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Armando F Sanchez Production

“Technology: Present and Future” series

Guest: Dr. Jose Morey, MD

Interviewers: Armando F Sanchez & Dr. Felix Zuniga

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Dr. Jose Morey, MD

Dr. Morey, MD is CEO and Founder Ad Astra Media LLC; providing role models and educational STEAM content to encourage more diversity in STEAM related fields.

Jose Morey, MD is an Eisenhower Fellow with the 2020/2021 ZHI-XING Fellows Program and is a health and technology keynote speaker, author and a consultant for NASA, Forbes, MIT, and the White House Office of Science and Technology.

He is considered a leader in exponential technology innovation and excels at leading multidisciplinary teams that sit at the epicenter of biotechnology, AI, and aerospace.

He is considered the first Intergalactic Doctor and is often featured on Forbes, Univision, CNBC, and NASA360. His latest essay “The Future Shock of Medicine: How AI will Transform Disease, Death and Doctors” was recently reviewed by The Wall Street Journal along with other contributions by contemporary thought leaders.

He serves as a technology and business advisor for MIT, NASA, UVA, African Innovation Alliance, US-Polish Alliance for Innovation and has served as a special envoy to the Polish Space Agency.

As Chief Engineering Council in charge of Innovation for Hyperloop Transportation Technologies, he directs international engineering teams in technology and intellectual property development.

As the Medical Technology and Artificial Intelligence Adviser for NASA iTech, he helped evaluate research initiatives that would develop novel technology to meet the 2030 Mars Mission objectives and deep space exploration.

His expertise in big data and innovation has made him a sought-after consultant in many industries. Dr. Morey has previously worked with Liberty BioSecurity as their Chief Medical Innovation Officer where he helps drive innovation in genetic intelligence, national defense, biotechnology, precision medicine and augmented human performance and with IBM Watson Health as their Associated Chief Health Officer where he helped develop global AI medical technologies.

Morey has also consulted with many companies to help create and train their deep learning algorithms and neural networks to develop intelligent systems in healthcare and aerospace.

Morey sits on several AI advisory boards and has over 100 peer-reviewed publications, articles, presentations, and lectures. He also has a seat on the Informatics Leadership Council for the American College of Radiology.

He has given talks to NASA360, the Radiologic Society of North America, HIIMS, Academy Health, Health Datapalooza, Tech.Co, Frost & Sullivan Executive MindXchange, Stifel Nicolaus Healthcare Investment Conference, the Chinese Medical Association and the Senate of the Commonwealth of Puerto Rico.

Morey holds an adjunct professorship of Radiology and Biomedical Imaging at the University of Virginia and at Eastern Virginia Medical School. And he is a guest lecturer at Singularity University. Morey is also an advisor with MIT Solve, Ideas MIT, Tampa Bay Wave, and I-Corps Puerto Rico.

Dr. Morey is a Senior Advisor with the NASA Space Breathing Initiative, where he helps direct an international team of hardware and software engineers to develop a blockchain-based data platform pipeline in collaboration with NASA and NetApp for COVID-19 rapid response utilizing a hybrid cloud. Identified and guided hardware and software parameters well as edge device integration and clinical AI development for prescriptive analytics and integration with the US National Emergency Broadcasting System.

He also serves as a Special Advisor with the White House Office of Science and Technology Kaggle CORD19 Project. He advised the Director of Research of CORD19 which is a collaboration between the Allen Institute for AI, Chan Zuckerberg Initiative (CZI), Georgetown University's Center for Security and Emerging Technology (CSET), Microsoft, and the National Library of Medicine (NLM) at the National Institutes of Health to create AI platform to review scholarly literature about

Armando F Sanchez: Ladies and gentlemen, thank you for joining our program. I'm very happy to have a wonderful role model guest. Someone who sort of expands our imagination. I also have today as my co-host, Dr. Felix Zuniga and he is an educational doctorate newly minted so we thank him for helping us to come along. Yeah, I followed his progress from when he started as an undergrad or through his Ph.D. so really happy. But, he also holds a leadership role also in the colleges of California. Let him share that through the show. Our guest today is Dr. Jose Morey. He's an MD or sometimes known as Dr. Intergalactic we're gonna have to talk about that one. I love that. That's how I came the initial contact. Oh, my gosh, he is huge. Huge amount of support for STEM Latinos, Latinas. His background is has a personal STEM literacy background in AI, quantum computing, aerospace, business intelligence, 3D printing, radiology and this is just the tip of the iceberg, folks. He sits on advisory boards, at MIT, NASA, White House Office of Science and Technology, and special categories. And it goes on and on and on. But the point of the matter is that one of the main points that he brought to us that he speaks and when I did some research and background is his emphasis on getting more students of color into the STEM fields. And I guess you know, your wonderful book, with *Good Night Little Astronauts*, I'm very happy to have is part of that whole package. So enough of me. Let's switch over to you. And let's begin with that. I mean, you have all these fantastic responsibilities across the board, across the nation and yet you take the time to look at the future, to look at children, to look at our future leaders. What stimulated you to go this route?

