



**The Brookings Institution and Center for Strategic and International Studies  
Vying for Talent Podcast**

**“America’s human capital edge”**

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*Episode Summary:*

In the capstone episode of the *Vying for Talent* podcast miniseries, co-hosts Jude Blanchette and Ryan Hass are joined by Remco Zwetsloot, an expert on the intersection of talent, technology, and national competitiveness. They discuss the security and economic importance of talent, benchmarks for measuring progress on human capital, and the competitive international environment facing the United States.

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**BLANCHETTE:** Welcome to *Vying for Talent*, a podcast that delves into the role that human capital plays in technological innovation and international competition with China. Today on this the eighth and final episode of the series, we're joined by an expert who will help put these questions into context and understand the big picture of the role that human capital plays in national competitiveness. My name is Jude Blanchette, and I'm from the Center for Strategic and International Studies.

**HASS:** And I'm Ryan Hass from the Brookings Institution. Our guest today is Remco Zwetsloot, a fellow at CSIS and a long-time expert on the intersection of talent, technology and national competitiveness.

**BLANCHETTE:** In today's discussion we'll reflect on the big takeaways from our year-long *Vying for Talent* project and hear Remco's insights on how the United States can maximize its advantages in the important arena of international competition. And with that, let's begin the conversation.

Remco, thank you for joining us. And just for listeners, it's fitting that we're having Remco as our final guest on this round of the podcast. Folks may not know that the project in many ways originated with some of the thought leadership that Remco was putting out, and when Ryan and I were conceptualizing the project, that began with a meeting with Remco at CSIS a couple of years ago. So, we thought it appropriate that we end with you and try to tie this all together and take a big picture of some of the lessons learned from the discussions we've had. But where you see this and what you think the future holds for this critical discussion of national competitiveness and human capital. But perhaps we can start with a personal question, which is we'd love to know a bit about your own background. Where are you from? How did you get to D.C.? And how did you get to focus on this issue?

**ZWETSLOOT:** Yeah, it's wonderful to be here and thank you both for doing this project. It's been great to see all the speakers and events and the attention you're shining on this important issue. I have a background that's actually somewhat relevant to these. I am not American originally. I grew up in the Netherlands and as of last year am an American citizen. So, went through some of the same journeys as the people that I study when it comes to STEM immigration.

I grew up in Amsterdam. My family's from there. Originally moved to the United States after high school for a gap year to go to community college in Washington State, and had an amazing time there. I was not the happiest kid in high school and was a very happy kid in the U.S. initially. I originally was going to go for nine months just to spend a year. Within three months, decided the U.S. was the land of opportunity and greatness and I was going to stay and at least get my associates'. Ended up doing that and getting involved in all kinds of student life things, including the college newspaper, cross-country team, things you don't really have in the Netherlands at university for the most part.

And unfortunately did also learn that higher education in the U.S. is very expensive, especially as an international student. And so after two years, I wasn't able to stay even though I wanted to, and moved back to the Netherlands and sort of skipping a couple of steps in the story there, finished undergrad, stayed there for a while. Had the great fortune to do graduate school at Oxford, where I met my now wife, who is American, and also learned that I really love research, international relations, international security, and so wanted to do a Ph.D. in the United States and political science. The top universities for that field, among many other fields, are based here.

So, again, got very lucky, ended up going to Yale for the Ph.D. And this was around the time that things in AI were starting to pick up. So, my background was much more traditional security issues. I spent a couple of summers in Bosnia studying the language, planning to do fieldwork in villages on post-conflict reconciliation, et cetera. But the deep learning revolution in machine learning had started. DeepMind had an algorithm, AlphaGo, that beat the world champion in Go. And things were really starting to pick up. And that was starting to look more and more interesting. And I was very fortunate at Yale to have a mentor and a professor who was interested in these issues.

And so, as I was figuring out what I wanted to do with my career, souring a little bit on academia as a line of work, but also just getting more and more interested in these AI issues, decided I wanted to potentially pivot to that. So, I took a leave of absence from the Ph.D. and ended up working at OpenAI for a little bit of now ChatGPT fame. Back in that time, this was 2018. The policy team was like two people and was all still very nascent. It's sort of weird to think how different of a world AI policy was five years ago compared to today. But that's when I was transitioning in.

