

Ramona Schindelheim, WorkingNation editor-in-chief:

You're listening to Work in Progress. I'm Ramona Schindelheim, editor-in-chief of WorkingNation. Work in Progress explores the rapidly changing workplace through conversations with innovators, educators, and decision makers, people with solutions to today's workforce challenges.

Ramona Schindelheim, WorkingNation editor-in-chief:

If you think you know Tulsa, Oklahoma, you might be surprised at what's new and what's coming up.

Newsreel Announcer:

The Tulsa story started in 1905 when deep underneath the land surrounding the little town was discovered a new and apparently inexhaustible source of wealth, oil. Oil that meant light and heat and now transportation for a growing country.

Ramona Schindelheim, WorkingNation editor-in-chief:

The boom didn't last. In two decades, the underground pool was exhausted, but Tulsa pivoted from producer of oil to a provider of services. And for the past century, it's been producing pumps and drilling rigs and storage. And protecting the city from the boom and bust oil industry, Tulsa also became a leader in aerospace and most recently technology. Tulsa's total tech employment has grown to more than 12,000 jobs, a nearly 25% increase since 2015. But that growth is just a start. There's a coalition of public and private partners, academics, business leaders, and innovators who say Tulsa will be joining America's tech hubs like Silicon Valley, Austin, and Seattle. Not only that, they're making a detailed plan for it to position Tulsa as a nationally recognized center for technology, innovation, and a leader in several tech fields.

Nicholas Lalla, Tulsa Innovation Labs co-founder and managing director:

Too many folks were taking too much of a scattershot approach to economic development and I think over the past decade, didn't see the return on investment that they wanted. And so our thesis was let's coalesce around a handful of high growth opportunities, go all in on them in a coordinated way with as big and broad of a coalition as possible.

Ramona Schindelheim, WorkingNation editor-in-chief:

That's Nicholas Lalla, the co-founder and managing director of the Tulsa Innovation Labs or TIL. That's the new technology-led economic and workforce development organization pioneered by George Kaiser Family Foundation. Lalla says TIL is using a targeted data-driven approach to Tulsa's tech-led economic development.

Nicholas Lalla, Tulsa Innovation Labs co-founder and managing director:

And it started with let's do a study of Tulsa's economy, situate that economy and its assets in broader macroeconomic trends to understand what are the assets today? Where's the market going? And what do we need to do to connect the dots and make investments to grow and leverage those assets? We worked closely with McKinsey & Company who provided analytical support to the TIL team at the... We started with a scan of Tulsa's economy, looked at all the biggest industries in town, certainly oil and gas, aerospace, manufacturing, looked at the local and regional universities and the talent and patents that they were producing, looked at emerging tech trends and figured out what's going to be the high growth opportunities in 5, 10, 15 years?

Ramona Schindelheim, WorkingNation editor-in-chief:

Tulsa already has a wealth of talent and the ability to build new talent and keep it in Tulsa, three major universities and a top-notch community college, and even a tech-focused high school that can all be part of the technology ecosystem.

Nicholas Lalla, Tulsa Innovation Labs co-founder and managing director:

Spoke to the dozens and dozens, I think over 120 stakeholders, local community leaders to understand what the aspirations were of the city and get insight from local Tulsans about the jobs and employers and conditions in town and scanned the universe for opportunities that we thought Tulsa could win in, right? We didn't want to just be a participant. What is Tulsa's right to win? And so looked at about seven or 10 kind of big industries and filtered based on the things that mattered most to us, what's the potential impact on Tulsa's economy for each potential opportunity? What's the feasibility of seizing those opportunities? And third, what's the diversity and inclusion of jobs created if we were to pursue those industries? And the best proxy that we had was associate's degree holders. So we factored in from the very beginning into our strategy, a DEI goal. So what percent of jobs created in X field could be attained through an associate's degree?