Dr. Jose Morey: Yeah, no, thank you, Felix, for the opportunity to come speak with you today, and Felix, congratulations on the doctorate, well deserved. It's not an easy road and we need more Latinos getting advanced degrees. So kudos to you. But it's because of my career really what what inspired me I have I finished medical school and after that, I did my postdoc training up in the Northeast. And that kind of changed my trajectory from just straight clinical medicine into more technology worked with IBM for several years as a consultant and then eventually as Associate Chief Health Officer for IBM Watson Health when that spun out the research labs that not only that I was working in, but other research labs throughout the world, well, then I worked with Elon Musk's Hyperloop project through Hyperloop Transportation Technologies. I was chief innovation there still innovation leading consulting and I've worked as a consultant to NASA through their AI tech program on deep space programs as well as through JPL on planetary defense projects. With the White House Offices Time Science Technology Policy, as you mentioned, particularly around AI projects to expedite COVID research over the last 12 to 16 months. Also similar emerging technology projects to the United Nations World Food Program and other organizations like MIT where I consult for solve and ideas which are two accelerators for them. I also work with the Legato Center for Entrepreneurship developing social impact solutions for low-income, low and middle-income countries. But in those roles that I've played in, in those experiences that I've had, I've often times been the only Hispanic and definitely the only Puerto Rican, *barincano*, on these projects, and sometimes the only minority on these projects altogether, and it within STEM and STEAM in these fields, which is the fields that are driving the economy today and will increase the drive of the economy into the future. There's a lack of diversity here in the United States. We don't have a lot of BIPOC people within those fields. We don't have gender identity diversity. We don't have gender diversity. We don't have people with disabilities, diversity within there as well. So it's the fact that there's this lack of diversity within science and technology, which forced me to try to create a solution and I talked to my mentees and others the importance of, you know, try to create and be involved in projects and create the world that you want to see. And I want to see a world within science and technology that is as diverse as the real world

around us. So I'm creating the solution. Or trying to solve the problem. And the way we need to do that is we need to inspire kids of all backgrounds that are underrepresented within STEM right now to go into the fields of science and technology and we need the data shows that we need to catch them early, we need to inspire them early and we need to grow with them as they say from K to career to be able to keep that inspiration going because we know that girls, people from BIPOC communities, others, even if we do catch them early on, they tend to fall off over time for a lot of different reasons. So we have to be able to continue to inspire them. So as Ad Astra Media I started at the end of 2019 with the help of the Eisenhower Foundation, I'm an Eisenhower Fellow, to be able to create media that shows representation of diverse people within fields of science and technology, through entertaining content, and we use education into that as well to be able to teach as we go along. But we want to inspire kids so that they see themselves we have that whole concept if you can't see it, you can't be it. So we want to let kids see themselves in those roles. People that look like them. People that speak like them, people that have shared community with where they grew up, how they grew up. In that way, we can get the kids to start dreaming about being those things and so that when they start growing up, they start saying, "Oh, you know what, I want to be a nurse like x, I want to be a doctor like y, I want to be a computer scientist like whoever". We want them to be able to know stories of people that are like them be inspired by people like them instead of what you typically see in media, which is people from underrepresented communities are playing that role. They usually are in kind of a minor role or some sort of some other tertiary role when it comes to what's going on. So we want to really put those characters front and center.

Sanchez: Let me sort of look at it from what I've heard is some arguments at times for lack of support, if you will, somebody says, "Well, there weren't any you know, if there were any outstanding minorities, we would see them in this room, but they're not so I just do they're not there." How would you respond to that discussion?

Dr. Morey: I would say that that's a very foolish and kind of short-sighted statement. There are plenty of people of color, there are plenty of women. There are plenty of people with disabilities there aren't they're not enough for sure. So I would agree with that. We need more and we need to be pushing that because the STEM fields as we know that the higher socio-economic fields, so we need to get socio-economic strengths. To be able to do that you need to inspire and study those things. And there are comorbidities as I say from my physician background that tend to go along with being part of a lower socioeconomic status whether that means you live in a digital desert and healthcare desert and an educational desert. All that stems with socio-economics and the data shows us that as socio-economics rises, those things tend to go away, those comorbidities tend to be resolved. So there are people in those communities that look like us that speak like us that come from our backgrounds. You know, I grew up in Puerto Rico, you know, right near the baseball field. So baseball park, so there are people that have our stories, but we're not out there. We're not, we're not telling our stories. So one of the things I'm doing I've interviewed, I have an upcoming book that's going to be 15 years old and older, to inspire kids where I interviewed diverse leaders within science and technology, and have those discussions that's going to be coming out quarter 1, 2022. I have another book coming out in October through Wiley Publishing, which talks about the evolution of Latino leaders. I did in conjunction with Carla Hall, my co-author. So there are the stories that are out there. We need to just be telling them so that kids know about them so that kids say, "Oh, I could do that. You know, I could be CEO, or I could be senior vice president of that tech company or that particular industry." They are there. They're just not being told. Part of that problem also lies in the scientific community. We have not been out there and been engaging in popular culture. We've been allowing other people to do that. And part of that is kind of the people that go into science and technology know that they're so dedicated in their fields, are so dedicated in their studies, and they may not be you know, as gregarious or extroverted as we require, but realistically, we have a responsibility, especially when they come from

underrepresented communities, to be out there to try to be role models to try to inspire the next generation because we have to be building generational wealth takes a village to develop. So we have to be out there to be able to cultivate that inspiration for the next generation. So part of that is on us and I realized that I had the opportunity, the ability, and the responsibility to be doing my part. So that's why I created Ad Astra Media to start playing that role into others a platform where they can be elevated as well. So telling those stories to bring inspiration to the next generations.

