Robot city organelle analogies worksheet printable worksheets free word

This biology homework page is perfect for helping students make an analogy of how a cell works to a robot city! This is a unique approach (cells have been compared to cities before) because it adds the idea of the robots that function inside the cells. The robots turn out to be proteins. I had a lot of fun thinking through this analogy and I use it throughout the year in my classroom. On this page, students think through what city structure each organelle would correspond to. This one page worksheet is designed to have meaningful, thought-provoking, and creative questions that are respectful of student time.Would you like another robot city connection activity? I have an additional activity designed to connect protein synthesis with genetics later in the year.This page is part of my giant Biology Homework for a Year Bundle. Click here to read about that whole year bundle if you want to buy a whole year's worth of homework pages at a discount as compared to buying them separately.This page is also part of a Cells Unit Homework Bundle. Click here to read about this unit bundle.This page is a non-editable PDF file. It contains unique illustrations that I created or licensed from professional designers. An answer key, with the answers in red, is included!Check out my Biology Doodle Notes for some engaging resources that thoroughly explain Biology concepts in a versatile way!Contact UsIf you have any questions or concerns, please reach out to us on the question and answer section of my store and we will get back to you quickly!Terms of Use:Purchasing my teaching resources allows you to:* make copies for your own classes only.* place this file on your own password-protected class page or server (Blackboard, Google Drive, etc) AS LONG AS no other teacher has access to that class webpage. This resource is for you, the purchaser, alone.You are not allowed to distribute this digital resource to other teachers or post this resource on any webpage or server that is available for public view. If you and a team of teachers would like to use this resource together, please purchase additional licenses on the resource purchase page.Failure to comply with these terms of use is a copyright infringement and a violation of the Digital Millennium Copyright Act (DMCA). Clipart and elements found in this PDF are copyrighted and cannot be extracted and used outside of this file without permission or license.Files are partially or fully non-editable to protect the images that are copyrighted and purchased through licenses. Thanks for understanding!© Bethany Lau All Rights Reserved. Season 1 December 21, 2021 Disruptions in the supply chain have impacted consumers' ability to get a wide range of products, from couches to milk. Asoo Vakharia, the McClatchy professor and director of the Supply Chain Management Center in UF's Warrington College of Business, explains what's happening, what consumers can do and what companies should do in this episode of From Florida. Apple Podcasts Google Podcasts Spotify Stitcher RSS Transcript Nicci Brown: Welcome to From Florida where you'll learn how minds are connecting, great ideas are colliding and groundbreaking innovation is becoming a reality because of the University of Florida. I'm your host, Nicci Brown. Today, we are going to talk about something that is affecting so many of us in ways that we never even considered: the disruption of the supply chain, both globally and nationally. We're joined by Professor Asoo Vakharia, the McClatchy professor and director of the Supply Chain Management Center in UF's Warrington College of Business. Asoo is a fellow of the Decision Sciences Institute and the Production and Operations Management Society. Asoo, thank you for joining us. Asoo Vakharia: Thank you, Nicci. Thank you for inviting me. Nicci Brown: I think it's fair to say that many of us have never given the supply chain a second thought, but that is until the past year and a half. So, let's start with the basics. What is the supply chain? Asoo Vakharia: To understand it, perhaps taking the example of a product, milk, we all use on a regular basis might be helpful. So, I tend to think of a supply chain as three different positions that are occupied before we get the product. The first position is who produces it. And in this case, it's farms, and there are about 50,000 farms in the United States producing milk. All right. These farms store the milk for at most 48 hours. And then it's put on trucks to be sent to, I guess, processing centers. That's where the homogenization as well as pasteurization takes place. And then once that's complete, then it's sent again on trucks to, maybe, a distribution center, or a Publix distribution center in Jacksonville or maybe directly to Publix's retail outlet. All of this actually is really interesting to observe because it's supposed to happen in about two and a half days after the milk is produced. So that, in a nutshell, is the supply chain. We've got the source, the farms, we've the processing stage where we homogenize milk and pasteurize it, and then we get the retail outlet, which is the place where we go and buy it. Nicci Brown: Is it accurate to say the pandemic set off supply chain disruptions or was this a problem simmering out there before March 2020? Asoo Vakharia: So, this is a really interesting question because when you say the pandemic set off disruptions. Yes, it did. That's a short answer, but anything can set off a disruption. And disruptions are a way of life. If I'm a supply chain manager, whatever point I'm at, even a consumer, disruptions are faced by us all the time. I mean, we saw the toilet paper shortage we had around March of last year and April of last year. So, I think this is happening all the time. What's unusual about the pandemic is three or four things. One is it was the scale effect was significantly higher. So, what happened was demand dropped so quickly and at such a high volume that it created a problem for us. The second thing was that over and above the demand stage, everybody sort of shut down. So, we had what's going to be known to us as The Great Resignation, which is actually a great reduction in employment. The second part is most of this got impacted on an international scale. So, it wasn't limited to a region of the world where we could deal with it in that region. It happened everywhere. The third thing is we don't know when it's going to end, okay, because I think there's this recurrence that's taking place in terms of the Delta and the Omicron [variants]. So, I don't know that the pandemic is over. And finally, it is going to reoccur frequently because if it is, then we have this issue about dealing with problems of this type over and over again. So again, the short answer, yes, the pandemic caused a disruption, but it's part of a supply chain is encountering disruption. The scale here was significantly bigger. Nicci Brown: And I'm guessing that the shortages of workers and materials is a bigger factor in the disruption of the national supply chain, especially food items and household goods. Asoo Vakharia: Yeah, I would tend to agree with that to some extent because there is the sort of notion that everything within the country shut down. But if you actually take the global footprint of a supply chain, this was something that everybody also shut down. It wasn't only us. So, when we say shortage of material, shortage of this, that. Yes, but it's part of this entire supply chain which expanded on a global basis. And so that's why this whole thing is being felt by us and every part of the world. It's not only the United States. It's just that we are paying a lot more attention to it. Nicci Brown: So, let's focus on the global picture. Would you give us an overview of the major ports in the United States and where they are and who runs them? Asoo Vakharia: Yeah, I think the very simple way of looking at that is just do a very quick scan of all the imports that come into the United States. And you'll see that approximately 20% are coming in from Asia and they are downloaded at LA. So that's the big port, right, in terms of scale. I think 20% of the entire volume in the U.S. is LA. The second big one is Long Beach, again, because the shipment is from Asia. It's about 13% of the total volume in the country. Both of these ports are run by the local city councils or the municipalities that are involved. So, there is very localized control here. Now, if you go down the list, there are lots of smaller ports that emerge, okay. For example, New York/New Jersey is one, Houston is another, there is even Brunswick and Savannah, which are ports, but the scale effects compared to the imports coming in on the California side, which is LA and Long Beach, is significantly smaller, okay. Across the nation, it appears that there is local control or, for example, state control. So, for example, the Port Authority of New York, there's the Port Authority of Georgia and things like that. So those are the ones that control the ports. It's not federal control at all. Nicci Brown: Is there anything the federal government can do to have a significant impact? Asoo Vakharia: I think actually they've done what they can, but here is a problem that you encounter in most of these situations. You have a federal government which is probably trying to look at the collective good. Municipalities, ports, everything when it's run at the local and state level, there is an essential conundrum that emerges, which is that the collective wisdom of the federal government, which is looking at the collective country as a whole, is not sort of manifested at the local level. So, there is always going to be this tug of war. And yeah, sure. I mean, we did start to enforce a mandate that they should be open 24/7. But coupled with that, there were some other effects that happened. So, it's not exactly the federal government not doing things but there is a difference in terms of how whatever they do will be received by the local authorities. Nicci Brown: And what were those other effects? Why didn't the 24/7 work the way that it was supposed to? Asoo Vakharia: Yeah, I think if you look at it from another perspective, it's the following. I try to think about this whole thing, and I talk about this in all my discussions with the execs and as well as my classes, think about a kitchen sink, okay. You have the inflows of the tap and you have the outflows of the drain, right. By doing the 24/7, all we did was we took that drain, which was maybe 18 or 12, made it 24/7, so it'd make it larger. So, the water that came into the sink from the tap is being processed faster, right. Now, we didn't think about two things when we did that. One was, is there any change in terms of this magnitude of stuff coming in, that means the tap. How much have you opened it? And we kept opening it more and more and more. So, the water level actually didn't drop when you opened the drain. The second part is when you open the drain, at the bottom, there is a pipe. Now if that pipe is not expanded, right, simultaneously, the effects are going to be felt at the pipe now. So essentially, we call it shifting bottlenecks. We have the drain at the bottleneck. We expanded the size and what happened was the pipe at the bottom, got to be the bottleneck. So, it's not that it didn't work. Of course, it worked. But now we've got containers on shore, which are lying to be picked up and all the ports are leaving these huge charges if people don't pick up the containers. Nicci Brown: So, let's talk about Florida. How do Florida's ports fit into the nation's supply chain infrastructure? Asoo Vakharia: Yeah, I think this is a really interesting question and I'm glad that we are talking about it a little bit because there's two things here that we should keep in mind. One is that when we discuss issues about Florida ports, first of all, from U.S. level, we're apart 5% of the total volume currently. So obviously we can always make the case saying, "Oh, we can have more capacity these ports." Now, what does more capacity mean? We need to have longshore people loading and unloading all the stuff that comes in. We need to have an infrastructure which is a rail or trucks, which are going to visit these ports and take the goods of away from them because otherwise we're going to do the same thing we did in Long Beach, which is boats are going to be out there, we want to unload them, we do and then we have this huge set of warehouses where all the containers lie. So, I think when you think about these types of issues, it's a little bit more complicated than it really appears to be — "Oh, we have capacity. Let's use it" — right, which is really the rationale that's being put forward. The other two parts here is that people might not be familiar with this, but most of the shipments are coming on what we call Ultra Large Vessels. These Ultra Large Vessels are about 14,501 TEUs (twenty foot equivalent unit) and above. Some of the ports on the Florida's side might not be able to handle those vessels. The second thing is to get them to Florida, you got to go through the Panama Canal. The Panama Canal does not handle Ultra Large Vessels. They handle Neopanamax and lower. So, the idea is that you have to have smaller vessels coming in. If you have smaller vessels coming in the cost is higher. The third thing is if you don't have the infrastructure, how do we actually manage those ports? So, I think it's a very deep issue that you need to think about and try to entertain all the solutions to it before you suggest it as, I guess, a policy. Nicci Brown: So, it sounds like it's not anything that could happen overnight, per se, but what about looking further into the future? Asoo Vakharia: Yeah, I think further into the future, actually, there's a unique solution that I don't know if, you know, it's just come out in the last five or six days or has been publicized in the last five or six days. The unique solution of the following. Amazon is a case in point. What they did is they actually went out and bought a lot of small vessels. They're shipping their whole products to over 42 centers in the U.S., not the two ports only. The second thing is because they have their own vessels and they're smaller, they can navigate the canal, they can get other places. And the idea is, costs are higher but at this point, the idea is to get the product to the people who want it. So, people seem to be willing to bear the costs, right? So, if you do this far-reaching analysis or thoughtful analysis at a more strategic level where you think about things in advance, they've done that in advance. So now they're not facing the short. For example, they say that their shortage percentage jumped 15%, but the shortage originally were only about 1.5%. So, when you say 15% increase is not a significant percentage of that total volume. So, companies need to motivate this effort. We can have a simple solution. I mean, Walmart and Costco actually have jumped into the same process. So, we have examples of companies that are trying to do this and use the smaller ports as service points. Nicci Brown: Do you think in a way, that's why we ended up, I mean, we had the perfect storm of the pandemic. But it seems that we had really gotten to the point where we had gotten so close to the bone in terms of not being able to stretch anything any further. So we were primed to be in this position and so now if we can avoid it in the future, it might mean having a little more padding in that supply chain. Asoo Vakharia: Yeah, absolutely. We call it building flexibility in the supply chain, making it more agile to respond to stuff. Technical terminology or whatever supply chain terminology. But the idea is that building in flexibility and building in additional slack or capacity indirectly is obviously warranted. But think about the shortage we have, for example, in trucking today. We don't have enough drivers. The containers that are offloaded and they're empty, they don't know where to put them. So, the whole point is that, we are going to have these disruptions occur. The amount of padding that we build in will just drive our costs up, right, because, eventually somebody has to bear the cost. And the idea is that usually it's the consumer that everything is passed down to — not always the right thing to do, but that's what happens, right? So, if we do that, absolutely. But on the other hand, we got so used to certain products costing so little that now all of a sudden if you have to pay more, I wonder what our reactions are going to be. So, unless there's a change in consumption patterns, I don't see this building capacity or flexibility as a solution. Nicci Brown: What does the picture look like then in the months and even years ahead, based on your experience? Asoo Vakharia: Yeah, I think that we can do several things and I think some of the stuff that we do is actually very much reasonable. I think the managers, if you look at most of the people, the executives that are running most of the companies, you'll see a marked shift over the last 10 years. About 30, 35% of them said disruption is the major issue. Today, it's almost 75 to 80% say "That's my major, major issue." Right? So, there's a mindset change. Other changes mindset changes in terms of technology. So, bringing technology to bear in some of these methods and implementation the supply chains, I think will probably have the positive impact for us going forward. Like I keep saying, I don't want to go on to Amazon and so on, but even Walmart today recognized the shift in online buying that took place because of the pandemic. And they've seen that the shift is not going back. So, it's not like we are going to start going more to the store. It's just that we go to the store, maybe, but we will still continue buying online. So, trends like that are hard to, in some sense, go against the grain. I think the pandemic has changed a life set, and it's going to be a little time before we all can adapt to the new way to doing things and how best to serve a customer. Nicci Brown: Well, speaking of time, when do you anticipate, or when can consumers anticipate an end to the supply chain issues that we're experiencing right now? Asoo Vakharia: You're going to put me out of a job if I have to respond to that question! I told you supply chain disruption is a way of life. So, I don't think we can have an end. We can have definitely an end to this current disruption that's happening and that's simply by recognizing that just because we handled one bottleneck, like the ports, operating them, there's going to be another one that comes up. So, we have this phenomenon of what we call shifting bottlenecks and that's going to keep happening. So, until everything stabilizes to the new surge in demand that's taking place, this is not going to be resolved. And if you say timeline, it depends on the goods and the products. But I think that for certain product categories, for example, electronics, the ones that use the chips especially, is going to take a little bit longer because we are trying to build up the infrastructure locally to make those things. In fact, the federal government is making investments in that sector so that we have local capacity. Well, that's going to take a little while to pay off. So, it might even be the middle of next year. I think the most immediate stuff, we talk about toys all the time, we talk about stuff in the grocery stores, I don't see that as a major thing extending beyond February of next year simply because the demand will go down after the Christmas season. And so everything will get to a stable level. And then people will start planning ahead from February to the next year's December. And that lead time is enough for the supply chain to react and stabilize. So, I think that's the way I'm thinking about it. Nicci Brown: And it sounds like even though there might be a little more diversification in terms of where we get things from, you don't see a huge shift in terms of us no longer bringing things in from global suppliers. Asoo Vakharia: I think if it's left up to the people who manage the corporations, the companies and so on, there are very good reasons why we've gone international. It's not that in some sense it was a half-baked decision that, "Oh, we wanted to minimize, we already get something for 10 cents versus 15 cents." I think it was a very measured response. And I think it happened over time. So, I don't think you can correct for that immediately. There is the idea of what we call insourcing now versus outsourcing, so basically getting stuff from closer. So, what we might do is the buffers or flexibility that you talked about building in earlier, we might build that in some location, which is much closer to where the customer is, right? But that's the real change that I see in the longer run. I don't see these supply chains disintegrating or new ones emerging. Of course, there are certain regions of the world that are so badly affected that they might suffer for a longer period of time than we have or we will. Nicci Brown: And your advice to consumers, anything that you would share with us? Asoo Vakharia: So, this is always hard to say. And I think that I don't know how to best put it, but I'll give you a couple of things. We've done this before, we are in this together. Let's not get on this bandwagon of, "I want this, I want that." Let's moderate our wants a little bit. Let's think logically. Let's realize that we can't solve the problem by ourselves. And please, please, please, don't go and do this toilet paper shortage for us again. I mean, just curtail your impulses and be a little bit thoughtful. The second thing is yes, you will pay higher prices. But the part about high prices is I just read today, in fact, that a lot of corporations in 2022 are going to pay us higher wages. So, I know people say inflation, but wait a minute. If people are going to be back to the status quo in terms of the net effect, it's not too bad. Our incomes have gone up and costs have gone up, so, okay, we'll manage that. And the third thing for consumers is look for deals continuously. There is lots of opportunity out there. People are offering stuff at good prices and maybe you won't get the brand you want, but you'll get a good brand. So, in terms of moderating what we do. I wanted to end a little bit not with the consumer so much, but with the companies. If you think about what should we expect and what should people do. I think companies need to be a little bit careful here because the idea of a container from China to a port in the U.S. being $1,200 at one time and now costing $20,000. The idea that Maersk, which is the biggest shipping line in the world, is making exorbitant profits just on that big margin jump, is a little disappointing to see, to be totally honest. To me, it looks like when we have a shortage of gas, the gas stations raise the prices to gouge us. So, I just would like the corporations to be a little hesitant. I think the best examples are, actually, if you look at pricing schemes and stuff, Walmart's gone up about 22%, Amazon about 25%. I think those are maybe some things that consumers can bear. But anything like what we've seen in the shipping lines is enormous. That level of profit — be a little bit thoughtful. The second thing is, remember consumers have long memories and they will reward people who have a little bit recognition of our conditions, too. And finally, don't do things short term. This financial return, I have to get a better return for my shareholders and stuff. Just be a little bit longer term and I think you'll come out ahead overall. Nicci Brown: Great advice. Asoo, thank you so much for being our guest today. Asoo Vakharia: You're welcome and thank you for inviting me. Nicci Brown: Listeners, thank you for joining us for an episode of From Florida. I'm your host, Nicci Brown, and I hope you'll return for our next story of Innovation from Florida. Collapse December 14, 2021 Today's parents are the first to raise children alongside social media and this generation of children is the first to grow up constantly "shared" online. Stacey Steinberg, a professor at the University of Florida's Levin College of Law is an expert on "sharenting" and the intersection of parents' and children's rights in the online world. Apple Podcasts Google Podcasts Spotify Stitcher RSS Transcript Nicci Brown: Welcome to From Florida where you'll learn how minds are connecting, great ideas are colliding and groundbreaking innovation is becoming a reality because of the University of Florida. I'm your host, Nicci Brown. Today I'm delighted to welcome Stacey Steinberg to the podcast to share her research on an issue of concern to many parents — how to protect the privacy and safety of their children online. Stacey is a professor at the Levin College of Law and oversees the Gator TeamChild Juvenile Law Clinic and the Center on Children and Families. She is an expert in "sharenting," where a parent's right to share online and the child's interest in privacy intersect. In addition, Stacey is the author of Growing Up Shared: How Parents Can Share Smarter on Social Media and What You Can Do To Keep Your Family Safe In A No-Privacy World. We obviously have a lot to talk about on this subject, so let's get started. Hello Stacey! Stacey Steinberg: Hi, thank you so much for having me here today. Nicci Brown: It's terrific to have you. So let's start with how you became interested in children's use of and safety on social media. What was the catalyst? Stacey Steinberg: I think it was a perfect combination of my love of photography. It's my hobby, my expertise and my research as a children's rights attorney, and the reality that I'm a mom of three kids trying to figure this out on my own. I started writing about my experience as a mom, right around the same time that I shifted from being a child abuse prosecutor to being a law professor. And I was writing about the mundane and the daily, all the things that go along with motherhood and work motherhood. And I started to feel that what I was sharing online about my kids could cause them harm, but I didn't really know what that harm would be or how. I just knew from my time in the courtroom, that the decisions we make as adults can often impact our kids. And sometimes in ways that we don't understand until many years later. So much of the attention that I was hearing focused on online sharing really focused on what kids were doing and the mistakes kids were making online. There was very little attention and very little guidance focused on parents and what parents were doing and how they could better protect their children's privacy online. So, I dip my toe on the water really to try to solve a problem. I was experiencing in my own family. I had no idea that it would make such a splash, that it would help or at least start a conversation for families around the world. Nicci Brown: And we are in an unprecedented era when it comes to children's engagement with screens and the use of social media. Can you set the stage for us with your perspective on that particular aspect of what we're experiencing? Stacey Steinberg: Certainly. We are the first generation of parents to raise kids alongside social media and our kids are the first generation to grow up shared. There's so much information that's out there online about kids that other people are sharing about them, whether it's schools, organizations or parents. And then as kids get older, they're also sharing a lot of information about themselves. We know that machine learning and artificial intelligence is often used to collect and collate information about people. And so we're in, as you said, an unprecedented era of information collection and information sharing, and we really don't know how all of this will affect this next generation as they come of age alongside social media with digital footprints, partially of their own making, but often digital footprints that others have made for them. Our experiences as adults who were once children don't really translate well in this social media minefield. My experiences in the school lunchroom, for example, are very different than my child's experience trying to navigate social situations on Snapchat. And the way that our kids interact with others has just changed so much. I really don't know what the long-term impacts will be. I imagine there will be a lot of drawbacks, but I think there will also be some benefits to our connectivity that we're experiencing now. And one thing that I really want to encourage families to do is not to fear the technology, but to try to learn about it. When I did this work, I was always . . . really got a chuckle when I think about other areas where we've seen new technology develop and the instant reaction has been fear, only later to learn that there are so many benefits. Even Plato once was afraid of the devastation and the danger of so much writing that would be taking place and thought that writing could actually harm young minds. So, my perspective on this is that we really need to look at this carefully, to not rush to judgment and to invite children into the conversation as they get older because really this issue is going to affect them a lot more than it will affect us. Nicci Brown: And I think part of what you're saying, too, is an intentionality when it comes to the way that we do share things and really thinking about it. Because I recall sometimes as a journalist asking parents if we can share the photograph that we might take of a child or getting permission slips, but then when it's our children, we don't give it a second thought. Stacey Steinberg: Yeah, exactly. I've always been very intentional with my work when I take pictures of other people's kids, when I was doing pictures for UF Health and for families there. Even when I was a prosecutor and there were stories or information that families needed me to share with the court or with others, always making sure that it was the right thing to do. the right way to tell it, with everyone's blessings. But my own family was very different. I became a photographer when my second child was about a year old and my role of memory-keeper and memory-revealer were constantly in flux. I was sharing my way through motherhood without a care in the digital cloud only to one day wake up and realize that I had done a lot without thinking about it and realizing that unless I stopped and paused, I really was creating potentially real issues for my kids growing up. It's funny, a lot of people call me an expert in sharenting, but I'm really doing this alongside all of the other families trying to figure it out. And the things that I thought I knew when I started this research — even the things that I believed I knew after I wrote my first academic paper — it's constantly changing and growing as I see how social media impacts our family. Nicci Brown: What about the pandemic? How do you think this has impacted how families are using social media? Stacey Steinberg: Well, when we went into lockdown and social distancing became the norm, families still needed ways to stay socially connected, and social media really filled that role for a lot of families. It was where families would go to, to see how friends were doing, even friends down the street that they could no longer see, just like they were seeing family across seas and how the pandemic was facing families there. I even saw schools using social media to stay connected with kids. A lot of my kids' teachers would have different Facebook groups where the kids would be able to stay in touch. I also had to start thinking about my own kids and how much social media I wanted them to have access to because before the pandemic, I really wanted to keep them away from it — probably a lot of other families did as well. But when the pandemic hit, and that was the way that they could communicate with their friends, like through Facebook messenger, I had to lean in a little bit and consider that maybe social media could really play a helpful role during a time of social distancing. Nicci Brown: So, it really is about balance? Stacey Steinberg: Absolutely. Nicci Brown: What are some of those concerns, though? The dangers? I mean, as parents, we all want to post those cute photos of our children, and I'm definitely guilty as charged, but should we? Stacey Steinberg: Well, I think for every family the answer's going to be different. I can tell you what the risks are and then I'll tell you a little bit about why it's hard to weigh these risks against the benefits. We know that there are risks that data brokers are collecting the information that we're sharing about ourselves, and it's likely they can collect the information that we're sharing about our kids as well. There's a Barclays study out that says that by the year 2030, almost two-thirds of all identity theft cases will be related to what parents are sharing online about their kids. Just think about all the safety mechanisms that we've used in our passwords — our pet's first name or our mother's maiden name. A lot of that information is now readily available for this next generation. We also know that pedophiles take advantage of what families share and can be saving those pictures and using them for bad purposes. A startling statistic that I heard when I started my work was that the Australian eSafety commissioner had said that 50%, five-zero, 50% of all images on pedophile image-sharing sites had originated on family blogs and on social media. And these weren't pictures of children nude. They were pictures of kids doing everyday activities, but they were being targeted by pedophiles and collected and then being used for bad purposes. So, we know that there are these real, tangible risks out there, but we don't really know how to measure these risks yet. We don't know how common these occurrences are as far as academic studies that have faced strong methodology. These are studies that we've seen anecdotally by private corporations or sometimes by governments outside of the United States. So, I would love to see more research right here at home that really helps us understand how common these risks are to our families. I've really focused on some of the less tangible risks that I think are also very important and much easier for me to measure as a parent. The importance of modeling appropriate social media behavior, for example. If we want our teenagers to get to an age where they take pictures of other people, only when they ask first, and they only share pictures of others when they have permission from that other person. Well, the only way we're going to teach them to do that is by modeling it at home. If I want my 15-year-old son to practice good social media etiquette, I could tell him all day long what I think he should do. But if I show him by respecting his views on what's shared about him, I think that I can go a lot further than just telling him why it's important. I also think that we spend a lot of time stuck in our newsfeeds, spending time being connected to our devices instead of living in the moment that we're in. When I was on a school field trip, for example, I saw all the fourth graders pull out their recording devices to try to record the lecture that the guest speaker was giving. We were in St. Augustine and I just remember this beautiful site that we were at and all this helpful information we were receiving, but all the kids were really experiencing it through their screens. Nicci Brown: And these were fourth graders? Stacey Steinberg: Yeah, these were fourth graders! And I think that it's a danger that we're not staying in the moment, that we're escaping to our newsfeed or that we're constantly posting and seeing who's liked our images and liked what we've said instead of focusing on real connections with the people in front of us. Also, a lot of times when we share all this information, people who are friends to us are still strangers to our kids. And so when our kids interact with people, say at the grocery store, and they say, "Oh my goodness, I saw you hit the home run at the baseball game." It might be confusing for a child because we've taught them about perhaps the risks of stranger-dangers, or we've taught them about privacy. But then when people that they don't know come up to them and know a lot about them, I think that it raises some red flags and it could create some issues for families. Lastly, I think one of the areas that I've seen in my own life, really applies to me so much, is that when we're constantly documenting something, in some ways we're rewriting the memories that we have of it. Even when I went to give my Ted Talk in Vienna last month, I remember I was up on stage giving my rehearsal. I was giving a rehearsal of the event and there was a speaking coach there. And when I got off the stage, she had told me I had done a really nice job and I was excited. But then my husband showed me the recording that he made of me up on that stage. And all of a sudden, I didn't feel as empowered as I felt when I first stepped off the stage. Instead, I was second-guessing my choice of attire or the way my voice sounded because of this recording, instead of just enjoying the memory that I had from actually being on the stage. I want our kids to be able to grow up remembering experiences from their perspectives. I want my daughter to remember the first time she went to Disney World on her own terms, not by the edited and curated view that I chose to post on my newsfeed that she goes back and looks at one day. Nicci Brown: That's a really important point. You know, this balance that you mentioned earlier of parents modeling, but also acting as hall monitors in a way for their children when they are online. Can you tell us more, though? What about the role that you think tech companies should have in this whole dynamic? Stacey Steinberg: That's a great question. And I think we're seeing overseas a lot of pressure being placed on tech companies to be more responsible. And we're seeing here at home, we're starting to see some congressional hearings on it. I think that there's actually congressional hearings happening this week on protecting kids online. It's called "Instagram and Reforms for Youth Users." So, we're starting to see that there's some societal accountability being placed on tech companies. And I've been skeptical about how companies have been doing. I haven't been thinking that companies had been doing a very good job trying to protect kids. Every now and then I see a glimmer of hope though. And I'd be happy to tell you about that glimmer of hope that I've seen instead of telling you about all the things I wish tech companies would do that they aren't doing right now. Nicci Brown: Always happy to hear hopeful things, so go for it. Stacey Steinberg: Sure. When parents share about kids online, or when schools share about kids online, they're creating obviously these digital footprints about kids. And so when kids get older and someone searches their name on Google, it's likely that the information shared about them during childhood is going to rise to the top. And so, unlike you and I who kind of defined ourselves online on our own terms, a lot of kids don't really have that benefit right now. In Europe, there is a concept called the "right to be forgotten," which is actually a century-old doctrine that says that after information is no longer relevant to a person's reputation or to a person's name, that they have a right, basically, to have society forget about it. And in the context of internet sharing in Europe, there was a case that held that the right to be forgotten did apply on Google. There was a man who had a lot of bad business dealings in the '90s. He got his business affairs in order later on, but every time someone searched for his name on Google, those bad business dealings, the articles reporting on it, would rise to the top. And he was actually able to convince a court that Google had to basically delete the connection to his name and those news articles. The news articles still exist on the newspaper websites, but those results are no longer coming up when somebody searches his name on Google. I have always advocated that we should have a right to be forgotten in the United States for what parents share online about their kids. When I went into labor with one of my kids, I had had quesadilla the night before from a local restaurant here in town. And a bunch of my friends also went into labor right after eating at that Mexican restaurant. And so the newspaper did a story about us and this wonderful quesadilla dish that will induce labor. Well, now my poor teenager, when someone searches his name in our town, that article comes up. Luckily, he thinks it's pretty funny. But the United States really would have a hard time creating a right to be forgotten for that article, for example, not to show up when someone searches his name because in the United States, we have really strong, free speech protections and we really value parental autonomy, which really would come into play with regards to a right to be forgotten. But Google has recently said that teens and kids should have the equivalent of a right to be forgotten and Google, a company that is not part of the government, was able to create a form . . . has a form now that parents can fill out, that older kids can fill out and ask that pictures and information about youth be removed from the internet. I think it focuses on pictures right now, but it's a really promising step that a company is recognizing that kids have unique needs and special needs when it comes to online sharing and that they need special protections. So, I love seeing that step that Google is taking, giving kids a way to request that pictures be taking off that are shared about them when they're kids. I wish more companies would do other things that could really help protect kids online. Nicci Brown: Well, I mean this summer Apple announced plans to release new tools that would combat child pornography on iPhones and Facebook was set to release an Instagram platform for children. And then the companies delayed the rollout of those tools and apps after experts like yourself raised concerns. So it seems the pressures are being felt by companies. Stacey Steinberg: