

**Travis Trammell III (PhD '20), interviewed by Linda Esquivel (Student Services Officer) on June 2020**

**[Travis]** Hi, my name is Dr. Travis Trammell. I am a former graduate student in Management Science and Engineering. I earned a doctor of philosophy from that department in April. I'm also an active duty army lieutenant colonel and I'll be moving on to an assignment with the army now that I've completed my PhD in MS&E.

**[Interviewer]: Can you tell us a little bit about your background, and where you grew up and where did you study before Stanford?**

**[Travis]** Sure. I grew up in a small town in northern Louisiana. It's called Campti, Louisiana, lived there my entire childhood went to the high school at Lakeview High School in that area. Then I moved onto United States Military Academy at West Point, and I studied civil engineering at West Point. Following that, as all graduates do, I commissioned as a second lieutenant in the United States Army and spent a variety of assignments in the US Army—A couple of deployments to Iraq, couple of appointments to Afghanistan.

Then I returned to pursue a master's degree because I was accepted to a program to be an instructor in the Department of Systems Engineering at West Point. So I moved me and my wife—my family moved to Cambridge, Massachusetts. I began graduate studies at MIT at the Sloan School business, received an MBA and also I concurrently pursued an MPA at the Harvard Kennedy School of Government at Harvard.

Following that, I served another army assignment at Fort Hood, Texas and then moved on to Stanford MS&E, specifically in the Risk Analysis, Decision Analysis research group and my area of research was in Risk Analysis.

**[Interviewer]: How did you become interested in engineering?**

**[Travis]** For as long as I can remember. I was very interested in mechanical toys, how things worked. I think that was encouraged by my parents both my mother and my father. And my father was really handy and was always tinkering with something on our property or around our house, so I kind of picked it up from him.

I was very interested in mathematics. I did well in mathematics in school. And it was kind of a natural extension of my interest and what I thought my skill sets were and it's been extremely

rewarding ever since. I enjoyed civil engineering, but I didn't really want to go deeper into civil engineering. I wanted to be more broad in my engineering background.

Quite honestly, Stanford provided an additional element of broadening that I thought is, I know is very valuable and totally appropriate for my areas of interest academically and professionally.

**[Interviewer]: So can you tell us a bit about your research?**

**[Travis]** So I defended in January, successfully defended in January and the topic of my research was *Fake News Risk, Management Decisions to Combat Disinformation*.

The focus of that research was really, as the title implies, we were looking at a quantitative method to examine both the spread of fake news or false information on an online platform and potential counters that decision makers, both government and industry could take in an attempt to address this surge that we continue to see in online platforms.

One of the things that we did, that was quite interesting, and I think new at the time was, we were able to conduct an online survey. That's something, I think that was relatively new to the engineering department, is the use of human subjects and an online survey. I know some other groups have done studies along those lines, but ours basically attempted to measure different population groups susceptibility to fake news.

So through a process online, we would expose them to some false information under the appropriate conditions, and then we would measure the impact of then obviously we would warn them at the end that the information they were presented was false.

It really did give some interesting insights into potential areas where those that are attempting to counter the impact of fake news could focus their efforts because in a limited resources environment, obviously, we just can't spread the peanut butter, so to speak, evenly across everyone. We really need to focus where people are most susceptible.

Finally, my research actually adopted an infectious disease model to model the spread of false information and fake news and it's particularly apropos now. I think we were trying to flatten the fake news curve before "flatten the curve" became a household name, but we do use those types of models—these mass mixing models that you see obviously across all of the news platforms as we talk about COVID.

**[Interviewer]: To just add on to that, how did you get interested in that work.**

**[Travis]** That's a great question. I did not come to Stanford initially with the thought of focusing in that area. I initially had interest in nuclear weapons counterproliferation based on my security background.

Within a couple months of arriving and in discussions with my advisor, Dr. Elizabeth Pate-Cornell, we both decided that a new direction was appropriate, and focus somewhere in the cyber realm. She had some prior students and continue to have students that focus on cyber security and risk analysis associated with cyber security, and that's an absolutely appropriate application of our methodology.

But I was looking for something a little bit different and this was in January of 2017 and the presidential election just occurred between 16 US presidential elections. We started to see some indication that there was a concerted effort to influence individuals in the campaign for nefarious purposes and there are some outside elements that may have been part of that. Some groundbreaking studies at Stanford had just occurred that we're trying to measure the impact of fake news on the election.