Dr. Felix Zuniga: Wow, there's just you know, so much. First of all, congratulations on all your accomplishments and everything that you're going to do as well. I applaud you know, the use of aspirational capital, right, coming from a community cultural wealth, framework and providing opportunities for our kids to see themselves in the future, right. There was just so many things that came to mind in the last couple of statements but, you know, I heard you talk about STEAM and STEM. Right. And can you talk about the importance of arts and stem?

Dr. Morey: Yeah, absolutely. One of the people that I speak a lot of that I hold up as an avatar is Leonardo da Vinci, the prototypical renaissance person. And he was one of the reasons I say that he's such a great inventor was because he combined the sciences and the art. If you asked a group of 100 people who was Leonardo da Vinci or what did he do? A lot of people would say he was an artist that you would have a considerable number of people that say he was a scientist and inventor. And the thing is, if you ask Leonardo himself, he wouldn't pick one, right? Because he didn't see himself through those lenses. He was constantly cultivating his skill set to left brain and right brain, and that's what allowed him to remain innovative and be able to push the envelope. And as he learned about the arts, his art skills, improved his science skills, as he learned about different aspects of science, whether it be chemistry, engineering, or geometry, each one of those skills, augmented those other skills and also augmented his art. And you can see that in things like you know, St. Jerome in the Wilderness, you can see that with the way he played with optics on the Last Supper. It see that with the way he kind of the facial features, they can have some things like the Mona Lisa, like you can see the crossover if you look at any of the sketchbooks, I mean it's any one of those pages could be you know, a scientific novel at the same time. It could be you know, put into the Louvre. It's just amazing how, in collaborative so STEAM, in my opinion, is the engine that drives innovation. It's very, very important. And I oftentimes when I do consultancy, work for a tech company, you know, they're trying to develop a project and they'll have people that have the same background. You know, you'll have five PhDs and all our mechanical engineers and like, you know, what, you know, what do we need to kind of get to where we need to. I said, "Well, go out and get somebody with a humanitarian degree, go out and get somebody with an arts degree go out and get them" What? they responded, "That's not the skill set." They were I think, you know, that is the skill set that you need, because it's like when you're trying to make the picture of an elephant and everyone is touching the same part of the elephant because that's the only thing they know. They're only as good as described that. But when you start looking at it from a different perspective, because you don't have that internal bias, then you can come with a really novel solution. Steve Jobs, gave this lecture that he'd always talked about innovation lies at the intersection between technology and art. It's at that point, that's where you become innovative. So that's the really most important part. Arts is integral to science and technology because at the end of the day, everything in life is about people. You know, that's something from Latino perspectives that I feel like it's always been an advantage to our community because we're very family-centric. We're very community-centric, and that always gives you an advantage. And if you start looking at everything's about people arts and humanities, that's what gets you to remember why you're doing something. When if you get stuck in the tech side, and the zeros and ones it can be very cold, and it can be and it's not just something has to be technically appropriate like the iPhone. The iPhone works and it's amazing piece of technology, but the iPhone wouldn't have been as successful if it wasn't also aesthetically pleasing. If it didn't integrate with how you as a human can interact with an object. And

so it's the combination of something that's both technically proficient, but then aesthetically, advanced. That's where you get something that becomes revolutionary like a piece of technology like a smartphone.

He shared the idea of the advantage of being Latino and you know, we are also very heavily arts-oriented. I mean, you go to Puerto Rico, Mexico, you go make what you see all the coloring the murals. You know, we take that for granted. But one of the interesting points is that you keep saying your stated is quoted as saying that Puerto Rico can become a Silicon Valley. And that's a unique idea. I like the idea that it doesn't have to be in one place over in California. Why do you think that's possible?