Yeah. I think the companies are feeling pressure to do something. And when Apple's rollout came out, when they made the announcement that they plan to release these new tools, there were a lot of concerns made about privacy and how we could balance competing interests, keeping kids safe and protecting individual privacy. And we see this in other areas of the law that these issues have come up. The newest initiative that Apple has is that it will warn kids before sending out pictures of what their artificial intelligence believes are nude images. But they'll still allow kids to send these out. And it doesn't actually alert parents that these pictures are being sent out. There were other features that Apple had announced that are no longer happening. One is that it was going to scan pictures on individual phones and iCloud, using artificial intelligence to predict which were known images of child pornography. That release has actually been paused over privacy concerns, which has caused a lot of backlash from children's safety experts. They really wanted this to go forward, but a lot of privacy experts, separate from children's privacy experts, privacy experts generally were concerned that this sort of artificial intelligence technology could be used in ways that could actually harm people further along. So, there are now through Apple more online safety tools for kids to find, to get resources and to get help. But the announcement that all of these changes would happen was really met with a lot of backlash. And so Apple had to really retreat. And they're still, I think, trying to slowly navigate the complex waters between privacy and safety, between giving parents control of their children's information and respecting children's ability to control their information themselves. Nicci Brown: You touched on it a little bit earlier, but what is the federal government doing in comparison to actions in other countries? Stacey Steinberg: Well, I hate to say it, but I think the federal government in the United States is behind what a lot of other countries are doing. Europe has the GDPR, which is a personal data protection law. Its framework focuses on ideas. There's actually seven key principles of lawfulness, fairness and transparency, purpose of limitation, data minimalization, accuracy, storage limitations, integrity and confidentiality and accountability. And these seven key principles I think most of us could probably agree on are really important for personal data protection. But in the United States, we've been slow to roll out something similar. And perhaps it's because we have a different set of rights that individuals have here that needs to be balanced against the need for privacy and safety. I would love to see us do more. And there have been a lot of really great ideas thrown out. If we could find ways to minimize the amount of data that's collected about individuals to make sure that any artificial intelligence is used responsibly and ethically, and if we could find ways that we could better protect kids' privacy and make sure that families understand what it is that they're agreeing to and allowing when their families engaged in things online. Nicci Brown: It does sound, though, that in the end parents must decide how much to share about their children online and they'll continue to have a primary role in monitoring and measuring their children's screen time. Stacey Steinberg: Yeah, absolutely. Ultimately we are a country that strongly values parental autonomy. And so I find that it makes more sense for us to empower parents rather than try to regulate parents in this space. And so while I'm an attorney and finding legal solutions is really what I do a lot of the time, I think that in this situation, this isn't so much about regulating parents as it is about educating parents. And I think a public health model of child protection is really the way to go. Most parents want to do what's best for their kids. They just don't always have the tools necessary to do that. Nicci Brown: And how has your own online sharing changed as a result of your research? Stacey Steinberg: It's changed a lot. And in some ways, it's been like a pendulum swinging back and forth. The biggest change is that I give kids veto power. My kids have the ability to tell me when they want something shared or not. And sometimes they come to me wanting me to share things. I think that what's really important in my family is that my kids know that, yes, I share because I'm proud of them, but that I'd be proud of them even if they didn't want me to share. I also think deeply about how sharing will impact them now, but also in the future and are there ways from me to minimize the digital footprint that I've left behind in their childhood? So, I try to delete pictures after I feel like they're no longer relevant or no longer need to be online. I spend a lot of time teaching my kids to be present and in the moment, which is something I struggle with all the time myself, I absolutely struggle with it. But being honest about that challenge I think is really helpful for kids. I certainly try really hard in my own life and with my kids online to avoid sharing overly personal information, not to shame others who share differently than myself. In any social group, there's going to be a lot of different ways that parents choose to share. I think that this is a new area, this is a novel part of child-rearing and it needs to be a central part of child-rearing discourse. So just like when we go to coffee with other parents and talk about how can we feed our kids better? How can we discipline them better? How can we make them get their homework done more efficiently? This just needs to be part of that conversation. And so I think that this is now a central part of our conversations in our family, at our dinner table and when we're out with friends as well. Nicci Brown: Some really great advice there. Is there anything else, any other tips that you would offer to parents and ways that they can ensure their children's safety and privacy online? Stacey Steinberg: I'd encourage parents to make talking about children's privacy, a central part of what they do around the kitchen table. This is a really important topic and I think that it's glossed over a lot in family circles and family meetings. Number two, I would say is that as a society, we really need to push for more research, more well-informed research to help guide parental decision-making so that we can empower families to make the best choices for their families. And number three, I would say, is that as we go through this process to give ourselves some grace. We are the first generation to try to do this. We'll make mistakes along the way, but as long as we can keep moving forward, learn from those mistakes and help our kids understand that process of figuring out how to share? Why to share? When to share? I think that will be a lot better as a society. Nicci Brown: Stacey, thank you so much for joining us today. Stacey Steinberg: Thank you. It was so wonderful to be here. Nicci Brown: Listeners, thank you for joining us for an episode of From Florida. I'm your host, Nicci Brown, and I'll hope you'll return for our next story of innovation from Florida. Collapse December 7, 2021 Porches are designed for social connection and for observing the world around us. In this episode of From Florida, hear what Charlie Hailey, a professor in UF's School of Architecture, learned in his meditation on porches – a space where writers find inspiration, presidents seek solace and which present us all with a perfect perch to observe life and nature. Apple Podcasts Google Podcasts Spotify Stitcher RSS Transcript Nicci Brown: Welcome to From Florida, where you'll learn how minds are connecting, great ideas are colliding and groundbreaking innovation is becoming a reality because of the University of Florida. I'm your host, Nicci Brown. Our guest today is Charlie Hailey and we're going to be talking about his newest book, The Porch: Meditations on the Edge of Nature. It's a very thoughtful, provocative exploration of space, places and nature and I'm excited for Charlie to share more about his work. But first an introduction. Charlie Hailey is a professor in the School of Architecture at the University of Florida. He has received numerous awards, including recognition as a teacher scholar of the year here at UF. He has also been awarded a Guggenheim Fellowship, a Fulbright Scholarship and a Graham Foundation grant. He's a prolific writer with six books about the built environment and his research focuses on the intersection of climate, building and community and how architecture and humanity intertwine. Welcome, Charlie! Charlie Hailey: Thank you. It's great to be here. Nicci Brown: So, I shared a broad overview of your professional background, but it would be great if you could tell us a little more about yourself, including your affiliation with UF and your particular focus as a scholar. Charlie Hailey: Sure. As you mentioned, I'm a professor in the School of Architecture where I've taught for 20 years now. I'm fascinated with architecture's connections with nature. I'm also intrigued by what we can learn from the edges of what we build. And I love teaching a wide range of courses. I've taught design studio courses, architecture history and theory, research methods and what we call design-build studios, which is where we actually build what the students have designed. Nicci Brown: Can you describe a few of these and tell us where we can find these design projects? Charlie Hailey: Sure. Working with students out in the field, we've completed more than a dozen projects over the past seven or eight years — those design-build projects that I mentioned. We worked with a town of White Springs to build a community music pavilion about an hour north of Gainesville. And there have been a few projects here in Gainesville working with nonprofits, including The Repurpose Project and the Boys & Girls Club of Gainesville. Nicci Brown: How do you go about that? Do you go and interview people? How does it all come together? Charlie Hailey: So, it's interesting because we have to put it all together in a semester. So it's usually small in scope and scale. And we start by working with members of the community and then deciding what they'd like to see and what they'd like to build. Recently, we've been working in Cedar Key building a series of projects. We actually built one out on Seahorse Key, about four miles offshore. It was a stair from the Marine Lab down to the Gulf of Mexico. We also built a few small projects out in Cemetery Point Park there and one behind the Chamber of Commerce. Nicci Brown: I've got to imagine that's tremendously gratifying for the students to see that work come together, but also it really epitomizes that land-grant institution of community and the university working together in a very balanced relationship. Charlie Hailey: I think so. And we really value that connection that we make with the communities and since we have a series of projects, we can actually go back and see them and also maintain them over time. Nicci Brown: Terrific. Well, let's turn to your newest book now, The Porch, which was published earlier this year by the University of Chicago Press. It seems you've been thinking about porches for a long time. How did the idea for the book come together? Charlie Hailey: Yeah. I've always really enjoyed living and working on porches and really any of those spaces that are somewhere between the inside and the outside. And as a kid, I used to build small structures along the river that was near my house and so I think there's a little bit of that in this project. And I get really excited when the context of research becomes the method or vehicle for that work. So I love that I could study the porch by simply being there. Nicci Brown: So, your book has a setting, the porch of your cabin. For listeners who don't know much about the area that it's in, can you describe your cabin and the area for us? Charlie Hailey: Sure. The Homosassa River is about 70 miles south of Gainesville. It's midway between here and Tampa. It's one of the first magnitude spring-fed rivers along the Gulf Coast, just north of Weeki Wachee, and just south of Crystal River. And the spring's head is called The Fishbowl and it's always been known as a great place to fish for both freshwater and saltwater. It's beautifully rendered by many artists, including Winslow Homer, who did a series of watercolor paintings there. And he really captured the mix of live Oaks, Sabal palms, Cedars and marsh grass and certainly the water, the quality of the water is beautiful. Our cabin itself is boat-access only. So it's down the river about two miles. So you really feel like you're getting away from it all when you head out there. And it was built in 1950, which makes it one of the first cabins on the river, at least boat-access cabins on the river. It's about 20-by-20 feet and the front porch spans about 10-feet deep and it faces out on the river. So you can really watch the tides come in and out. You can watch the wildlife and really get a sense of the place. Nicci Brown: You identified four core elements that demonstrate as you say, the fundamental nature of a porch to our humanity. Would you briefly share what those are and how they work to frame your thinking about porches? Charlie Hailey: Sure, sure. One of the intriguing things that define the porch is the in-between. It's a place where we can be both inside and outside. It's about coming and going. It's about open and closed, here and there. And there are these wonderful paradoxes of the porch. So I came up with those four elements that include tilt, air, screen and blue. And tilt is based on the slope of the porch. The idea that we can find a stability even in instability. And if you think about the way the porch works, it really assumes that it's going to get rained on so it sheds water really easily. The second element, a porch wraps architecture in air and this is the place where public and private mix. It's where hosts meet guests. And then screen maintains openness with enclosure. So the porch protects as it also exposes. I was fascinated to learn that the weave of screening material was studied right here at UF in the 1940s in an office called the Insect Wire Screening Bureau. And they found that 20 openings per inch is just about as dense as we can go without losing that connection with the outside. But it's also still wide enough to allow the no-see-ums, the biting gnats that we all know here in Florida, to get through. Finally, blue talks about how we daydream on a porch. It's a place that mixes the actual and the imagined. One of the first things I did with the cabin's porch was to paint the ceiling Robin's egg blue. So not so much to ward off the insects that made it through the screen, but to really explore the restfulness of that blue-green color. Nicci Brown: You know, I think it's fair to say that through the pandemic and some of the things we've experienced recently we've gone through a collective trauma. Did that help crystallize your thinking about porches and what you find so fascinating and important about them? Charlie Hailey: Yeah, it really did. One of the things that I found on the porch during the pandemic was it's sort of architecture that's ready-made for social distancing and it actually ended up being a really important place that connected us during the pandemic. A lot of what I had read about porches before the pandemic was about porch pirates and about the porch as this sort of oversized Amazon delivery box, but when the pandemic hit, I think it really redefined what the porch was about. Not in a nostalgic way, but actually in a very practical way of finding new ways to connect us. Nicci Brown: And along with those ideas is another I guess, perhaps, central theme and that is porches as muse structure, a method for tuning us to a rapidly changing climate. "A porch is an ideal place to become connected to the world around us and to gauge how our environment is changing." And I'm quoting you there again, but what perspectives have you drawn about our climate from the vantage point of your own porch? Charlie Hailey: Right. Well, I found that porches are essential ways to connect us with nature and also to witness the changes that are happening around us. And sometimes those are subtle and sometimes they're quite dramatic. Porches protect us from the elements, but they're also vulnerable. And they really put us on the cusp of those changes. Our cabin on the river has air conditioning, but the porch remains unconditioned. And you might say that it's even conditioned by nature. So as the temperatures rise with climate change, the porch is essentially on the move southward. You could say that the porch is moving with that changing climate and it's something like 100-feet per day, if you actually run the numbers. So by the time I finished writing the book, the porch was actually 70 miles south in Tampa. Nicci Brown: Can you tell us a little more about that 70 miles? It sounds pretty dramatic. Charlie Hailey: Yeah. It's a way that I tried to illustrate and really understand how to visualize that change in climate. Because I think sometimes we feel quite distanced from what climate change really means and how we can understand it. So for me, the porch embodied that change, by sitting on the porch and feeling that temperature change, you really essentially occupy a space that is further south over time. And 100-feet per day is not something that you could sense, but over a period of 10 years, I feel like the porch offers that connection to climate so that you could really start to sense that change that's happening. Nicci Brown: You bring many people and their experiences into your exploration of the porch, from philosopher John Dewey, who had such an impact on education in this nation, to writers Marjorie Kinnan Rawlings, James Agee, Carson McCullers and presidents — William Taft to Richard Nixon. In fact, you have a section on presidents and their use of porches. And I have to admit, I did not know about the White House's rooftop porch and I suspect I'm not alone. Could you share with us a story or two about the different ways presidents put that space to use. Charlie Hailey: Yes, there was a sleeping porch on the roof of the White House, if you can believe it. In my research, I had found one photograph of what looked to be a temporary structure on the roof. The only information was a handwritten note, a caption, with the date 1916, attributing it to President Taft. So imagine the view in the photograph, just above the south portico of the White House. You can see the high balustrades and then next to the attic where the president's family slept is something that looks like a makeshift-tent with cables that anchor it back to the roof and screening around its edges. So I was intrigued by that photograph and I spent a week in the National Archives, kind of pulling my hair out and trying to find more information. And it was on the last day that I found a drawing kind of buried in the bottom of a drawer that showed that it was actually built in 1918. And so it was probably during the Wilson administration. And at the time sleeping porches were strongly recommended and encouraged for health. And so you can imagine presidents weren't immune to what some people called the passing fad of sleeping porches. So I loved the idea of essentially camping on the roof of a national symbol. And then when this temporary architecture was transformed into what was called the Sun Parlor and then later the Solarium on the roof, it's where presidents' families could relax. It was where Carolyn Kennedy went to kindergarten and Eisenhower had family barbecues. Nicci Brown: Wow, that's fascinating. You really do take us on a trip through time with your stories and you take us from ancient Greek to modern times during this meditation on porches. So how should we think about porches today? Are we getting the most out of our porches? And what's the message you'd like to leave us with about porches? Charlie Hailey: Yeah. During the course of the research, I mentioned the connection with the pandemic and I had found that there was a small resurgence in porches, but a lot of them aren't really being built deep enough to occupy. They're more symbols cast on the front of houses and buildings. So I was really interested in talking more about how porches are exceedingly useful and actually really important places to witness climate and also to connect with people. And I recently wrote an essay for Orion Magazine making a case for the porch and how porches might help repair our connection to the world and change our perspective from one that centers on humans to one that works from nature. So I think porches remind us to pay greater attention to the edges of what we build so that we might in turn pay greater attention to nature. Nicci Brown: Well, it sounds like a really important way to look at things and I think our listeners would very much appreciate hearing you read a section from your book. Would you do that for us? Charlie Hailey: Sure. I'd love to. Thank you. Thank you. A manatee's breath drifts across the porch screen. It is a sound so delicate yet insistent that I stop breathing. I count time in the rings of smooth water that drift with the river's current toward the ocean. I listen for the next breath but this manatee is moving fast, and its footprints blend back into the burnished roll and flicker of the river that holds its own breath between tides. The manatees are on the move this January day as Florida warms after a cold snap. What we call fire weather is what most other parts of the country think of as winter, but manatees know the subtle changes of the lower subtropics. They feel the air through water like we feel it in porches. That was the fourth manatee I've heard in the past hour. The extraordinary can become routine, but it never gets old. Set back from the river, we don't always see them, except when we catch a black snout sending out its wake like a skidding duck or a piece of driftwood plowing the current, and except that time when a mother came into our lagoon with her calves — the littlest looked like a puppy. There's another one, louder, closer, but on a porch earshot isn't necessarily eyeshot. It rained last night, and the cedars drip like metronomes. A kingfisher calls, far enough away to mix with the gentle lapping of breeze and water on limestone. It is quiet today, but it feels like anything can happen. I hear my own breath again, waiting. The porch where I write will soon be underwater. For seven decades it rode hurricanes and winter storms. In another seven, the sea will cover the boards where three layers of flaking paint sandpaper my bare feet. We do not complain about this reality, neither the porch's vulnerability nor the paint's inconstancy. In a position both privileged and ill-advised, I sit here by choice, aware of what's coming and what's at stake, saturated by a knowledge of this place and its climate — one that is constantly and dramatically changing. Here, on the porch, theory meets practice. There's the idea of a changing climate, and then there's actually witnessing its effect. Here on a porch, the unseen is inescapable, like the manatee. And the mullet who just splashed in the brackish water taut with low tide. I didn't see the fish, but I heard the dazed flump of reentry into a river saltier than it was last year, and now watch the ripples widen from this joyful leap. In our time here, the porch's floor has been inundated once, and nearly a second time. A fragile wrack line still clings to the porch's concrete pile, just below the wood framing of its floor. The flecks of cedar needles, tiny bits of shell and soil, left there from this fall's hurricane, seem trivial compared to what happened up north in Mexico Beach, but it's all part of the same thing, this living on the coast, which is really living in the coast, deeply embedded in the littoral. Not fixed in place, but held adrift between tides, floating. Like all the things that Hurricane Hermine and her seven-foot storm surge set afloat in our porch and its cabin four years ago. When we took the boat out to the cabin the next day, the tannin-stained water was still lapping onto the porch. When my son and I stepped up onto the porch, we walked into a washing machine that had just finished its cycle, one set for heavy soil and turgid water moving this way and that. Even though no doors were ajar or windows broken, it was like someone had ransacked the place, leaving it turned in on itself. Like nature was trying to find us, trying to send a message. When I walk out on the porch now, I instinctively check the water for signs of change. I watch and hold my breath. I am teaching myself to sit on a porch. I am learning to read what's around me. Checking for signs, I scan the water. Floating. Nicci Brown: The book is The Porch: Meditations on the Edge of Nature. Charlie, it was a delight to have you as our guest today. Thank you so much. Charlie Hailey: Thank you. Nicci Brown: Listeners, thank you for joining us for an episode of From Florida where we share the stories of faculty, researchers, students and administrators whose thought leadership is moving our state, our nation and our world forward. I'm your host, Nicci Brown. And I hope you'll join me for our next story of innovation From Florida. Collapse November 30, 2021 Professor Mo Wang of the Warrington College of Business is in the early stages of a research project looking at how to design trustworthy, transparent and fair AI-assisted hiring systems – work funded by a grant of nearly $1 million from the National Science Foundation and Amazon. Wang talks about the project, why it is needed and what the team hopes to achieve in this episode of From Florida. Apple Podcasts Google Podcasts Spotify Stitcher RSS Transcript Nicci Brown: Welcome to From Florida where you'll learn how minds are connecting, great ideas are colliding and groundbreaking innovation is becoming a reality because of the University of Florida. I'm your host, Nicci Brown. Today we are joined by Professor Mo Wang, the Lanzillotti-McKethan Eminent Scholar in UF's Warrington College of Business. Dr. Wang is in the early stages of a research project about fairness in AI hiring practices, an issue that is being widely discussed across our economy and workforce. First, a little more about Dr. Wang. His work focuses on older worker employment and retirement, occupational health psychology, human resource management and quantitative methods. In addition to his role as a professor, Dr. Wang is the director of the Human Resource Research Center and chair of the Management Department. He is the founding editor of Work, Aging and Retirement, and has authored more than 200 scholarly publications. In addition to this, Dr. Wang is the incoming president of the Society for Industrial and Organizational Psychology for 2022-2023. Mo, thank you for joining us. Mo Wang: Thank you. Thank you for having me. Nicci Brown: You received a grant of nearly $1 million from the National Science Foundation and Amazon to study how to design trustworthy, transparent and fair AI systems to assist hiring decisions. Please tell us what you and your collaborators are looking at in your study. Mo Wang: So, my research team, actually, we have computer scientists, we have information systems specialists, and then I am a psychologist. So what we are trying to do here is we are trying to improve the existing AI system for hiring to inject a social science perspective because so far a lot of the hiring decisions made by AI systems are designed by computer scientists. And often time their disciplinary training and also disciplinary tradition tend to pay less attention about the legal consequences and also the social evolutionary trends. So, we're trying to use this grant to inject this knowledge and then see whether we can build better system and also see whether we can actually eliminate the discrimination cases in the labor market. Nicci Brown: So, building on that, much concern has been raised about hiring bias and AI is regarded as both a potential solution and a potential problem. So, let's start by talking about hiring bias. Can you tell us more about this problem? Mo Wang: According to federal law, it is illegal to discriminate against a job applicant or an employee because of the person's race, color, religion, sex, national origin, age, disability status or genetic information. However, we know those kinds of discriminations happen on a day-to-day level. For example, in 2020 the EEOC, the Equal Employment Opportunity Commission, they actually received 22,000 charges on the basis of race-based discrimination. And a similar amount of charges were filed on the basis of sex-based discrimination and also disability-based discrimination. So, the discrimination in hiring is actually happening pretty frequently. Nicci Brown: And let's talk, too, about the fact that not all of this is something that people are aware that they're doing. Some of this bias is actually implicit. They don't understand that they're being biased. Mo Wang: Yeah, exactly. So, a big chunk of it is actually implicit bias, right? So, a lot of time people actually have discriminatory actions without even realizing, right? And

also, of course, there are other more explicit bias, but more and more we see the implicit bias. Nicci Brown: And AI is seen as a potential solution to this? Mo Wang: Yes. So, AI has been viewed as a potential solution for two reasons. First, AI has been viewed as being more objective, so removing human bias, right? Because if the AI training algorithm is used, it can be blind to demographic information. So, from the surface you can see that all the algorithm does not consider like race, gender, age in evaluating the candidate. So, that's the first reason it's viewed as a solution. The second reason is in the AI system, the algorithm can allow the desired fairness level to be specified as a parameter. And so, what that means is as a selection model, as a prediction model, so the AI system allows to do a complex mapping from predictors to decisions that optimize accuracy while satisfying the fairness constraint. Basically this is called in recent advancement, this is called fairness-aware AI system. So, it is viewed as helping with the fairness issues. Nicci Brown: And yet there are still concerns about structural bias in algorithms, correct? Mo Wang: Oh, yes. So, this is actually based on our recent research on the grant. So, the first thing is, although AI can be blind to demographic information for job candidates, it may still pick up other predictors that entail bias against the minority candidates. So, for example, if an AI system capitalizes on certain predictors that are prone to bias against the minority candidates, for example, criminal background, credit history or cognitive ability tests, well, it would generate a lower scores for those minority candidates although the demographic information is not explicitly in the model. So, the second issue is actually related to the fairness-aware AI system I just talked about. So, the fairness-awareness AI system tends to select some candidates with high expected criterion and some others who look very much like minorities to satisfy the desired fairness level. However, when the AI system does that, it tends to create different predictive functions for different group of applicants. So, for example, the majority group and the minority group, their algorithm can be very different. So, that creates a differential treatment situation and we know that's not legal. So actually, although it's a fairness-aware AI system, by using the system itself, it creates a bias in its own form. Nicci Brown: Yeah. So, it's by basically continuing on something that's biased to start with. So, it just extends that bias, say, with those kind of cognitive tests or whatever else it may be drawing on. Mo Wang: Mm-hmm. Yeah, exactly. Nicci Brown: So, there's no question that more employers, though, are relying on artificial intelligence to assist in their hiring decisions. So, what does this mean for job candidates? What can they do? Mo Wang: So, actually this is a very good question. So, although more employers will rely on AI to assist in hiring decisions because it's automated, it's more efficient, the factors that make job candidates successful in jobs are relatively stable. It doesn't change very dramatically. So, in other words, so what the employers are looking for is still largely predictable. So, as a job candidate well, today what my employer wants from me would be largely stable like in, let's say, one or two years, right? So, a good AI hiring system should still pick up those factors in assessing job candidates. Therefore, when preparing for their job applications, job candidates need to understand what knowledge, skills and abilities or work styles that they should possess to be successful to perform the jobs they're applying for. So, such understanding can help them better emphasize those qualifications in their job applications to enhance their chance to be selected. And one thing I want to mention may be helpful is actually the Department of Labor, the U.S. Department of Labor, hosts this online database called O*NET and it includes all kinds of information about jobs. So, basically when you develop your job applications, it would be good to search for that job in O*NET and find out what are the desirable levels of knowledge, skills, abilities and the work styles it require from you and emphasize that in your job application and that will enhance the chance. Mo Wang: So, there are three things to consider when we design the AI system for hiring decisions. One is we need to minimize adverse impacts, which is we should have systems that generate the same selection ratio for majority and the minority groups. But at the same time to do that, we also need to minimize the predictive bias, which is what I was talking about. We need to avoid the differential treatment for different groups. So, they should share the same predictive function, because otherwise you are actually not using the same standard to hire people. But then at the same time, we also need to pay attention to the employer's goal, right? So, employers want to maximize the fit between the job candidates and the job that they're hiring for. So, we also need to pay attention to that. Our research actually shows of those three considerations, it's often easy to satisfy two of them and then to satisfy all three of them is quite difficult. So, our next step is to see how to optimize in this impossible triangle to create the best social value for the labor market. And then down the road, I think this may also have implication about the current employment law, because the employment law generally emphasizes the adverse impacts, right? So, most of system designers, they pay attention to this four-fifths rule, which is the minority selection ratio cannot be lower than 80% of the majority selection ratio. But our research shows that only paying attention to that is not enough, you also need to pay attention to the differential prediction for different groups. So, I think what we are going to do next step will have a lot of implication for guiding companies in designing those systems. Nicci Brown: And when will the study be completed? Do you have a sense of that? Mo Wang: So, the grant, it's a three-year grant, so we should wrap things up in 2024, but then we are also looking for other sources of funding maybe to continue this line of research. So, for example, so what we are looking at here are mainly a majority group versus minority group, but I also have research on aging, right? So, but when you look at people aging, so it's not majority versus minority because everyone ages. So, one day everyone become older. So, this kind of research will tackle different kind of discrimination issues. So, we're trying to also expand on that. Nicci Brown: So, it sounds like this is going to be an ongoing and very interdisciplinary kind of work that you're doing. Mo, thank you so much for being our guest today. It's been a real pleasure. Mo Wang: Oh, thank you so much for having me. I really appreciate the opportunity to explain my research. Thank you. Nicci Brown: Listeners, thank you for joining us for an episode From Florida. I'm your host, Nicci Brown and I hope you'll return for our next story of innovation From Florida. Collapse November 23, 2021 Note: Cuba is a subject that evokes a wide variety of viewpoints and emotions, especially in Florida and especially among Cuban-Americans. Today's "From Florida" episode examines one expert's views and observations on current events in Cuba, particularly within the context of its relationship with the U.S. Lillian Guerra, a professor of Cuban and Caribbean History at the University of Florida, is a go-to source for national media on Cuba – from its history and its politics to the ongoing protests in the country. In this episode of From Florida, Professor Guerra, whose scholarship includes five history books about Cuba, shares her insights about the latest protests, who is behind them and the path forward as she sees it. Apple Podcasts Google Podcasts Spotify Stitcher RSS Transcript Note: Professor Guerra misspoke in referring to Yunior García's public challenge of a top Communist official in the original recording of this episode. The interview has been updated with the correct information. Nicci Brown: Welcome to From Florida where you'll learn how minds are connecting, great ideas are colliding and groundbreaking innovation is becoming a reality because of the University of Florida. I'm your host, Nicci Brown. A planned protest in Cuba on November 15 was quickly repressed by government security forces as police took to the streets and key individuals were arrested or barred from leaving their homes. Today, our guest is Professor Lillian Guerra, a professor of Cuban and Caribbean history and director of the Cuba program at UF. She is considered one of the leading experts on Cuban history with five books and numerous awards to her credit and is a widely sought media commentator on Cuban affairs. Today, she's going to share her expertise with us. Welcome, Lily. Lillian Guerra: Thank you so much for having me. Nicci Brown: Last summer, Cubans took to the streets in protest against the government of President Miguel Díaz-Canel. They were the biggest demonstrations in six decades, according to the Washington Post. Could you briefly tell us what led to these protests and what were the key issues? Lillian Guerra: Well, one is to say that first, the internet made them possible. And that is because the Cuban government allowed Cubans, really as of 2018, to have access to the internet on their phones. They have only the been allowed to have cell phones since approximately 2009. And so that meant that people in the far western province of Cuba, in a small town, were staging a small demonstration around 8:30 in the morning. And it got livestreamed and, extraordinarily, it catalyzed dozens and dozens of locations across Cuba and about 100,000 to 150,000 people, and that's pretty conservative estimate, came out on the streets and began marching. They were people from all walks of life and, effectively, I think, what happened because it was so improvised, it was so spontaneous, was that Cubans exploded in the kind of rage and anger that they have been building up for some years now. There's much to complain about, there are very few places to complain and those places have reduced in size and number extraordinarily since about 2016. So, the economic situation is certainly part of their list of demands that need to be addressed. But mainly, the fact that the Communist Party exercises so much control over the economy itself, over their daily lives, over their choices, that's really what they were protesting. Nicci Brown: And it sounds like the officials, the party, was caught off guard in a way just how ferocious their outpouring was. Lillian Guerra: Yeah. I think, first most of the members of the top echelons of the Communist Party and the Ministry of the Interior, which is really the security state along with the armed forces, they tend to just speak to each other. They have really no clue as to what's going on at the level of the barrio and among the public. They have convinced themselves in the kind of echo chambers that they live in that levels of discontent are manageable and that they had everything under control and effectively that was proven a lie. So, they were not just repressive, but they seemed to be ferocious, as you say, in their vitriol, in their condemnation. We saw special troops being deployed that Cubans didn't even know existed. They looked like some kind of thing out of Star Wars, many of my friends said in Cuba, dressed all in black. They used attack dogs. This was in broad daylight. It was also live streamed and filmed by literally hundreds, if not thousands, of people in Cuba. And so all that made for a situation that they were unprepared for and that really revealed what I would call the other Cuba that has always been there. And especially has been there in the last 30 years since the fall of the Soviet Union. We now have multiple generations that have only lived the last 30 years and they were out there. But so were old ladies and old men and blacks and whites, and there was a majority of people of color on the streets. It really, again, it was a shock to the world for those who are not constant observers and not lived in Cuba, but I think it was an even greater shock to the Communist Party. Nicci Brown: So, things seemed to quiet down, and then artists and activists organized a new protest they called the Civic March for Change, but that was quickly shut down. And media reported that police filled the streets. Can you share with us what happened? Lillian Guerra: Yeah. So, to be brief, I would not say that things quieted down. What happened was about 5,000 people were arrested in the next seven days after July 11. Today about 500 of those people are still in prison. There were already artists and intellectuals who had been arrested. There's a rapper named Maykel Osorbo and Luis Manuel Otero, who