I learned a lot there, but ultimately was more interested in public service and government policy and so had wanted to come to D.C. from the beginning. And again, I think my life is just sort of a succession of lucky strokes. One of the people I had met when I was transitioning into the field was Jason Matheny, who was at that time director of AIRPA and had been a thought leader on AI for a while, among many other issues, and he ended up roping me into the team and the grant proposal that ended up being the foundation for the Center for Security and Emerging Technology, or CSET. And so, that was the dream organization and the dream job that I couldn't have created myself, fell into my lap. And that is ultimately when my line of effort on these things started looking at the AI talent landscape and beyond.

**HASS:** Remco, one of the many contributions you've made in your thought leadership is the argument that talent competition is critical to technology development. Can you help unpack what that means and how you came to that conclusion?

**ZWETSLOOT:** Yeah, for sure. This is actually a great jumping off point to just continue the story a little bit. When we started CSET, one of the things we did early on was to just ask around to a bunch of stakeholders, folks in government, outside of government, of what the most important issues related to AI were that weren't getting enough attention. Folks in Congress, the White House—at the time, it was the Trump administration—industry, Department of Defense, et cetera, and talent kept coming up as an issue that is, on the one hand, very critical to AI, and on the other hand, there weren't really great studies out there. There wasn't a lot of great data out there on how to strengthen the U.S. AI workforce. And so, that ended up being my primary project, my first project.

Like I said, I came into this from an AI angle. I didn't have much of a workforce or talent background except for my own personal immigration journey, perhaps. And that was a recurring theme. And then when I started studying the issue, one of the things that jumped out immediately is just how international the U.S. AI workforce is. And this is true, I think, across many other STEM fields as well. But just to put some examples out there on AI—one of the statistics that jumped out was more than half of the people who are working in the U.S., in all of the country, who have computer science graduate degrees. more than half of those were born abroad. So, that's of the entire U.S. workforce with advanced CS degrees.

And then when you look at the future workforce, the people who are now at university in masters and Ph.D. programs, it was around two thirds were international students. And when you look at the companies that are starting unicorns, companies with \$1 billion or higher valuations, more than half of those companies had international founders. And today, if you look at Google and Microsoft, some of the companies that are leading the AI push right now in the United States, they have CEOs who came to the U.S. as international students who were born abroad. So, that just jumped out immediately when you look at the AI landscape in the AI talent landscape as a huge issue. And then over time brought in to looking at semiconductors and other areas and you see a lot of the same patterns there, too.

**BLANCHETTE:** Thinking now across the landscape of the U.S. talent ecosystem and actually maybe just building on some statistics you just cited. On the one hand, the fact that we have such a high proportion of foreign-born talent in our workforces is obviously something to celebrate and integral to our DNA. On the other hand, I think some folks look at that and think about really that's a manifestation of deep shortcomings in our ability to cultivate native born U.S. citizens from going in to computer science. So, I wanted to ask at a very high elevation, how do you think about what the United States is doing well in terms of cultivating, developing human capital, both facilitating but also developing its own talent pool from native born Americans? And then where do you think our biggest shortcomings are?

**ZWETSLOOT:** It's a great question and actually something that was so important that we hired a whole other person to work on it. So, when I specialized in this international side, we realized there's also this huge domestic workforce component that was important. And so, a colleague at CSET, Diana Gehlhaus, ended up spending up a whole research agenda on that. And she's done some amazing work, which if listeners are interested in I workforce, I highly recommend.

I think that there is great complementarity. Often there's a framing of there's only so many jobs out there, it's zero sum between international and domestic. I actually think there's great complementarity between those two populations, those two groups. You see this looking at those startups I mentioned, the unicorns. There's estimates out there that for every international entrepreneur that starts a company, on average, there's around a thousand jobs created, many of which go to American citizens. There's studies that look at when international enrollments increase in U.S. departments—so, when you look at student slots—those tuition dollars actually ended up funding program expansion. So, you don't see international students coming in and decreasing domestic enrollments. But because the programs are growing, you actually increase domestic enrollment side by side. And those are, I think, just a couple of the ways that they reinforce each other.

I think there's around \$400 million a year in spending that is on domestic STEM education programs funded entirely by visa fees that international students and international workers pay to the U.S. government. And so, I think you see just a lot of complementarity there.