Ramona Schindelheim, WorkingNation editor-in-chief:

TIL mapped out five key areas in which Tulsa can lead. The first is virtual health, which can bridge the digital divide between urban and rural Oklahoma and leverage the ongoing decentralization of healthcare to help more people.

Nicholas Lalla, Tulsa Innovation Labs co-founder and managing director:

The digital divide between an urban community like Tulsa and rural Oklahoma is real. It is real across the Heartland. And we saw an opportunity given research being done at the University of Oklahoma, Tulsa and OSU, Tulsa to carve out a niche for ourselves in virtual health technologies that can bridge the digital divide, that can help decentralize healthcare, that can get rural communities access to healthcare that they need.

Ramona Schindelheim, WorkingNation editor-in-chief:

The second area is energy tech, which makes sense given the legacy industries of oil and gas, but with climate change issues and disruptions in the energy market, this area has a new twist.

Nicholas Lalla, Tulsa Innovation Labs co-founder and managing director:

Energy tech is going to be focused on OT and renewable forms of energy. Can we bring in new innovative technologies that make our O&G companies more sustainable for the future and de-risk automation in the field?

Ramona Schindelheim, WorkingNation editor-in-chief:

Third is advanced aerial mobility or drones. Some oil and gas companies around Tulsa are already using them to monitor critical infrastructure. Farms are using drones to monitor crops and to drop seeds. Oklahoma State University has one of the nation's strongest advanced aerial mobility research programs in the country. We'll have more on that in a later episode. The other two areas are cybersecurity and data analytics. The University of Tulsa already has a strong cyber program. We'll discuss that in another episode too. There's a huge and growing need for cyber talent, especially in the energy and

infrastructure, both in Oklahoma and around the nation. Talent that could help prevent attacks like the Colonial Pipeline hack last year.

Nicholas Lalla, Tulsa Innovation Labs co-founder and managing director:

Every technology company need needs more data scientists, particularly the energy companies. They are putting sensors on everything. They're getting so much data in, but they don't have the in-house capability to actually make use of that data and to extract value from it from a business perspective. And that's where the talent play for analytics comes in.

Ramona Schindelheim, WorkingNation editor-in-chief:

Virtual health, energy tech, advanced aerial mobility, cyber and data analytics. That's where Tulsa's tech niche is and where TIL is building local and regional coalitions. And they have support at the highest levels of the state.

Elizabeth Hutt Pollard, Oklahoma Secretary of Science and Innovation:

I'm three years new to the state of Oklahoma and I think Oklahoma maybe one of the humblest group of people I've ever met mostly in good ways, but when it comes to talking about all the great things we're doing, sometimes I think we fall a little bit short.

Ramona Schindelheim, WorkingNation editor-in-chief:

That's Elizabeth Hutt Pollard, Secretary of Science and Innovation for the State of Oklahoma. She comes from one of those established tech hubs, Silicon Valley, where she had experience in growing tech companies. That experience is helping her define a technology future for Oklahoma, one that could be described as smart, equitable growth. One of her first roles as cabinet secretary was to help establish a science and innovation council, which Oklahoma governor, Kevin Stitt, initiated by executive order.

Elizabeth Hutt Pollard, Oklahoma Secretary of Science and Innovation:

And there, it begins to define how we can better work across the state government and all of our state resources and assets, whether that's our foundations, our tech hubs, our higher ed to create an ecosystem that can really compete, thrive, and impact economic development. I've had the opportunities to socialize that plan with some of the leadership in Tulsa, whether that be at the Kaiser Foundation, whether that be at the Tulsa iHub at Halliburton and really saying here's how we can begin to talk about and communicate about what's happening in Oklahoma together to really create a greater presence for our urban centers, as well as our rural communities.

Ramona Schindelheim, WorkingNation editor-in-chief:

Pollard says part of the strategic plan is forging a strong pipeline from education to employment.