So when I call and you're referencing that Forbes article, and what I've spoken about what the people there was called, it's the Silicon Island. So we can take what Silicon Valley has done and we can transport it to Puerto Rico. We have to change the mindset and that's you asked also what kind of an inspiration for what I'm doing and you know, after the community as a whole, underrepresented communities, this whole the divide between the haves and have nots, it's only going to increase if we don't get on board with the new economy, you know, with the silicon collars, the new generation of STEM, that's where it's going and that we have to be ready for that. Not just for communities that aren't represented to be able to grow and generate generational wealth. But for the country as a whole, the United States to be competitive at a global level. You need to embrace the diversity that you have here. Diversity has always been an advantage the United States. If you look at the Olympics, almost every other country is completely homogenous. What has been the greatest strength for the US has been our diversity. Sometimes it's what causes so much strife in the country, but realistically, it's been the greatest strength to our country. And that demographic of that diversity is changing and if the future majority of the population isn't ready to compete in those fields, then the economic power of the United States is going to fall. So we need to be constantly generating a pipeline of that. Now, specifically to your question about the Silicon Island perspective. Well, we saw what happened with Hurricane Maria we saw what happened with all the other, you know, natural disasters that are going on across the world. People from underrepresented communities tend to be affected more by these global cataclysmic events, whether they be climate change whether they be pandemics. Why? Because it opens up a very brittle skeleton that you have a systemic inequality that's been built into the world. And so the ones that are already most disaffected are the ones that are going to feel the effects of these kinds of change. So we saw what happened to the island after the Hurricanes were when you have an economy that is so heavily based on tourism, in a world in which climate change is a reality which we have to adapt to what's going on because of the consequences of not making decisions earlier, then that makes you have to reinvent yourself and look what happened during COVID. The jobs that got affected the most were those low-income front-end worker jobs, those the people that were out the door, those were the people that were affected the most. But the people that had those STEM jobs, they could transition to working from home, right, they could transition to working through zoom and having all these kinds of mobile things. So that's what I want for the island. That's what I aspire to create for them as well, transitioning them from primarily tourism there. There will always be a sector for that and a need for that. But being able to have a more robust economy to be able to withstand those global cataclysmic events that will continue throughout the world, whether it's climate change, whether it's another pandemic, you know, in 10-20 years, whatever, whatever the issue is, so that you can have a robust economy. It's all about diversification and being able to prepare for what could happen in the future. So you need to be able to set the groundwork for it. I think the island has the capability to become a Silicon Island. We have a growing ecosystem of startups, we have that kind of support, but you need to bring different factors together. You need to have a government on board with their support of academia, you need the private sector and the public sector to come together, creating those unique public-private partnerships, to be able to generate an intellectual property to be

able to stimulate startups to be able to create new jobs of the future. I think it's possible and I think the foundation is there. So that's why I'm a strong proponent of it.

Sanchez: I was in San Juan, Puerto Rico a couple of years ago, part of a tour that I was doing and the lights went out in the city at eight o'clock in the evening. So I that my gosh, you know, centers of the island, that the need for strengthening the infrastructure and being able to anticipate and act on them. So you mentioned that the imports, and so in that, so that's not a third world country.

Dr. Morey: But yeah, it shouldn't be. It should not be. It's been treated as one. I think that's a political statement. I'm making.

Sanchez: Felix, I know you had a question.

Dr. Zuniga: No pivoting on infrastructure, more about personal infrastructure. Can you talk about the role that mentors should play in helping you get to where you've been? And a two-part question the second part would be, we talked about diversity and the value of diversity. What can leaders of the organizations that you participated in, do to walk the walk right, as opposed to just talking to talk about diversity, which we've heard a lot of over the many years as well, especially since last year and the Black Lives Matter movement and you know, there's been a lot of talk about change, but can you talk to those two points, that'd be awesome.

Dr. Morey: Yeah, absolutely. Great questions, too. And I don't have a problem getting a little political. Armando, it's up to your audience, but no, for a mentor, mentorship perspective, it's hugely it's a huge part of it. You need those mentors in STEM. I did not have mentors, from my you know, Latino *boricanos*, somebody was that I kind of that kind of brought me through my career. But it shows you the importance of having those kinds of things right and having people that look like you and not just having those that look like you and developing a mentor perspective. Then also cultivating mentees and getting mentees to develop into mentors. You know, it's a skill set that needs to be taught. And it's very, very important one of the most important things, and ideally as a mentor as you develop mentees, and the way I look at it is my goal is to not get not to teach mentees to get to my level. I want mentees to surpass me. My goal is for whomever/ I'm cultivating to go farther and further than I ever did in whatever aspect that they want to go in. Because that's what you should be looking for in your mentees. But it also shows you because I did not have my own Latino mentors, besides people within my family, which we'll get back to in a second. But it also shows you the vital importance of having allies throughout your journey. And why the majority is just as important to educate in these things. We talk about the content that we're creating, having diverse stories and diverse representation and yes, it's important for kids growing up to see themselves in those positions, so that content is for them, but it's equally or even greater of importance for the majority to be able to see that representation as well, because they are the ones that control they are the gatekeepers they are the ones who are empowered and so when they see someone you know a Latino kid with first name Jose will say last name Morey with a or little Afro-Caribbean kid, or anyone that's coming in someone with a different gender, different gender identity coming into a field, they need to be able to have an understanding that person regardless of what they look like does play a role in their company and they need to be able to give them access because even though they might be the first one that looks like that. They should not have a bias that keeps them from not allowing that person in. And anything that we do the minority can speak and can speak truth to power but at the end of the day, the majority has to be on board. There has to be allies that are made because at the end of the day, slavery would not have been abolished if it wasn't for majority women's suffrage would not have been would not have happened if it wasn't for the male majority. The civil rights movement would not have occurred if it wasn't for a white majority that help it to occurred. Now it was the minority that was always fighting and the ones