And ultimately, we have to build both at the same time. And I think depending on the sector and depending on the issue, you're going to want to either focus a lot on those long term investments. And sometimes you want to be a little more focused on the immediate needs today. So, for building the foundational ecosystem, we need to compete in AI over the long term. You want to be investing a lot in that education piece.

For addressing acute chip shortages and building semiconductor manufacturing plants, a lot of the skills you need to do that are currently in South Korea and Taiwan, where they already have successful fabs. And you want to be recruiting engineers with ten plus years

of experience to start those up. And that's more of an acute immigration issue. And so, I think both of these really matter. You want to be working on both at the same time and depending on the issue, you probably prioritize one or the other. But we need to do both is the key answer.

**BLANCHETTE:** Can I ask just a very quick follow up? Which is on thinking about that domestic workforce component, a lot of the focus seems to be, at least in the policy discussion that I follow, of thinking about higher education and up. And I'm curious, how do you think about or how does some of the research bear out about from a competitive standpoint, when is the right entry age for when we should think about human capital development? I mean, are we thinking about this in pre-K nutrition and what the effects that has on cognitive development? Are we thinking about spreading opportunities so we don't see a coastal-rural divide in terms of where opportunities are for internships, or other pre-higher education opportunities to develop the workforce?

**ZWETSLOOT:** Yeah, I think it's all of the above, which is part of what makes this such an interesting area to study. I've been at it for five years now and there's new things every day that come up. And it is incredibly diffuse. It's an ecosystem. I think one of the interesting challenges for the U.S. is on the one hand, the fact that it's so decentralized is actually a strength, right? And I think bringing the comparative angle with China back in, there's something about resilience and robustness that's strong about the U.S., where even if we don't always know at the top what the technologies of tomorrow are going to be, the fact that the system is so decentralized means that somewhere someone is going to be working on those, and that's actually a real strength. Whereas in China, I think there's much more of that top down dictates which when you get it right, can be really good. When you get it wrong can be disastrous. And so, I think, yes, it is all of the above. That's part of what makes it interesting and challenging. But also the U.S., I think, has great strength in that sort of resilient, decentralized system.

**HASS:** If we can zoom out for a second and just thinking macro at the United States, what do you identify as our principal strengths and shortcomings in attracting and cultivating talent? I know that you've talked about decentralization is one of the advantages that we have, but how would you go further?

**ZWETSLOOT:** I think one of the ways that I have seen—and I think it helps actually to put it in a comparative perspective with China on this question as well—one of the analogies that has helped me wrap my mind around this is if you imagine yourself walking down the street and deciding, like, if it's during the day, you can imagine yourself going into a coffee shop. If it's at night, you can imagine yourself looking for a bar. You're walking around, you're looking, well, where am I going to go? And there are some places that are, you know, the door is open, but they look maybe a little questionable. And so you're kind of like, Well, do I risk that? And there's other places that are very attractive and appeal to you, but it's unclear whether you're going to get in and you have to stand in line outside, et cetera. China is the place with a door that's open but questionable attractiveness. The United States is a place that a lot of people want to go to. And I think that's the fundamental strength.

And then the fundamental problem that a lot of people face is that it's unclear whether the door is actually open to them. And I think that problem's been worsening over time. When you look at, for example, surveys that ask people where they want to go, international scientists, people that are at the top of a lot of folks' recruitment lists, the vast majority say they want to go to the United States and very few say they want to go to China. When you actually ask them, like, where's good work being done in science and technology, China often scores better than the U.S. But on some of the foundational things like quality of life,

language barriers, politics, feeling secure, I think the COVID lockdowns in China didn't help with this, China just feels like a much more uncertain and unattractive bet. Whereas I think the U.S. scores high on those factors. That's certainly been the case for me personally in my life.

But when you look at the immigration system in the United States, it's very difficult for a lot of folks to navigate. There are huge backlogs, especially for people wanting to transition from temporary visas to permanent residency, which involves getting, as it's colloquially known, a green card. If you are, for example, an Indian master's student in a STEM field at a U.S. university today, and you have a company that wants to hire you—so, you've already proven yourself attractive in the labor market—if that company would sponsor you for a green card today, the theoretical projected wait time, given what the backlogs look like, is 80 to 90 years. So, there's actually estimates that researchers have done of how many people would die before they get a green card if they were sponsored, if the system continues as it is today. And so, for those people, the decision to come and stay in the U.S. is just mostly impacted by that immigration piece and less by the, like, do I want to stay here? You know, many more want to stay here than can.