Elizabeth Hutt Pollard, Oklahoma Secretary of Science and Innovation:

We hear our governor speak a lot about the desire to become a top 10 state and really looking at business leadership to help provide that growth infrastructure. We have operated in more of a fragmented way around science and technology and we've relied very heavily on our universities to drive that. And while all of our higher ed does have aspect of economic development that they think about in regard to, for instance, supporting their own innovation hubs and so on, the reality is that we

haven't had a comprehensive approach to that kind of technology development across the state. And so this has been a vision of governor Stitt to help drive that forward.

Ramona Schindelheim, WorkingNation editor-in-chief:

Another part of the tech vision is building out infrastructure so that rural Oklahoma doesn't get left behind.

Elizabeth Hutt Pollard, Oklahoma Secretary of Science and Innovation:

We still have a lot of infrastructure that has to happen in the state to tie our rural communities together, such as the development of broadband and ensuring that all of our population has access to wireless technology, especially coming through the COVID situation, ensuring our students have the ability to receive the kind of education opportunities that everyone else does. And so those are the kind of things where I believe we keep growing and we work in concentric circles looking at Oklahoma City, looking at Tulsa, looking at Stillwater, Norman, how do we continue to expand those circles of influence in science and technology that foster people that are in more rural locations to still take advantage of those opportunities, whether it's job creation or whether it's education?

Ramona Schindelheim, WorkingNation editor-in-chief:

Secretary Pollard notes the Tom Love Innovation Hub at the University of Oklahoma. It was formed to connect the University of Oklahoma and the broader Oklahoma community to foster innovation and entrepreneurship. It's based in Norman, but there's staff and programs across the state, including Tulsa. Tom Wavering is the hub's executive director.

Tom Wavering, Tom Love Innovation Hub executive director:

The idea was pretty straightforward that there are amazing resources, talent, expertise at the University of Oklahoma that could help improve the state, improve the region. How do we do that more effectively and leverage the talent and resources that we have? Since then, what we've done is our mission is really increasing innovation, launching more startups, building Oklahoma's entrepreneurial ecosystem. If you are an entrepreneur and you are trying to launch your business, whatever it might be, as you go on that journey, you're always going to encounter different types of roadblocks, whether it's funding, whether it's technology, whether it's partners, whatever it might be.

Tom Wavering, Tom Love Innovation Hub executive director:

One of the things that's kind of unique to Oklahoma and this part of the country is that in other places, if you're a founder and you run those roadblocks, everyone understands, oh, that's normal. That's part of the process. And there's a whole ecosystem to kind of support and help you move forward. Here in Oklahoma though historically, when entrepreneurs kind of hit those roadblocks, the default tends to be an assumption that I'm hitting those roadblocks because I'm in Oklahoma, not necessarily just because they always happen. And so that then leads entrepreneurs to leave and go to other places or the coast or whatever because they think grass is always greener over there.

Tom Wavering, Tom Love Innovation Hub executive director:

What we are doing through the Tom Love Innovation Hub and the George Kaiser Family Foundation, and Tulsa Innovation Labs has been a big partner in this, is how do we take a very holistic approach to launching, growing, supporting startups and entrepreneurial ecosystem across the state? And so we

really focus on what is this complete suite of programs and resources and activities that takes someone all the way from that original idea, that original research, that original inspiration for their business, all the way through to successful funding, hiring, growing profitable startup or social enterprise?

Ramona Schindelheim, WorkingNation editor-in-chief:

They encourage collaboration with a broad network of partners with their own programs and expertise.

Tom Wavering, Tom Love Innovation Hub executive director:

And that's really what we're doing in the virtual health space with Canopy Health Tech. It's this partnership between the University of Oklahoma and Oklahoma State University and University of Tulsa and Tulsa Innovation Labs and the Oklahoma Center for the Advancement of Science and Technology and Atento Capital and a host of other partners to say, all right, you're this brilliant researcher. You have some idea around virtual health. How do we get you the mentoring you need and the training you need and the legal support you need and the technical support you need to advance that idea, that technology into something that could start to be funded? And how do you aggregate all those resources and again, make it easy for those folks to do that?