is an artist, who'd been arrested much earlier in May. Luis was briefly released and then rearrested before July 11 or at the time of July 11 and didn't actually participate in the protest. So, there are tons of people that were gathered up and silenced through this process. And at the same time, the Cuban government was preparing for another blow. So in August, August 17th, they issued a new law decree which is extremely draconian and which makes criminally liable anyone who posts anything on the internet that the Cuban government determines is subversive of national security or its own interests or those of socialism. So it's pretty broad. And then anybody who posts, anybody who sees the post and doesn't immediately report it is equally liable. The level of offense is the highest level of offense. So, this was all because, I think, they anticipated that they would have more protests like this. What, again, perhaps they didn't know was that a Facebook Community called Archiepiélago would emerge pretty quickly at the same time around August. And it would immediately garner to itself about 36,000 members, 17,000 of them registered in Cuba. They announced in October that they wanted to have a protest and there were three different cities signed on. This is really unprecedented. They then issued a letter to the Cuban state saying that they wanted to have the protest authorized. It was a march for civic peace, civic protest, was supposed to be peaceful and they dated it for November 20th. The Cuban government had responded immediately saying no way, in writing — also unprecedented — and stated that the basis for their protest was really espionage and inspired by the CIA and it was a national security threat, so under no means would they approve it. So, then the Archiepiélago group moved the date to the 15th, which really matters, because the 15th in November the Cuban government had stipulated as the opening of the country. They were opening the airport to tourism. They had claimed that 85% of the population was vaccinated with a vaccine that they claim as well is highly effective. And so, this was supposed to be the inauguration of their return and supposedly lots of people were expecting great things to happen. So, the coincidence was very strategic by Archiepiélago. And what we got as a result was planning on the part of the government to squash any possibilities, not just of the activists coming out, but of the population. Nicci Brown: So, can you tell us a little bit more about Yunior García, who I believe is one of the key figures that has been involved with this whole movement? Lillian Guerra: Yes. He is somebody who is a playwright. He graduated from one of Cuba's top art schools. He was known to those of us who observed things closely because of an incident that happened in early 2016. He was at a meeting of the Brothers Saínz Association, that's an agency of the Communist Youth, and it took place in front of the First Secretary of the Communist Party for García's home province of Holguín. And at that meeting he had the audacity to address the First Secretary with 15 questions and among them was the question of why Raul Castro's economic reforms had never passed or been passed under the first 50 years of the revolution under Fidel Castro. He asked why there was currently a playwright whose work was being censored and yet supposedly there has never been any censorship nor was there any current censorship in the sphere of culture in Cuba. So his audacity and the framing of those questions and the context of those questions really blew a lot of people's minds. And it was about the very thing that he's protesting today, which is the absence of the freedom of speech and the right to express opposition, criticism, and to get away with it and to make an impact on the state through those means and to change the state. So, here we are almost literally, more than a decade later, and he signed onto Archiepiélago along with a lot of other people. The day of the protests he, as well as major activists, about 400 of them in fact, found that on their doorsteps they had 30 to 50 security agents. And then in addition, they had these orchestrated mobs created and governed by an organization called the Committees for the Defense of the Revolution. They exist on every block in Cuba, have since 1960, and were prevented from leaving their homes and then spent hours being taunted. In the case of Yunior, he was prevented from speaking to the press. He lives in an upper story of an apartment building and they even lowered Cuban flags and other things to prevent him from looking out his window. And at one point, he was able to pull out a white flower and to show that to cameras that were placed in an apartment building adjacent to or directly across from where he was. But that was all that got out. Nicci Brown: Can you tell us about the symbolism of that white flower? Why a white flower? Lillian Guerra: Well, all children in Cuba since really 1902, when the Cuban Republic was inaugurated, we learn the poem by Jose Martí which is, "I cultivate a white flower symbolizing unity and harmony, a nation for all" which is exactly this nationalist writer, independence fighter's mission, his message and his mission. So, all Cuban children grow up with that. It's a reference directly to this idea of returning to consensus and to democracy, frankly, because Martí was not associated with anything like an authoritarian state. He was associated with racial democracy, with equality and with republicanism. So, the pulling of the white flower really was a dramatic symbol. He had also issued a manifesto prior to the 15th which talked about returning to the vision of Jose Martí and the white flower. And one has to say it was to the great astonishment that by the next morning, Yunior García had left the country. Nicci Brown: Yes, so tell us more about that. We understand that he is now in Spain. Lillian Guerra: Yeah. He gave a press conference this morning [Thursday, Nov. 18]. It was pretty dramatic. I would say, before I get to the points about the press conference, when he left almost immediately the Ministry of the Armed Forces and the Ministry of the Interior started circulating photographs of him at the airport attempting in fact, to make him appear as if he had been an agent of Cuban intelligence rather than an activist. And that's one of the things that the Cuban state first, does regularly, tries to discredit activists by claiming they're either agents of the CIA or their agents of state security, you know, so that's an old narrative. Now, when he did leave nobody knew about it on the island. And it seems that he has fled with his wife. He gave a very dramatic statement this morning saying first that had he remained in Cuba it was very clear to him that he was going to live what many activists had lived until that point before these protests, which is months and months and months of house arrest. And that he wasn't going to be able to handle that, that he would've turned into somebody who was more muerta en vida, that which means dead in life. Cubans use that a lot as a phrase to talk about demobilizing or how they feel demobilized politically and sort of constantly suppressed in their abilities to complain and to do anything about the conditions. People also use the word zombie, yo soy un zombie, which also means that we eat each other, you know, we distrust each other so much that we cannibalize each other. We pull each other down. So, he said, that's what remained for him. And he also warned that if the world community does not recognize what's happening in Cuba, that there will be eventually a blood bath there. There will be a blood bath because people will continue to oppose the state and we might have more protests like the one in July. And the Cuban government, which does not negotiate, does not apologize, will pull out all the stops the next time. Nicci Brown: There's a lot of symbolism in these terms that you use. Are you surprised that young artists have been at the forefront of what's going on or is this to you what should be expected? Lillian Guerra: Well, it definitely should be what is expected. Artists have, especially since the early '90s, been able to take advantage of spaces that the Cuban Communist Party's adoption of capitalist reforms allowed them. So, from 1993 until really 2020, Cuban artists were able to write their work and create work and sell it and distribute it without Cuban government authorization. So, art and the art world became one of these very extraordinary spaces where Cubans artists would speak in part about the other Cuba, would speak about what was happening. Art became, whether it was film or was actually a painting, became kind of an archive. It became alternative journalism. It became a source of entertainment. It became where people looked to see themselves and their lives and what could not be stated in the media. So artists were slammed by a new reality in 2019 when the Cuban government suddenly released Decree No. 349, which reversed all of that and said that suddenly, musicians and artists and filmmakers would have to have the mediation of the state, the authorization of the state, for the production and dissemination of their work. And that resulted in some pretty unprecedented protests. On November 27, we're going to have the one-year anniversary of the first, really big one, 300 or so artists staged an eight-hour protest in front of the Ministry of Culture, a sit-in. And these were not random people. These were the most prominent, most famous filmmakers, actors out there. People like Jorge Perugorría, who's a very famous actor, Tania Bruguera, who had at that point been subject to months and months of house arrest and there she was back on the front lines. So, this reality here that the artists were leading the charge through this pioneering act, really, I think made it possible for Cubans to follow their example. And now artists have become the primary enemy of the state. Nicci Brown: Now, U.S. officials have condemned the Cuban government and the show of force and the use of what the U.S. officials are describing as intimidation tactics. Is this response more aggressive than in the past? And why do you think that's happening? Lillian Guerra: Well, we haven't seen things like these mobs standing in front of people's homes for 40 years. I mean, this is a tactic that was unleashed in 1980, when about 125,000 Cubans registered to leave the country in the Mariel boatlift. And so these mobs, which are organized by the Committees for the Defense of Revolution, carry out what they call meetings of repudiation, where they stand in front of your house, they taunt you. Back in 1980, they were cutting off people's electricity. What makes this very dramatic is the revival of all that against people who don't want to leave Cuba, who want to stay in Cuba, who want to change Cuba that way. And perhaps that's why they're a greater threat. And we see as well that the intimidation factor was tremendous because Havana looked like it was an abandoned city on the 15th. It wasn't just the protestors who were intimidated or those who would've been out there. It was everybody, nobody wanted to leave their house. So, the economy was paralyzed. You looked at Santa Clara, you saw the military and the security forces out on the main plaza of the city. And the same was true of other cities. So, people weren't even leaving their homes. I mean, it was like the country's on lockdown, something we haven't really seen since the death of Fidel Castro. So, this I think is something that, it's a turning point, really. Nicci Brown: And to that point, the risk of being locked up in jail for not just months but years for things like protesting are stories that we're hearing. Lillian Guerra: Or using the internet to become part of a Facebook community. A lot of independent journalism has been happening on the internet. We have newspapers circulating on the internet. We have people who live in Cuba who livestream on YouTube interview shows like this one and they have thousands and thousands of viewers. The Cuban government can't control this other than to shut down Wi-Fi. And, of course, it has to live economically through Wi-Fi. It has to provide these services to its own industries and to the tourist sector. So, it really finds its hands tied and as a result, what they've tried to do is launch a campaign against what they call "media terrorism," which is to engage in the kind of acts that I just described, where you listen to a radio program on YouTube, where you engage in debate, you read news that's being produced in Cuba by interdependent journalists who are also cordoned, had their Wi-Fi cut, have been jailed, have been under house arrest. I mean, so we have a kind of oppositional culture rising there that I think is going to be very difficult to stop. Nicci Brown: Last summer the Cuban government promised to institute economic reforms. Has that happened? Lillian Guerra: Well, they have done this kind of promise repeatedly. The issue here is that the Cuban state relies on its ability for it to survive, on its ability to monopolize the wealth in the country through its own state-owned businesses. So, you have state capitalism effectively. Eighty-two percent of the economy is in the hands of one major conglomerate, called GAESA, that is run by the Ministry of the Armed Forces. The Ministry of the Armed Forces generals, their role is largely to be the CEOs and chief executive and financial officers of these corporations. Their partners are often foreign investors. They're major free trade zones outside Havana in addition to the tourist sector of the economy. So, if the economic autonomy of the people, entrepreneurialism, were to really take off it would inhibit the state's ability to control people politically. I mean, if you don't owe your livelihood to the government, then you're kind of fearless. You don't have to go to rallies. You don't have to worry about your Committees for the Defense of Revolution, what anybody thinks, and you don't believe in socialism. You believe in entrepreneurialism and small-time capitalism and relying on one another. So, I think that the government for the last 30 years has relatively or regularly rather opened up the private sector, the non-state sector, and then it shut it down again. And it is repeatedly done that. So, it has to, on the one hand, provide self-employment opportunities because it cannot employ everybody. On the other hand, it doesn't want people to succeed. And so that's the catch-22, that's always a part of the state, this situation. Nicci Brown: And Florida, of course, has a large Cuban population, and we have seen protests here. Many people have family and friends in Cuba. What's the reaction that we've seen so far, as I mentioned, there have been some protests and where do you see that going? Lillian Guerra: Well, I think that, first and foremost, and I speak as somebody who was born in the United States of Cuban-exiled parents who arrived in '64, I think we have to recognize that Cubans on the island are fully capable of negotiating with the Cuban state. We have to support them in their ability to do that and we have to support their voices. And that includes voices that we might not agree with. There are many Cubans on the island who are extremely angry at the state because it says it's socialist and then the Communist Party effectively does not invest in education or health care. Instead it invested in its own industries and that kind of behavior mimics big-time corporate capitalism on the Walmart scale. So what Cubans are asking for on the island is very diverse because there are many different kinds of demands and really they've never had the opportunity to voice them or to galvanize groups. I think that it's hard for the right wing in Miami to put down their own or put aside their own interests for the sake of change in Cuba. And when I say that, taking a hard line and sticking to the same policies we've had for 60 years will get Cuba nowhere. The embargo, in particular, hurts mostly the Cuban people because it allows for the Cuban state to monopolize the resources in the country and decide how to distribute them. It gives them an excuse and a banner to wave about how the United States is really responsible for their poverty and their lack of food, et cetera. And this also, the fact that the right wing will often continue to say that we must, in fact, harden the embargo or prevent Cubans from visiting the island or prevent Cubans from sending all the money that they want to the island, if they want to. Under Obama, that was possible, the normalization of status, and has become virtually impossible. When Cubans take these positions in the United States, they really enable the Cuban government to continue to be in power and to have its power undiminished. So, we also have a lot of people on the left who want to denounce the Trumpists and will do that without any regard for what the implications are. So, then they take the position of the Cuban state and then they support what they say and they don't look beyond the Cuban state's discourse and justifications for its rule to the reality that that state has created. Nicci Brown: So, you mentioned two hard-line approaches, I guess, or extreme approaches. What do you think should happen or could happen to help move things forward? And do you think it will? Lillian Guerra: First of all, I think that we need to start ending the isolation of the island and we need to do that through a variety of means. First, the Trump administration, in its last breaths, put Cuba back on the list of terrorist states or states sponsoring terrorism, which is really absurd. All he did was really to pound the voters who had voted for him on the back, those who support hard-line stances, there is nothing more hard line than claiming that Cuba is in league with North Korea or Iran. It could barely feed its people and the Cuban government has no interest in sponsoring terrorism. Their leadership is more interested in lining their own pockets, frankly. So, what that particular condition does is it prohibits anybody in the state of Florida like myself or the library here from having academic exchanges and intellectual exchanges, bringing students to Cuba, using our research funds to do research in Cuba. Those are the things that change Cuba, that empower intellectuals in Cuba, that provide alternative sources of information and pluralistic understandings of what academics are all about and pluralism in general. So that's first because we have a law in the state that says that if Cuba's on that list, then we can't do anything. We can't engage in those kinds of activities. I think secondly, we need to re-establish people-to-people exchanges, which enabled in the last year of the Obama administration about 100,000 Americans to visit Cuba, who would otherwise never have gone. And they established in the short time that they went, many of them, business-type arrangements with small entrepreneurs in Cuba, setting up entrepreneurial businesses where a product was designed in Cuba and made in the United States and then distributed. And then they were able to share the profits. That's technically illegal again. So, you can't have this kind of collaboration, even in small businesses, across borders. And we should, because of course that empowers the entrepreneurial class. It creates economic autonomy for the citizenry, the very things that the Cuban government disdains and does not want to happen. I also think we need to restaff the embassy. We need to have full of consular services. Right now, if you have a visa to come to the United States and you've had that visa from before COVID you can't. You have to go to a third country to get anything processed. And we don't even have from Biden a sense for how they're going to establish whether people have been vaccinated appropriately or not upon arrival. We've done that for other folks, coming from Brazil for instance, big hotspot, upon arrival here, they get vaccinated again because we don't trust the Brazilian vaccine, okay. Well, we need to have these kinds of guidelines. We need to have a statement from Biden and just simply saying, 'Well, we side with the protestors and what's going on is wrong,' does nothing. It does nothing. I also think that Biden needs to stop worrying about gaining the Republican vote or the South Florida Republican vote because he is never going to gain it. Whatever he does, whether he does nothing or he does something, he is never going to have an audience in that community. They will always condemn him. And just as they did with Obama, Where he has a lot of room to work is with younger generations of Cubans, people who don't vote or would vote if they had a reason to vote. And if they see changes that immediately impact their family's lives on the island. And I think that those changes would be immediate as they were when Obama made normalization a possibility. Nicci Brown: Are you hopeful those changes might happen? Lillian Guerra: I am very hopeful. I think, you know, the best way we can ensure a change in Cuba is to galvanize the forces that already exist there and to flood them with us. I mean, we are great diplomats for change and for pluralism and what we understand, even when we're wrong about what happens in Cuba, we're inaccurate in our understandings of Cuban society, when we arrive in Cuba and we're faced with that, we have conversations with Cubans who are the greatest teachers about their reality. So, the Cuban state, really, I think we would like and we need to call the Cuban state's bluff on a number of things that they say that we will never do. One of which is to really open up our relationship with the islanders. Nicci Brown: Lily, thank you for being our guest today. It's been a pleasure having you here and hearing more about your thoughts. Lillian Guerra: Thank you so much. I'm so glad you did this. Nicci Brown: Listeners, thank you for joining us for an episode From Florida. I'm your host, Nicci Brown, and I hope you will return for our next story of innovation From Florida. Collapse November 16, 2021 Forrest Masters was an undergraduate student at UF when a professor asked if he wanted to join a research team that chased tropical cyclones. He has been tracking storms ever since. In addition to conducting research during major storms, Forrest oversees UF's advanced wind tunnel – a National Science Foundation user facility that attracts researchers from across the U.S. In this episode of From Florida, Forrest shares what it is like to conduct research in the middle of a hurricane and how his research may help contribute to more resilient communities. Apple Podcasts Google Podcasts Spotify Stitcher RSS Transcript Nicci Brown: Welcome to From Florida where you'll learn how minds are connecting, great ideas are colliding and groundbreaking innovation is becoming a reality because of the University of Florida. I'm your host, Nicci Brown, and today we're talking about hurricanes. Experts predicted that the 2021 Atlantic hurricane season would have above average tropical storm activity. And they were right. There have been 20 named storms as of October 11, and we won't reach the end of what is the typical hurricane season until November 30. This season storms have resulted in damages collectively estimated at more than $70 billion. On top of that, dozens of people have lost their lives during flood surges and other storm-related events. This loss of life and property makes the work of the University of Florida researcher who is joining us today incredibly vital. Forrest Masters is a professor of civil and coastal engineering in the Herbert Wertheim College of Engineering. He works in the college's School of Sustainable Infrastructure and Environment and is also the college's associate dean for research and facilities. In addition to his work at UF, Forrest serves on the board of the Federal Alliance for Safe Homes. Forrest has received more than 50 grants from state, federal and private organizations to support his work, which is focused on developing a deeper understanding of hurricane behavior and how to better design structures to withstand the increasing ferocity and frequency of these storms. Forrest, it's a pleasure to have you with us today. Forrest Masters: Good morning. Really great to be here. Nicci Brown: So as a starting point, I'd love to learn more about what made you interested in hurricanes in the first place. Forrest Masters: For me, it began as an undergraduate student at the university. I was in a structural engineering course and the professor came to me and said, 'Do you want to chase storms?' And when you're 20 years old, there's only one answer to that question. And subsequently I got involved in an undergraduate research program here and that's when I really began to fall in love with the study of tropical cyclones. And from there, I built a career. Eventually became a professor studying both the meteorological effects of these events, but also studying how buildings respond under extreme winds and wind-driven rain conditions. Nicci Brown: So, you've conducted field experiments in nearly 40 named storms, several of them Category 4. What's it like to chase a hurricane? Forrest Masters: Well, certainly it's not as sensational as what Hollywood would show you. There's a lot of hurry up and wait, honestly, and a lot of driving. When we leave the university, we're bringing a lot of equipment. We have a convoy of vehicles, large trucks, trailing portable weather stations that get deployed in the path of the storm and hauling other types of equipment. Ultimately, we're bringing the lab to the hurricane. As deployments typically go, I'd say most of the work actually happens in the lead-up to the event. There's just a lot of planning and preparation. But once we hit the road, we stay on the road. And so generally all of our trucks, we have 100-gallon diesel reserves so we don't have to do a lot of stopping. We keep moving, we move to the site, we do a lot of coordination on the road with local officials to get permission to go into different places. There's a lot of communication with meteorologists and other people that are keeping close tabs on the storm to identify the right place to be. But when we actually get there, it's relatively quick. We have these 6,000-pound weather stations that when they're fully deployed are about 33 feet in the air. You know, we've done this now for almost 20 years, over 20 years. So, we have a lot of experience putting these out. So that takes on the order of about an hour to put one up. We move around the area, we put these in strategic locations. We're often coordinating with other university teams that are in the field. For example, we have colleagues at Illinois and Texas Tech and Oklahoma and University of Alabama Huntsville who bring portable Doppler radar systems. And we try to co-deploy so that as they're surveilling above, we're taking measurements below. So there's just a lot of coordination and we get out there. But I don't think our heart rates get over 100 beats per minute or anything like that. It's a very intentional process. And you know, this is the great thing about doing it today. The amount of information I have at my fingertips is exceptional. So I really have a great idea of what's going on, down to maybe the 15-minute increment about weather conditions to get us in the right place at the right time. So, I hope I didn't dash any dreams for anybody that's listening about how exciting this is to go in the field. It is quite exciting, but at the end of the day it's work and it's professional work. That's how it's treated. We're very safety conscious and we spend a lot of time making sure that we have the best information to make sure that we're making the right decisions. We're trained to be highly analytical, to respond to changing situations, so this is a perfect environment to put those skills to test. There's a lot of improvisation involved because you don't know exactly where you need to be and by when you need to be there. The situation is very fluid. It's a wonderful opportunity to work with your colleagues and particularly to bring students in the field. In my experience, it brings out the best in them. They almost always, after leaving their first storm, come out a different person, someone who's more prepared for their professional future and someone who's more in touch with the issues that ultimately drive all the engineering work that's being done to protect society from these storms. Nicci Brown: I understand that we've become a lot better at tracking hurricanes. But with all of the science and technology we have at our disposal, why aren't we better at predicting the changes in the strength of hurricanes? Forrest Masters: Predicting the intensity of a storm, it's a very tricky business. Storms, when they're moving across the Atlantic and eventually they recurve and they strike the U.S., as they're moving towards the shoreline typically they're encountering a lot of new conditions. I mean, the presence of land, for example, cuts off the supply of moisture and heat. We also see dry air become entrained in the storms, among other factors. And so the reality is when a storm's over the water, often we know more about it than we know about it when it's actually making landfall. It's the period of sort of greatest uncertainty because of those changing conditions. And that's in large part what motivates us to go out in the field and take the type of measurements we do, is really to create both situational awareness about the overall storm intensity but also to collect data that will be used for many generations from now to improve those models. So, eventually we hope we can help put ourselves out of the storm chasing business by having better and more actionable data to improve modeling. Nicci Brown: So, we hear about modifying clouds with seeding. Why can't we modify hurricanes so they just dissipate or become less powerful? Forrest Masters: The topic of weather modification has existed for a long time. And there are notable projects that looked at all possibilities to do this, including a very large one called Project Storm Fury, which was done in the last half of the last century. And generally, the biggest problem with modifying a storm's intensity is simply the sheer amount of energy in a storm. These large events can have more than 100 terajoules of energy. It's not straightforward. There isn't a magic bullet here to kill a hurricane. So while it may be true that some of these technologies can be deployed and can ultimately reduce intensity in certain parts of the storm, when you're talking about a storm that spans hundreds of square miles, it's not a trivial thing to do. And also there are unintended consequences of modifying the environment that have to be dealt with. I wouldn't rule out at some point in the future of humankind, we don't figure this problem out. But for the time being at least, it's a very complicated problem. And we have other areas certainly where we can make a difference in terms of, for example, improving our building codes and standards and our design practices. And there's also just handling the flow of people during these events through evacuation and that type of thing to give us a more direct path to ultimately reducing the impact of the storm. Nicci Brown: So, the data you collect when you are chasing hurricanes, what is that data like? How do you gather it and how are you using it? Forrest Masters: The purpose of our program is to measure surface wind speeds. We take out ruggedized weather stations that are designed to withstand up to 200-mile-per-hour winds. And we deploy them right where the highest winds are expected to arrive. And we measure wind in three different directions at a very high resolution. And that ultimately allows us to characterize the structure of these damaging winds. And that's important because the nature of the turbulence affects the loads that act on buildings. And so we're able to make strong inferences about if we're going to simulate that environment, for example, in our wind tunnel here at the University of Florida, we can use that information to help improve those simulations so that we're doing additional testing. The data are also used for post-storm damage assessments. This is one of the, the probably the hardest problems, hurricanes, these extreme events, make it very difficult for people to actually go out and observe what's going on. Yet, engineers and meteorologists are called immediately back in to tell us what happened. And so providing these types of measurements gives us a very clear line of sight on what the wind field intensity was at that location so that we can evaluate if the building stock performed adequately. And as often is the case, what we do see is a lot of damage at well below design wind speeds. And that's important because it allows the engineering teams to pinpoint what are the links in civil infrastructure that ultimately cause systemic failures. So, those are some of the ways that we use the data. We also provide it to operational users. It's fairly common to see when the National Hurricane Center is monitoring hurricane weather conditions at landfall that were reported out on measurements we're taking. And in turn, this information is shared with emergency managers, both at the state and local leve,I who are ultimately figuring out when can they get their people back in. So it's a wonderful community of people, both on the research and operational side, sharing information and supporting each other. That by far is probably the part I love the most about being in this role is interacting with all these people that are so passionate about doing the best they can to take care of the affected community. And I take a lot of pride that I'm part of that community and I can contribute to it. Nicci Brown: Well, let's talk a little bit more about that wind tunnel. It's called the Terraformer and it's quite central to your work. Can you tell us more about what it is and what it actually can do? Forrest Masters: So, in addition to our field work, we do a lot of work in our laboratory. We, for example, do physical testing where we actually destroy systems to see how they perform and then we study the underlying engineering that led to the design. We also operate a large, what's called a boundary-layer wind tunnel. And the purpose of the wind tunnel is to simulate, at a reduced geometric scale, the actual atmospheric boundary layer. So you can imagine if you went outside and you felt the wind on your face and it's changing in different directions, well that's a product of the fact that the wind is moving through trees and buildings to get to you. And so we actually, in this tunnel, we can simulate the Earth's landscape over a very far extent. And the Terraformer is one component of the wind tunnel that allows us to dial up any type of terrain at a specified geometric scale. So if you came to me and said, I need to run an experiment at 1 to 100 scale in marine conditions or a 1 to 10 scale in suburban conditions, within 90 seconds we can reconfigure the floor of the wind tunnel. There are over 1,100 individual roughness elements that we can raise and lower and twist to give us exactly the type of condition that we'd expect. And so the Terraformer allows for high-throughput testing in different types of terrain environments to evaluate loads or evaluate how buildings might move, aerolastically is how that's referred to, in the wind among other applications. Nicci Brown: How large is it? Forrest Masters: The wind tunnel's quite large. It's one of the largest in the world actually for this type of application. Nominally at the test section it's 20-feet wide by about 10-feet tall, and it's powered by eight large what are called vane axial fans. And it's an open-circuit wind tunnel because it's so large and also the tunnel in length, I think, is about 125 feet. So it's a pretty substantial piece of equipment to operate. In fact, because it's so large and we built so much sophistication into the equipment we use to control the flows in it, it actually became a National Science Foundation user facility back in around 2015. So, anybody in the United States that's an academic that wants to use the wind tunnel can work with the National Science Foundation to come to our lab. So, we have people coming there all the time to exploit its unique capabilities and its size. Nicci Brown: Fantastic. So, it sounds like this really does help guide you when you're looking at building an infrastructure safety and the guidelines or recommendations that you would make. Forrest Masters: Yeah. That's what we're shooting for. I would say our aspirations go further than that. I mean, ultimately, we're trying to create a test bed that allows people to be as creative as possible about exploring these issues. So, I wouldn't say that the structural engineer is the target audience. It goes way beyond that. You know, we work with meteorologists, we've worked with people in other fields looking at different types of technology deployment for sensing and so on. I think that's really, I mean, if you really had to distill down what we do at the University of Florida, I think it's trying to push the envelope. The facility, although it probably could operate with the speed and productivity of a commercial facility, that's not the intent. The intent is to allow people to come in and try wild new ideas that potentially could be transformative or ultimately lead to better solutions in an engineering context. Nicci Brown: And to your earlier point, this really is a community, if you will, of people interacting and coming up with solutions and trying things out. Despite the improvements we're seeing in building codes and the like, we are still seeing increasing damage to buildings. So with all of that in mind, what are the implications that you see for the future? Forrest Masters: Yeah, this is, I think, one of many lenses when you think about society and how it operates that tells us a lot about how the U.S. infrastructure will change over time. Because ultimately, we're looking at buildings that might have existed 50 to 100 years and are expected to be around for another 100 years or so. And the implication is that actually in solving the hurricane problem, we have to actually understand how buildings perform in day-to-day weather. So I think it's a good platform to sort of study the holistic performance of buildings. And if you want to sort of step out to more of a macro scale, when you think about how communities respond to events, that's the thing about a natural disaster or some other type of exogenous shock to a community. Time speeds up. And all the bad things that might happen to that community over 20 years might happen in three months. And so there's a real opportunity to, I think, self-reflect on how resilient communities are in the face of these events. And, specifically, to places like Florida, which has a lot of coastline and I think upwards of a 1,000 people a day moving into the state, it's an opportunity to think long term. I have real concerns about what the state of evacuation will look like in 50 to 100 years in a crowded place like southeast Florida, where people can't build. I mean, we're going to be forced to think about the function of buildings, particularly sheltering in place in areas that don't flood more so than we've ever thought about that before. So, these events really, I think, positively influence design engineering thinking around what we're going to do. And ultimately this is a silver lining, I guess, to the problem. It forces us to think about building better communities to stand up to these events. Nicci Brown: Forrest, thank you for the work that you're doing and that of the other researchers that you partner with. It was great to have you as a guest on our show today. Thank you so much. Forrest Masters: Thank you. Nicci Brown: Listeners, thank you for joining us for an episode of From Florida, where we share the stories of faculty, researchers, students and administrators whose thought leadership is moving our state, our nation and our world forward. I'm your host Nicci Brown and I hope you'll return for our next story of innovation From Florida. Collapse November 9, 2021 Thanks to the GI Bill, thousands of military veterans have been able to pursue an education at the University of Florida. It is just one way the nation and UF shows gratitude for our military veterans' service. And it also helps to broaden the experience for non-veteran students. In this episode of From Florida, Roselind Brown of the Collegiate Veterans Success Center highlights UF's history of working with veterans, while Savanna Turner, who served in the U.S. Coast Guard, talks about the opportunities and challenges veterans face on a college campus. Apple Podcasts Google Podcasts Spotify Stitcher RSS Transcript Nicci Brown: Welcome to From Florida, where you'll learn how minds are connecting, great ideas are colliding and groundbreaking innovation is becoming a reality because of the University of Florida. I'm your host, Nicci Brown. Thursday is Veteran's Day, a day set aside to honor those who served our country in the United States Armed Forces. Our gratitude for our military veterans is deep and abiding. One way our nation has worked to show that appreciation is through educational support. Today, we're going to hear from two people at the center of UF's efforts to make military veterans feel welcome and help them succeed. Savanna Turner is a student veteran at UF, but to get us started, I'd like to introduce Roselind Brown, who is assistant director of care in the Collegiate Veterans Success Center. Roselind, thank you so much for joining us today. Roselind Brown: Hi, Nicci. Thanks for having me. I'm glad to be here. Nicci Brown: Can you tell us a little bit about yourself first of all and your career with UF and the Collegiate Veterans Success Center? I believe this is a fairly new role for you. Roselind Brown: Yes, you are correct. So, I have actually worked with the university for about two years, but I've just transitioned into this role about a month and a half ago. So, brand new into the Dean of Students Office, which is where we're housed, and