So I presented that idea to Dr. Pate-Cornell and thankfully and to her credit, she was open minded even though our tools and techniques had not been applied in that specific manner before. She was open to attempting to apply probabilistic risk analysis in this area. Honestly, ever since I decided to focus on that area, the decision has just been confirmed because one of our concerns was; Is this a one time only thing, are we going to develop a fixed to solve this, and then is the community going to move on. Is academia going to focus on this? And as most people know this continues to be a problem by all indications there. It's going to be a greater problem moving into the future.

We've been able to partner with some tremendous team members here at Stanford and really seeing the academic community kind of start to steer the ship and direction toward addressing all of the concerns associated with influence campaigns or fake news. It's been an incredible experience over the last three years, as we've studied this.

**[Interviewer-Esquivel]** Sounds like you're participating in a lot of great research that's going to be very impactful in the future.

**[Interviewer]** How do you imagine your research interests might change over the next 5 to 10 years?

[Travis] I'm becoming more and more convinced and I better understand the reason why academic study, whatever their dissertation research is for the rest of their life, quite honestly, the rest of their professional life; I think that's quite common and I'm experiencing that as well, there's so many things that through the course of my research that I have an interest in exploring greater depth in those areas. I think one of the most fascinating and exciting areas and potentially dangerous areas is the application of artificial intelligence and machine learning to mass produce false content.

So we already see some of this online where our online experience is personalized based on reams and reams of data that the content providers will mine for insight access to what our interests and preference are in certain areas, and they provide us with that information, of course, for a better user experience.

But from the standpoint of false content that's particularly troubling. You can imagine a future where potentially getting false information but there are artifacts that you and really only you know and resonate with you, so something maybe about your hometown that's in there or something about a family member or maybe it's a fake video of a family member that's been produced that's providing information that's designed to look like message that you received on a platform from a friend or relative.

So I think that my academic research will continue in this area. I am very interested in potential countermeasures and we've started to look at what's available, but I would like to continue to look deeper from that standpoint and see if there's anything that hasn't been developed or something that's very very new that we could apply to this model and really test the efficacy of the countermeasures that are out there, these ideas that novel thinkers continue to come up with every day.

And then finally, I think my research is going to focus a little bit in the policy area. I've provided some feedback on things that you can do from a countermeasure standpoint. I address a little bit in my research the idea of what is the appropriate role of governments versus private industry versus individual citizens, but that's only going to become foggier as we move forward. That's a huge question for society. How much censorship do we want, what should we, is Facebook for information or for entertainment of what's the mix? What's the breakdown? What's their Responsibility of US government? What's the responsibility to US government as compared to other governments globally? I'm really interested.

And I'm going to stay in government for at least another six years, so I think that those questions as we continue to develop things on the government side will continue to rise, and

we've got to have some academic rigor behind the discussions that we have as those that inform policymakers on this topic.

**[Interviewer] What are your career plans after Stanford and how did you decide on them?**

**[Travis]** So I'm extremely excited I have the opportunity to go work at the National Security Agency at Fort Meade, Maryland. So that's where I'll be assigned next for a few years. It's in their Risk Analysis Department working for a woman by the name Anne Neuberger, who's the Senior Risk analyst, for the National Security Agency and so I look forward to doing some very exciting work there. Potentially looking at cyber risk associated with the overall industrial base. Also, I think it's very likely that I will contribute to analysis being done in preparation for both the 2020 election and then obviously future elections that the US government has interest in making sure they're free and fair and not inappropriately influenced.

My career is going to continue along that path and I'm really just excited to pursue those opportunities, both within the US Army within the government and within the what we refer to in the government as ICE, the intelligence community. And I think that the NSA is the most appropriate place from the Department of Defense standpoint to have a broad view of potentially what's happening in the information space and the influence that's being attempted within that space. So I'm extremely excited and my family's excited to relocate to Maryland, although we're really going to miss the Bay Area.

**[Interviewer]: What most excites you about your future?**

**[Travis]** So first of all, I mean just personally, I'm so excited for us to, as a collective family to move forward, post the rigors of PhD work. It's been great to get to reconnect with them now and I look forward and continue to develop and flourish in Maryland.

For me personally and professionally, it'll be really fulfilling to get to apply some of the work that I've done. We've gotten some recognition with some of the research that we've been able to produce. In an interview on the local Oakland Fox channel recently, it'll be coming out the end of May. There's a podcast called Future Hindsight that we were able to do about a 45 minute, hour long session to discuss our research.