Ramona Schindelheim, WorkingNation editor-in-chief:

One way the Tom Love Innovation Center is helping tech entrepreneurs build companies from promising ideas is through the Oklahoma Catalyst Program.

Tom Wavering, Tom Love Innovation Hub executive director:

There's a federal program called the Small Business Innovation Research or SBIR program, which is \$4 billion the federal government allocates every year to invest in small high tech companies. They don't take equity. It's cash. It's not a loan. Doesn't really impact IP. And so it's often called America's Seed Fund. If you look historically, a number of amazing companies started this way, companies like 23andMe and Qualcomm and iRobot and Sonicare Toothbrushes and hosts of others. In certain parts of the country like the Heartland, startups aren't as familiar with this federal program and how complicated it might be. So our Oklahoma Catalyst Programs kind of simplify that process and help people do that.

Ramona Schindelheim, WorkingNation editor-in-chief:

A graduate student with a promising health tech innovation could come to Wavering and his team looking for seed money for research or to start the company. Wavering also sends feelers to look for promising developers. Battle Analytics is one of their success stories. It was started by two graduate students from the University of Oklahoma, both living in Tulsa and interested in machine learning and the image processing. As they found out, one good idea might turn into a better idea, but this trial and error takes support.

Tom Wavering, Tom Love Innovation Hub executive director:

What we were able to help them to do was connect with an opportunity, in this case, with the federal government through the SBIR program where the Air Force said, hey, we need a solution for detecting laser eye injury. And it's machine learning and image processing. And they said, "Hey, sure, we can do that." So they wrote a proposal and got some funding. Well, it turns out two things they learned. One, there's not that many people with eye injuries due to lasers, but two, they learned that in order to

detect laser eye injury, they actually had to detect everything else going on in the eye first to figure out there was a laser that damaged them.

Tom Wavering, Tom Love Innovation Hub executive director:

And so that's when they realized like, wait a minute, maybe a bigger commercial application is detecting like other things in the eye. And so then they went on and were able to get some funding from the National Institutes of Health and now they're focused on commercializing almost imagine a mobile phone-based clinical diagnostic tool that like a pediatrician or a primary care physician could use for children to do a rapid screening of potential eye diseases or conditions because often many primary care physicians or pediatricians might not have the specialized training to diagnose at an early age some of these rare eye conditions. But with a tool like this, they can do that and then refer them to the appropriate doctor and it can get treated and avoided. And they're starting to see a lot of interest in that.

Ramona Schindelheim, WorkingNation editor-in-chief:

Like Secretary Pollard, Wavering is a transplant to Oklahoma. He sees one of the advantages of the state and Tulsa in particular is that it's more accessible to anyone who wants to make it.

Tom Wavering, Tom Love Innovation Hub executive director:

I led companies that our whole business model was doing research and development and launching products and launching startups and launching spinoffs. And we did that as for-profit businesses. And we worked with universities all over the country and I always saw kind of the potential universities had, but then I also always saw the bureaucracy and politics and all the other stuff universities had. And what originally drew me out to Oklahoma was this idea that the University of Oklahoma was saying, we are not focused on one college or one department or one thing. We really want to have this kind of one Oklahoma approach to say, how do we help?

Ramona Schindelheim, WorkingNation editor-in-chief:

You've been listening to the first episode in the special series for the Work in Progress Podcast, Destination Tulsa: Tech Hub in the Heartland. In the next four episodes, we'll explore how the city is encouraging tech talent starting in grade school and helping a more diverse population to train for these growing fields. We'll also explore how Tulsa's startup companies are getting the help they need to get off the ground, and we'll talk with several new residents who turned down opportunities in bigger cities to stake their fortunes in Tulsa, plus more in a growth area that has the Department of Defense calling. Destination Tulsa is written and produced by Larry Buell. I'm Ramona Schindelheim, editor-in-chief of WorkingNation and host of the Work in Progress Podcast.