into the center as well. But very excited to be a part of the team. Nicci Brown: So, could you share with us a little bit of a brief history of veteran services at UF? Roselind Brown: Yes. So, UF actually has a really long history of military service, veteran services, and then also military training. As a land grant university, it was actually a part of the act that created the land grant to have military curriculum a part of the university. So we have a long-standing military history. Additionally, with that we were one of the inaugural units for the ROTC. So again, really strong military training. And jumping forward many decades, we also really had a strong presence within World War II. It actually had a very significant impact on our university with our students as well as faculty and staff joining the service during those years. A lot of our student housing was actually created as barracks to house all of those students coming back to campus. One in particular would be the Corry Village, which was named after William Corry, who was one of the two student body presidents who unfortunately did pass away during World War II. Flavet Village was created to help when we had our soldiers come back during World War II. It was initially created with travel trailers and then was made into that permanent housing facility, just to house the many students that came back during World War II. Additionally, we have had members serve in Korea, Vietnam and every single conflict since. Nicci Brown: So, obviously, we have a very rich history of veterans and involvement with the military here at the university. Can you tell us how many veterans we currently have attending UF? Roselind Brown: Sure. So, we are able to track our veteran students in a variety of different ways and that includes our students that are utilizing military benefits. So at this time we have 947 students that are actively using their educational benefits. That does include, though, active duty as well as dependents of veterans. Overall, though, we have a strong estimate of about 2,100 students that identify with the military community who might not be using benefits, but are still either active duty, spouses of a military member or a dependent. Nicci Brown: And I would imagine that runs across all levels of the university. So, everywhere from first-year students right through to doctoral students. Roselind Brown: Exactly. And also within our professional students as well, too. Nicci Brown: Terrific. So, one of the things, too, in terms of how we are recognized across the nation, U.S. News & World Report ranks UF as the 10th best college for veterans in the country. So we are well known. What kinds of services and support does the Collegiate Veterans Success Center provide for all of these students that are here? Roselind Brown: Yeah. So, the Collegiate Veterans Success Center, it was actually created out of concern for our veteran students, wanting to really create a space where they were able to feel supported, could relax, study and really have a space to build a community with others that were within the military community or military-affiliated. So, a lot of our services are around social connection and support and transition into such a large university as University of Florida is. We have a wonderful lounge for them to come, just relax, hang out, chat. We have a study space where they can come in and bring groups as well as a computer lab and free printing. But we also partner with the VA and we have a Vet Success on-campus counselor, who works with us 20 hours a week, as well as with Santa Fe, so she understands a lot of the transfer requirements, which a lot of our veteran students are a part of the transfer classes as well. So, she's great with handling questions about VA benefits, academic advising, career counseling and really also the transition to UF as well. Nicci Brown: I would imagine that sense of camaraderie or connection is something that's very important to veterans. Roselind Brown: Yes. Very, very, very much so. It allows them to really just speak with someone who understands, even if they're from a different branch, from reserves, active duty. They really have kind of a common language and being able to have someone to talk to that understands that language. Nicci Brown: Well, Roselind, thank you so much for joining us today. And thank you, also, for the work that you're doing. It's greatly appreciated. Roselind Brown: Thank you. It's been great speaking with you today. Nicci Brown: Now, it's my pleasure to introduce listeners to Savanna Turner. Savanna is an officer with the U.S. Coast Guard, who earlier this year was named Veteran of the Month by the Florida Department of Agriculture and Consumer Services. She is a doctoral student who is studying agricultural education and she also is the president of UF's Collegiate Veterans Society. Welcome, Savanna, and thank you for your service! Savanna Turner: Thank you. Nicci Brown: So, tell us a little bit more about yourself. What drew you to the Armed Services in the first place? Savanna Turner: Yeah. So, I come from a family that has a lot of people in the military, who have served in some capacity. And so when I was an undergrad at UF, I was curious about that pathway and kind of seeing what that might be like. At the time, I was in the Department of Agricultural Education and so my career route looked like I was going to be an agricultural teacher at a K-12 school and I felt like I was way too young to teach kids. So, I was looking around and kind of decided that the United States Coast Guard was the way for me. I was really interested in, at the time, marine life, which I did not do anything related to marine life so far in the Coast Guard. But that was kind of something I wanted to do and be able to serve my country and do it in a capacity that was of interest to me and ended up starting to become a passion of mine, and now I'm at 10 years and counting in. So that's kind of family in the military and then just kind of wanted to do something a little bit outside of my comfort zone and be able to travel and do different things because I grew up close to Gainesville, about an hour and a half south, and that was about the most I've had with experience in the world at the time. And so I wanted to do stuff bigger than myself, but also get my opportunity to travel. Nicci Brown: And was anything surprising to you when you did join the military? Savanna Turner: Not really. I watched a lot of YouTubes on basic training and what that would be like and talked to my recruiter and prepared, to the best of my ability. I mean, I think that when you go through training there's things you can't prepare for, but it was about what I expected and it was very interesting going in and being active duty and everything. Nicci Brown: So, can you tell us a little bit more about what you did when you were with the Coast Guard? Savanna Turner: Yeah. So, my first unit, I came out of basic training as an E3 and I was stationed on a ship. It was actually a sailboat, it's a big, tall ship, and the purpose was to do PR in different countries and around the United States. Nicci Brown: By PR, you mean public relations? Savanna Turner: Yeah, sorry. Public relations. So, we went around and were in different ports around the world. And so it was kind of like, I guess, an ambassador of the United States. And we also trained the Coast Guard Academy cadets, which are similar to ROTC but there's an academy, so like West Point if anyone's familiar with that. So, we trained them in seaworthiness. That ship went to Saint-Pierre, France, which is past Nova Scotia, and then I went all the way down to Aruba, lots of places along the way. And then after that, I went to training to become a marine science technician. I got stationed in New Orleans after that and that job entailed a lot of pollution response, hazardous material response when it becomes waterways, waterfront facilities that manage hazardous materials over waterways and then foreign freight. So foreign cargo ships that come through, we do safety, environmental and security laws and regulations. So, we have to make sure that they maintain all of those international and U.S. laws. So, I was a marine science technician for the majority of my enlisted career and then I switched to the reserve, did the same job in Savannah. Yeah, Savanna in Savannah, I know! Savannah, Georgia, I got that a lot! And then after that I became a commissioned officer in the same field, just as an officer and my current assignment is in Port Canaveral or Cape Canaveral. Nicci Brown: Wow. You've really clocked some miles. Or nautical miles, I guess. So how do you feel that that experience has really directly impacted you as you study and with your studies? Savanna Turner: Yeah. So, I've always really been interested in the way that people are, like the way w e— why do we pick certain behaviors? Why do we do certain things? And so, I originally said I went into the Coast Guard because I wanted to do marine life stuff, which I didn't end up doing, but a lot of laws and regulations are meant to protect the environment. And so, with the experience as an undergrad, I definitely was very interested in environmental protection, environmental education. And that sort of led me into my doctoral degree, which is in agricultural education and communications, more specifically looking at public outreach in relation to sustainability. So, looking at how we can become better as people to help save the planet, is basically — that experience in the military added to the idea I already had. My dad likes to tell a story that when I was four about how I told one of his friends he needed to recycle some plastic he had in his hand. So that's kind of been part of who I am, but I think that the military sort of helped me see how people live throughout the world firsthand, to understand it a little bit better. And that helped inform my master's degree in sustainability, which led me here as a doctoral student. Nicci Brown: And I guess a lot of that draws upon your PR experience as well? Savanna Turner: Yes. So, you mean PR, like public relations? Nicci Brown: I do. You got me. Savanna Turner: Yes. Yeah. So, working a lot with the public, I mean, in the military, that first unit I talked about being on a ship, it was an ambassador of the United States. So, I talked to a lot of people, especially the cadets that were on board that we were training. We also had prior enlisted that would come on and learn how to be an officer on board. So, I had a lot of interface with a lot of different people from different cultures, different areas of the world. And so, that kind of inspired me in a way to say, 'I'm on the right path. I really want to pursue a Ph.D., to be able to learn about all these social science theories and why we do what we do and how to be able to help people change behaviors that are going to be more sustainable and more environmentally conscious.' Nicci Brown: So, you were on active duty for five years. Was it difficult to transition to the reserve? Savanna Turner: Yes, surprisingly so. So I was active duty for five years and when I transitioned to the reserve, I was definitely still in the active-duty mindset of go, go, go all the time, I've got to do all this stuff. And the reserve is — a commitment is one weekend a month, two weeks out of the year. You're still able to do a lot of the same job responsibilities. That's the fortunate thing about the Coast Guard, is we're always actually doing the mission. And so, I was able to still maintain the same level of qualifications and be able to go out and do inspections and things like that even as a reserve. But I think that getting out of the active-duty mindset and switching into a more, I guess, less time-consuming role and still being able to maintain a civilian life and be able to get a civilian job and then battle that with doing the one weekend a month was very challenging in the beginning. And it was kind of challenging transitioning mentally out of that active-duty mindset. Not bad, but just different. You kind of — it's sort of like losing a family, in a way, and it was kind of — some people equate it to a divorce. I was only in for five years, so I don't think it quite felt like what maybe a divorce would feel like, but it was still a very big transitional step. Nicci Brown: For sure. So, what were some of the things that you did to help you transition, to move along? Savanna Turner: So, I have a very unique thing that I did. A lot of people told me, "Find a project, keep yourself busy" because a lot of times you'll save up your vacation time and you'll use it at the end of your contract. So, you're still technically in, but you're on vacation at the end. And I had, oh gosh, like 50 days, I think. And so, I was looking for a job. I hadn't got a job yet in the civilian world. And I moved back in with my parents for a few months because I didn't know where I was going to live. I wasn't going to commit to anything. And so, I decided that I wanted to live in an RV full time. So, I bought my grandparents' travel trailer and I ended up renovating it. So, I had wood floors. I painted, I ripped out all the furniture. So that actually really helped me be able to transition because I had a purpose every morning. Because that's one thing that's really difficult is that loss of sense of purpose. And then it kept me up and moving and something that was active with my hands. So, it helped me transition out of that. And so that was a really big project that I was working on, in addition to yoga and trying to reflect and understand that it's okay I'm making this transition. I will have a new purpose in life, that's fine. But that was, yeah. I lived in that RV for three years. So, I lived in an RV! Nicci Brown: Wow. Savanna Turner: But, yes. It was an awesome project. I had a great time. Nicci Brown: Yeah. I hear about people being really passionate about that lifestyle, but also very innovative in terms of rehabbing those RVs. Savanna Turner: Yeah. It was a lot of fun. Nicci Brown: And what about your move back to the classroom? And, obviously, UF isn't new to you because you earned your undergraduate degree here. But now that you're a veteran, how do you see things differently in the classroom? Savanna Turner: So, I started fall 2019, right before COVID, so I had one regular fall semester. And it was very similar, but it was different. So, obviously, I'm familiar with campus. I was here as an undergrad. And this town, it's changed a lot in the eight years, I think it was, that I had not been here. But I think that, at first it was difficult because I didn't know how to connect with other graduate students because my life experience is so vastly different. And I'm older than most people and so that was kind of a challenge. How do I communicate with them without sounding like I'm just boasting about my experience? And so, I was kind of quiet and reserved at first, which is definitely against my personality. I'm usually very talkative and doing different things. And so that was kind of a little bit uneasy in the beginning. But I'm very fortunate. I'm in a really great department and it feels like a family since I went there as an undergrad. A lot of the same professors are there, and we have a really great graduate student structure. But as far as my internal struggles, it was still hard to really be able to connect with people in general. I think that that's kind of a challenge. But then I happened to find the Collegiate Veterans Society during that semester and that really helped me to feel that sense of belonging. I still get along great with all my graduate student friends but having another set of students who understand my past and my history and have similar experiences has been really helpful to find that sense of belonging. Nicci Brown: For sure. So, you're now the president of the society. Can you tell us a little bit more about the group, and what your role entails? Savanna Turner: Yeah. So, the Collegiate Veterans Society is a student-led organization. We're under student government. We're also part of the Student Veterans of America, which is a national organization. And so, our organization exists to create that sense of community among student veterans — active duty, reservists, dependents, military-affiliated students, even anyone who might be interested in the military. We want to create a sense of community and a place that people feel safe and inclusive and they feel like they belong somewhere. Because I think that sometimes we tend to think more like, 'I can do this on my own, I'm self-sufficient' because that's how we've been trained to think and that's a lot of times the position we've been put in. So, I think it's great that we have this organization to create that sense of you can stop in whenever you want, you can hang out with us. You don't have to, but we're here for resources and whatever you need. That kind of helped me and so I wanted to be able to be put in a position where I can help others as well. Nicci Brown: And you started UF's first peer-to-peer student veteran mentorship program. Can you tell us more about that? Savanna Turner: Yeah. So, this semester it's kind of on pause. I think when we all went to in-person, everyone's super overwhelmed and everyone's still trying to get their bearings, but we will start that back up, hopefully, in spring. I've been partnering with the Veterans Success Center here on campus to help get that up and running. And so, I kind of got that idea from my department, actually. We have a pairing process that we do with new graduate students and then more seasoned graduate students to help people coming from all over the country, even just coming to Gainesville, maybe they already lived in Florida, to acclimate to being able to be at the university. And so I kind of modeled it after that, same similar design as that. Student veterans that have been here a little while connect with new student veterans to kind of help get their bearings — if they need to be connected with the right person, with their VA benefits, if they need just someone to support them, someone to talk to, professional development opportunities. So, I wanted to make sure that we had that opportunity and I kind of modeled it after some other universities. I just kind of did a quick search and kind of saw what other universities were doing and realized that UF didn't have that peer-to-peer opportunity. And so, I kind of used the department's modeling. And then I have always really enjoyed mentorship. So I kind of used some of the things that I've used in the past or that I've come across that I thought might be helpful, because I think that being a mentee is just as important as being a good mentor. And so I wanted to create a sense of a workshop so we can all get together and learn together about how to create actionable plans on what that relationship would look like. I think that it's a little bit harder right now, but I think in spring we'll definitely be able to ramp it back up and be able to have that opportunity for student veterans. Nicci Brown: Sounds terrific. So, you've mentioned some of them, but what are some other challenges that veterans face when they take on university studies? Savanna Turner: I think that . . . I've thought about this question because everyone has a unique experience in the military. You have people who have served combat roles, people who have been stationed in other countries, people had good experiences and bad ones, just like anything else. And so, I can't really tell you what exactly

everybody has to go through because everyone has a unique sense of their life. But I do think that some of the other things that student veterans have are, we usually have more refined or polished skills in the sense of leadership or team building or maybe time management or meeting deadlines, and self-discipline. So, I think we bring a lot of those skills to the table when we come here. So, I think that it helps to our success, but only if we're put into a supportive environment that allows us to be able to utilize those. And I think that sometimes we like to hide and we don't want people to know that we're veterans because then people look at us differently. So I think that that's really important, that you have a supportive environment for us to be able to flourish and be able to utilize those skills, not only for ourselves but be able to help other students as well. Nicci Brown: What about the whole idea of questioning? When you're in the military it's very important that you follow command and that you work together as a unit. At universities, sometimes part of the core of things is to always question why, what if. Is that also a challenge? Savanna Turner: For me, personally? No! Nicci Brown: I got that!! Savanna Turner: My experience in the military, before I was an officer, I was actually enlisted for nine years. I recently became an officer in the reserve and I was put into a field as a marine science technician. And so, I was actually in a field where it was welcoming to question things, not in a command sense, not in those more formalized systems that are in place, but more in the field work. So, I did a lot of environmental laws and regulations and inspections. So, we had to be very inquisitive about what we were doing and very like, 'Why is the ship doing this, this way?' So yes, they're not meeting the intent of the regulation, but you have to go more in depth on the why's and ask the questions. And so I was in a position where that was a good thing, obviously not in certain scenarios, like chain of commands and things like that. So, I didn't really have a problem with transition. I think sometimes I ask too many 'why' questions. It gets me in trouble because I do tend to ask, if it's an administrative thing or something, I'm like, 'Why are we doing it this way?' And that's not always the best approach. But, yeah. So, I think that that's, actually, in my experience, been a thing that I've been able to carry with me into my studies. Nicci Brown: Sounds terrific. So, let's talk about the original GI bill, or the Servicemen's Readjustment Act, as it was formally called. It was signed into law in June 1944 and is credited with having been a key contributor to establishing the American middle class and boosting the post-war economy. How do you view the impact of the Post-9/11 GI Bill? Savanna Turner: That actually has been a huge benefit for a lot of people. For me, in particular, when I was working as an extension agent, when I got a civilian job and switched to the reserve, I was able . . . UF paid for most of my master's degree. I paid for a little bit here and there, but then I was able to utilize that degree or that Post-9/11 GI Bill to be able to get a doctoral degree, which is extremely expensive. And so being able to come out of here with a degree and not have any debt . . . I mean, I have some for my undergrad, but as far as my master's and Ph.D., I don't have any debt. And obviously, that's in the news a lot, we always talk about student loan debts. And so being able to serve your country and kind of be able to serve others and then the benefit you get is that you get a four-year university paid for. It's a huge benefit and it helps out a lot of people. So being able to utilize that was a really big factor in my decision to become a doctoral student because I knew I didn't want student loans anymore and I didn't want to have to pay for that. And then, we also have an opportunity to have a monthly housing allowance. So that takes a little bit of the burden off of having to worry about being able to pay rent. Many of us still work part-time jobs. I'm a graduate assistant and so that helps with food and things like that. But it really has set me on this trajectory. I definitely would not be pursuing a doctoral degree without it. And I feel that a lot of students that use it kind of look at it like, 'This is a great opportunity. I spent four years in the military and now I'm able to go to school for free.' Basically, for free. It's been really beneficial for a lot of people. Nicci Brown: And I think it's important to remember, though, this isn't a zero-sum game. You've served your nation, then you're coming back and you're getting this great education, but that will again contribute to society as well. Savanna Turner: Yeah, exactly. I mean, now, you think about a student veteran that's coming out — most of us are a little older, we've had some life experience. We have a lot of polished soft skills that we come into university with, that we can help mentor and teach others about our life experience. And then getting that formalized education that maybe compliments those soft skills that we've learned really makes us a better member of society. And we come out of the university with more, I guess . . . I don't want to say we're more prepared, but we do have a lot more to offer the world as far as combining all of that experience. Nicci Brown: You touched upon something there that I think is worth following up on about coming into the classroom and having some life experience. And I think that's another side of things that we talk about, the benefits that veterans bring to the university, to their classmates, that they do have these different viewpoints that they can share. And earlier in our conversation, you also mentioned that, at first, you didn't want to share that you'd been in the military. So, can you talk a little bit more about that evolution and just what veterans do bring to the atmosphere of a university? Savanna Turner: Yeah. So, I still don't like sharing. I won't openly walk up to someone and be like, 'Oh, I've been in the military for 10 years.' I don't know. It just feels weird to talk about it. I talk about it sometimes in a general sense, like if I use that as an example in a classroom or something like that, but I still am not comfortable just talking about it openly. I actually talked to some grad students and I was like, 'What do you think that I bring that's different?' And a lot of them said, 'That diverse world view.' I have a different perspective on the world compared to my peers because — I didn't serve in a combat role, I wasn't stationed in another country — but I was on a ship and I did go to a lot of other countries, experienced a lot of cultures. So being able to have a different worldview based on my life experience I think helps a little bit. When people get to know me it kind of . . . I can offer up a lot more experience and say, 'Hey, I think it's a good way to do this, but you may want to consider these other factors because I've been there, done that, and I made that mistake. Or I did this and I was successful.' And so I think that that's a lot of what student veterans can offer. We're not going to openly do that. I think you have to, like I said, create a supportive environment where we're able to kind of offer up that worldview. But I think that we have a lot to offer as far as life experience, especially being that a lot of students are younger than us and maybe haven't had that experience yet. I think that we could offer a lot to be able to give some insight and some wisdom to some degree to some people. Nicci Brown: Savanna, thank you so much for your service and thank you for joining us today. It's been a real pleasure chatting with you. Savanna Turner: Yeah. Thank you. Nicci Brown: Listeners, thank you for joining us for an episode of From Florida, where we share the stories of faculty, researchers, students and administrators whose thought leadership is moving our state, our nation and our world forward. I hope you'll return for our next story of innovation from Florida. We are going to be talking with Forrest Masters about his research on hurricanes. Please join us. Collapse November 2, 2021 Cryptocurrency is a mystery to many of us. In this episode of From Florida, Mark Jamison provides a straightforward explanation of cryptocurrency's origins, how it works, why it's attractive to some investors, what regulators are looking at and implications of cryptocurrency for the average person. He also talks about the one big question no one has yet answered: Who is or was Satoshi Nakamoto? Jamison is the director and Gerald Gunter Professor of the Public Utility Research Center and director of the Digital Markets Initiative at the University of Florida's Warrington College of Business. Apple Podcasts Google Podcasts Spotify Stitcher RSS Transcript Nicci Brown: Welcome to From Florida, where you'll learn how minds are connecting, great ideas are colliding and groundbreaking innovation is becoming a reality because of the University of Florida. I'm your host, Nicci Brown. Cryptocurrency. I'm sure I'm not the only one who is trying to figure out what it is and what it means for most of us. However, it is the topic of conversation in the financial and political worlds, drawing both enthusiastic and cautious investors and the scrutiny of regulators. Our guest today is Mark Jamison and he knows a thing or two about cryptocurrency. Mark is the director and Gerald Gunter Professor of the Public Utility Research Center and director of the Digital Markets Initiative at the University of Florida's Warrington College of Business. Welcome, Mark! Mark Jamison: Glad to be here. Thank you. Nicci Brown: So, cryptocurrency has been around a lot longer than many people may realize. Can you give us a little history and a basic explanation of what it is? Mark Jamison: Sure. Let me take you back to 2008. As you might recall, the country was going through a financial crisis and that attracted the attention of a group of people called Cypherpunks. Now they go clear back to 1992. It's basically a group of people that met in somebody's basement in Oakland, California, and they had two basic worries. One is they worried about the government getting into their privacy, getting all their information about them. And then also about just how big and controlling the financial institutions were around the world. So the financial crisis played right into their suspicions. So they were very worried at this moment. And they had worked on cryptography — how do you hide your digital information so nobody can read it — and they had also tried to figure out a type of digital currency that would be something that could keep them independent from the banking system. But they'd never quite been able to solve one particular problem. And it's what's called the double-spend problem, which is, if I'm going to tell you that I have this digital money and I'm going to buy something from you, how do you know I really have it? I might be giving it to somebody else at the same time. Well, on Halloween, October 31, 2008, on their listserv shows up an email that says basically this: I have been working on a new electronic cash system that is fully peer-to-peer with no trusted third party. And it's signed by Satoshi Nakamoto. Now the trusted third-party issue is important because when you and I engage in an electronic transaction there's a bank between us that verifies that, yep, Mark really does have that money. And yes, I am delivering it to you. So, this was no party in between. It's just the computers took care of it. Now, there were a couple of curious things about this paper or about the person. One is that no one had ever heard of this person before. And so how did he actually get access to their listserv? And then so many people had worked on digital currency before the listserv pretty much just blew him off — except for one gentleman named Hal Finney. Hal said, you know, if you need some help, I'll help you. And so this Satoshi Nakamoto — who we still do not know who that is. It may be a guy, it may be a woman, it may be a group of people. We have no idea who it is. All we ever have are emails from this person or group of persons. Nicci Brown: Do we even know where this person, these people, were? Mark Jamison: No, we really don't know. We're guessing from the timestamps on the emails this person and or persons sent that they were probably either in Europe or the U.S. That's just the best speculation that we have, but we don't know, actually. So Hal helped, via email, Satoshi work out some of the computer coding and in January 3 of 2009, Bitcoin launched. That's what emerged from that work. And it's important in that Bitcoin gave us what we call a blockchain. And this idea of a blockchain is that you have a network of computers that are all peers. It means there's nobody in charge. They're all basically working off the same software. And the purpose in Bitcoin, of this network of computers, is they all act as what we call miners, which means that each of them has a complete record of every Bitcoin that's ever been created, who's it gone from, who's it gone to and you can download all of that anytime you want to and become a miner — I won't go into the details of how that works — but their job is to keep that ledger all up-to-date. That worked. And it got so many people excited that now we have a lot of these types of what we call cryptocurrencies floating around. Nicci Brown: Right. So Bitcoin, as you just said, is one example and the oldest one, but it seems that every day we are hearing about a new cryptocurrency. So how does one get launched and who sets the value? Mark Jamison: Well, you're right that we have a lot of what we call cryptocurrencies around. There are over 10,000 the last time I looked. But there are basically three types and it's important to tease those apart in order to understand what's going on. There are some that are indeed pure cryptocurrencies, which is what Bitcoin is. It is simply a ledger that says I've transferred this from me to somebody else. And that's all it represents — a transfer. Then you have some that are called utility tokens. A utility token is something where it's actually a close system that where you have all these entries of the currency, if you will, or the token, on the ledger, but it can only be used for particular purposes. So, the most famous of those is something that's called Ethereum. And I won't go into the details on it, but essentially Ethereum allows people to share a network of computers. And by owning the Ethereum token, you can use those computers. So it's a closed economy in some sense. Then you also have what are called security tokens. Security tokens means that you actually have some property rights to something out in the tangible world, if you will. And so those have their own types of properties and own legal arrangements. So the question about where do they come from and how do they get value? The creation of a cryptocurrency of any of those types always starts with what we call a white paper, where some person or group of people say I'm going to create this cryptocurrency and I'm doing it for these purposes. And here's how the computer code is going to work. Then they launch that particular business or enterprise or whatever it might be. If it is a pure cryptocurrency, like a Bitcoin, or if it is a utility token, like an Ethereum, they have what we call an initial coin offering. If it is a security, we call it a security token offering — just different names. Now, how does the value get set? Well, there are two ways. One is that at the start, the person launching the coin or token might set the value and say it's worth this much, how many people want to buy it? And they may have a target number in mind or what have you, but that's essentially how it would work. Other people will say, yeah, I've got 2 million of these I want to sell and I'll just put them out in the market and see what you people want to buy them for. People just bid on these. So, it's in some sense an auction of some sort. And either of those ways works just fine. From that point forward, it is simply supply and demand that determines what the prices of these tokens or coins are. Nicci Brown: So, is the proliferation of cryptocurrencies a problem then? Mark Jamison: Well, no. The producers and the users of the cryptocurrencies determine whether or not it's going to be successful. If the producer has a good business plan or a good functional token that people can use or cryptocurrency that people can use for a lot of different things and the users agree, then that works. And it has value to all of them, that's why they engage in it. And actually in some sense, it has been helpful to a lot of small enterprises because there are some businesses that can't afford to go through some of the traditional means of raising capital. Trying to get money out of a venture capitalist is tough. You've got to be in the right network of people. You've got to meet certain demands of the venture capitalist. As long as you stay within the law, you can issue some sort of a security token and get the capital that you need. So it actually has helped in a lot of places for that. Also has helped a lot of people with transactions that for whatever reason don't have access to banks. But you can engage in transactions with these cryptocurrencies. Nicci Brown: What about data mining? Can you tell us a little bit more about data mining? Mark Jamison: Well, data mining is a very different kind of a thing. A data mining is where you're gathering massive amounts of data and you're using different mathematical statistical formulas to say, what does the data tell me? So, you don't go into it with a particular question in mind. I'm an economist. I always go in with a question in mind. I'm trying to figure out how something works or what explains something else. Data mining just says, I'm going to let the data speak and it may relate, it can relate, to cryptocurrencies but it doesn't have to, but it can relate to cryptocurrencies because this blockchain, this massive database on all these computers is a lot of very clean data that data miners love. Nicci Brown: Got it. So we've heard in the news issues surrounding the environmental impact of cryptocurrency. Can you tell us a little bit more about that? Mark Jamison: Sure. When Satoshi Nakamoto designed Bitcoin, he, she, they had to make it expensive for someone to cheat. That was the key to keep someone from getting it to that double-spend problem. They tried to make it really expensive to lie. And the way they did that was by developing a computer algorithm that took a lot of energy to solve, a guessing game is what it essentially turned out to be. Well, that's fine. But once you get several thousand computers around the world all playing the game, they start burning up a lot of electricity. So when you look for miners, you typically find them in places in the world where energy's very cheap. And so people worry about this. Now that is called a proof of work concept. There are other ways of running blockchains. For example, Ethereum, one I mentioned earlier, which is a really popular utility token, is trying to implement what they call a 'proof of stake,' which says that you don't have to go through lots of expensive effort to be credible in our system if you just have a big stake in the system. That decreases your incentive to cheat. And so we'll take it that way and they may get it to be much less expensive. There are some other algorithms that people have worked on out there, hypergraphs and things, that might be a lot cheaper to run as well. So people are working on the problem, but there have been some concerns. Nicci Brown: Interesting. Could you tell us a little bit more about some of the opportunities and I guess the dangers that investors might come across? Mark Jamison: Sure. Now, first off, I don't give investment advice. Nicci Brown: Okay. Mark Jamison: I actually hire somebody to do that so no investment advice from me. But it helps to think through the three different types of cryptocurrencies, tokens, that we have because they have different kinds of financial properties. Let's start with just the pure cryptocurrency. If you think of yourself as investing in a pure cryptocurrency, I discourage people from using the term "invest" in that case because there's nothing tangible behind it. The currency is only good for transactions and its value is determined by two things. One is how useful is it for making transactions? If it's accepted by two or three people, that's it, it's probably not very valuable. If it's accepted by thousands or millions that makes it valuable to use. It also has value for speculation. These cryptocurrencies tend to be a bit volatile. And so a lot of people just love trying to own them in, buy low sell high with them because they move a lot. So that is the demand side. The supply side is that they exist only in a fairly fixed amount. It's very predictable how many they're going to be out there. So, if you're thinking about, 'I would like to speculate or own or whatever in a cryptocurrency' think in those terms. You know, are you paying a price that reflects speculation or its actual functionality? And how's the supply going to change. Similar for utility tokens. There's a computer that says here's how many they're going to be in circulation. Demand is indeed still functionality. How big is this system? How valuable is this system that people can trade in? And then there's a lot of speculation as well. Now the security one is different. Again, the number of security tokens is fixed in a computer algorithm, but there are underlying assets. You might be an owner in a business or a debt holder in a business. You've got some stake in the success of a particular business. And the value of that business helps determine the value and then there's speculation as well. Probably one of the better pieces of advice I've seen on using these types of things for investments is they might be really useful for diversifying your portfolio. You know, a portfolio you manage risk by having different types of things you own, where one of them goes up and value to other going down in value so that the portfolio stays about the same value. It turns out these cryptocurrencies behave very differently from all of our other financial instruments. So it is a new way to diversify that portfolio. Nicci Brown: Because it's so new is that part of the risk, though, as well and some of the danger? Mark Jamison: Perhaps. You have to understand what the volatility is, how it relates. And that has been pretty well researched. Now, a lot of academicians jumped