We've been we've been very fortunate to see some of the benefits of our work get recognized and so I'm super excited to continue in this area and really just continue to contribute to the body of knowledge in this area. One of the things with working within the government that I'll find obviously is just access to, perhaps broader base of information to do this analysis, and

really to give back to the country. I went to Westpoint when I was 18, I've been in the military ever since. I turned 40 this year. I think I'm at the point I'll make the highest level of contribution to the security United States and that's meaningful for me.

It also is validating to contribute, to all things, the elections of United States because it's the bedrock of the way our society works and our form of government. I feel there's a certain nobility to that work and that's extremely fulfilling for me and we're just excited as a family to move on to Maryland.

**[Interviewer]: What advice do you have for future students and how can they make the best use of their time at MS&E and at Stanford?**

**[Travis]** It's great question. One, I would say Stanford should be at the top of your list, quite honestly, I've got a fairly extensive academic background MIT, Harvard, Stanford. I choose ahead of all of those and I'll take a second to explain why.

All of those are great institutions, but I know of no place in in the country that brings together such a vast array of expertise in all disciplines, the level of excellence in all disciplines that you have at Stanford. So MIT is obviously amazing in engineering in the humanities, it's less renowned. Harvard has some areas where I'm not going to compete as much with MIT because MIT is just down the street.

The beauty of Stanford is and there are certain logistical and bureaucratic issues that creates. Although you can do work in MIT and Harvard and there's cross collaboration.

But the greatest form of cross collaboration is within the institution and so for interdisciplinary work of which my research was most certainly interdisciplinary, there is no better place to research these ideas than Stanford University. That's a core belief of mine, and it really was born, out in my experience.

You've also got SEASAC and Hoover. You've got think tanks, you got practitioners. So not only do you have people across every academic realm, you've got practitioners that you can go and sit down, you can talk to Ambassadors and Secretary of Defense and these sorts of things.

And I would say that within MS me particularly, most of the work that I've witnessed there, mine and others that I've seen is it's inherently at some level interdisciplinary and it's also applied. So when you have applied research, you need to have access to those resources and they're all right there. And then because it's such a collegial environment within MS&E and

more broadly within Stanford, everyone, no matter what level of seniority is always extremely willing to sit down with you and discuss your research. And so that's a great benefit too.

And then finally, I would say that the idea that pervades Stanford and pervades Silicon Valley, more broadly, is that all challenges with effort and with ingenuity and with focus can be best at some level. So there's kind of an audacity that pervades the entire environment, which I think is palpable. I would tell students that you'll I think you'll feel it when you're on campus, very quickly. I think it's extremely motivating personally for each individual student. But to collectively have this ability to address really really hard problems and have a sincere belief that you can have a positive impact.

And that was really my experience at Stanford. And it started very soon after I arrived and I still feel that, and it just continues to grow the longer and more a way from Stanford, quite honestly, my affinity for it. So I highly recommend MS&E , highly recommend Stanford, if any of those that those things I've mentioned are attractive to you, I think, Stanford needs to be at the top of your list.

**[Interviewer]: What will you miss most about Stanford and the Bay Area?**

So for Stanford it will most certainly be the community of people that me and my family have been able to grow while we've been there. We've made some lifelong friends—lifelong family friends.

My kids have thoroughly enjoyed living on Stanford, we lived in Escondido Village in a graduate housing for students with children. It was just, an incredibly pleasurable experience. So we're going to miss the people that we had the opportunity to grow with and miss the people within the department, faculty, staff, and students. It's really a collection of very intelligent, very motivated, very focused people that are also willing to give a hand to anyone who needs it. And I've been in many organizations, many institutions that I have served in and I know how rare that is.

We're going to miss the people, we're going to miss the weather. We love the weather, it's pretty good with kids. It's great for them to be able to be outside so much of the year.

We're going to miss all of the cultural aspects that come along with the Bay Area, all of the sites, all of the things that my kids were able to visit. I think I'll go back to, you know, we'll miss at some level, just the desire to form a community. I think it's so strong at Stanford and quite honestly in our area of Stanford housing. There was always an outreach to try to build a community and the only thing that I could compare it to is, there's a similar movement within

military basis where who kind of all in this together. We're all working towards some objective. We're all studying different things, but similarly, in the military, we all have a similar job so that bond that brings us together and then all the families become very close. So we're definitely going to miss Stanford in the Bay Area.