that were suffering for it. Absolutely. But they had to find out why. So we have to help cultivate the majority to help us get to those levels as well and that's something that people tend to forget and that we need to do. And then us from an underrepresented community, we have to elevate our leaders that are already there. And we have to teach them to be mentors. And we have to get them out there and get them into the ecosystem to speaking and not being afraid of speaking up because there are generations that need to see them and need to aspire to be like them. So it's an important thing that we have to be cultivating that within the leaders that we have. Because as Armando has said, "Oh, well. What about the people say that there are people that aren't like that?" Well, we need to get them out there. We need to get them talking. We need to give them a platform to be able to do that.

Dr. Zuniga: I heard recently about someone say I don't need allies. I'm looking for accomplices. Right so.

Dr. Morey: But we have to remember those things too, from our perspective, right because, you know, as Latinos, we need to be reminded that, you know, we have our own kind of issues. That we have to think about misogyny and patriarchy. It doesn't only happen in the majority, we have a lot of those issues in our own community. So as we have especially our LGBTQ plus friends and family that are coming up, we have to be cognizant that we have to be an ally to those as their kind of biggest struggles that they're facing in their minority are struggles that we have to face at other times, right. And we might be a little bit ahead in certain perspectives. But we have to understand that there are other minorities and they'll continue because this is something in my own journey I've seen, especially with individuals with disabilities, as we were drawing as we were creating content, and bringing in mentors and telling people's stories. It was in an unknown bias of my own that I learned that oh, you know what I hadn't thought about that kind of issue. And when I started thinking about it, I've never worked with someone with a physical disability ever throughout my entire, you know, in twenty years within STEM. And the fact that I've had zero interaction with anyone with a physical development disability and stem doesn't mean they don't exist, and we went out and we found them but it was that, that that same thing that you yourself have biases that you don't understand, until you learn about them. And that's the thing about humanity that we have to keep learning. What are those blind spots that whether it was whether it was culturally or whether it's, you know, the world or whatever it was that kind of imbued those things within us. We just have to be open to the fact that you know, things that we don't know are incorrect right now in our lives, we have to be open to fixing them once. Once someone comes to us and says, Hey, this is a this is something that you've been struggling or doing appropriately and you have to grow yourself.

Sanchez: I thought came to across my mind that you mentioned the greatest ideas on Earth, and may come from a person who is in the furthest corner of a classroom, that most people would say that child has, you know, will never have a future but yet their mind is processing information to a level where we could change the world with that idea. So what I'm hearing from you then is that we need to put in place structures that recognize kids that may not be the normal as of today's educational structure, and recreate it and rebuild it so that those kids do come to the surface with their ideas. And then the world benefits. How do you do that? What how do you recommend that the educational structure change, so that all ideas fit. There that there is a pipeline of ideas coming in, that we can all benefit from?

Dr. Morey, Yeah, that's a that's a bigger discussion and a tougher discussion to have. You know, it's really I think Felix and people have studied this are way more halfway, much greater skill set and be able to having these discussions and myself but I will give a few points that I can think of and then Felix, they'd love to get your discussion into this as well. But we have to, in my perspective, go back to the root cause. So I tend to my medical training tends to have been looking at things and trying to get all the data and try to put a differential diagnosis together and then start trying to whittle down