into that. There is one thing though, I need to point out as well. And that is while there's this idea that there's no trusted third party, that computers just do it and it all works great, you are trusting the computer programmers. Very few of us have the skills to go read the computer code and know that the algorithm is doing what it said it would do. In fact, there was a research study done at the University of Pennsylvania, which looked at — this is several years ago now — 50 of the top initial coin offerings that were done over the past year. And some computer scientists read the paper, looked the computer code and found out that many, many times the computer code did not do what the white paper said. So, you might want to find a trusted third party to check out that computer code for you. Nicci Brown: So, speaking of third parties, I guess, Congress is looking at regulating cryptocurrency. And so it's interesting for me to understand what are lawmakers looking at and why? Mark Jamison: Well, I think as far as I follow it, there are basically two efforts. One is actually by our Securities Exchange Commission. That's the one that regulates Wall Street, if you will. They are worried that some of these security tokens, primarily, but they reach pretty far, so some of the utility tokens as well. They say these look like securities to us and we regulate securities. So, you know, here's the 150 or 2,000 pages of paperwork that you've got to do to launch one of these things. And so they're after it and they're checking into it. They have now approved some of the different types of cryptocurrencies, but some people have gotten in trouble for not following the rules, even though they didn't know the rules were there and thought they didn't apply. It was kind of the wild, wild west there for a while. So that is going on out there. Oh, I should mention as well, just to be complete. There's also anytime you have a technology change that really affects traditional business models, the incumbents fight back and some of that's going on as well because we have in our banking system a trusted third-party system that makes a lot of money being the trusted third party. And if that can be replaced by computer software, that's a little scary for those folks. There's another effort, and this is actually showing up in some legislation in Congress, to force the entities that are involved in helping people trade these cryptocurrencies to requiring them to report everything that's happened. So if you and I, for example, well, let me change the example. Suppose that that you're a large business and you do work in the U.S. and Europe. There'll be times where you will want to convert dollars to euros and times you want to convert euros to dollars. Any time there's a change in value of those you have to report that to the IRS. It might be a loss. It might be a gain. The IRS wants to do that with cryptocurrencies as well. Right now, you are required if you're trading in cryptocurrencies to report that. Congress, the IRS, would love for the exchange entities to have to do the reporting just to make sure nobody's cheating. Nicci Brown: Understood. So at least two countries, Afghanistan and El Salvador, have adopted cryptocurrency as their official national currency. Why did they make this move? And what are your thoughts about cryptocurrency as the basis of a country's monetary system? Mark Jamison: Well, my understanding in the case in Afghanistan, Afghanistan and El Salvador as I understand them, are different in this regard. In Afghanistan, this is primarily a movement of the citizens and it's largely with the Taliban taking over. People were concerned about what if they come and take my money? You know, where can I, how do I manage the risk, what if the currency collapses, all of these things. So they just started using a lot of cryptocurrencies and they had limited access to banks. That was particularly true for women and girls — that generally in a lot of those countries, women and girls are not allowed to have bank accounts, but they can have Bitcoin. And so they start managing their own finances that way. That's how El Salvador started out as well. People who did not have bank access started using Bitcoin or perhaps some other cryptocurrency. Eventually, my understanding of it is, that the president of El Salvador saw that, that's pretty cool. In fact, I would like to be a really cool president. So he said, let's have Bitcoin as one of our currencies. So now they have two currencies, Bitcoin and the U.S. dollar. Now that can be a problem. So there's no problem with having a cryptocurrency as your currency, per se, as long as it's designed for that purpose. So in the case of like an El Salvador or even an Afghanistan, if it became official and they had two currencies, just think of yourself as a person running a small shop or just sitting out in the street and selling goods, you have to accept either Bitcoin or dollars and their values change considerably relative to each other. So, you have to keep track of all of that. That's going to be difficult for a lot of people, it would be easier for them just to have one currency. So that's a challenge for a poor country if it tries to do that. But what I also encourage countries to think about is that they've got a real supply problem when it comes to a cryptocurrency. The way that our currency, the U.S. dollar, the way its volume changes is if you want to create a business, you go to a bank and you borrow money to do that. And the bank doesn't really have that money that it loans to you. It has some percent of it. So, when you borrow that money from the bank that creates new money, but it's based upon you creating value in the economy. So, there's a tracking of how much the economy is growing and how much the currency, the volume of currency, is growing. The only exception of that is things that we have going on right now where the Federal Reserve Bank tells the U.S. Treasury, "I'm giving you a billion dollars, just go spend it." It comes from nowhere. They just make it up and send it. So that becomes an issue. But the supply can follow the demand for the U.S. dollar. That's not true with the cryptocurrency. The supply follows a formula in a computer, regardless of how many people want the cryptocurrency. That rate of growth is stuck by that program. And that's one of the reasons why the values are so volatile. And if you're a country thinking about this should be my currency, understand it's going to be very volatile. Nicci Brown: Do you ever see a time where currency, as we know it, traditional currency, is going to be phased out? Mark Jamison: You mean like the hard-copy currencies that some of us still see, but not everybody? Nicci Brown: Yes. Mark Jamison: I would be surprised, not for a very long time. One is that not everybody has a smartphone and certainly your smartphone doesn't work every place you go and you need something like that to engage with a cryptocurrency. So I don't think that'll happen anytime soon. Nicci Brown: Moving on, how might investments in and use of cryptocurrency impact Wall Street and the financial markets? Mark Jamison: So far, it's been additive. We've created new financial markets with these cryptocurrencies because they don't have a lot of the cost of the traditional system built into them. A lot of people who can't afford those costs, those transaction fees, are now part of a financial system. So there are people who might migrate from one country to another and want to send money back to their family, they can do it through Bitcoin or some other cryptocurrency at almost no cost. If they were to do it through the official banking system, they would lose 10, 20, whatever percent of that. And if they tried to do it through the informal system, it even gets more expensive. So we've added new financial markets. We've also added new financial instruments that are showing up in the traditional markets. There's an effort to have futures of Bitcoin. I think that's about wrapped up. I didn't follow the latest news on it. It's been a multi-year effort, but it looks like there's the traditional Wall Street systems are now going to be participating in the cryptocurrency system. Nicci Brown: So then for the average person, what's the bottom line as far as cryptocurrency goes? What does it mean for us now? And I guess in the future. Mark Jamison: Well, you can just blow it all off and pay no attention to it whatsoever and it won't affect you a bit. You can decide that you want to diversify your portfolio, make sure you know what you're doing, because there's no one guaranteeing that this all continues to work, because we have had cryptocurrencies disappear. So you want to watch out for that. You could maybe help finance a new business with some of it as well. You could do that kind of a thing. But I just encourage people to think carefully, know what you are doing because a lot of this is still being discovered, still being developed, and we'll see how it all works out. It's going to play a role in our future economy. How big of a role and exactly what role is yet to be seen. In fact, it's interesting to note that having founded Bitcoin and being the very first miner, Satoshi Nakamoto actually owns, I don't know how much millions of dollars in Bitcoin and has never touched it. There's some speculation that maybe he, she or they have passed away and just can't access it. And that is something to make sure you pay attention to with cryptocurrency. I think it's true for almost all of them — I may be wrong, but I think it is — that if you lose the code that gives you access to your cryptocurrency, you can't get it anymore. No one else has that code except you. There's no way to break into the system and pull it out. So we've had a lot of people that have gotten a lot of Bitcoin worth, a lot of money, lost their code and there it sits and it'll sit there forever. Nicci Brown: Wow. That's a word of warning there. Mark Jamison: Yes. Nicci Brown: Mark, thank you for sharing your insights with us today. It's been great having you with us. Mark Jamison: It's my pleasure. Thank you for having me. Nicci Brown: Listeners, thank you for joining us for an episode of From Florida, where we share the stories of faculty, researchers, students and administrators whose thought leadership is moving our state, our nation and our world forward. I'm your host, Nicci Brown. I hope you'll return for our next story of innovation From Florida. Collapse October 26, 2021 Bats! Bats are the only mammals that power their own flight and the University of Florida has hundreds of thousands of them living in the world's largest occupied bat houses. In this episode, From Florida host Nicci Brown talks with Verity Mathis, mammal collections manager at the Florida Museum of Natural History about the history of bats at UF, species found in our colony, the role bats play in the ecosystem and other fascinating facts about bats. Apple Podcasts Google Podcasts Spotify Stitcher RSS Transcript Nicci Brown: Welcome to From Florida where you'll learn how minds are connecting, great ideas are colliding and groundbreaking innovation is becoming a reality because of the University of Florida. I'm your host, Nicci Brown. Now, Halloween is just around the corner and we thought we'd take a moment to learn about a creature often associated with this time of year — bats! Here's a fact many people may not know. The University of Florida is home to the world's largest occupied bat houses. There are two bat barns and a bat house just across from Lake Alice on Museum Road and they are home to hundreds of thousands of these flying mammals. Our guest today is Verity Mathis, mammal collections manager at the Florida Museum of Natural History. Verity, welcome! Verity Mathis: Thank you so much for having me. Nicci Brown: So how did we come to have three bat barns on our campus? Verity Mathis: So, back in 1991, there was a colony of Brazilian free-tailed bats that were roosting in the stadiums, on the track stadium and the tennis stadium. And as you can imagine, when you have a large colony of bats, they make a lot of mess and smell. If you've ever gone past the bat houses, you know what I'm talking about. And so the Athletics Association decided to try to build a house to rehome those bats. So they built the house and, funnily enough, they transported all these bats into the new house, excluded them from the stadiums and then the night after they transported them, they all left and they didn't come back for three years. But then finally in 1995, the bats started recolonizing the bat houses on their own and they've made it a permanent home now. And so then in 2010, they built the bat barn to help give the bats some more space and then in 2017 they built the new bat house. And that was built with the intention of eventually tearing down the original bat house, which is becoming really deteriorated and getting to the point where it's probably going to have to come down. And so they're hoping the bats will colonize that new house. Nicci Brown: So from what I understand, there are more than 1,400 species of bats. Would you tell us more about the ones that live here on the UF campus? Verity Mathis: Yeah, so like I mentioned, the bat houses are primarily occupied by Brazilian free-tailed bats, which are one of the most common bat species in North America. They're definitely the most common one here in Florida. And that's the majority of bats that you see probably around town and just pretty much anywhere. And then there are also a couple other species that you might see coming out of the bat house. There's the Southeastern myotis, which is in smaller numbers. I think the estimates I read were maybe a hundred or so might colonize that house. And then you might also get a few evening bats as well, but by and large when you're seeing bats coming out of that house, it's going to be the Brazilian free-tailed. Nicci Brown: I understand they're really quite amazing when it comes to flight. Verity Mathis: They are! So, bat species, all of them are capable of different heights of flight and types of flight. But the Brazilian free-tailed bat that we have here is actually really remarkable. Not only is it capable of long-distance flight, so within a night it can go 30 miles or so foraging, looking for insects, but it's also capable of very high-altitude flight. So, the species out West that are migrating, they've been documented to migrate up to like 9,000 feet in the air, 10,000 feet in the air, which is really, really high. And in fact, when they're doing these migrations, sometimes if there was enough numbers of them, they actually show up on the weather radars and you could see these masses moving through the air. And they're also really fast flyers. So this particular species, normally it can maybe fly around 60 miles an hour is probably like maybe top speed, but they've actually been documented to go as fast as 100 miles an hour in like short bursts, which is just amazing to think about. This one species is just capable of so much. Nicci Brown: As you can probably tell from my accent, I grew up in Australia and we have the flying fox there. Verity Mathis: You're so lucky. Nicci Brown: One of the largest bats, but how big are the bats here at UF in comparison? Verity Mathis: They are really small in comparison. So the ones that you have over in Australia, which are the flying foxes, those are what we call mega bats. They're huge. They can have a six-foot wingspan. You compare that to the bats we have here in Florida, which are much, much smaller. They might have, I don't know . . . the wingspans vary depending on the species, but anywhere from maybe six inches or nine inches, something like that. They're maybe a little bit bigger, but they're small bats here. They call them microcystins, which is hard to say. But so, yeah, they're a lot smaller. Nicci Brown: And then even when you look at their wings, the structure of what are called wings, but really they're like hands. Verity Mathis: They are and they are our hands. They have the exact same bone structure in their wings that we have in our hands. So, the thin bones that are in the actual wing membranes are their fingers. They're the same fingers that we have. And in fact, the order of bats, the order is called Chiroptera and that literally translates to "hand wing." So that's the same morphology, just like the flipper in a whale is our fingers. It's all homologous. Nicci Brown: So can you tell us how many of them we actually have here? Verity Mathis: So, the estimates vary and I don't know the last time anyone has done a real true estimate count, but we think we have around 400,000 to 500,000 of the free-tailed bats. And like I mentioned, maybe around a hundred or so of the Southeastern myotis. And so that's a pretty good size and the bat houses have the capacity . . . the two houses have the capacity to hold, I think, 750,000 bats and now that we have the third house, we have even more capacity. Nicci Brown: Wow. So small bats, but large population. Verity Mathis: Yes. Nicci Brown: What's the typical behavior of these creatures? Verity Mathis: When you see them emerging for the evening, they're going out to forage. And so they're going out to look for insects. So they come out and about 15 minutes after sunset is when you start to see the emergence. So that's a good time to go to the bat houses if you're trying to watch that. And then just throughout the night, they're going to be flying around looking for food. They might come back to the roost occasionally throughout the night. But the cool thing about the Brazilian free-tailed bat is it is capable of really long-distance flights for a bat its size. It can fly over 30 miles a night just looking for food. So they're going to be ranging pretty far. And they're feeding on insects. All the bats we have here in Florida are insect eaters. So they're going to be looking for mosquitoes, for moths, beetles, flies, anything that they can find. Nicci Brown: Wow. So, they are the only mammal that flies, too, from what I understand? Verity Mathis: That's true. Yeah. They're the only one capable of power flight. We have gliding squirrels or flying squirrels, which really don't fly. They just glide from tree-to-tree, but bats are the only ones that are actual true flyers. Nicci Brown: So, when they are out flying at night, when do they generally come back to roost? Is it called roosting? Verity Mathis: Yeah. It's roosting. Yeah. So, the bats are roosting in the bat houses or in trees or in caves, depending on the species. So, they'll forage frequently throughout the night. Sometimes they'll come back to the roost, like every three or four hours maybe. And then they usually start to really head back for the morning or we would say we're going home for the night and they're going home for the day. Maybe like around three, four, in the morning, they'll start making their way back. Although, I've seen them out still foraging at 5:30, 6:00, in the morning when I'm walking my dog when it's still dark outside. So, there's still some late . . . I don't know what you would call that — early morning bats? Nicci Brown: Right? Yeah. Well, I guess it's all relative. Right? Verity Mathis: Right, yeah. Nicci Brown: One of the things that I think is really important for us to recognize is the part they play in our ecosystem. How is the bat population doing in our state and are the colonies decreasing or are they increasing? Verity Mathis: Right. So bats are extremely important ecosystem service providers because they provide natural pest control. So, the ones that we have here on campus, the Brazilian free-tailed bats, seem to be doing really well. They tend to roost in large numbers. They seem to have a pretty steady population. We have 13 species of bats here in Florida. They're all insectivorous but we have two that are federally endangered. Those are the gray bat, which is found in north Florida. And then the bonneted bat, which is only found in south Florida and the bonneted bat is cool because it's the only bat that is only found in Florida. It's not found anywhere else in the world. So that's what makes it special. So those two bats are of conservation concern and are being monitored and FWC, which is the Florida Wildlife Commission, is actively looking at those populations. And they survey other bat populations as well. But by and large, I think the Florida bats are doing really well. Nicci Brown: How does the weather affect their behavior? Verity Mathis: So, they do tend to slow down on their emergence when it's cold outside, when it's rainy. The bats that we have here are active year-round. They don't hibernate like some bat species would up north because it just doesn't get cold enough for them to need to do that. You'll notice if you go out on a really cold night, you probably won't see the same emergence numbers that you would see in the summertime, but they are here year-round. So, the bats that we have here also don't migrate. So, the same species of bat that you find out West will be migrating to Mexico during the wintertime, but here they're just year-round residents. Nicci Brown: And are there other bat houses in Alachua County? Verity Mathis: There are, I mean, a lot of people have bat houses on their own properties, which is great and then some of the businesses are starting to put them up as well. So, if you go to Swamp Head Brewery here in town, they have a really nice big bat house out in their area. And then we're really lucky to have Lubee Bat Conservancy here in town. So not only are they doing really great conservation work for bats, like the flying foxes that you have in Australia, but they also are really active in building bat houses. Nicci Brown: And it sounds to me like that is something that you encourage -- people setting up these bat houses in their yards. Verity Mathis: Absolutely. Yeah. The one thing we do say is if you're interested in putting a bat house up in your yard, it's just to do your research and make sure that you're getting the right kind of house and putting it in the right kind of location because Florida does have a little bit more . . . maybe some more specific requirements just based on our temperature and just everything because Florida, you know, we're special! So, there's some really good information out there on the web, especially if you go to the UF/IFAS website, which is the Institute for Food and Agricultural Services. They have a really good web page dedicated to bat houses in Florida and how to do it, what kind of design you want, how high you want it, the direction it needs to face, because the bats do have very specific requirements. Nicci Brown: And what should you do if you encounter a bat? Verity Mathis: Well, No. 1 is never handle it with your bare hands. Bats do carry rabies. So do almost all mammals. Maybe the exception could be made for the possum. But bats are a health risk. So, you want to be careful. What we usually tell people is if you find an injured bat on the ground and it doesn't look like it's capable of flying is to put on some nice thick gloves, get it into a container, maybe put a towel on there so it has something to hold onto and then call your local wildlife rehab. So here in Alachua County, we have Florida Wildlife Care and they're certified and trained on how to handle these bats. If you have a bat in your house and you're trying to figure out how to get it out of your house, you want to open up your windows, maybe open up your door, close any interior doors in your house to keep it in that room and then try to just stand back and stay out of the way and hopefully it'll get out on its own. And then if for some reason it lands on your curtains or on furniture and it's just hanging out, put on those gloves again, get him into a container and then you can take it outside and very carefully put it up on a tree or some other vertical surface because bats really aren't great at taking off from the ground. They have to be up in a nice vertical service and then they can fly away. So, you just want to get them into a place where they can do that. Nicci Brown: They have pretty amazing skills, though, in terms of not hitting people or running into people and, from what I understand, it's not likely that they will fly into you or anything like that. Verity Mathis: Exactly. That is a huge myth that bats will get tangled up in your hair or attack you. They're just trying to avoid you. And so the other . . . like bats aren't blind. They have vision and they have echolocation, which is very . . . it's not unique to bats because whales and dolphins also have it, but it is really cool because they can emit these sonar signals and that bounces off things and tells them information as to what they're looking for. So, it tells them if that's an insect they want to eat, that's a tree they want to avoid. So they're really good at navigating the environment around them and they're going to avoid you if they can. Nicci Brown: Well, let's talk a little bit more about some of those myths, because we know that bats feature quite prominently in popular culture — everything from being characterized as blood-sucking vampires to being represented by one of our greatest superheroes, Batman, and even being the namesake of an operetta by Johann Strauss, "Die Fledermaus," which translates directly, if I'm not wrong, to "flutter mouse," which I have to admit I love. Why were you so fascinated with bats and are we being fair with these representations, especially the ones that we associate with evil things? Verity Mathis: Yeah, bats, they get probably the worst rap of almost any mammal I can think of and it's very undeserved and a lot of that has to do with pop culture and their long association with blood-sucking and vampires. And the funny thing is, out of the 1,400 species of bats that there are in the world, only three of them are actual blood drinkers. And those are all found in South America, Central America. So, it's not even a problem for North America. And they, like I mentioned before, provide all these amazing ecosystem engineers of natural pest control. There are pollinator bats that are found in other places which help pollinate the plants around them, especially if you like tequila. Tequila is from agave and agave is a bat pollinator obligate. So, they have to be pollinated by bats. There's bats in tropical countries that eat fruit and then they disperse the fruit and help the forest diversity that way. Their bat guano, the bat poop itself, is a really great fertilizer. So it's really helpful for gardens and things like that. So they do all these great things for us and then we turn around and we're scared of them. We want to be respectful of them and of their lifestyle and we don't want to encroach upon them and bother them because like I mentioned, there's always the possibility of handling a bat wrongly and getting bit by rabies, but that's actually not a very common thing that happens. I think as long as we continue these conversations about telling people how cool bats are then maybe eventually pop culture will catch up to that. Nicci Brown: Catch up. And I understand there is a connection between our namesake Gatorade and bats. Verity Mathis: Yeah. So, one of the things that we sometimes do is . . . well, sometimes we find bats on campus that maybe aren't doing so great or found on the ground in the middle of the day and they need to get rescued. And so what we sometimes do is we will get gloved up and get them into a box and then we'll get them Gatorade and just using a little dropper, give them some Gatorade just to give them some hydration, some sugar just to perk them up a little bit, and that helps them recover. And then we can then release them out into the woods here on campus and hopefully they can continue on their way. We used to have a container of Gatorade in our work fridge that was just labeled "bat juice." Nicci Brown: Oh, my goodness. Little bat athletes! Verity Mathis: Yeah. Nicci Brown: Are there any other interesting facts that you'd like to share with us? Verity Mathis: Oh my gosh. I probably could talk for hours about bats. So, like you mentioned, there's 1,400 species of bats, which makes them a quarter of all mammalian diversity in the world. And they're the only ones that can fly so how cool is that? But some things that people maybe not might not know is bats are also extremely long lived for their size. So, when we think about small mammals like rats and other things like that, they only live maybe a year or two in the wild and bats can live decades. The oldest living bat that's known in the wild lived over 41 years and that was a small bat. That wasn't one of the big flying foxes, too. So it's pretty amazing that they can live for so long. And as a counterpoint to their long lives is they only give birth maybe once a year to maybe one pup, maybe two. Sometimes if things are really great, they might give birth at twice year, but I think that's pretty rare. So they have very low reproductive rates, but very long lives, which I don't know, that's fascinating for such a small mammal because that's pretty opposite to everything we know about how size correlates to reproductive activity and how size correlates to age. And yeah, they're not rodents. People want to call them rodents. They're more closely related to humans than they are to rodents. Nicci Brown: I want to circle back. How did Verity get involved with bats? Was there a young Verity that was fascinated or was it something that came upon you when you were studying? How did you get so enthralled with bats? Verity Mathis: Yeah, it just came upon me through my job and how I just came to Florida. My background is actually more in rodents. And then I was working for a time in Mississippi and I started helping out our bat biologist there and just going out and getting to net bats with her and learning more about them. I really just got into it. And then when I came here, I just, I don't know, it just happened that I started becoming more and more about bats. And then our curator of mammals, he had an active research program on bats in the Bahamas. So when I first started working here about seven years ago, I got to go on trips to the Bahamas where we were netting bats there. And that was just so much fun and really cool. And so just learning more about them just through life, I guess. Nicci Brown: And if anyone who is listening wants to share that passion and learn more about UF bats and the bat barns, where can they go? Verity Mathis: So, if you just go to your favorite search engine and just put in "UF Bat Houses" that should take you directly to the web site that we have. The museum hosts a web site about the bat houses and it gives all the information about them that I talked about today and some more information as well. I think that's probably the first hit you'll get when you search for it. So that's probably a good resource to start and then you can always just email or call me. Nicci Brown: Verity, thank you so much for joining us today. It's been a real pleasure. Verity Mathis: It was awesome. Thank you. Nicci Brown: Listeners. Thank you for joining us for an episode of From Florida where we share the stories of faculty, researchers, students and administrators whose thought leadership is moving our state, our nation and our world forward. I hope you'll return for our next story of innovation From Florida. Collapse October 19, 2021 For UF's Student Life division, helping the university's more than 55,000 students connect and thrive over the past 18 months was a challenge as the pandemic and social issues escalated the common pressures of the college years. Student Life Vice President D'Andra Mull shares how UF adapted and expanded services to connect students to campus services and to each other. She also discusses the innovations that worked so well they are being continued. Apple Podcasts Google Podcasts Spotify Stitcher RSS Transcript Nicci Brown: Welcome to From Florida, where you will learn how minds are connecting, great ideas of colliding and groundbreaking innovation is becoming a reality because of the University of Florida. I'm your host, Nicci Brown. The University of Florida is among the nation's largest campuses with more than 54,000 undergraduate, graduate and professional students. That is a lot of students, which means UF's Division of Student Life fills a leading role on our campus, with more than 25 departments and 2,500 full- and part-time employees. The role of Student Life was especially important in ensuring our students stayed connected to our campus and each other during the pandemic. Student Life also plays a vital role in meeting the mental health needs of our students. There have been numerous reports about the mental health challenges faced by college students today — not only because of the pandemic, but in general. We're going to talk about that and how UF's Student Life division has come up with innovative ways to address students' mental health and help our students thrive. My guest today is Vice President D'Andra Mull. She joined us in January 2020 from The Ohio State University, where she served as associate vice president of Student Life and dean of students. Welcome Vice President Mull, we are delighted to have you as our guest today! Vice President D'Andra Mull: Thank you so much, Nicci. I'm also very delighted to be here with you all. Nicci Brown: Well, you chose to come to UF at one heck of a time! Vice President Mull: Yeah. It seems like I have perfect timing in this space — three weeks before we learned of this small event, that we thought would be over within a few months, and, ha! Here we are. Nicci Brown: Right! So, I shared a little bit about your background before you arrived here at UF, but we'd love to know more. What led you to a career in Student Life? Vice President Mull: Absolutely. So when I began my undergraduate student career, it was with the intention of going to law school upon graduation. I did what many students will find themselves doing and that is exploring career opportunities through things such as internships or externships and leadership experiences, and I actually completed an internship. During that internship, while I recognized how much my time spent with the lawyer was amazing, I loved what she did for her. But for me I also learned that's not what I want to do with my career. I did know that I really wanted to be in a space where I could advocate for those who perhaps didn't always have a voice in the conversation or a seat at the table. And so I went back to my mentor, who was the vice president for student affairs and vice-president for enrollment management, and I said to her, "I'm wrapping up this internship and I don't want to be a lawyer anymore." She said, "Well, I figured you'd come to that conclusion. As I've walked through your internship experience with you this summer, you've spoken very highly of it, but I could sense that there was some tension between what you eventually want to do and what you're saying to me now. So I figured you'd get to this point." And I was like, "Well, should've told me that a long time ago, then maybe I would have saved some time!" But no, it was an awesome experience, and she said to me, I'll never forget. She said, "Who do you want to help? How do you want to live your values?" Something to that effect. And I said to her, "Well, I love advocating. I love being in spaces where I can really tell the story of why things should matter. And perhaps what we do to move needles and really shift some things in favor of audiences or groups that I've been able to work with." And she said, "Have you ever thought about a career in Student Life? — or, she said student affairs at that point. And I said, "Well, no. What's that?" She's like, "It's what you do every day." I was student body president, president of my sorority. So for me, it was just an opportunity for me to figure out how all that came full circle. And I was like, "Oh, you all get paid to do this?" And so that was how I began my journey into the profession. It was definitely being in the right place at the right time with the right mentor and being able to take the right risks, because I think sometimes we get caught in a journey where we've gone along a path for so long that we don't want to shift. I'm glad that I had a mentor that had the courage to say to me, "Hey, it's okay to change." And then also for me to realize that just because it's your time doesn't mean it's your door. So it was certainly my time to graduate, but my door looked different to advocacy than I thought it would. Nicci Brown: Yeah. That sort of self-reflection is so important and also having that guidance. And it's a perfect segue, I guess, to what you're doing now that you started off with that guidance. Vice President Mull: Absolutely. The work that I do now allows me to make magic happen for students, with the leadership of the amazing team of professionals that make that happen and students and graduate students alike. And so it certainly is a very big operation. As you mentioned earlier, we have 2,500-plus professional and peer-professional employees helping guide the way. We have 25+ departments that make it all happen, ranges with everything from counseling and the wellness center to our GatorWell office or our recreational sports, our residence life and education to a multicultural diversity affairs area. We run the gamut and make sure that students not only leave with an education, but they leave with an experience. We really do work to make sure that we prepare Gators to engage, transform and thrive. And again, having a team that's centered in that, whose mission is to live their values out loud and help students find their purpose and passion certainly allows me to come to work every day, find my broom and get in, and do good work. Nicci Brown: Sounds terrific. It is a challenging job though, and I think we all know that even in the best of times that the college years can be stressful and very challenging for young people. And that has been especially true over the past several years due to the pandemic and many other societal events. What have you seen at UF and has there been an increase in students' mental health needs? Vice President Mull: One hundred percent. We have been acutely aware of what's going on nationally and we've seen that reflected in our student population here at UF. We've seen an increase in need, which goes together with an increase in communication and our proactive outreach in the de-stigmatization of mental health. We want students to know that it's okay to know when you need to get some assistance, right? No different than if I'm writing a paper and I realize that perhaps I'm having a writer's block or I have some anxiety going on, it's okay for me to reach out to someone who has either walked the journey or is trained to offer me guidance. And so helping students to first recognize that it's okay to ask for help, that we are made to have helpmates, we are made to ask for assistance, we are not made to go this alone, and to put in place the resources that allow them to do that. We've seen this through the lens of student anxiety and mental health needs. We've seen it with some just simply managing the stress. We've seen some distracted learning environments. So we run the gamut of what we've always seen. I've seen some students who need to have their weekly visits with our mental health professionals. That's what helps them stay guided. That's what helps them feel safe and supported in the environment and so we've certainly worked to make sure that we can provide that service. We also know that we have students who simply need help in areas of, whether it's healthy eating habits, it may be they're coming into an environment that is more stressful, and so they've either forgotten those grounding principles of health and nutrition, so they need some help finding their way. So, we have our offices like the GatorWell health promotion services who allows our students to find their way that way. We have recreational sports. And so we think of health and wellness as a large scale, not simply what happens in the mind, but also what happens in the body. We think it's all interconnected and so we try to make sure our services and our support for students help them to recognize that help comes from many different directions and it is about the whole body and the whole student and the multiple dimensions of wellness that keeps us all healthy, engaged and thriving. Nicci Brown: Do you think that some of the comments we've had from high-profile young leaders, such as Naomi Osaka and Simone Biles, has really helped students to recognize that and to come out and seek help but also understand that it is a holistic approach, if you're going to succeed in one thing you need to take care of your entire self? Vice President Mull: Yes. Without question. I think that the best thing about folks really being comfortable moving in and speaking out about their needs is that it allows students to see mirrors and reflections of themselves. I believe that both Naomi and Simone have given students the courage to say, "I see you. And because of the fact that I see you, I now also see me a bit better." And so it allows them to go into spaces and really understand that they're not in this alone. The stories that Simone and Naomi and others like them have shared with students allows them to, again, know that this is not about a fight on their own. Whether it's stress management or this idea of the mental health stresses they may have, maybe it's healthy eating. Whatever that looks like, we have lots of representatives across the national media scope that allow our students to understand that they're human and that is not a weakness to know that everything doesn't align perfectly on every day. There are some days where it's going to take you a little bit longer to get out of bed, perhaps. There are some days you're going to spend a little more time struggling as you try to sleep. There are some days when you're going to really say, "You know what? I can't go to that meeting after classes today because I'm just worn out." And I think that Naomi and Simone and, again, the whole community of folks who are so courageously speaking out about the fact that sometimes they're