

# The Journey of Young Geomatics Professionals

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The average age of a surveyor today is approximately 60 years old. But there are new young professionals making their mark on the industry each year, and they are powered by a sense of energy and optimism.

Young surveyors and geomatics professionals were attracted to the professions for a mix of reasons.

Like the surveyors of decades past, many of them enjoy the ability to work outdoors and see the impact of their work take shape before their eyes.

Others are drawn to the ability to continually learn new technology and contribute to new infrastructure.

On the Geoholics podcast, three young geomatics professionals joined us to share how their career started, and where it's going.



## ***Entering the profession***

We'll begin by introducing the three surveyors we interviewed and how they entered the geomatics profession.

There's no doubt that surveyors stumble on the profession in many different ways. Often the path to becoming a surveyor is a windy road, complete with unexpected twists and turns.

### ***About Gabby:***

Gabby's journey began with an interest in 3D technology, specifically when it came to the gaming industry. Then she came across a company called Cesium, a platform for software applications designed to enable the power of 3D data.

That discovery led her to get involved first as a developer, and then in the areas of open source, GIS, and 3D communities.

Currently, she's busy leading a team to apply 3D technology in partnership with Komatsu, a Japanese construction equipment company.

Gabby's team partnered with Komatsu to create an app that brings data—such as from drone flights and smart construction machines—into one portal in order to enable 3D measurements.

If you've ever heard the term "digital twin," that's Gabby's current work in a nutshell. Today's companies are interested in collecting data and making models.

"What you can do is create this three-dimensional digital twin model of your construction site, or your buildings if you're in real estate, or your city if you're in city planning, and using these to make real-time decisions about your projects," Gabby said.

### ***About Chris:***

Next up is Chris, who has worked at ODOT since 2016. His work has taken him all over the west coast, completing projects on behalf of the Department of Transportation.

He enjoys working in the public sector because there is a commitment to doing things the right way. Working for the public good means that his team has both the opportunity and the resources to see projects through and partner with other talented organizations.

More than anything, Chris enjoys doing work that benefits both the surveying profession and public citizens.

Currently, he coordinates the UAS program which is focused on harnessing data in large geospatial data sets.

"Everything has a coordinator, right? Everything happens someplace," he said. "We're the folks that coordinate that. So, let's find a way to leverage that type of information and data that we already have, and we're already collecting. Get it in people's hands, in the public's hands and everybody that needs it."

His mission is to make public data useful and equitable, just like data in the private sector is carefully collected once and then mined over and over.

### ***About Jose:***

Jose's career started in civil engineering in 2008, when a national guard recruiter enticed him with a scholarship. He was placed in the closest job that the guard had to civil engineering at the time, which happened to be land surveying.

He was still pursuing an engineering career when a 2014 national guard mission took him to Chile. There, he assisted with a surveying project to connect the north and south ends of the country to create a more direct travel route.

"We were helping them do some of that construction work and I was just like holy hell, why haven't I been doing this survey work for the last eight years?" he said.

When he got home, Jose quit his engineering job, went out into the field as a surveyor, and never looked back.

### ***The different layers of mentorship***



Finding the surveying profession is one thing. But in order to truly succeed and get established, it helps to find a good mentor.

Some mentors will help you learn the technical side of things, as you work side-by-side almost in an apprentice or shadowing capacity.

They teach you how to press the right buttons, deliver maps, and operate machinery.

But Chris says that the best mentors go beyond that, taking on the role of a coach and guide, through both life's professional and personal challenges.

"Work is not just all DTMS and drones and LIDAR. It's 'I broke up with my partner, my parents are passing away. What do I do? I'm afraid to take the test.' All of these other things that we seem to struggle with," Chris said.

Chris has now reached the point where he can act like a mentor himself. He's focused on imparting the wisdom that he wishes he's gotten when he was just starting out.

### ***Mentorship takes education to the next level***

Gabby's opinion is that mentoring has been crucial to her success. While education can provide a good foundation of knowledge, school can only teach you so much.

"When the rubber meets the road, mentors are really what leads you to opportunities and what helps you overcome certain problems as they come up, and really give you the set of tools that you're going to be using every day," she said.

"Formal education gives you a lot of the tools you need, but not necessarily how you should use them. And I think a lot of what mentorship ends up teaching you, is how to solve problems when they actually come up."

She's had multiple individuals that she considers mentors, including the CEO of Cesium and senior developers that she works with.

Jose agreed that you need someone to take you beyond the theoretical knowledge of books and into the real world.

"You can learn as much as you want from a textbook, but you're not going to get the same experience. You're not going to get the same knowledge, or the feedback, or constructive criticism, whatever you need. That red line 'WTF' on one of your plats, you're not going to get that from a textbook," he said.

All three professionals agreed that education was truly important, and that education and mentoring are most powerful together, with one helping build upon the other.

It's also undeniable that the best mentees have the mindset of a student, with a humble outlook and a hungry willingness to learn.