what are the potential solutions? I look at everything through a physician's lens. It's something that I tell my physician colleagues that they never really they take it for granted, or they don't realize that the skill sets of how you train to diagnose and to treat can be applied to really any industry. It just it's you move away from the file the biology of human-machine and into industries and trying to break it down and trying to come out to a diagnosis. So you look at the history of how education has been brought here in the United States. Education in the US has been focused primarily, you know, came from an agricultural agrarian society when we were developing into an industrial society right and where we have summer breaks, right? That's why kids can go back and help their parents on the farm. But we've completely evolved away from that kind of an industry and that kind of society now. Not 100% but the majority of us are no longer living in those kinds of lifestyles. So you have to reinvent education really from the ground up. And this whole concept that you teach really to just generate one type of person for one to fit into one type of mold, it doesn't make sense at all. And realistically, it's a very lazy way of kind of trying to educate people. We have to understand that different kids are at different levels and not everyone needs to go into STEM either. It's just we need to get more because of the lack of representation also has to do with the lack of economic inequality. But there are there's an importance to understanding what are the skill sets and what's the passion of the individual to whether it's their passion wants to go into the trades or their passion wants to go into the arts or their passion wants to go into the sciences. But being able to allow that diversity of thought and evolutionary development within the child's minds. We have to be more open to that. And there are models out there people are trying to do that. But for the map for the vast majority. The educational system here is kind of one size fits almost no one. So it's an issue. You need to cut, we need to restructure it completely. And then we have to think about what are the assets mean the fact that when we transfer COVID we made a transition to virtual learning, but teachers aren't taught virtual learning in schools, correct me if I'm wrong, Felix, please. Like when you're growing when you're getting your Masters or your undergrad, you're not taught how, you know how do you teach a virtual class, but realistically now we have that we have not only the ability but the necessity right? But as we go back, or if we go back, we need to be thinking about new methodologies of how teachers are taught, how the educators are taught through professional development through their educational modules, to be able to think outside the box or to think as if there is no box. Then we also have to take into consideration with the United States that there's a digital divide between communities. So even if you start teaching virtually, that doesn't mean you'd be able to reach everybody. So there's that's why it makes it's a complex discussion because there are complex problems that so you need to bring in the government to make sure that there's equality amongst access, then you need to bring in academics to have a discussion of, you know, how do you evolve, teaching methodologies? And then obviously, the marriage of the two of how can you create hybrid models, not just hybrid, personal to virtual, but hybrid into all the different types of settings that there are all the different types of learners. And you're there's never going to be a perfect solution because the country is too big and too complex. But you can do better, and we should do better and we owe it to our kids to make sure that we do better by them. And at the end of the day, if we pour more energy, more time, more thought, into the next generation, we're only investing in ourselves. It's only a win-win. So this concept of you know, it's too expensive. If that makes no sense to me. How can ho can an investment in your future and investment in yourself be too expensive? That seems nonsensical and moronic to me. So, and the role that we play at Ad Astra Media specifically is we're there to combine the entertainment and the educational side. We've seen our content to be able to be integrated into school districts and into lesson plans and having educational modules built into our pipeline. And we're already doing that with partners like the past Foundation, Ohio, and others where they're taking our content, creating those modules and then putting it into their workshops and into their school districts. And that's something that we see long term because we need to not just educate in different ways, but that part of inspiration has to be in there too, so that kids can start dreaming about what they can be as opposed to you know, coming from Puerto Rico, just thinking about maybe

athletics or the arts. Nothing wrong with those but we want them to be equally thinking about being a doctor, being a nurse, being a physicist.

Sanchez: We're gonna give out. I'm gonna ask you for contact information for our viewers to be able to learn more about what your project is, but let's throw this whole pyramid. huge, massive question on Felix's lap and see how he responds to that.

Dr. Zuniga: I was hoping that we're gonna go to the next question. No, you're not gonna get off of it. It's very complex, right? And there's a lot of different pieces that are into playing there. The only thing I didn't hear you say Jose was saying that it would just be to incorporate the student voice right and voices from our community. Because a lot of times the conversations happen between the governmental entities and the businesses or corporations that are you know, looking for the people with the careers and it's like, what can we do to the community not you know, for the community or with the community, right, so incorporating the student voice Armando and how to fix education, right? Because they're the ones who are experiencing it. And you spent, you know, many years in the classroom and you know, firsthand what, what education does to shape students and student minds, you know, so listening to those canaries in the coal mine, right, so to speak, and find out what's, what's going wrong, what's pushing our students out what's not working for them? You know, I was just reading a study last night about, you know, serving faculty member serving and Hispanic serving institutions and how they have to pivot their teaching style and pedagogy to work with students from that community, whether or not they are from the dominant background or Latino background. And so it's that right, it's asking the questions and seeing how the students in the communities were serving, you know, what is of interest to them and how are we adapting our styles to their learning, right, as well. And like you said, Jose, you know, the digital divide is huge, right, being able to close that gap. You know, right now, there's a lot of services that are in place because of COVID. From, you know, broadband agencies to do like emergency connectivity for the internet. Families can get connected for free or for as little as five bucks a month. That's gonna go away at some point, right? But that doesn't mean the need goes away. Because, you know, once you know COVID is over, hopefully, then people will turn around and start trying to make money off of those things again, and that gap will continue to widen. We have an ongoing crisis in Latino education, right. Next education. We are seeing more graduates of college that are Latinos, more than ever, but when you look at it closely, the equity gap, you know, based on the size of the community is growing, right if it's a smaller number of percentage of that greater community that has never been higher levels of education, so it's, it's this huge wave that that's coming. And maybe we can pivot to the next question with like, you know, as we look at future careers and things like you know, automation, robotics, AI, the importance of again, diversity and having us represented in AI. Can you talk about some of the challenges that you see with that and the lack of diversity in AI development in the future?

Dr. Morey: Yeah, well, it's the same problem. It's in the rest of the STEM or STEAM fields. We already have a lack of diversity now. And if the data holds true, that divide is only going to be exacerbated, not just the physical divide of not having the representation, but then the economic divide of not being in those fields. Artificial Intelligence is a huge one. I mean, AI and automation. It's going to touch every aspect it already touches so many aspects of our lives, right? If you're watching something on TV, or if you're finishing up a Gmail or if you're putting in a Google search, you know, machine learning is already involved in anticipating what you're doing or where you're going. Or if you drive near something. Or if you say something off-hand when you get an advertisement, right. We've all seen that. So it's in 100% of our lives already. It's only going to increase whether it's in it's gonna get more sophisticated and more complex. You're gonna see robotics, you're already seeing them in warehouses, taking over more warehouse jobs, obviously, more manufacturing jobs, like people talking about, oh, we need to bring back manufacturing. Well, yes, people want more