not feeling okay, has been very instrumental in helping our students to feel more comfortable doing that as well. It reduces the stigma in ways that we need to have done. The reduction in stigma here means an increase in uptake and services, but for us that's okay. I think the best thing you can do is get help before you need it. And when you need it or wait until you're so far down the road, it's kind of like your warning lights that come on on your dashboard, you deal with that check engine light before it becomes an engine failure. The check engine light is essentially telling you, "Hey, there's something that's going wrong. There's something that's a bit off in this space. Let's get it checked out and worked out before we can actually get to a place where it becomes harder for us to get to the heart of what's going on and it takes more resources to help correct course or offer support." So I think that Simone and Naomi both offer us a gut check, a reality check point. It is certainly a stop in the road for us to say as a university community, "Hey, we have a lot of students who literally are mirror images to these high-achieving athletes that we have in front of us. We have a lot of students, whether they're achieving academically or in athletic fields, who are putting a lot of pressure on themselves and we are, too." So how do we make sure that what we do, as we have high expectations, we also understand there may be high needs and that we offer roadways to their success that allows them to, again, look in the mirror and see the things that others may see in themselves and they can recognize that. But then we also offer support that allows them to grow and bloom from what they've learned. Nicci Brown: I know that during the pandemic Student Life instituted several measures to give students as much of a typical campus experience as possible and to help them connect with other students. Can you share a little more about those innovations? Vice President Mull: Yes. So, the pandemic certainly brought a lot of things to light for all of us. One of the biggest truths that we saw come out was that our students are deeply social. We know that it doesn't matter if the world is experiencing a pandemic, it doesn't stop the fact that we all need connection. We knew that that was true for our students, we watched how they navigated it. We watched them struggle in the very beginning as we told everyone that we have to hunker down and make sure that we're being safe. We didn't change our scope from being safe, but we moved away from talking about "social distancing" to talking about "physical distancing." That was a critical movement and step on behalf of the University of Florida. We knew that for students, they live in social spaces. I can't imagine most of our students not having owned a cell phone at some point in their formative years. They've always grown up with the internet. I remember I used dial up. My first experience with the internet was dial-up and someone would jump on the call and be like, "You have to get off the line. I'm really trying to do some work here." But for them, how do we keep them engaged in spaces and ways so they knew the university still cared and was committed to their success, while also honoring the pandemic that was blowing up largely across the world. So again, we made sure that we had ways to connect that were innovative, inclusive and dynamic. These range from the creation of the first virtual student union in the country at a large institution. So, what we did there, we launched our virtual student union to provide a hub for the programs, services and events that shape the student experience. We did everything from comedy shows to check ins. We did meet ups. We did movie nights. We did a lot of things that allow students to still be in a space where they can engage. It became a really large sensation for students. We had millions of users of that space. Many of them were repeat users, others were one-time drop ins. They saw Tiffany Haddish, who's a very popular comedian and they wanted to hear from Tiffany Haddish. So, for them, it was really important that they could still engage in that experience. We also expanded our online classes. So, we talked a lot about the dimensions of wellness and so that's a big focus for us. We made sure the rec sport students could get up off their couches and literally engage with their rec sports from the comfort of their living room. That was very popular with students as well. And so while we had the opportunity for students to come to campus and engage in rec sports by making sure that we made the areas smaller for students' usage, made sure that they have some privacy, we also want to make sure the students knew that they could join wherever they were. We also hosted a "pod" concert. We had an in-person concert where students could come and be in pods. All throughout the pandemic we talked about the power of "quaranteams," T-E-A-M-S. We know that's important — that students are deeply social. We knew that if we did not create social outlets for them, they would create them for themselves. So, we made sure that we recognize that if you live in a house with four other students, it makes no sense for me to tell you that you can't attend a concert with them. So we made sure that we had ways to really embrace and engage them while also honoring the pandemic. And I think that it's important to say that because I don't want to give the impression that we didn't understand what was going on around us, but we also understood the students that we were serving. We had recharge days. We knew the students were just tired. We leaned into the benefits of the Florida weather and embraced the sunshine and had an outdoor day of activities. You could do painting. You could go and make a clay pot. You could get a T-shirt. You could make a tie-dye T-shirt. You can do a host of different things that just got you out into the sunshine and embraced what that meant for us. The way that that really does help us is that we had thousands of students that came out to take part in that. Heck, I came out for a cupcake, those cupcakes were delicious. So, we had different food stations. There are all types of things that we really did do to engage students. So again, we really did honor the pandemic, but also honored the needs of our students. We found ways to connect them to their student experience even though it looked a bit less traditional than they would have had in previous years. Nicci Brown: And I'm guessing that even though, hopefully, we will be through the pandemic in some way, shape or form very soon, a lot of these innovations are things that we can build upon in the future. Vice President Mull: Oh, absolutely. We will leave our virtual student union in place. We knew that for the first time, this was a time where some students who've never been able to engage in UF activities beyond their classroom experience, this became possible. Meanwhile, we have a lot of UF online students who are not here locally in Gainesville. For the first time they could attend the concert with their peers. They could see the comedian, see the expressions of laughter from their colleagues as they're on that screen. They could take part in a rec sports class, as well as others who are around them. So, knowing that what we did actually should be something we should continue to do, we've taken that seriously and so we will be leaving those services in place. The same for telehealth. While we had some telehealth resources and services that were available, we expanded the scope and scale big time. And so we will also continue to meet the needs of students. If students want to meet virtually, we will give them that opportunity. For those students who want to be back in our counseling spaces, they will also have that as an option. We're not going to remove services, we're simply expanding them. And so again, the promise of what we learned from the pandemic is that there are more ways for us to meet the needs of students. And so we're certainly keeping those in mind as we move forward. Nicci Brown: Well, I'd love to hear more about the innovative approaches that we've developed here at UF to care for, counsel and promote the well-being of our students. Vice President Mull: Yeah, so there's a lot. I'm thinking, particularly, what we learned is that there were a lot of students who simply wanted some drop-in appointments, to be able to just say, "I need to drop in and touch base." I always think of it, as you think about the ability to just walk into Chipotle and place an order before they get there, then take their order and they go. In some ways, that's what students need. They just need, again, a gut check or a spot check, for someone to just say, "Hey, you're good. Let's talk about these stress management techniques." Or, "Hey, have you thought about this," or "Hey, let me help get you to the next resource." And so we prepared an a la carte program. So that is located in Peabody Hall and it offers brief, same day 20- to 30-minute consultations for students to make sure that we can get the right support for them. So, it doesn't mean that you have to take time and wait, perhaps, for a counseling appointment, as you would in other spaces. We offer the ability for students, again, to stop, meet with a professional, make sure we're having them pointed in the right direction as they move forward. Telemental health and telehealth services largely have become a much bigger spotlight for us. What we did learn from the pandemic, and I like to call it the promises of the pandemic, is there are ways for us to expand the services in ways we support students. We have a lot of students for whom telehealth services are now the way they'd like to go. If they don't want to come to campus, but they certainly want to talk to someone about what's going on in their lives or questions they may have or anxiety

that may be valid, they can now literally jump on a Zoom call and do that. They can pick up a telephone and schedule an appointment to have that done as well. So, it allows us to be nimble in our services to students and make sure we're meeting them where they are, and we literally mean that. Wherever they are at this point, we're able to meet their needs and make sure that we're supporting them. And again, we've also found that both the virtual and in-person counseling allows us to meet more students' needs. So, whereas previously, perhaps you had a 45-minute counseling session or a 30 minute counseling session and then there was a turnover because you're setting up your space, you're cleaning your space, you're doing all those things. We eliminate some of that time and we're able to spend more time directly with our students there as well. And so we offer, through our partnership with SilverCloud, a self-guided program that students can download to help manage their stress and anxiety. There are many virtual spaces. We're moving into the AI space, the artificial intelligence space. We're really using different resources to make sure that students can get what they need wherever they are. We've also launched My CWC, which is the virtual space for students to learn about services and resources available to support their mental health. Similarly to a lot of our outside of scope university resources, students can now go in and they can almost do a punch list of things that they're experiencing. They can talk about some of their symptoms. They can talk about some of the services they've already had before they'd gotten to the university and then they can figure out from there where they go. So, it's almost a self-guided tour to what you need with regards to assistance. And so students have really picked up and honed in on that and it helps them identify things that they didn't know existed within them. So, we ask a student about anxiety. They haven't identified it previously as anxiety, but it's helping them to understand, perhaps, when you're having these mini panic attacks, it goes back to stress. Let's talk about stress management techniques. And then we also have Gator to Gator. We know that, again, I talk a lot about mirrors with students and the fact that we're all meant to be a mirror to someone. And so this initiative allows students to get connected to one of our trained student ambassadors for personal support and or referral information. So we're really pouring and leaning into our student-to-student dynamic here because, again, I think to your point earlier, Simone and Naomi allow us to see that we aren't the only ones going through some things alone and students being able to support other students allows us to reinforce that. Nicci Brown: Yeah, it really sounds like by drawing in their peers, but also providing all these different touch points, what you're doing is normalizing and really, as you said, meeting students where they are and helping them to understand this is not something that they should feel ashamed of. This is a very normal human experience and allowing them to get the help they need when they need it. Vice President Mull: Yes, absolutely. It's normal for a car to need gas, it's normal for a car that's electric to need to be recharged. It's very normal for a student to need to get support to help them go as well. And so we definitely want to double down on that and make sure that again, we're lifting the stigma and normalizing student success. Because student success runs a continuum, it doesn't just mean that you're successful in the classroom. It means that we're preparing all the tools that help you to be successful so that when you leave here, you're not just leaving with your education. You're leaving with an experience that you've learned, you've grown from, you've figured out how you manage, you've figured out how to build some resilience and, ultimately, you figure out how to thrive both here on campus and beyond. Nicci Brown: Yeah, let's talk a little bit more about that because the GatorWell Health Promotion Services really does focus a lot on not just the success in college, but setting up those healthy habits so that when you do graduate you can build upon them throughout your life. Vice President Mull: Yes. And so I am so proud of the work of Dr. Monica Webb with her team in the GatorWell space, because that is what they talk about. Wellness is not just a one-stop. It doesn't mean that because you're doing well academically, that means you're well. It doesn't mean that because you're hitting the gym regularly, that you're doing well. It means that it gives you the ability to focus on all the pieces and parts that keep you running smoothly. And so we talk a lot about the various dimensions of wellness with our students so that they know that it's okay to, again, figure out how all the pieces work together and get you really moved along. They do lead many of our upstream initiatives as they work to prevent issues before they become problems for students. We do a lot of things in the reactive space, but GatorWell is the most proactive mental health or health and wellness initiative that we have. So, it's not just mental health. We have CWC that supports that as well. While GatorWell certainly helps to support student's mental health, they're all about health and wellness holistically. And so their holistic health model certainly allows students to grow in that space. It ranges from alcohol education, to time management to simply guidance and tools and consultations on a variety of levels. They partner closely with our Greek community, because we have such a large population of students that live in that space or thrive in that space. So they really are here to make sure that, along with our Student Life assessment and research team, we're figuring out what the patterns are for students, we're working to be proactive in that space for next classes of students to come and that we protect the well-being and promote the well-being of our students collectively. We really do want to create whole initiatives and wellness initiatives and not simply focus on one dimension, but rhelping students recognize that wellness is a large scope. It goes to scale. It doesn't simply stay in one place or it doesn't focus on one particular element. Nicci Brown: Well, it sounds like our students are in great hands. Thank you so much, Dr. Mull, for the work you're doing and your team and your partners. And also thank you for being our guests today, it was really terrific to speak with you. Vice President Mull: Well, thank you. I appreciate the opportunity. Anytime I get to talk about the amazing work of the Student Life team and our phenomenal students that we get to support as they move throughout their educational journey here, I'm always motivated by that. I know that I'm in the right place. I know that that conversation that I had with Dr. Nancy Scott many years ago that led me to this field was the right conversation to have. And hopefully we can continue to make sure that we're doing all we can to lead students in directions that allow them to be well holistically, too. So thank you for the opportunity. Nicci Brown: Listeners, thank you for joining us for an episode of From Florida, where we share the stories of faculty researchers, students and administrators whose thought leadership is moving our state, our nation and our world forward. I'm your host, Nicci Brown. And I hope you'll return for our next story of innovation From Florida. Collapse October 12, 2021 At his inauguration in 2015, President Kent Fuchs set an ambitious goal for the University of Florida: Become one of the nation's Top 5 universities. Mission accomplished! President Fuchs shares why he didn't hesitate to set that goal, what has made the university's rise possible and what's next – including his thoughts on a day of celebration. Apple Podcasts Google Podcasts Spotify Stitcher RSS Transcript Nicci Brown: Welcome to From Florida, where you'll learn how minds are connecting, great ideas are colliding and groundbreaking innovation is becoming a reality, because of the University of Florida. I'm your host, Nicci Brown, and we have a very special guest today — University of Florida President Kent Fuchs, who's going to share his thoughts about our university and its rise to a Top 5 ranking. Dr. Fuchs became the 12th president of the University of Florida in January 2015. He previously was provost of Cornell University and had served in academic leadership positions and as a faculty member of electrical and computer engineering at Cornell, Purdue and the University of Illinois. In addition to his doctorate from the University of Illinois, President Fuchs holds a master of divinity degree from Trinity Evangelical Divinity School. He is a fellow of the American Academy of Arts and Sciences, the American Association for the Advancement of Science, the Institute of Electrical and Electronics Engineers and the Association for Computing Machinery. Welcome, President Fuchs. It's terrific to have you as our guest today. President Kent Fuchs: Thank you, Nicci. It's great to be here. Nicci Brown: Now, you set the University of Florida on a path to a Top 5 ranking at the start of your presidency in 2015. In fact, during your inauguration speech, you challenged us to think of a University of Florida that, and I quote, "Has the same acclaim in academics as athletics" and that, "the nation looks to for leadership in both areas." You did not hesitate in stating the goal: "We will be among the nation's Top 5 public research universities." What made you believe UF could rise to this level? President Fuchs: The university for a number of years had a goal of being amongst the nation's Top 10 universities all the way back to President J. Hillis Miller, who in 1948, in his inauguration address, said that, "The nation deserved a university in the state of Florida that was amongst the top 10 to 12 universities in the nation." It took us a number of years to get to that point, to be amongst the Top 10. And indeed, before I was recruited to come to the University of Florida, the university had already made a lot of progress in establishing metrics that it believed would indeed be important to achieve and to make progress on, to be amongst the nation's Top 10, and so I had the privilege of riding on that momentum. When I was interviewed and did my own assessment, and then in my first year, just decided that Top 10 wasn't ambitious enough. We were going to get there probably within a few years and we needed a goal that would be more aspirational. So indeed we looked at the metrics. We looked at other universities that would be considered amongst the Top 5, and we felt that we could get there. And the state, again, deserved it and the nation deserved the university in the state of Florida that was considered amongst the Top 5. So we indeed established that as our new goal even before we had moved into the Top 10 of university rankings. Nicci Brown: Well, speaking of aiming high, you have a great partner in Mori Hosseini, chair of the Board of Trustees. How has Chair Hosseini helped develop and drive this vision? President Fuchs: Mr. Hosseini is just truly unique, I think nationally, in just how he has worked so hard on behalf of higher education for the state of Florida. He was the chair of the Board of Governors for the state university system before he was on our board and then was appointed to our board and then was vice chair and now is, indeed, chair. So, he spends an enormous amount of time with our elected officials. I know this past week he was in Washington, D.C., working on behalf of higher ed broadly and specifically for the state of Florida and certainly for the University of Florida, as well as other universities, including Embry-Riddle University, from which he actually graduated in the area of aeronautical engineering. He has done several things. Not only does he make the case for higher ed and the University of Florida with those that are supporters of the university, particularly elected officials, but he also holds us within the university accountable to making progress on metrics that we decide on that are important — important for the student body, important for faculty, important for, indeed, the reputation of the university. So he is really, really focused on the University of Florida and just continuing to make progress on what we broadly call its stature — this combination of its excellence and its reputation nationally. He's just laser-focused on that. He spends more time than anyone I've ever met, on a volunteer basis, working on behalf of higher ed, in addition to all the companies that he's responsible for during this day job. Nicci Brown: So, can you share a little more about the specific things that the university did to make a difference in its ranking evaluation? President Fuchs: The University of Florida is really metric driven, more so than any place I've been, and I'm an engineer by background so I love numbers and trends and graphs and tables and charts. But we track over a 100 different metrics across the institution. Some of them are inputs to the university. Examples of that would be the size of the endowment of the university. We also have outputs. So an output, an example of that would be the prestigious awards that our faculty may achieve on an international or a national basis, things like graduation rates, students that have financial need, what percentage of those that start at the University of Florida actually get a university degree. So, we have about a 100 of these different metrics that we measure. We would do that, regardless of whether there were any rankings based on that, because we believe it's important to see how we're doing and the progress or lack of progress that we're making. And secondly, to be able to compare ourselves to others. And much of this information you can get from public databases, some of them federal. So we're able to measure ourselves against other institutions, doing our own internal rankings. It's natural for us to take those metrics and look out at how different rankings are established and then to measure our progress against those metrics — not only the ones that we've already been measuring, this 100, but also how those then map into rankings. Nicci Brown: So, a degree from the University of Florida not only has high value, but importantly is incredibly affordable, which of course translates to students being better positioned to capitalize on their education. What can you tell us about the partnership with state leaders that has made this possible? President Fuchs: The state of Florida is, I believe, one of the most generous of the states in terms of the state government and the citizens of the state investing in higher education. And because of that, we're able to keep our tuition incredibly low, lower than any universities outside of the state of Florida. So to get a degree from the University of Florida typically, as an undergraduate, it would take four years or eight semesters. An academic year of tuition is about $6,800 in terms of tuition and fees. And that's about, about roughly 10% of what it would be in terms of tuition at a private university, like where I was before I came to the University of Florida. So that is just incredibly affordable. And then on top of that, there's state financial aid. There is financial aid from the university itself that we've achieved through philanthropy and our endowment. So, coming to the University of Florida and getting a degree from the University of Florida, we believe should never ever be limited by a person's financial needs. And if you have the ability to be admitted to the University of Florida, then we're going to work our hardest to make sure that you actually graduate and that you graduate with almost no debt. Only a third of our students have any debt of any kind when they graduate. And of those third that have a debt when they graduate, it's less than $20,000 that they have on average. So our students in general have no debt. I know I went to college many, many years ago, graduated in 1977, and when I graduated, the equivalent debt that I would have today, adjusted for inflation, is about $50,000. So, it's so different here at the University of Florida than it is at most other universities outside of the state of Florida. And it is indeed due to the generosity of donors that assist with financial aid and sustain the programs at the university, and then indeed the financial resources that the state invests. And then we demonstrate, in return, a return on that investment. Nicci Brown: So, it is wonderful to be able to say we're a Top 5 university and we have this ranking and the students were so excited about it. But what does it actually mean for students, staff, faculty, researchers and our alumni? President Fuchs: You know, what I tell our alumni and our current students — it means that their degrees or the degrees they're going to get are more valuable because when people think of the University of Florida, they see that on your diploma, they're going to realize that you achieved that degree from a university that was one of the very best in the nation, and recognize this. So the ranking is really just the recognition of the quality of the institution. It also does several other things. One, it's a reflection of real metrics that are meaningful. For example, social mobility, the graduation rate, the selectivity in terms of the rank of students in their high school that come to the University of Florida, your peers. You'll be networked for the rest of your life with people that are just incredibly, incredibly talented. It also has benefits for the state and for the state of Florida in terms of attracting companies that want to be in a state where higher ed is valued or higher ed is incredibly high quality and rankings affect the perception of companies that may want to be here. And then lastly, I believe it actually affects the perception of people that want to move here and live in the state of Florida. They want to live in a state where their children or they themselves will have the ability to go to a university or a college that is equal to any others around the nation. So, in some sense, we're changing the perception that people have about higher ed. Our state is a relatively new state, the state of Florida, and we don't have the history of a lot of other parts of our nation that are a couple hundred years older than we are, but we're rapidly making a progress across the state in all of the public universities, with the University of Florida leading that mission. Nicci Brown: You touched upon this a little bit, but we are, of course, a comprehensive land-grant university. Do you think that people have a strong understanding of what it means to be a land-grant and how that benefits people in the community? President Fuchs: Yeah, we have this heritage, that the university was created as part of the nation's land-grant initiative to be a place where people from any economic need could come and learn skills, get an education that would benefit them in their career. And that started out in agriculture in what, then, was called the mechanic arts. We would call that today engineering. So those indeed are our roots and we focus on that. We have one of the very, very best and largest agriculture programs, for example, in the entire nation. That just makes a huge impact on natural resources and the ability to feed the world, much of that coming from the state of Florida. But in addition to that we're a truly, truly comprehensive university, one of the most comprehensive in the nation. Sixteen colleges spanning not just agriculture and engineering, which were our roots, but the fine and visual and performing arts, medicine and then everything else you might imagine in between. We also are an academic health center here at the University of Florida. We actually own our own hospitals. We have one of the largest hospital systems that are centered right here in the University of Florida and associated with that would be programs such as in public health or in pharmacy or dentistry and nursing. And then we have veterinary medicine with animal hospitals here in Gainesville and then programs across the state. So, when a student is looking for a place to study, I almost always am certain that we're going to be able to offer that program because of how comprehensive we are. Or if there's some grand challenge that's facing our state, our nation or, indeed, our world, we're going to have faculty that have expertise in addressing that. They've dedicated their lives to working on it. Anything from a pandemic to an issue in, say, political science, world peace or anything else you could imagine we have faculty working on that. And I find that exciting, not just from, say, a faculty perspective, but also from a student perspective, that they have a passion, if a student has an interest, there's going to be a faculty member that is going to be one of the world's experts on that. Nicci Brown: So really a driver of innovation. President Fuchs: Absolutely. And I would say innovation that obviously affects the economy and we have some of the most incredible incubator and startup facilities in the world right here associated with the University of Florida. But innovation in the other areas, the humanities and the social sciences, as well as areas of what are thought of as STEM, the science and technology and engineering and math. Nicci Brown: You mentioned the state of Florida and, of course, Gainesville, but the Southeast — how do you think having a Top 5 public university benefits the Southeast? President Fuchs: Well, having lived in the Midwest for many years, in Illinois, and actually having gone to graduate school there and been a faculty member, both in Chicago and Urbana-Champaign, and then having lived in and been an academic leader in the Northeast and in the state of New York, and then spent a fair amount of time out in California. I know there is a national historical perception that maybe the Southeast, and maybe the South in general, just doesn't value higher ed as much as say, a New England or maybe the Midwest. One of our goals is to change that perception, that indeed the universities in the Southeast and the South compete heads up with those and other parts of our nation. The rankings can influence that perception and indeed the accomplishments of graduates can influence that perception and indeed the work of the faculty and others that make a difference nationally will change that perception. I think the hardest part is to indeed change a reputation or perception, but we're making progress and I'm proud to say that University of Florida is one of those national leaders that is changing the perception of higher ed in the Southeast. Nicci Brown: Well, speaking of perceptions, how are the public universities that are ranked above us —so UCLA, UC Berkeley, University of Michigan and the University of Virginia — different from UF? And what do you think it will take for us to rise even higher in the rankings of public universities? President Fuchs: Yeah, those five universities have been ranked amongst the Top 5 from the very beginning of rankings, so many decades. And they're all excellent as are dozens and dozens of just wonderful universities across the United States. I think our greatest asset, and I'm biased, but I think our greatest asset as a nation is the quality of its colleges and its universities. There are 4,000 colleges and universities and we're talking about the ranking of research universities, of which there are a couple of hundred of those. So for the University of Florida, we do have some distinctive attributes. I would say the most obvious would be how comprehensive we are. Those other universities do not have, for example, agriculture programs, what we call our Institute for Food and Agriculture Sciences, and extension programs that we have in every one of our counties and the natural resources that those faculty work on and work to develop and sustain. And the fact that our 16 colleges span all these different areas makes us fairly distinctive. All those universities are comprehensive, but we have a distinctive characteristic to them. The second characteristic would just be how low our tuition is. We're dramatically lower than all of the other universities in the Top 10 by any metric and that is a distinctive attribute. But then thirdly, the investment by our state. We're the only university in the nation over the last few years, the last couple of years, that has grown its faculty by 500. Not just hired 500 back, but actually grew the faculty by 500. And we're adding another 100 faculty in the next year, year and a half, around artificial intelligence. And so that gives you the distinctive nature of this trajectory that we're on that will indeed be one of excellence, but also what I would call stature, it's comparative excellence. So I don't wish any university to slip in the rankings, but we are committed as an institution to sustain our Top 5 ranking and to move up in the perception, in the mind's eye of everyone, the broad public, as well as our peers nationally. Nicci Brown: I think when it comes to AI, it's important for us to recognize that it is infused across the curriculum as well. This is not just a standalone and that's probably another distinction as well. President Fuchs: Our initiative on artificial intelligence is one in which we're not trying to compete with those universities that for many decades have led in artificial intelligence, narrowly focused say, on computer science. Examples of that would be a Carnegie Mellon University or Stanford or MIT. We want to compete and actually lead in having, as you said Nicci, artificial intelligence embedded in our curriculum across every one of our 200 academic departments, every one of our 16 colleges, so that every graduate, no matter whether they're undergraduate or a master's or doctorate degree or another professional degree, will have had AI as part of their curriculum. And they will be, as we're describing, enabled to be a part of the workforce that realizes and actually develops AI in their field and understands it, the risks and the opportunities around AI. It's exciting to see the College of the Arts recruiting faculty in AI or the College of Public Health and Health Professions. Every one of those 16 colleges is, as we speak, interviewing and hiring faculty in AI specific to their discipline. Nicci Brown: Terrific. The University of Florida is now ranked 28 amongst both public and private universities. Why do you think it's important to be competitive with both types of institutions and what's your goal for UF's status in the combined public/private ranking? President Fuchs: Yeah. I don't think I'm ready yet to announce a new ranking goal because we're still celebrating just all the progress of the past 10 years or so. But it is important, when we think of students or our employees including faculty, most of them don't distinguish between a public university versus a private university. Again, I came to the University of Florida from a private university, although it was still land-granted, had agriculture and had the same heritage. Therefore, since we're competitive, we are competing with not just with publics — that Top 5 ranking is amongst the nation's very best public universities — but those that are private. And some of the privates are quite different than the University of Florida. Probably the obvious would just be the size of the student body. If you're a student at Princeton or Yale, at Princeton, the number of students is less than 10,000 total. At Yale, it's slightly more than that. So there, you're going to have a student body that's, say, 20% the size of our student body. And some of the rankings, actually, are normalized by the number of students. So in other words, for example, the resources you have per student. And so if you have 55,000 students, like we do, compared to maybe eight or 9,000 at Princeton, it's hard for us to have the same amount of resources. And it's hard, not just for us, but for any public university because you almost always are going to have a larger student body. But even though some of those metrics don't work as well for public universities we still have to compete for students. We compete for faculty, we compete for employees, we compete for grants, philanthropy, just heads up with all those, the most prestigious privates as well as the publics. Amongst the publics, rarely are they ranked in the Top 20. I believe this year the highest public was ranked No. 20. We were 28th amongst the privates and publics. That is one of those areas that I believe the publics have opportunities to have reputations that are equal to the very best privates and that's one of our aspirations. So, to be specific, it is to move up in that ranking of privates and publics combined. Nicci Brown: Well, see, we did get you to make a goal for us! But we'll stand by for a few more. So speaking of celebrating and setting ourselves goals, in 2019, you tweeted a "note to self" in which you said you'd asked the faculty if you could cancel classes for a day-long celebration if the University of Florida reached the Top 5. Well, we're there now and I understand there's something in the works. So for those who may have missed it, can you update us? President Fuchs: Yes, that tweet has been repeated back to me by our students. I'm not sure. I didn't know they noticed it from a couple of years ago, but they did. And as soon as the rankings came out, the next day, they were hoping that classes would be canceled that week. I think some of them must've had exams or papers due that week. It turns out that the university president can close the entire university, send the employees home, cancel classes, if there's an emergency like a hurricane or, if we were up north, a snowstorm. But, for discretionary reasons, such as celebrations, I can't do that. I don't have that sole power. So, I do have to, by our university policy, consult with the colleges and the Faculty Senate, which we are doing, and we've picked a date in February. The end of the first week of February, beginning actually at the second week of February, in which we will have a day of celebration and a day also of gratitude, just gratitude for all the contributions of everyone. We're at that point, nearly two years of the pandemic, so gratitude to our healthcare workers, our employees, our students, for the success we've all had as an institution and individually over the past two years. And I am going to the Faculty Senate and asking them to cancel classes on that day. It'll be a Wednesday, the second Wednesday in the month of February. We're also going to roll into that a reflection on our university's values, which have not had as much visibility as I have wanted. So a couple of years ago, we established a set of values around excellence and curiosity and support of one another. And we're going to work that in as well. So reflection, gratitude and, hopefully, a lot of fun with food trucks and maybe a concert and other things. And with any luck, no classes on that day. Nicci Brown: Well, it definitely sounds like something to look forward to. I have one final question, if you're open to it. Rankings are important. They're certainly not everything. With the UF community and Gator alumni having just celebrated homecoming, I would love to know what you most appreciate and cherish about the University of Florida. President Fuchs: One of my favorite things to do when I give a talk to members of our community, including alumni, is to start with what are the things that they would like not to change at the University of Florida? Because often presidents talk about things we want to change and make better or make new. And there's a long list of attributes at the University of Florida that alumni and those of us that are here today cherish. I think that the most important one for me that I very much and am working hard that we not change, is to avoid us becoming competitive with one another in a negative way as we indeed enhance our reputation and our stature. So, to say it another way, this is an institution that has been thought of historically as one where people support each other, care about each other, a place where we work hard but yet have a lot of fun. And to me, I want