Excellence. We are helping them forge new market channels and new product and service offerings. While they came from a long history of providing outsourced IT talent, they appreciated the need to move into more sophisticated offerings in sectors like health care and life sciences in order to appeal to companies in pharmaceuticals and managed care. The resident talent that we have at the University of Buffalo allowed us to sit with them and introduce very cutting edge analytics methodologies for looking at clinical data and health records. CTG has worked very closely with the University, and through subsequent collaborative grant submissions, won a significant electronic health grant that will make use of UB's high-performance computing center and informatics experts located here at the Center of Excellence. That kind of collaborative relationship has already allowed CTG to hire more than 70 new employees to work on these innovative projects.

Doug: Silicon Valley, Austin, and Research Triangle Park have constructed an entire ecosystem by populating so many successful startups. How has the Center of Excellence been building an ecosystem in which startup companies can flourish?

Marnie: Of all the pathways we work on, startup companies received the least attention and fewest coordinated resources in the region, particularly when it came to high-tech businesses. We know that startups often follow a path of technology commercialization. Since 2001, when this life science focus took off, about 50 percent of the firms that were launched were affiliated with the research institutions here. But, the resources to actually launch companies and take the technology forward locally, weren't well organized. The Center of Excellence, therefore, put together an informal commercialization partner network, with partners who have the expertise and the inclination to work with startup companies. This network now gives us the resources to tackle some of the key issues that arise.

One example would be the company, Empire Genomics, which launched out of our genomics and microarray facility. That facility had a significant amount of business under its institutional umbrella. It was determined that this could be a business for genetic testing or molecular diagnostics, which could be done as a private sector entity. We provided Empire Genomics with assistance in launching its business formally, connecting with entrepreneurial talent, and in looking for funding. We brought them funds and access to equipment to help with validation testing around their molecular diagnostics. We continue to introduce them to other potential investors. They too, are co-located with us and are ready to move out of the nest. While we are not officially an incubator, the co-location piece has turned out to be a very important one due to access to vital business and R&D resources.

Companies that are not located here are also able to take advantage of our programs. We have monthly seminars and workshops where we will take these companies by the hand and introduce them to other resources in the ecosystem. This could take the form of helping them to incorporate, assistance in writing a business plan, or recruiting help to find talent, in addition to providing access to funding and R&D expertise and facilities. The beauty of our commercialization partner network, which helps us deliver all of this support, is that the participating organizations who wanted to help grow our life sciences economy came to the table willingly and have engaged with us as true partners.

Doug: So, in a sense, you're creating a one-stop resource to really orchestrate all of the things that a startup company would need in order to get a good foot hold.

Marnie: I do feel the phrase "one-stop shop" is very fitting. One common example is a principal investigator talking to us about a new technology that he or she has, but doesn't know how to move forward. Many regional companies are ripe to take some of the technologies coming out of the University. Or, if that investigator did decide to take that business forward, we would work to try to find proper entrepreneurial talent and the right management team. In addition to our one on one work with the inventor, we host a 'Pre-Seed Workshop' specifically to assist inventors and entrepreneurs who are at this early stage.

Areas like Silicon Valley benefit from the entrepreneurs and management talent that come out of their larger firms. In our region, we have a long-standing history of some larger medical device firms being very active here, but not other life sciences sectors, like pharmaceuticals, diagnostics or biomedical informatics. We are starting to see people transition out of established companies and now lead some of these new firms. The CEO of Empire Genomics, for example, made the leap from his business development role at one of our large biotechnology firms, Life Technologies (formerly Invitrogen), to leading this start-up effort forward.

Doug: If I'm following your thinking, commercial opportunities begin to organize around technologies being developed by universities and hospitals in the region. Then, rather than those technologies finding themselves a home in other parts of the United States or the world, you aim to find them a home in Upstate New York.

Marnie: That is an important part of our focus – trying to commercialize technologies regionally where it fits our strengths. But that's just half of the picture. I find it equally exciting to see individuals from new or established firms come from completely outside of our system, and bring us a technology that needs additional tweaking, such as process optimization, validation testing, or perhaps, further product development. That's also where we bring resources to the table on behalf of growing businesses by leveraging our resources. I find that very energizing because it's taking the voice of the customer from people already in industry to those who have the expertise in the research institutions. They energize each other. We had a device company talking to a group in our orthopedics research center, and you could just see the chemistry between the two, and the excitement about hearing the latest developments on the research side. At the same time, those sitting in the institutional center were hearing specifics about what customers were asking for, and the issues that the folks were finding in the field. I think that kind of synergy is the other half of the picture for us.

Doug: Taking what you have already accomplished as a foundation, if you look back from 2015, what would you like to be saying was accomplished in those five years?

Marnie: That's a great question and a fun exercise to think about what this all will look like. We have had some good successes, but I think that the speed with which they're happening, as well as the extent of the ecosystem, needs to explode. For us, this means that the Buffalo Niagara Medical Campus will see full occupancy of all possible space, and you will see concentric circles of additional development with much of that coming from the private sector. We currently have two regions beyond the downtown area that have a concentration of employees in life sciences. Grand Island is on the way to Niagara Falls, with about 1,000 life sciences employees working for private firms. In another part of our region, we have a cluster of medical device firms. The rest of our 150 life sciences companies are distributed around the region, where I would expect to see more clusters develop. The private sector is just starting to ramp up its full engagement in commercial real estate development for this sector, but I expect to see that take off. As I sit here today, looking out my window in sunny Buffalo, I know that there will come a time when what right now feels like a campus or a corridor, will actually be an entire region built on our current success.