**EVERY NEXT LEVEL OF YOUR LIFE  
WILL DEMAND A DIFFERENT YOU.**

## ***Mentorship is a two-way street***

It's also important to remember that both young and experienced surveyors can learn from one another. Anyone can mentor anyone, regardless of age or background.

"Everybody should have a mentor, even those I'll use old 'grouchy guys,'" said Chris. "I think if we don't have mentors that are younger than us, that they're failing themselves."

There are three or four separate generations hard at work in the surveying world today. The way that a young "digital native" sees something will be unique from how a more senior, traditionally trained surveyor sees something.

"Those are two very different ways of growing up, and they both can educate each other and help each other along," said Chris.

For Jose, mentors are the ones that helped give him the push he needed to reach new levels in his career. Now, it's all about helping to pay it forward.



## ***Understand what's behind the tech and embrace technology***



Entering surveying today looks different than it did a decade ago. New technology is being developed and honed each day.

It's important for new surveyors to be willing to tackle the challenge of technology. Luckily, it seems that tech is also surveying and geomatics' new biggest draw.

"It's going to appeal to the younger generation, just because it's a shiny toy and people are going to want to learn how to use it and do something outside of the ordinary with it," said Jose.

That said, you can't just be pressing buttons; you also have to be committed to understanding what's going on beneath the surface.

There's an increasing demand for fast and efficient data collection.

But no matter how easy it gets, there's always going to be questions, things that go wrong, or formatting issues.

"I think there still is an incredible need for people to understand what's going on behind the scenes of all that technology," said Gabby.

No one knows what's coming next in terms of new tech like AR and VR that could be used for 3D visualization. It's exciting but will take work to master.

"It's an exciting future, but we're definitely going to need people that understand the cogs and gears of how it goes on," Gabby said.

Chris said that the danger of technology is that it makes things "too easy." When the emphasis is on ease and speed, it can quickly devolve to just beating the company next to you in order to make a profit.

"I think that's just unfortunate, because I think there is plenty of work to go around in a lot of ways," he said.

The danger is when we stop thinking, because that also makes the work less interesting.

"I'm simply like one of those grouchy old guys now," Chris joked. "It's good to think your way through it a little bit."

## ***Get involved***



Young Surveyors  
Network

Once Gabby, Chris, and Jose got established in their careers, they all started looking for ways to get involved and spread the surveying love to others.

The goal? To raise awareness about the profession, welcome new faces to the profession, and help them progress in their careers.

Chris, Jose, and Gabby have gotten involved with the NSPS, which is a great organization for young surveyors.

"I met some of my favorite people in the world through that group. And so, I think one of the greatest benefits is one gaining access to your state organizations is important because they're going to be the folks that are going to be supporting you through these meetings and the meetups with the national group," said Chris.

Involvement in the NSPS allows for exposure to what's happening in surveying in other states, at a national scale.

It's great for job opportunities, too.

"At this point, I could call up, a half a dozen to 12 folks in any one state and potentially get a job," said Chris. "Or maybe they're traveling, with a problem. They can call me and vice versa. And so, it's just building that social network."

Jose recently got involved with the NSPS diversity committee that kicked off not too long ago.

"There's definitely a lot of opportunities for young surveyors to kind of champion that, and I think expand the areas that we've been focusing our resources on. Because not only are we not doing enough recruiting as it is, but we're also narrowing and focusing our efforts in the same areas every year. So, expanding that," Jose said.

As part of the Texas Young Surveyors group, an offshoot of NSPS, he's also helped put together a booth at the Houston Hispanic Forum's 34th annual education and career fair. Close to 5,000 students came by the booth, intrigued by the 3D sandbox display.

"It's a really good way to build those bonds and do something that you're not going to be able to do by yourself because you don't have those resources," Jose said.

Almost every state has an NSPS professional organization, with a representative that you can contact. If not, you may be able to create a young professional's group in your state.

It's an excellent way to take part in and contribute to something bigger: the surveying profession as a whole.

### ***Meet young people where they are***

When you're trying to connect with young individuals like high school and college students, it may take a different approach than in years past.

"The younger generation, maybe they don't want to cut brush with a machete or start at the bottom or whatnot," said Chris. "We just need to be more flexible. We don't need to have these really strict 'this is how I've always done it. This is how you're going to make it through to be a surveyor.' I don't think that those serve us any longer."

This will require about how the surveying profession fits into the modern world.

Chris gets hands-on by teaching an entry-level survey course at a local community college. He also helped start the Young Surveyors Network in Oregon, and partners with the technical education campus in Salem, Oregon, which teaches some surveying material.

"There's this really cool program where if you have some sort of engineering degree or surveying degree, we rotate you through the businesses that you might be working with as a surveyor at ODOT for two years, and then you get a full-time job at the end," he said.

These are the types of innovative internships that surveying needs.

"Surveying was built by folks that weren't afraid to get dirty. And it seems like the work that needs to be done is just getting out to the schools and the high schools," Chris said.

For those who aren't afraid of hard work out in the field, a little hard work getting involved off the field is just another rewarding professional challenge.