to continue that and, if anything, double down on it as our stature increases. Nicci Brown: Sounds wonderful. That joy of discovery and I guess it's always great to be a Florida Gator. President Fuchs: That's right. Nicci Brown: Well, thank you so much, President Fuchs, for being our guest. We do appreciate it and we very much value your leadership of the university we love. Listeners, thank you for joining us for an episode of From Florida, where we share the stories of faculty, researchers, students and administrators whose thought leadership is moving our state, our nation and our world forward. I'm your host, Nicci Brown, and I hope you'll return for our next story of innovation From Florida. Collapse October 5, 2021 More than 700 teams of students from across the country are participating in the Florida Hacks with IBM event, which runs through November. Their challenge? Find solutions to some of the most difficult environmental issues, from protecting waterways to developing sustainable fisheries. Sanethia Thomas, an assistant instructional professor in the Herbert Wertheim College of Engineering, is overseeing the hackathon and shares how the event is teaching students more than how to code. Apple Podcasts Google Podcasts Spotify Stitcher RSS Transcript Nicci Brown: Welcome to From Florida, where you'll learn how minds are connecting, great ideas colliding and groundbreaking innovation is becoming a reality because of the University of Florida. I'm your host, Nicci Brown, and I'm joined today by Sanethia Thomas, an assistant instructional professor in the Department of Computer and Information Science and Engineering in the Herbert Wertheim College of Engineering. Sanethia, as you're about to learn, is an amazing person and she is overseeing the first "Florida Hacks with IBM" event for the university. Now, I don't know much about hackathons, but today we are going to learn what they are and how they help students learn and grow. Welcome, Sanethia, thanks for joining me today! Sanethia Thomas: Thank you for having me. Nicci Brown: So Sanethia, tell us a little bit about your background. You were a successful student athlete, a professional basketball player and are now a highly regarded professor of computer and information science. How did your interests come together and why information technology and computer science? Sanethia Thomas: Yeah, so as a child, I was always intrigued with computers and so I knew that computers were going to be the future. I was also very talented in sports and so I played basketball and that's when I got a full-ride scholarship to the University of Texas at El Paso. Halfway through, I said there's not really much as far as opportunity for women's sports at the time. WNBA was not formed. But I was very talented and I wanted to play, so I went overseas and played for a short period of time. I played in Belgium, Amsterdam. Came back and then went straight into industry and worked for AOL. It's funny, because sometimes I ask my students, "Have you heard of AOL?" And a lot of them are like, "No!" But that's where I got my start in industry working for a tech company, a very prominent tech company at the time. So then, I decided to get my master's degree at Clemson University. And so I always loved working with younger student athletes and youth in general. I got my master's of science at Clemson and I met Juan Gilbert and one conversation with him changed my life Nicci Brown: For those who don't know who Juan Gilbert is, can you tell us a little bit about him? Sanethia Thomas: Yes, Juan Gilbert, he is the Banks Family Preeminence Endowed Chair of the Department of Computer Science here at University of Florida. And so I decided to get my Ph.D. in computer science because he showed me that you can merge computer science with pretty much anything. And you can see that in reality today, that computer science touches every part, every industry, across the board. It became very interesting when I could take my passion working with young student athletes and develop technology tools for them to use. And so, that's when I decided to get my Ph.D. in computer science. My research is in athlete development and I create tools to help young athletes realize that they're more than just an athlete and they can strive to become a professional athlete, just as I did, but then there's life after sports, as well, so to give them that paradigm to say, "Hey, you're more than just an athlete. You are a total individual, so what other things are you interested in?" And my tool shows them different career paths that they can take. Nicci Brown: Terrific, and I want to take a moment to give you a shout out for your incredible work to pay it forward and help student athletes through Second Shot and Score High Coach. What are these programs and why did you start them? Sanethia Thomas: Yeah, so Second Shot evolved for my dissertation work and my research work, as I mentioned before, helping young athletes identify a career path outside of sport. It has a play on words. Those that are familiar with athletics, you get that second shot on the foul line to where you can take another breath or that second shot when you're kicking in the end zone for football, so that second shot is very strategic. You have to plan it out, and it's really impactful of how the game will turn out. And so, translate that into life. You have to be strategic about your life. Second Shot informs student athletes of all the career paths that are out there. Score High Coach is a tutoring program where I work with all youth on how to raise their SAT, ACT scores, hence, Score High, so I work with them in that area. Nicci Brown: Terrific. Sounds like a conversation for another day. But our main topic of conversation today is the "Florida Hacks with IBM" event — also being sponsored by the Florida Technology Council — which just got underway. I think it would be helpful to start with a description of what a hackathon is for our listeners who, like me, may be unfamiliar with these events. Sanethia Thomas: So yeah, a hackathon is traditionally targeted to computer scientists, graphic scientists or the people who are interested in developing and coding programs. Normally, it's for a predefined period. You will see it, maybe over 72 hours. In the school setting, students will stay up, bring their sleeping bags and code throughout the entire 72 hours. They're trying to come up with solutions and different types of products that can answer whatever question that the hackathon has surrounded by or targeted at. So, it allows students to, one, try technologies that they haven't used yet, get a deep dive, immersive experience in using the technologies, work with a team, and create innovative answers to problems, in a short period of time. Nicci Brown: From what I understand, this is the first hackathon hosted at UF, so can you tell us a little bit about how it might be different and how the partnership came about? Sanethia Thomas: Sure. UF has clubs where we do small hackathons, as I mentioned the 72-hour hackathons. And so, when Dean Abernathy spoke with me about that, she mentioned, "Well, what if we do a hackathon to bring in other people outside of computer science?" We have this big AI initiative and we would like to open it up to other students, not necessarily targeted at computer science students. And I thought it was a wonderful idea because a lot of times students are intimidated by hackathons, because if they're not in the computer science field or they haven't heard of a hackathon, they tend not to join in since it's such a compressed time of 72 hours they have to turn around a solution. Provost Joe Glover and [Engineering Dean] Cammie Abernathy worked with IBM and we created this hackathon for students at the University of Florida. Then we brought on the Florida Tech Council and it rolled out to the entire state of Florida. And now, it's offered to anyone in the U.S. 16 years of age and older. It's a longer period of time, so where we're able to target more students. It's over 11 weeks to give people a chance to learn the tools, attend webinars, get some information, and then come up with a sound solution that they are to build. It's literally from September 13 all the way to November 29. Nicci Brown: Fantastic. How many students are participating in the "Florida Hacks with IBM"? Sanethia Thomas: We are very excited that we already have 734 teams registered. Nicci Brown: And how many schools are represented? Sanethia Thomas: We have about 60 schools represented all across the U.S., schools from Duke University, Clemson University, Berkeley, MIT. We have schools in Rochester, the Rochester Institute of Technology, University of Southern California. All the Florida schools are participating, so it's a great representation across the map. Nicci Brown: Terrific. And speaking of representation, is there a lot of diversity in terms of the students that you're seeing? Sanethia Thomas: Yes. I have a personal interest in that, and I'm very excited. We have a lot of women that are interested and we have positioned ourselves to offer a lot of women mentors. That is very attractive because if you see a woman in computer science, then that says, "Hey, I can do that, too. She looks like me." And so, as we know, computer science has mainly been a male-dominated field, and now we're seeing more women involved, which I'm very excited about. We are prepared for that and we are expecting a lot more women to join in. Nicci Brown: And I guess that also speaks to the fact that computer science and AI really is integrated across so many different fields? Sanethia Thomas: Yes, it is. It doesn't matter if you're in agriculture, if you're in computer science, if you're in art, AI touches all the industries. Nicci Brown: Can you tell us a little bit more about some of the challenges they are trying to address? Do you have information about that? Sanethia Thomas: Absolutely. We are advertising "Be a part of the change." And so, we are protecting environmental resources and we have six challenge statements. The challenges are, challenge No. 1, deals with climate change in the Florida ecosystem. Challenge two deals with improving the condition of Florida's waterways. Challenge three, sustainable fisheries. Challenge four is power consumption. And challenge five is animal agriculture. And then we threw in a wild card, so anything that deals with climate change or sustainable fisheries or animal agriculture, they can bring all those together for a wild card. Our focus is on the environment and improving the environment for all. Nicci Brown: As you mentioned, this hackathon really is focused at problem solving, but you also alluded to something else, and that was what students get out of it in addition to that. Can you speak a little bit more about that aspect? Sanethia Thomas: Yeah, so when you participate in a hackathon, you are immediately stretched. One, students are learning new technologies and they have a lot of pressure under the gun. With pressure, things rise and things come to fruition, so students are able to work in teams. They're able to learn the different technologies. This hackathon is unique because we have webinars where students are able to work with mentors one-on-one to help them learn the IBM tools and technologies. Just for registering, IBM is offering $200 in credits for these tools. The AI initiative that Florida is really embracing, this hackathon allows students to operate in that. The winners will actually receive access to the HiPerGator AI platform, which is really enticing, as well. Those students that are not computer science students, they will definitely learn some basic tools to help them operate in this world that's being run by AI. Nicci Brown: Right. It's that interconnected world and so there'll be able to form relationships with people outside of their programs. Sanethia Thomas: Yes. Yes. Nicci Brown: Can you talk a little bit more about that big prize at the end? Sanethia Thomas: Yes, so there's a $100,000 prize pool and that's broken up into different categories. The grand prize is $30,000. Second place is $20,000. Third place is $15,000. But those that have participated, maybe this is your first hackathon, we are even giving awards for that. So, if this is your first hackathon, you can win a $2,000 prize. We also have prizes for each challenge category that I mentioned before. There will be award at $3,000 for each team within each challenge category. We also have a submission incentive, so the first 20 teams that submit qualified projects will receive $4,000. One additional category, which is really exciting, is the social media category, so it's the TikTok challenge, and students can win a $1,000 by creating a really good TikTok showcasing their project. Any team that has some type of gamification will receive $10,000 and that gamification you get points by watching different webinars, watching the video replays, interacting with mentors. We are rewarding students for being active in the platform and learning the different tools and working with the mentors because that's the overall goal is for students to get educated on what we're doing on the AI initiative, and they can walk away as better students and better off for the University of Florida. Nicci Brown: Sounds like a lot of fun. We'll have to be on the lookout for that one. When will we know the results of the hackathon and where can listeners learn more? Sanethia Thomas: Yes, so the results will be released on December 6 and you can find more information floridahackswithibm.bemyapp.com. Nicci Brown: Wonderful. I want to say good luck to all the students who are participating in the "Florida Hacks with IBM" competition. We look forward to hearing more about the solutions you propose to address these challenges facing our state and many others as well. Thank you so much, Sanethia, for being our guest today. Sanethia Thomas: Thank you for having me. This was a wonderful opportunity. Nicci Brown: Listeners, thank you for joining us for an episode of From Florida, where we share the stories of faculty, researchers, students and administrators whose thought leadership is moving our state, our nation and our world forward. My name is Nicci Brown and I hope you will return for our next story of innovation From Florida. Collapse September 28, 2021 As trusted influencers, artists and culture-bearers communicate information in ways that make it both understandable and memorable. That's why the Centers for Disease Control and Prevention turned to Jill Sonke, director of the Center for Arts in Medicine at the University of Florida, for help crafting a plan to bring public health and arts and culture organizations together to empower vaccine confidence. In this episode of From Florida, host Nicci Brown spoke with Sonke about her work as senior advisor to the CDC's Vaccine Confidence and Demand Team. Apple Podcasts Google Podcasts Spotify Stitcher RSS Transcript Nicci Brown: Welcome to From Florida, a podcast where you learn how minds are connecting, great ideas are colliding and groundbreaking innovations become a reality at the University of Florida. I'm your host, Nicci Brown. Today, I am pleased to have with me, Jill Sonke, the director of the Center for Arts in Medicine. Jill is an affiliated faculty member in the School of Theatre and Dance, as well as the Center for African Studies, the STEM Translational Communication Center, the One Health Center and the Norman Fixel Institute for Neurological Diseases. And for the role that we're going to be talking about today, Jill is also currently the senior advisor to the CDC Vaccine Confidence and Demand Team, which is part of the CDC's COVID-19 Task Force. A warm welcome to you, Jill. We are so glad you could join us. Jill Sonke: Thank you so much, Nicci. It's great to be here. Nicci Brown: Let's start with a little background about you and the center. Where and when did your journey begin as an ally and advocate for the arts and medicine? Jill Sonke: Well, it began when I came to Gainesville and started teaching as an adjunct faculty member in the School of Theatre and Dance. At the same time, the Arts in Medicine program was just beginning to bubble up at UF Health Shands Hospital. I had earlier in my life, when I was in high school, I was heading toward a career in medicine. I was volunteering in hospitals from the day I turned 14 and was eligible to do so. And I took a turn from that pathway when I began dancing at the age of 17 and then went full steam ahead to dance, had a career in New York City. Then when I came to the Gainesville and started teaching at the university and heard about this Arts in Medicine program, it just felt like the most extraordinary opportunity that I could be an artist in health care and really realize both of my dreams together. It was really incredible to be able to step into that new program and to become one of the first two artists-in- residence. Nicci Brown: You say the new program, but the University of Florida has one of the oldest programs for Arts in Medicine. Can you tell us a little bit about the history of the program? Jill Sonke: That's right. In 1992, when I got involved, the artist-in-residence program was just beginning. But in fact in the late 1980s, a group of caregivers at Shands began to come together to explore their understanding of the health benefits of the arts related to their own lives. This was Dr. John Graham-Pole and a number of other care providers who recognize that they were dealing with the stresses of their work, their burnout and anxiety by turning to poetry and painting and music. They've rather informally started offering what they called "Laughter Play Shops" for other care providers and eventually a community member, Dr. Mary Rockwood Lane, heard about this. Her husband was a clinician and she approached John and said, "If doing art is good for you, don't you think it might be good for your patients as well? I think we should create an artist-in-residence program." That was the beginning of the artist-in-residence program. Another wonderful thing about this history is at the same time, the College of Medicine had started its own program. Tina Mullen, who is the director of the UF Health Shands Arts in Medicine program today, at that time had been hired by the College of Medicine to bring the visual arts into the environment of care. It took about a year's time before those two initiatives found each other and became one program, the UF Health Shands Arts in Medicine program. So that program was established in 1990 and was among five programs that began around that time in the United States. Now, of course, that small landscape has developed into a very robust landscape where there are arts programs now at least half of hospitals in the United States. Nicci Brown: Jill, what is it about the arts that makes it such a powerful tool to communicate about health? Jill Sonke: That's a great question, Nicci. There are a number of things. On one level, it's about the artists themselves, artists and culture bearers, those who hold the cultural and creative practices in communities and in groups. Those folks tend to be trusted members of communities, they are people who listen, they are people who question, they're people who care innately about the well-being in their community, and they are people who take action and they rally people to action collectively as well. The CDC thinks of artists and culture bearers as trusted messengers. They're people who facilitate really important dialogues in communities. And then the arts themselves are so powerful. Like, they're fun. We want to come to them, more than we want to come to maybe a PSA or a billboard, just to compare with some other more traditional public health forms of messaging. They also put ideas and information into very personal and cultural contexts. They make them really personally and culturally relevant for us and they can make information more understandable. They facilitate dialogue. We go to see a great film, we go to a concert and what do we say to one another after? What did you think? We just dive into talking about it because they're compelling in that way. And in those dialogues, we consider the difficult issues and vaccination can be a difficult issue, right? So, that the dialogue that's facilitated provides opportunities for people to consider their own values and decisions. I do want to say, this is not about propaganda and about persuasion, though, we certainly want everyone to get vaccinated. I believe this is a really important moment for this, but I also believe that the arts are uniquely powerful in allowing people to make their own decisions and that's really important to me in this moment. They enable that kind of personal insight that facilitates personal decision-making. And in turn, through that dialogue, they can really drive collective action. Artists have been agents of social change throughout our human history and this moment is no exception. Nicci Brown: You recently collaborated with the CDC on a project to boost public confidence in COVID-19 vaccinations, which, of course, has become such a large issue. How did that collaboration come about? Jill Sonke: I actually love this story. When the CDC formed its vaccine task force, it brought together a group of incredible people from across its divisions and the majority of those people were public health professionals who had worked in other parts of the world on health communication campaigns. And they all recognized that in those contexts you would never launch a major health communication campaign without artists, without songs, without dances, without the visual arts. They decided, why not here? We need the arts, it's time for this to happen in the United States. This is the moment, in this critical moment, for us to bring artists and culture bearers in community to bear in addressing vaccine confidence. Nicci Brown: Can you tell us a little more about the initiative and the projects that you actually led? Jill Sonke: Sure. I was appointed at the beginning of June as a senior advisor to the Vaccine Confidence Team on the Vaccine Task Force, as you mentioned, with the assignment to create field guides as a part of a kind of a multimodal initiative that the CDC was launching. They had partnered with the Georgia Department of Public Health and with two arts organizations in Atlanta to mount a pilot, a demonstration project, to use the arts to partner with local artists, to bring vaccine information into communities. They had also made a plan to create a funding stream for arts organizations to be funded to do this work, to partner with artists and culture bearers across the country. They knew that if they were to make funding available that there had to be guidance. They asked me to serve as co-author on two field guides. I developed, in partnership with the task force, one field guide focused on developing partnerships between public health departments and professionals and arts organizations and artists, and a second focused on developing creative campaigns and arts-based communication programs within those partnerships. Those two field guides were released about a month ago. So, the CDC foundation now has $2.1 million available for arts organizations to partner with public health departments to engage in vaccine confidence work. They plan on awarding about 30 grants of about $75,000 each. Nicci Brown: What kind of evidence is there that art actually does influence well-being and health behavior? Jill Sonke: There's evidence, Nicci, around the arts and health communication, including in the Ebola epidemic, incredible things happened. I did research with our team here at the University of Florida Center for Arts in Medicine on what happened in the Ebola epidemic in West Africa, the way musicians stepped forward at the moment when the general public was very distrustful of health professionals and when, especially in Liberia, the idea that Ebola was a government conspiracy was widely held. Musicians stepped in and started writing songs. There was the first song was written by two artists named D-12 and Shadow, and they just were frustrated with the situation. They just at home one night recorded a song called Ebola in Town, and within a week it was topping the charts and playing on the streets and in dance halls and on the radio. UNESCO and USAID and the World Health Organization took note. They came in and immediately started partnering with artists. The second song that was released was called Ebola is Real, written in partnership with public health professionals to counter that conspiracy theory. There is a long history around the world of the arts being used in health communication and some very strong evidence that arts-based programs can, in comparison to more traditional public health methods, lead to more behavior change. There also, as you asked Nicci, is a lot of evidence around their relationship between the arts and health and well-being. We established about a year and a half ago here at UF the EpiArts Lab, which is a National Endowment for the Arts research lab. It's a partnership with Dr. Daisy Fancourt at University College London. Daisy is really the leading researcher globally in this area. She's published over 100 studies now that look at associations between arts and cultural participation and health outcomes, and the findings are extremely compelling using longitudinal, large cohort data sets in which she can essentially simulate randomized clinical control trials. She's found associations, for instance, between participating in arts and cultural activities just once a month or more leading to 48% less likelihood of the development of depression among people over the age of 50. Similarly, significant reductions in loneliness. Children who engage significantly in creativity are also about 50% like less likely to be maladjusted and the implications for lifelong health there are very, very significant. She's also found significant reductions in age-related disability and chronic pain, and she's even replicated studies that were done in Scandinavian nations, beginning in the 1980s and now through her work in the UK, that show associations between arts participation and longevity. So people who engage more than just every few months or more and arts and cultural activity have a 31% lower risk of dying early than people who don't. And these studies are all really well controlled for things like socio-economics and education, geographic location. Those social gradients do exist. we know, in arts participation, but they are not a factor in the relationship between the arts and health and well-being. Our EpiArts Lab is now using Dr. Fancourt's statistical models, and seven longitudinal American data sets and we're doing studies to investigate the associations between the arts and an array of health outcomes in the United States, which is a very different context. And we're finding very similar and really compelling associations between arts participation and a number of age-related outcomes and child development. Most notably, one of our recent analyses showed a really exciting association between arts participation and reduced what's called delinquent behaviors, behaviors that can result in engagement with the juvenile justice system and behaviors that are often maladaptive. We're really excited about advancing that research here and broadening the understanding in the United States of the health benefits of arts participation. Nicci Brown: Can we dig into that just a little bit further? How does the United States compared to other countries in enlisting the arts in major public health initiatives? Jill Sonke: Well, frankly, we've been a little bit behind. Since 2010, I've been doing research in other parts of the world around how the arts are used in public health. I started that research in east Africa because I noticed in Uganda, the arts have been a primary means of health communication and health education since the 1950s. The government has invested in the arts and the Ministry of Health employs a lot of artists. In fact, when I'm in Uganda, I always laugh because artists will say, "Thank God, I'm an artist, I can always work because there are jobs in public health for artists," which is really wonderful. It's just common sense. In one of the interviews I conducted with a senior member of the Ministry of Health, my first question was, "Why do you use the arts in public health?" He kind of furrowed his brow and looked at me like I was an idiot and said, "Well, you can't do public health without the arts. You can't just tell people health information, you have to engage them emotionally." He had a deep understanding of aesthetic experience, the idea that when we have aesthetic experiences, those moments that are different than other more mundane moments, we have them in art, we have them in nature, they're moments that mark themselves in our memory and in our lives, they are memorable, they have lingering effects. And when we engage people with health concepts in those kinds of moments, not only do people understand and remember information, but they engage in narratives and in dialogues that help them consider their own lives and values and help them make choices that they can really commit to. And then when they tell, in fact, speaking of the evidence, Nicci, when they tell other people about those aesthetic experiences and the health issues that they're considering, those people are even more likely and quick to change their health behaviors. There's a very interesting social learning phenomena that contributes to the value of the arts in public health. Back to your question, we've been a bit behind in the public health sector in the United States. In our culture, we have a very professionalized arts context, right? You're an artist, or you're not, you pay to go and see the arts. I mean, that's a gross generalization because there's also a lot of art and creativity that happens every day in our homes and in our communities, but in comparison to some other cultures, we do separate the arts from the fabric of our daily lives, more than other places do. I think that in our health care and in our public health context, the arts are sometimes considered soft, right? The soft stuff. In fact, about four years ago, we became a partner with ArtPlace America. They asked us to lead their arts and public health work. Our work was focused around creating a field of arts in public health and America, changing that paradigm in the United States. I thought it was going to be big, hard work. I often say, I thought it was going to be like pushing a big boulder up a hill. In fact, it was like chasing a boulder down a hill because the readiness and the sort of tipping point around understanding was so available and public health professionals and agencies have really stepped into this space. We're seeing a lot of enhanced understanding, activity and partnership across the public health and arts and culture sectors in the United States right now. And educational programs and conferences and symposium, research publications, just a lot of exciting things happening that really mark the development of a field and a discipline. Nicci Brown: It sounds like we're going to be seeing an increase in these types of programs being used to communicate issues surrounding health. Jill Sonke: I'm optimistic that that's true, Nicci, and I'm also really hopeful that we'll see that happening soon on our campus. We've just developed a partnership between the Center for Arts in Medicine, the College of Public Health and Health Professions, the College of Journalism, and UF Health Communications to launch a campus-based, arts-based health communication campaign for vaccinations. So, more news to come on that soon. Nicci Brown: It's heartening and exciting to hear about that kind of progress. If people are listening and they want to learn more about the field guides and the program repository, how can they do that? Jill Sonke: You can go to the CDC's Vaccinate with Confidence page. There's a landing page for the field guides there. There's a link to our repository there as well. We will be creating a field guide specific to funding these sorts of partnerships and projects next. And on the CDC Foundation's website, you can find the request for proposals for the funding opportunities. And then on the Center for Arts in Medicine's web page, you can again find the field guides, our beautiful repository of arts for vaccine confidence programs around the country is accessible there as well as a webinar that we hosted a few weeks ago in partnership with the CDC and the National Endowment for the Arts. It's a one hour webinar which focuses on the Atlanta arts pilot, and a few other really beautiful programs – an organization called Hip Hop Public Health. It looks also at what the state of California is doing with their creative corps program. They've got $15 million dedicated to arts for vaccine confidence programs and beautiful work in San Francisco. So, lots of ways to find examples and to find those resources. Nicci Brown: Thank you so much for spending some time with us today and thank you for your work. We very much appreciate it. Jill Sonke: Wonderful to talk with you, Nicci. Thank you. Nicci Brown: Listeners, thank you for joining us for another episode of From Florida, where we are sharing stories of faculty, researchers, students and administrators who are moving our state, our nation and our world forward through their innovations and discoveries. I'm your host, Nicci Brown and I hope you'll join me for our next story of innovation From Florida. Collapse September 21, 2021 More than 6 million people in the U.S. are currently living with Alzheimer's disease and that number is expected to grow exponentially in coming decades. It's a devastating illness, with far-reaching emotional, physical and financial impacts on individuals, caregivers and their families. At the University of Florida, researchers are searching for answers to what causes Alzheimer's, how to diagnose it early and prevent or slow its development and for the most effective treatments. Host Nicci Brown talks about that work with Todd Golde, director of the Evelyn F. and William L. McKnight Brain Institute; Malú Gámez Tansey, co-director of the Center for Translational Research in Neurodegenerative Disease, and Adam Woods, associate director the Center for Cognitive Aging and Memory, about their Alzheimer's disease research. Apple Podcasts Google Podcasts Spotify Stitcher RSS Transcript Nicci Brown: Welcome to From Florida, a University of Florida podcast, where you'll learn how minds are connecting, great ideas are colliding, and groundbreaking innovation is becoming reality on our campus. I'm your host, Nicci Brown. And today I'm pleased to introduce you to three researchers at the University of Florida who are investigating ways to prevent and treat one of the most difficult health challenges of our time -- Alzheimer's disease. More than 6 million people in the U.S. are currently living with this disease and the impacts are far reaching. This episode is airing on September 21st, World Alzheimer's Day, which is aimed at raising awareness and challenging stereotypes about the stigmas that surround this disease. My guests are Todd Golde, director of the university's Evelyn F. and William L. McKnight Brain Institute. Malú Gámez Tansey, co-director of UF's Center for Translational Research in Neurodegenerative Disease and Adam Woods, associate director of UF's Center for Cognitive Aging and Memory. Welcome to you all, and thanks for taking time to join us today. Adam Woods: Thank you. Todd Golde: Thank you. Malú Tansey: Good to be here. Nicci Brown: So let's start with a foundational question, and I thought I would direct this to Dr. Golde. What is Alzheimer's disease? And is it inevitable? Is it an inevitable part of aging, will we all get it? Todd Golde: Well, Alzheimer's disease is what we refer to clinically as a dementia. So it's a loss of your memory in higher cognitive function, and it's inexorably progressive. So it begins subtly with, for example, just a little bit of forgetfulness sometimes and sometimes it appears with loss of executive function, but more often the first symptom is a noticeable loss of your short-term memory. And then it proceeds to involve almost all your higher cognitive functions until eventually the person who is suffering from this disease ends up in an assisted living facility or incapacitated. And typically, they don't die per se of Alzheimer's disease, but they die from the consequences of Alzheimer's disease -- with getting an infection and being basically bedridden. Within the brain, what happens is it's accumulation of a couple of proteins that we call amyloid and tau.There could be some other things going on as well, but to keep it simple, we'll leave it at that. And these actual pathologies, what we call plaques and tangles, plaques are amyloid and tau is in the tangles, were first described by Dr. Alzheimer -- who was German physician who saw the first person with this disease by looking at their brain back in the early 1900s. And so those are still what we study today. The second part of the question is, is it inevitable? And the answer is absolutely not. What we know is there are people that live into their hundreds who are cognitively intact and when they die, their brains are free of these pathologies. So we know that there are people who don't get this disease, who age, cognitively successful agers as we call them or super brains. And we're beginning to unravel some of the things that protect people from getting this. But nevertheless, as you pointed out in the introduction, it affects a large number of people and it affects a large number of the elderly population. About 1% over 60, by the time you're 85, depending on what numbers you believe, something like 25 to 50% of the population may have it. So it's pretty scary. So it's not that as you age, you have a pretty decent chance of getting this if you live long enough, and that's a scary proposition because most of us, nobody wants to lose their cognitive ability. Nicci Brown: Right. So you mentioned that it's a form of dementia. How do you differentiate it between Alzheimer's and other diseases that could be categorized as dementia? Todd Golde: Well so, luckily one of the major advances we've had over the last 20 years is development of biomarkers that enable us to actually detect these pathologies in living people. And initially they were imaging studies. And more recently, they're still not quite prime time so if you go to your doctor's office, you're not going to get these quite yet, but maybe in a few years. There are blood-based biomarkers that are pretty accurate. So if one goes back 20 years ago and even went to the most expert neurologist in the world, they could give you about an 80% accuracy in diagnosis. And the only way that we could truly know it back then was if somebody donated their brain and they were looked at at autopsy. And so this is a really remarkable progress in some ways because even the best clinician will get it wrong occasionally. And that creates a lot of confusion about what to do. And there are a whole bunch of other things, that other 20%, is of late onset dementias are a big portion of it's what we call vascular dementia so it's a bunch of maybe little strokes and then there are a whole bunch of diseases with really long names that could be mistaken for Alzheimer's disease, like frontotemporal dementia with parkinsonism linked to chromosome 17, that really long name. Nicci Brown: Yeah. It's kind of a scary name, too. Todd Golde: Yeah. Nicci Brown: So, you've all got different approaches to the disease, the study of the disease. It would be great to hear a little bit more about the description of your approaches and I guess how they differ with one another. So maybe, Malú, if you could share a little bit about your approach? Malú Tansey: Sure. My group is very interested in understanding how your immune system either protects you or predisposes you to these age-related neurodegenerative diseases -- Alzheimer's, Parkinson's. We believe that a long time ago it was recognized that these diseases, if you look in the brains of people with dementia, you would see that there was inflammation there at end point in the autopsy. And it was thought that it was just a result of neurons had died. And there was inflammation because the professional vacuum cleaners in the brain had shown up to clean up the debris. But now we're understanding and recognizing that perhaps there are other processes that happen in life that may contribute to risk of these diseases, perhaps things that are genetic, underlying predispositions that may affect immune cells or glial cells in the brain that make them sluggish or not playing with a full deck. There might be environmental factors such as lifestyle, diet, different things that contribute to that. And so we believe that inflammatory processes and dysfunction of the immune system may be part of what contributes, perhaps in midlife. And so if we can understand what those processes are and understand people at risk, we might be able to diagnose earlier. And if we think of the disease in a different light, we might be able to develop better therapies that use the power of the immune system to leverage new technologies, new therapies, much like the cancer field has done. And that is an area that, for instance, my colleague Todd Golde, here has used before and is using now, both in Alzheimer's and together with other colleagues here also in Parkinson's. And so we study both the role of the immune system in Parkinson's and Alzheimer's, and some of the differences and similarities are teaching us a lot about that. Nicci Brown: It sounds like in part you're looking for some triggers as part of that research that you're doing. Malú Tansey: Correct. Yes. Some underlying predisposition that might be genetic, some interplay with environmental triggers, lifestyle, maybe diet, exposures through what we call barrier sites, through the gut microbiome, through olfactory epithelium microbiome, lots of different ways that you interact with your environment, which are now well-recognized to present such triggers. Nicci Brown: Thank you. And, Adam, your research?