manufacturing from a logistics and supply chain perspective. But realistically, a lot of those jobs are going to be automated. So even though they may be back on shore, they won't be the same as they were, you know, 50-60 years ago, where you're gonna have physical labor doing that. What you will have is a technician fixing the robots, right? So and that's where the STEM field is very important because the criteria of the people that work there are going to change. Same thing with car mechanics. As we get cars that are more advanced, it's the the old school mechanical knowledge goes way you need more computer science, then you need more mechanical science, right? So it's the evolution of things. It's gonna affect every single thing. You look at restaurants, I mean, restaurants are already trying to play with automated services. We've seen that now with COVID Even more, right? You go to a restaurant and you don't even have a menu anymore. You just have a little thing that's on your table and with your own phone, you do you do or you order things directly from your phone you pay for if you don't even see anyone. Amazon has full stores where you don't see people you just kind of walk in and walk out with what you want, and everything's automatically tracked. So it's going to be more and more and greater and greater. Artificial Intelligence is a big driver of that divide. Absolutely. And we need to be able to be prepared for that. So we need more people in computer science in machine learning. And it's not just from zeros and ones perspective of people that are actually doing it, we also have to be involved with the parts of datasets that are being created to be able to build this automation. The reason that is is because artificial intelligence, all it can do is replicate what's been done in history. So if the datasets that are already there have a systemic bias or racial bias because of the system that created those datasets, then the artificial intelligence is just going to replicate systemic and racial bias. And we see there's a great documentary right now on Netflix called "Code Bias" by some of my colleagues at MIT, which the main protagonist of it she's a computer scientist, and she was creating an AI application based on facial recognition that she was trying to do for an app. And when she bought an off-the-shelf one and never it didn't recognize her face, it would say no face, no face detected, but then when she put on a white face mask, it was able to detect a face. And so when she started looking into the datasets like why this happened, she looked into all the big ones, IBM, Amazon, Facebook, when she looked at what the datasets were, it was, I think, greater than 90 or 95 or 95% male so obviously you didn't have enough females represented to be able to create an adequate application. And then it was like greater than 90 - 95% Caucasian. So she was an African American female, so it was doubly and the thing was a beast that foundational algorithms were the ones that are being used and things like health care, things in criminal justice. So the systemic inequality that was put in place because that database, then got perpetuated into all these other systems. And we're seeing that there's a ton of articles coming out where people put in this application, you know, to be able to catch to be able to scan a crowd and detect who might be a criminal or whether you need insurance coverage or not. And AI or the algorithm puts out something racial. You saw, I think it was a few years ago, Microsoft put out an AI chatbot on Twitter, where it just allowed it to learn from Twitter and be able to respond to people and they had to take it down within 90 minutes because it became antisemitic and misogynist within 90 minutes. Because it was just learning from Twitter from Twitter input. And so it wasn't that the algorithm was racially motivated or had some sort of sexual bias it was just that the data was. So if we are not a part of that evolution, then the systemic inequalities that have held back underrepresented communities, whether they be African American women, females, LGBTQ plus, will be perpetuated into the future. So it's not just learning about it and be able to get part of it. But it's also making sure that those databases are robust and equitable for all. Still, it really does come up because when you go back and look at who, who actually created, like, let's say that facial recognition software, they were all Caucasian males. So of course, they weren't thinking about the fact that oh, maybe we should get somebody that looks different from us to put into the data. Because it was again, their own kind of blind spot. You know, it may have happened to us, potentially, that goes us through, you know, Latino males sitting around. It would happen to us too, as well. We weren't thinking about it. But that's why diversity is so important. So you can at least have one person that doesn't look like you. Put their hand

up and say, Hey, there's a problem here. So that's, the importance of why we need to be at the table and they say that's that old adage that if you're not at the table, you're on the menu. That's it's a whole set of true forever and ever.

Sanchez: I want to take on the same question that I threw at you and Felix also approach the but I'm gonna oversimplify and I emphasize oversimplify it. As an educator for many years and talking to many peers. I think, what happens in education for me, my perspective is we never get to the question of “why?” that we get into too much of the details, which are now in Google. I can bring it up in two seconds. But we never stop and get to the level and say, Okay, why do you think this or that? And I think when you're bringing the question is from the scientific point of view, that's the core of science to ask why. So I see it from that level. If we merge this question, and we embody it. I think our educational system will change from the bottom up.