Doug: If we look at a broader geographic picture, are similar things happening, let's say, in the Rochester area, which are associated with medical universities and companies in that area?

Marnie: We do have notable developments in Rochester and many of its burgeoning new companies, all the way over to the Syracuse area and Cornell University, and to some extent moving down state into the Albany area. We are part of a region that we refer to as the 'Golden Horseshoe,' which statistically is as robust as areas like Boston and Silicon Valley in terms of life sciences research and industry activity. Yet we haven't achieved the same recognition of this critical mass. When we think about our region, right now we have about 150 life sciences companies in the Buffalo Niagara area, which I would say is about a 5 county area. When you expand out your reach to about a 90-mile radius, and extend into what we call the Golden Horseshoe, it takes you up into Canada, and over to Rochester. Now you're talking about over 600 life sciences firms. I think that we have barely scratched the surface of the impact of that kind of collaboration, which ultimately can gain us the recognition as a high-tech

region. I think that western New York has a special opportunity around the cross-border relationships with Canadian companies and Canadian institutions. And that too, is relatively untapped.

Doug: What is the Center doing to develop the kind of competencies in the workforce that would make Upstate New York a very, very attractive place to be locating companies?

Marnie: The success that we've seen in growing companies only begs the question more and more, "Where is this talent for any piece of the ecosystem, where is this talent?" We have launched a variety of programs, such as, "Becoming a Leader in the Life Sciences," simply to help those people who have approached us and said, "This life sciences thing is really taking off, how do I get involved?" Through the program, we introduce what we mean by life sciences. In addition, we've launched a public awareness campaign, called iSciWNY™ ([www.isciwny.com](http://www.isciwny.com)), where we highlight information such as "Who are these 150 employers in the region?" With that program, we are able to introduce to adults, as well as middle and high school students perhaps for the first time, this exciting industry that is available to them. Those are the kinds of experiences that we are putting together as a region, through both public and private sector support.

At the same time, it behooves groups like the Center of Excellence to keep getting the word out there as broadly as possible. We will be at the International Bio Show, the largest annual show in the world, to feature the biotech industry and life sciences overall. Every year we try to take advantage of that opportunity to showcase what is happening with our companies. We want to become part of the thought process for any individual or any company who is asking themselves, "Where is it that I would like to set up shop?" "Where are there partners to help my firm meet its research and business needs?"

I think people see that there is opportunity here. There is a blending of the new economy perspective from people outside of the area and those returning after many years, hand-in-hand with those of us already fully engaged in life sciences here today. This is creating a pool of resources who are excited to jump into this innovation economy. That's where we see our workforce development programs blending together with this recruited talent.

And, as you well know, to grow an innovation economy of either existing firms or new firms, you do have to have some amount of capital. We really need to be identified as a region where that capital could be well invested and well spent. That's something we're working on right now, and I think we're starting to gain some ground. We are hosting another Explore Buffalo Niagara Investor and Entrepreneur Forum, featuring leaders and investment community folks from the US and Canada, along with dozens of high-tech firms raising money. It's not unusual to hear someone say, 'I was amazed at the businesses being built here.'

Doug: I'm very interested in getting across to our readers the mental model - the thinking that people are doing. First, I hear that you're looking to pull things together. Secondly, you're focused on building a network of relationships. Thirdly, you keep asking yourself the question, "What's missing that would make a difference? Where can I find it and pull it together into what we're doing?"

Marnie: Yes, very much so. I also tend to look at the end goal, and see where I'm trying to get to, from where I am today. I see pieces, perhaps puzzle pieces, and they naturally start fitting together in my mind. I envision things in this way, and I

naturally organize them, even from the first time that I came back to this community and heard about what was happening in economic development and workforce development. In creating the strategic plans, I couldn't help but see my end goal, and that starting to assemble those puzzles pieces was absolutely what we needed to do as a community. Ironically, it was about four years later that I found that exact task on my plate. I was gratified, but it also concerned me that in four years that kind of activity hadn't been happening. People were continuing to hoe their own fields. I am really driven by *not* reinventing the wheel, but by pulling together the good work that's already being done and knitting it together and augmenting it with new initiatives where needed. The challenge is having the conversations with people who lead these disparate efforts to start to sew these pieces together collaboratively.

Doug: In bringing the interview to a close, what would you like to say?

Marnie: I think that the Center of Excellence is one organization that's in alignment with this vision of the new economy, and what a region like Buffalo, New York, can become. But we are just one among many partners needed to be successful. Creating the ecosystem has been a crucial part of what we do. In many ways, it means having to do many, many things. And always with this vision of how do you pull the pieces together to head down that road towards what we know can be a new economy? Honestly, we are a region where there is a wonderful quality of life, so you can be innovative on the one hand, and you can have really fulfilling kinds of experiences in your family and leisure time. The reality is that in each community there will be leaders who emerge. The key is to actually keep growing those leaders. My goal down the road would be not only to have a thriving life sciences economy here, but to also have many leaders who would be identified from one end of the U.S. to the other and abroad, for their success in driving our region's prosperity. Rather than simply having one shining light in a community, we would actually have many, many diverse individuals joining and leading this effort forward.

Life sciences will certainly be a flagship for years to come, but I would also expect us to see other high-tech industries developing in the same way . . . clean tech, advanced manufacturing, and others, for example.

I look forward to the coming years, where the Center of Excellence is one among many leading institutions and organizations showing the way to a community like Buffalo - a community that, while we know we have far to go, is on the rise, and has that kind of bench strength and commitment. I think one of the unique aspects of our region is our real love and passion for what we can become; and I think that the sky is the limit.