Adam Woods: Yes. We're approaching Alzheimer's disease from a slightly different approach in that the work that we're doing in my lab and in our center is really targeted at the idea of preventing the onsets of dementia or Alzheimer's disease, or at least attempting to offset when you might develop these diseases. And so the approach we take very often involves evaluation of different types of novel interventions, and often very non-invasive interventions, that have the potential to alter the brain's function and improve the brain's function and potentially enhance some of those thinking and memory problems we see in later life. Now, the underlying concept for that is if we can change that trajectory of decline, and that's the trajectory of decline that we experience naturally as we get older. As we get older, even starting as early as our 20s, we see a slow decline in thinking and memory skills. That decline gets much sharper in the sixth, seventh, eighth decade and beyond. If we can take that trajectory and move it up, recover some of that lost function, we have the potential of changing that trajectory towards future decline. Development of things like mild cognitive impairment, this stage before Alzheimer's disease or, ultimately and eventually, Alzheimer's disease. As Todd had said very well, this is not something we feel like everyone is going to get. We feel like this is a preventable disease. So, our group isn't so much in the business of treating Alzheimer's directly. We're more in the domain of attempting to prevent the onset of Alzheimer's. And some examples of what we do are noninvasive interventions like cognitive training. Very often you hear these referred to as brain games, computerized games that are targeted towards enhancing certain domains of cognition that decline as we get older. But we don't just do these brain games or cognitive training. We also pair that intervention, which has shown some exciting efficacy — in fact, a recent study showed, using 10-year follow-up data, about a 25% reduction in MCR, or mild cognitive impairment, conversion rate in adults who had done 10 to 15 hours of this training 10 years in the past. So there's real potential here for this concept of prevention or offsetting the onset of Alzheimer's disease. But we also pair it with forms of non-invasive brain stimulation, like transcranial direct current stimulation. So the application of this weak, electric current to the brain by placing electrodes on the scalp, you feel a tingling prickling sensation on the scalp. But the amazing thing about this technique is that it actually allows us to noninvasively stimulate the underlying brain tissue to facilitate the neuroplastic response of that tissue. And what that means is learning at the neural level. When you take something that facilitates learning at the neural level, and you pair it with another technique like cognitive training, which also facilitates learning at the neural level, you have this potential synergy to enhance the overall efficacy of these kinds of interventions. These are just a couple of the interventions we're looking at. We kind of pride ourselves on doing bench to bedside research, where we start to try to understand the mechanisms of these novel interventions, and then convert those interventions into actual clinical trials and potential clinical applications with the end goal being to create a series of accessible technologies that can be deployed in the community to help prevent Alzheimer's disease. Todd Golde: As I said, I grew up in this, what we call the molecular age of Alzheimer's disease and was fortunate enough to be a somewhat naive MD-Ph.D student who helped to, I think, define causality in this disease. So taking, not doing genetics, but taking clues from genetics and understanding how they altered the biology to lead to Alzheimer's disease. And that really is the foundation, or was the underpinnings, of what we call the amyloid-cascade hypothesis of Alzheimer's disease, that the cumulation of this peptide we call amyloid in the brain triggers the complex disease. Over time, I've helped, I think, to guide and frame how anti-amyloid therapies might work or not. More recently, though, with this idea that we really need to turn our attention to the complexity and the brain organ failure that's contributing to Alzheimer's disease, we've begun to develop programs that are, for example, trying to target non-genetic factors that may promote risk. One that I'm particularly excited about is the impact of psychological stress and stress signaling pathways in Alzheimer's disease. And we've actually developed a therapeutic that impacts this pathway and, remarkably, it does amazing things to body physiology and we're still trying to figure out whether it will have effects in Alzheimer's disease, but we think this will end up, if we're lucky in the clinic someday, maybe not for Alzheimer's, but for something else. And that's one of the things that's sort of exciting about doing the sciences. If you keep your mind open, you never know where it leads. But ultimately the last thing that I'd like to do is the idea of figuring out how we impact the disease in the symptomatic patient. And that means, I think a combinatorial approach, and this is going to be really hard, but we don't really have what we call a preclinical roadmap for even doing this. There's no way, there are very few examples of people taking a multi-modal therapy and showing, hey, even in our mouse models, which are models of the pathology, not necessarily models of the disease, that we could completely cure the disease in the mouse model. And so that's what we want to try to do. And it may, whether it's in Alzheimer's disease or a related dementia model, that's where we'd like to go. Because ultimately, again, if you're symptomatic, you want to feel better, think better and not decline. And in order to do that, we've really got to do better than what we're doing. And it's going to take a little different approach. Nicci Brown: So we're really fortunate to have three leaders in your fields gathered around the table on the campus here at University of Florida, but how much interaction is there throughout the world between other countries and sharing of some of this research. And is that an impediment to you moving forward if there is not a lot of it? Todd Golde: I think one of the wonderful things that's happened in science in general is that there has been a, especially in the preclinical space, even in the private sector — so pharmaceutical companies, biotechnology companies — there's a much more willingness to exchange data before you get to a drug or an intervention or something that's going to make money. There's still the individual laboratories that don't want to get their work scooped by somebody else, so keep it relatively private. But I think everybody realizes that no single discovery or person will ever fully develop the cure. They might identify a target or some way to do it an intervention, but it's going to take an army to translate that into something that actually impacts human health. And so I think we've all been humbled by how hard this journey is to go from. In my own world of when I began doing research some 30 years ago in this space, we were driven by these amazing genetic discoveries that laid the underpinnings of understanding causality in Alzheimer's disease. And most people in the field thought we'd have something in the clinic that was working 10, 12, 15 years later. And we're still waiting. And so it's been pretty humbling, I think, for everybody in the field to see how hard this disease is to tackle and we realize we're not going to do it alone, and it's going to take a team effort. And we have a great team of collaborators at the University of Florida who, everybody has individual excellence, but we are all elevated by challenging and working with each other. Nicci Brown: Anything to add Malú or Adam? Malú Tansey: Yeah, I would add that Todd is right, the ability now to set up pre-competitive spaces that sometimes foundations like the Alzheimer's Association does to bring in pharma and biotech to set up partnerships with academia, and many of us have them, to move forward with tools to de-risk projects because sometimes we're experts in one thing and they're experts in another. And so it's that team science and that collaboration that has really changed, I think, in the last 10, 15 years since I've been certainly at the mid-professor level and that has meant a lot. You have to be careful because you don't want to become anybody's testing ground. It teaches them a lot and it teaches academics a lot. So it's a very important part of what we do. Todd Golde: Actually, one of the things that I was involved with was called a grant from the Accelerating Medicines Partnership at the NIH. So this was from the director's office and it was designed to create this preclinical data warehouse, where we were required as part of the funding agreement to, as soon as we generated the data and quality controlled it — and this was large scale ohmic data, so things like how are genes changing in the brain, how are the proteins changing in the brain? What are in the blood? And I mean, on thousands of individuals with Alzheimer's disease or thousands of brains, and this was beyond what any single lab could do, but the point was, it all went up and was accessible to researchers across the world as soon as we felt that the data was of sufficient quality, before publication. And I think that's a really nice way to think about that's how we need to do science, especially if it's publicly funded. I mean, it's to get the data out there and so the best minds in the world could work on this really tough problem and try to bring something to patients that might actually work. Malú Tansey: And that became very important in COVID because people were working from home and you could not get to the lab, but you could data mine. Adam Woods: Yeah. It wasn't that long ago that science was a silo game where you became the individual that did the one thing, and you only did this thing and no one else should ever do this thing because you do that. And then we, over the last 10 to 15 years have really evolved into this concept of team science and team science is great at the local level, around different institutions, but what we're talking about in terms of Alzheimer's disease and other major diseases is a world scale of science. Not just the local team, not just the teams across universities, and efforts to share data, efforts to build worldwide partnerships, which there are a number of models for and there are, in fact, a number of foundations and other agencies working to facilitate this. We've had some experience with the McKnight Brain Research Foundation, facilitating multi-site studies to really understand what does the successful ager look like so we can create new intervention targets to bring us to that goal state. So there's no one answer to the question, but what we do know is that it is a worldwide scale that will be required with many great minds, not just those around the table or at the University of Florida, although we've got a good start here to really go after this and find that solution, as Todd said, we thought we would have many years ago already. Todd Golde: The other thing I like to say is ultimately science is the art of reproducibility. And something that makes the headlines and then never gets reproduced really isn't helpful to the field. And when you have large groups of teams working on it, it generally leads to a higher degree of reproducibility and not leading the field down rabbit holes and wasting time trying to pursue an observation that was made in a single lab and then is poorly reproduced outside of that laboratory, even though it sounded really exciting and that still happens, but it tends to be figured out a lot quicker. And so we don't go down dead-end roads. We tend to stay on the path that we think is likely to lead us to things more easily. Nicci Brown: What are some of the impediments that really challenge you right now? Todd Golde: Well, I think the biggest one that happened is we can't do true therapeutic discovery, not non-pharmacologic interventions, without pharmaceutical partners. We just don't have the infrastructure and the cost. Those trials cost somewhere between $1.5 and $2 billion at a minimum. That's a guesstimate. So you could imagine that there's a big gap between the kind of funding that's been remarkably increased in the Alzheimer's space over the last five years, recognizing that it was sorely underfunded relative to the unmet medical need and the huge societal, personal and economic tolls it was taking. So that's likely been right-sized finally after 20-some odd years, but that's still not enough to really change or say we don't need the private sector to help us. We need them. And so I think that's one of the challenges and just getting the sufficient data to make that investment is challenging because a private sector looks at this and goes, "We put a lot of money in and we haven't gotten a return. So why do I want to gamble this huge investment for something that so far the track record isn't good for probability of success." Thankfully, some companies, not all, some have abandoned this, but some companies are still working very closely with academics and still have quite a bit of internal funding to make sure that this is still going on. And let's hope that doesn't change because it'll be not a good thing. There was a real retraction when some drugs failed in the around 2010 and many pharmaceutical companies basically stopped doing research on neurodegenerative diseases. They said it's too hard. And slowly they regained and rejoined. But academics really haven't lost steam, but I think the real bright spot is the public advocacy groups and people like the Alzheimer's Association and American Federation for Aging Research, increased I think it's almost a five-fold increase in NIH funding for Alzheimer's disease and related dementias that we've seen over the last six years. And that's bringing new people in the field, new ideas and it's enabling. Malú Tansey: I think another impediment has been really that perhaps we've thought about these diseases as very homogeneous and they're not. So the heterogeneity of the presentation of the diseases has been difficult. And without biomarkers until very recently, we just haven't been able to design a good trial. And a trial that's meaningful and that can inform a good Phase 2 trial. And so when you design a trial and you take all comers, your signal to noise ratio, you can't even test the hypothesis, right? And so it's very tough. And if you don't have good biomarkers to really know that whatever target you're shooting for in your trial that you've engaged with the target, as they say, that you've really hit it. If you don't have that, then it's really difficult to interpret negative results. Todd Golde: The other thing I would add is that there's been a dilemma of treatment versus prevention and what the biomarker studies have really taught us as well as autopsy studies is that there's a long, silent phase to Alzheimer's disease. So pathologies begin to accumulate in your brain 20 to 25 years before you show symptoms. And so there's a disconnect. And I think a lot of the reasons you might ask, well, "Why is that?" Well that's because brain reserve and resilience, your brain could withstand a lot of damage before you start showing true cognitive impairment that falls out of the normal range. And yet if we track those people earlier, some of the tests that Adam does and my colleagues within the Alzheimer's Disease Research Center, sort of cognitive stress tests, and you could begin to see that people even before they would be called symptomatic actually are having decline in function. It's just within the normal range. So you can't call it abnormal yet. But when you add that with the biomarkers and we get enough data now, maybe something will happen because we could say, hey, you're on the track to get the symptoms full blown, full minute Alzheimer's disease. Now we can intervene. But we're still in early days on proving that these biomarkers can serve as surrogates. Nicci Brown: Alzheimer's is a terrifying disease, I think, for a lot of people. We've seen the effect that it has on our loved ones. And so we're all, a lot of us, thinking of things that we can do to try and prevent it. And I think, Malú, you mentioned earlier about people going down a path that can even be dangerous because they're so desperate to head this horrible disease off. What are some of the dangers that you think people need to be wary of? Malú Tansey: Yeah. I mean, there's good reason to think just based on epidemiological studies, which really shouldn't draw any causation from them, that there are some associations between chronic inflammation during life and your risk for these diseases. That's just based on medical records. It's based on people with autoimmune disease that appear to have higher incidents. And if they're treated with blockbuster anti-inflammatory drugs that they have less incidents. But that's just an association and it's very tempting to infer causation on that. And then when you run the trials, the trials fail. Probably because it was too late to treat anybody with an anti-inflammatory at that point. So I think some of the dangers are that people may read those studies and say, "I'm going to take daily ibuprofen or daily whatever." Unlike the daily baby aspirin that has been associated with reducing the risk for heart attack or whatever, that's not the case here. And so you could give yourself GI bleeding or something. And so that's a problem. Other things, we know that a good diet and exercise and sleep are good for you, just like they are for lowering your chances of cancer. And they're good for your cardiovascular health. But you don't want to go in and, say, buy a lot of expensive probiotics and prebiotics and spend your money on that because there's no good scientific data really linking any kind of disease modification or slowing down of any of these diseases with any of those things. Whether they may change your constipation or your GI health, that's a different story. They may do that. And if you feel better, that's great. But in terms of changing the disease itself, there's no good evidence of that yet. Todd Golde: I would add that at a public health level and referring to the broader category of dementia, not Alzheimer's disease per se, there's pretty good data that says doing things in your mid-life, such as controlling your blood pressure, exercising, eating a Mediterranean diet, may have a benefit. So, there is a genetic component to this, there are familial risks, and you could do everything right and still get it. But just like with general public health measures, doing things to take care of yourself do influence your cognitive health. Even educational attainment is associated with protection from Alzheimer's disease. And we don't really understand that per se. The only way I conceptualize it — and this is just conjecture — is that it's like having a fit brain, you could withstand a lot more insult before you show signs of . . . Malú Tansey: Mental reserve. Adam Woods: Yeah. The cognitive reserve. And that's something that's education has been used as a surrogate marker for cognitive reserve and cognitive aging for a long time. And there is a protective value there, but I would like to circle back to this idea that we're getting at here. And it's a question I get asked constantly when I give community talks. And that's, "When should I start doing these things? When should I start with this physical exercise? When should I start with brain exercises and so forth, so on." And my answer is always, "Do you have time right now?" Especially in the non-pharmacological, noninvasive space, many of these are accessible technologies that you can access today. Now we're still doing the science to provide definitive evidence of reducing Alzheimer's incidents and conversion of mild cognitive impairment. Once we obtain that data, it's something where, my hope is, we'll push into earlier and earlier ages where we're suggesting, "Hey, start exercising these systems." We always talk about exercising in the body. We rarely talk about exercising of the brain. Our research and research of many others around the world, demonstrate that there is significant value, whether it be educational attainment, whether it be different types of programs, behavioral interventions, or other approaches to exercise the system, because it is arguably one of, if not the most important, organs in the entire body. And so waiting until and at later disease state or what we still clinically call early Alzheimer's disease, we're not early in any fashion. There's a certain point where pathology can impact the system to a point of no return, where no matter what I can attempt to do, whether that be pharmaceutical, whether that be non-pharmaceutical, there's only so much gain I can get from these interventions. So pushing our approach to this to earlier in life, whether that be midlife or otherwise — I mean, in reality, we talk about seeing cognitive aging effects in our 20s. You're in your mid-20s, it's as good as it's going to get. From there, we're going to start slowly declining. Well, in many disease processes, we look at when do you start declining and we intervene at that point. Unfortunately, in systems of cognition, we just ignore that until your sixth or seventh decade of life. And then we get concerned. So a shift in our thinking and our mindset relative to how we can intervene more effectively is going to be very important in moving forward with better prevention of these diseases. Todd Golde: But that also is in my research, really focused on the root causes of the amyloid pathology. And now more recently, the tau pathologies that we know are significant drivers of the degenerative process within the brain. But the earlier you go in the disease process in an asymptomatic individual, the safer your drug has to be. So we've lost some really good promising candidates because they turn out to have unacceptable side effects. And that bar for safety is higher today than it ever has been. The second thing is that those trials cost a huge amount of money. And depending on the modality you're using, if you're using a typical, what we call small molecule drugs, something like a statin, there's no guarantee of exclusivity for a pharmaceutical company. If it takes 20 years to prove their drug worked, there are off patent by that point. And they probably will never regain their investment. In contrast, using something like a biologic, an antibody approach, they have exclusivity at least under current law. So they'll throw an antibody in there, even though it costs a lot more to treat people with an antibody. And it is really not a great public health solution even if it worked and typically involves an infusion or something, which is not convenient for a patient and, at least with the current antibodies, every month. So it's a real challenge. My thinking has actually changed a little bit and partly it's the recognition that you're late pathologically when you start to show symptoms. You're actually beginning to have what I call now brain organ failure. And if we do not approach the symptomatic patient as somebody who has brain organ failure and try to make that system work better with a multi-pronged approach, be it a non-pharmacologic intervention, a mixture of things or what we sometimes call a magic shotgun drug, something that does a lot of things and has a number of actions that actually can restore function, I think we're going to struggle. Because, at the end of the day, even if you have a disease-modifying drug, unless it's amazing and completely stops a disease in its track, an individual on a certain trajectory won't really know that they're not getting better, you're just slowing their decline. That's a tough one for a patient to stay on that regimen. They want to restore their memory and if you can't do that, it's going to be harder. So the field has turned away from simply trying to make the brain work better. And I think we need to turn our attention back to that. We have amazing what we call magic bullets — gene therapies or RNA vaccines or ways to more precisely and more safely target things. And I think we need to be bolder here and try to change the way that we do these trials so that we're looking for bigger effects. Adam Woods: Well. in leveraging off something Malú said and then Todd alluded to as well, this concept of precision and precision in medicine and the approach that we realize humanity is individual variability. We treat it like it's all the same when it comes to a treatment and intervention, we might slightly titrate the dose, maybe. But we know that that isn't the most effective approach. We know that we have to drive further into addressing just the milieu of individual variability. Each individual, each patient that walks in is completely unique. Their backgrounds, their premorbid medical history, genetic factors, yet there's a lot of information there. And it's really hard to parse that information into actionable items for intervention. I think one of the things we hope to do as we forge forward with newer technologies, like the AI and our artificial intelligence initiative at the University of Florida, is drive these technologies that are incredibly well-equipped to take this robust, deep, dense data and start to parse out actionable patterns and targets from what is ultimately the individual variability of the patient. Patient to patient. And so we're not there yet, as was being said, we have to do better. We have to drive forward in terms of both our approach and our mindset and the technologies we apply, to really leverage these skills that cross multiple, multiple domains of expertise and pull that information together to titrate the approaches. As Todd was saying, we're going to have to take multifaceted approaches to addressing this disease. It's not going to be a one and done. It's not going to be the magical drug most likely. And so in that case, as you said very well Todd, we have to do better and we have to do more. Todd Golde: I would also just on your individual variability, I'd like to call a little kudos to my colleague, Dr. Tansey, because she's been a real champion of diversity and inclusion in Alzheimer's disease and neurodegenerative disease research and women in science. In general, we do a really bad job of including diversity in our trials. What we should say is we know a heck of a lot about the natural history of Alzheimer's disease in Caucasians of Northern European descent. There's also lack of just diversity — socioeconomic and educational diversity. And that's partly because these trials are pretty challenging. If you agree to one of these, you're going to go through extensive neuropsychological batteries that last hours. You're going to strap yourself in an infusion chair for a few hours, you're going to get multiple radionucleotide PET scans, you're going to get multiple MRI scans. They might ask you to have a lumbar puncture. This is a big burden to place on somebody. And so it takes a lot of processing. We have a lot of people who are rightfully a little fearful of the medical system and we're seeing the consequences of that with some of the lack of vaccination rates and things in the country. You could imagine the hurdles to try to get more diverse enrollees in these trials. I'll give a shout out, mostly to my colleagues in South Florida. I lead the NIH-funded 1Florida Alzheimer's Disease Research Center [ADRC]. It's a consortium of universities and institutions throughout Florida. We were refunded for another five-year cycle. But in that first period, we had the highest percentage of Hispanic/Latino participants of any ADRC in the country, out of the 30 networks. And it wasn't that high of a burden or hurdle because most of those did not have very many Hispanic enrollees. And they would lose them when they would enroll them. And we were actually able to retain them and continue to follow them for many years. And now our colleagues at the University of Miami are actually doing a great job of bringing in African-American participants. So we probably will end up with one of the more diverse research participants in our Alzheimer's Disease Research Center. And it's not me. It's my colleagues, Drs. Ranjan Duara, David Loewenstein, Rosie Curiel and Melissa Armstrong, who were really leading that clinical effort. And I'm sort of the ringleader. But it's really remarkable to see, and you don't really understand how bad we've been until you look at the data and go, okay, we have 5,000 brain scans on people with Alzheimer's disease and 100 from African-Americans and 125 from Hispanics. It's not quite that bad, but it's close. Malú Tansey: That's exactly right. We know very little about how dementia affects people of color. Not just because of the demographics, but just lifestyle and access to care. And it's a complex picture. And then getting them enrolled in trials is very difficult because of cultural differences and outreach and things like that. But I do agree with Todd, I think the University of Florida does a remarkable job. I think Emory does a really good job as well. They have a really good ADRC that does outreach, Whitney Wharton out there, Allan Levey, they do a lot of African-American populations, they'd go into the churches and they seek them out. But yes, there's a lot that we need to do better to understand the effect of diverse genetic background. Adam Woods: And in my mindset, because I'm leading four clinical trials at present and have worked on numerous clinical trials over the years, when you see a trial finish and it's five, six, 10% in minoritized participants, that is a failure of science because that is doing science for the majority and not science for everyone. And so we have to do more. And then here we work very hard. I mean, we just finished the enrollment in a Phase 3 trial and across the University of Arizona and University of Florida main campus we ended with 16% minoritized participants. And while our data safety monitoring board and others were really excited by this, I was disappointed. I wanted 25% and we invested heavily — we paid for transportation for every single participant from point-to-point at every time, provided remuneration that was appropriate for the study, provided any kind of accessibility issues and tried to address them one-on-one. We had full-time recruiters, out in the community, that are in the churches, at these events in the community, literally every weekend, every day they happen, and that's literally what we have to continue doing. We have to do more because we can't continue having these drug trials finish to where it's not representative of the U.S. population. That is a failure. Nicci Brown: Resources, websites people can go to? Todd Golde: So just for some local information, there's some data on the research that's going on at the University of Florida that's updated at the McKnight Brain Institute. So mbi.ufl.edu. Nicci Brown: Our brains helping yours? Todd Golde: And there's also a website for our 1Florida Alzheimer's Disease Research Center. And then I think one of the better websites on the larger scale is the national Alzheimer's Association website that really lays out in lay language the disease, its impact and how you could go to get — we didn't talk about things like caregiver burden and other kinds of things. And caring for a loved one with this disorder is a huge burden and a real challenge. And there are resources and links to support groups, ways to manage that, et cetera. So I think the national Alzheimer's Association website is probably the one that I would most strongly recommend if you just want to figure out how you're going to cope with this disease. Adam Woods: And then probably the CTRND [Center for Translational Research in Neurodegenerative Disease] website. Nicci Brown: The CTRND website, yeah. Adam Woods: And Center for Cognitive Aging and Memory website would make sense to include that as well. Nicci Brown: Yeah. Todd Golde: Well, and a final one would be there's clinicaltrials.gov. And so if somebody does want to enroll in trials, and if they're hearing that someplace besides the state of Florida, these are run nationally and there are many sites and one could look at trials in your area. Pretty much if you are running a clinical trial, whether it's non-pharmacological or pharmacologic, it has to go on that site now. Adam Woods: And I get emails all the time from people who have gone on ct.gov or clinicaltrials.gov, and they'll reach out and say, "Hi, I'm at this location, are you running a site here? I'd like to participate in your trial?" And so it is a resource that people use to find trials that may fit. We have local research registries and other things of that nature, but clinicaltrials.gov would probably be a nice one to add in. Nicci Brown: So we've spent a good amount of time and I think we've barely scratched the surface because there is so much to talk about, but for our listeners, are there any things that you would say they should be on the lookout for in the next few years, any breakthroughs that you might see coming or developments that we should be on the lookout for? Todd Golde: Well, I think it's a really exciting time. There is a renewed interest in pharmaceutical companies, and I think whether you think this new drug [Adulhelm] worked or not, at least for some people, this will mean that there is a path to getting some financial reward for investing in therapeutic development in this space. And so I think that will bring about a continued investment in the pharmaceutical sector. But we were beginning to unravel the complex biology of this disease in ways that I think we wouldn't have really anticipated a few years ago. And I think that with the novel technologies around, be it RNA vaccines, I'm not sure if that's applicable to Alzheimer's disease, but somebody might find it, there are gene therapies, there's an ability to more rapidly identify novel traditional small molecule drugs or make new antibodies. So I think there is hope. I think we need to learn from our failures or not complete successes. And I think the field's willing to do that. We've eaten enough humble pie that we can say, "Hey, we need to change the dialogue." And when we think of developing a therapy or an intervention, we need to align it with the stage of disease, be it even clinical or preclinical, where it's most likely to show an effect. These prevention studies that are going on, on people with genetic risk for Alzheimer's disease, that are really heroic efforts, mostly from the participants who are really probably doing this more likely for the next generation, rather than for themselves because the likelihood that they're going to receive a drug that will prevent them from getting Alzheimer's disease, as we go on I think is higher and higher, but in the early days, they're not getting optimal drugs, but we're learning about the natural history of Alzheimer's disease. And that's ultimately how we're going to figure out how to prevent this disease is in those people initially. And then we're going to figure out ways to intervene better in people who have the symptomatic phase of the disease. I fully believe that, it's not going to be easy, but we're going to roll up our sleeves and get to it. Nicci Brown: Anything to add from anyone? Malú Tansey: Yeah. I think people should be on the lookout for acknowledgement that while it is a complex disease, we are getting a better handle on the biology. We are understanding how the gene and environment interactions in the immune system, how you respond to your triggers outside — stress, sleep, diet, all those things come together to dial up a dance card of your predispositions and your likelihood. And while you can't necessarily control your genetics right now, there's probably an opportunity to potentially do a lot of things about the other factors as soon as we find out more about them. I'm extremely excited about the potential for modulating the immune system to understand risk and lower those risks over a lifetime and develop new therapies. Adam Woods: I don't have really much to add in that. I think my colleagues have said it very well. I think the one thing I would like to reiterate is the heroes in this aren't the scientists. It's not the clinicians. It is the participants, it's the participants in all of these trials that come in day after day, and you talk to these participants and they say, "I know this probably isn't going to help me directly or maybe it'll help me a little, but if I can help move this forward, if I can help my children, my grandchildren" that to me, is the sign of a hero. And that's the people we're working with. Those are the people who are going to break the bow in this and move this forward. We're just going to be there to help them facilitate. Todd Golde: Even those, I mean, much of what we learned beginning with Dr. Alzheimer and Dr. Oscar Fisher, who was a contemporary scientist, basically they looked at the post-mortem brain. And so we do have brain donation program here at the University of Florida and having access to brain tissue is a gift that is huge because we would be nowhere in this disease without the access to the human brain and understanding the proteins. In fact, it was in the 1980s that what I call Alzheimer's disease entered the molecular age. It wasn't until that. So, we had these descriptions of what went on in the brain and the clinical features. But they purified the proteins that we still work on today, amyloid and tau, from the post-mortem human brain. And then both were linked in different ways to genetics of dementing disorders in the 1990s. And that really served as a framework for our modern understanding of this disease. Though, in some ways we also oversimplified it at that time. And as Adam said and Malú, there are so many factors that influence your cognitive trajectory. It's not just about amyloid and tau, and we need to embrace the complexity and move beyond that. Nicci Brown: Well, I want to acknowledge all those people who have participated, but also thank you all for your time this afternoon and also for your work and your research and that of your colleagues. Todd Golde: Glad to do this. It's important to get the message out there. And the only thing I'd add just at the end is that the increase in public support funding at the national level, and even the state of Florida level, has been tremendously important to what's happening at UF and across the country. And so one thing you could do, which doesn't involve participation in a trial, is to contact your representative or state Legislature, and just tell them how much you're concerned about Alzheimer's disease and continue to support it. And we're not going to do this without that, funding is key. And it sounds a little self-serving, but we've been paupers in the world of relative levels of funding to medical impact and that's changed. And we need to keep it that way in order for us to really move this from where we are to get the next one. Malú Tansey: To the next generation too, really, I think it's important while we might have the resources and the ideas, the next generation of people in our labs that are already here, they have even better ideas than we do, hopefully. Adam Woods: Yeah, that's right. I mean, we're looking at a tripling of the population afflicted by Alzheimer's disease by 2050 and economically our health care infrastructure isn't well equipped to handle that level of care. And so what we're looking at now is trying to find solutions to address this now, not when it becomes a catastrophic level of economic impact. And so everyone has a role to play, whether that be participating in a study, participating in reaching out to representatives to help support future Alzheimer's funding. But at the end of the day, go Gators! Nicci Brown: Listeners, thank you for joining us for From Florida, a University of Florida podcast where we share the stories of faculty, researchers, students and administrators whose thought leadership is moving our state, our nation and our world forward. I'm your host, Nicci Brown, and I hope you'll join me for our next story of innovation from Florida. Collapse September 14, 2021 Welcome to From Florida, a podcast where you'll learn how minds are connecting, great ideas are colliding and groundbreaking innovations become a reality because of the University of Florida. Apple Podcasts Google Podcasts Spotify Stitcher RSS Transcript Welcome to From Florida, a podcast where you'll learn how minds are connecting, great ideas are colliding and groundbreaking innovations become a reality because of the University of Florida. I'm your host Nicci Brown and on each episode, I'll be talking with UF faculty, researchers, students and administrators — thought leaders From Florida — who are moving our state, nation and the world forward. The University of Florida is one of America's leading public research universities, recognized for innovative discoveries and advances in a broad range of fields – from agriculture to artificial intelligence – for educational excellence and for our major role as an economic engine in our state. Our impact, though, extends around the globe. We have many stories to share. I hope you'll join us. Collapse

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