Dr. Morey: Yeah, I would agree. And I think that's another reason that we don't elevate science into all fields the way we used to, you know, or there's not there's there's a lack of respect towards science in general or the amount of time it's, it's I feel, Felix just got a doctorate in education. I mean, that is not an easy undertaking that takes sacrifice. And, in today's culture, and it goes again, again, it goes back to us ourselves as the scientists not being out there and not being involved in popular culture. You know, social media has elevated ignorance. has elevated lunacy to the same level, as scientific education. The fact that, you know, I spent until I was 34-33, studying, you know, to be a physician, you know, doctorate degrees post-doctorate degrees, residencies, post-residency fellowships and to think that people want to argue with physicians or with other scientists, because of something that they read on some obscure blog by some obscure person or machine that may have written something random. It's just we have this lack of respect for the scientific method, and how we get to facts how facts are derived. People don't get to choose facts. Facts are just what they are, whether you like it or not, it's just the truth. And we tend to forget that like the sun is a chemical reaction of different perspectives, and it's not going to change it's not a mythical or magical creature that comes and goes. It's not being pulled by, you know, horses that kind of rotate around by some omnipotent being it is what it is just because you choose to think it's something else doesn't mean that it's something else. It is what it is. So that's the thing that we have gotten away from and that's the thing also that we're trying to change it at Ad Astra Media is to elevate science as a whole for the entire community because we've gone away from that and it's dangerous, and we've seen the dangers that it can cause it literally leads to loss of life. And it's unfortunate, and something that we have to be constantly fighting against because I believe ignorance is at the core of so much, especially when it comes to inequality. Thinking of people as you know, calling someone illegal or calling someone a racial slur or judging someone by whom they love or by the way that they were born. All that really at the end of its core comes out of a place of ignorance. And knowledge I believe can be the thing that conquers most of those inequalities.

Sanchez: We're getting close to the end of the show. First of all, could you give us the contact information where our viewers can keep up with all the fantastic projects, especially your media one and thank you for the book. I just loved it.

Dr. Morey: Oh, you're welcome. Yeah, so if everyone thank you for the time and follow us on social media Instagrams, the best way, Doctor Intergalactic Dr. INTERGALACTIC on Instagram and then our website is Ad Astra Media, which is something that astronauts say to each other like me it's Latin for to the stars. So Ad Astra Media.com and through our website or social media, you're able to find links to buy our books. Our books are available on Amazon, Walmart, Target, Barnes and Nobles. Your local bookstore can order them too if you ask for them. More books coming out. They're all in Spanish and English. Always we're starting to work on Spanglish books coming up where they'll have

both Spanish and English together. Yes, kids can have them. We have free comics online, free educational modules online for teachers. We have other ones that are gonna be available for teachers to be able to just put into their classrooms. That they want to download or purchase them. And then we're also gonna be going through a crowdfunding campaign here towards the summer, early fall, where anyone that wants to invest into us will be able to do so to support and push the cause for it. And if there are folks out there that want to invest now, we're also doing that as well. Through different mechanisms. Anyone that wants to be a part of the story, or you know, an ally in the journey, please reach out to us.

Sanchez: I want to be part of it. I want to be part of it. And I know feelings also. Feelings final question and then closing statement, please.

Dr. Zuniga: My final question would be, “What advice do you have for aspiring creators, aspiring authors, people who have the idea or concept that they want to do something but they're not sure where to start?”

Dr. Morey: Start small, do something. Do something that you feel that you that that you can do? That would be easy to do? Like start a small blog, write something on medium? Do something simple and show it to your friends show it to your family? And start from that perspective. Find allies, you know, find groups in your local Community Find groups online that can help you there's that old adage, my dad was huge in damages. So we'll be chosen by noon. So that's why they just kind of come out of me and I blame him so when it's his fault, but there's an old adage that is things from Africa, but “If you want to go fast, go alone, but if you want to go far, go together.” So find your allies, find your community, whether it's the family that you're with or the family that you choose, find them and help them on their journey, and hopefully they will help you on your essence. Sometimes it's more powerful to help others reach their dreams and through the universe, I think those things tend to come back and you'll find doors and windows that tend to be open as you're trying to help others and it helps also to get you out of your own mindset because you start seeing the art of the possible and others and it helps you kind of grow yourself. So if you're having problems, you know starting something on your own help someone else start something and then hopefully that will give you the motivation or the knowledge of how you do it yourself.

Sanchez: Wow. I'm gonna ask you to share with us your closing statements but my God we're just seems more like we're starting not in the for the lack of time with please give us your views.

Dr. Morey: From my perspective is thank you. Thank you, Felix. Thank you, Armando for giving me the opportunity to speak and everyone listening to this and watching. The future's bright. I'm a strong believer in creating the world that you want to see. Creating the world as you see it. And I believe we all have the capability to be world builders. I believe we all have that power within us. If you think about where we came from. We all have stardust in us. The stardust that's everywhere in the universe that's inside of you. And we can create new universes and we can create them in the way that we can see them and we can create a better world and we can do it together. So I would ask everyone who's out there who wants to be a part of this journey, come create worlds with us? We would love to have you on it.

Sanchez: Hey, amen to that. I'm just overwhelmed with such fantastic ideas and motivation. The idea that we have our social media, we can use it. If we come out of our desks stand in front of it and share our best thoughts and motivate the future. I applaud that. I know that Felix has been well is working his Ph.D. has been doing also on the side. I don't know how he did it, but he has. So as long as we keep listening to individuals like you and we need to bring in Latinas as well to do the same thing. I think we're set for a better future.

Gracias, Dr. Jose Morey.