**BLANCHETTE:** Can I ask to continue hearing some of your thoughts on China's position here? I know you primarily are focused on the United States, but you've mentioned earlier one of China's challenges is the centralization of its approach, which seems to have the advantage of sort of aggregating and channeling capital towards preferred technologies. I'd love to hear what else you think are strengths or shortcomings in China's approach to this. They certainly have scale of population, which is what we're trying to compensate for to some extent with our immigration policy. But how else would you assess the sort of balance sheet of China's approach to human capital?

**ZWETSLOOT:** Yeah, I think that population piece is huge. When you look at the Cold War, the Soviet Union and the U.S. had roughly the same population, and during the Cold War, the U.S.'s workforce strategy was therefore primarily domestic facing and you could actually just compete on domestic talent. And it wasn't until the '80s that you started seeing a greater inflow of international talent into the United States. I think that's the fundamental backdrop to a lot of this discussion.

When you look at the output of Chinese scientists of universities, just to take one example, Chinese STEM Ph.D. graduation rates have increased from the year 2000—there were about 10,000 STEM Ph.Ds. per year in China. We've done a study projecting forward to about 2025 based on enrollment rates in the past few years how many people do we think are going to be graduating by then? It's close to 80,000. In 2000, the US had 20,000, so it was double China. In 2025, the U.S. is going to have a little under 40,000. So, now China's doubling the U.S. instead of the U.S. doubling China.

So, when you look at those trends, I think just on domestic output, that's where a lot of China's great strengths are. And at the same time, universities have been rising through the quality ranks for China, whereas for the U.S. universities have been dropping out of the top rankings. So, I think that is definitely one huge advantage.

I think the other advantage is one of scale of money, just investment and the government prioritizing science and technology as the key to Chinese independence, national security,. Being able to throw a lot of those resources doesn't fix all problems. And I think talent is one where throwing money at the problem does some things. China has been somewhat successful at attracting international talent, but I think a lot of the problems are more foundational. And so, I think the advantage population, resources, disadvantage some of those fundamental societal issues.

**HASS:** I want to ask you an impossible question. You started out talking about artificial intelligence and your role with open AI and ChatGPT. And today in the headlines, generative AI is the buzz. But if you look out 5 to 10 years from now, what does your crystal ball tell you about which industries or sectors will be most heavily impacted by an additional marginal unit of talent? In other words, where do you think that the talent competition is fiercest and where will it have the greatest impact on the industries of the future?

**ZWETSLOOT:** Yeah, it is an impossible question, but I can speculate. I think AI, in fact, especially on a scale of 5 to 10 years, I think is going to diffuse across the economy such that an additional unit of AI talent is going to have impact in cybersecurity, in biotechnology, in aerospace, kind of name your industry. We're already seeing a lot of AI being applied to innovation in all of those industries. Last year, a somewhat scary model was published where AI that was being used for drug discovery, there were a couple of parameters that a model with peaceful commercial purposes, a couple of parameters were inverted, and instead of creating medicines, it created toxins. And this AI model invented approximately 40,000 new toxins that could be used in chemical weapons.

And so, I think you're going to see a lot more of that, like, AI being applied to innovation across a bunch of sectors, which is going to have, one a lot of security implications, but, two, also a lot of commercial implications. And so, I think additional units of AI talent, especially AI talent that doesn't just have machine learning expertise, but also has expertise in the sectors where AI is being applied, that is going to continue to be critical.

I think on the other technologies, I would call out semiconductors, which I've done a bit of work on, and we're seeing huge investments in increasing cutting edge manufacturing capacity in the United States now. I think that's a multi-year bet. There have been estimates looking at for the CHIPS Act subsidies that Congress passed last year, how many new fabs are going to be created with those, and then how many workers are those fabs going to need. That's about 30,000 workers in the short run is the estimate. And that was already a tight labor market. And I think those industries are going to hopefully continue growing, at least that's the goal. I would say anything computing related in general, I think that's just becoming such an integral part to society. So, I would add quantum probably to that list.

But technology, like we were talking about before, it's so unpredictable. The system is very decentralized, it's hard to tell the future. And so, I think the best thing for governments to do is often to lay kind of a broad foundation and then to let industry, let academia explore. And so it's really across all sectors that this stuff matters. Xi Jinping said talent is, quote unquote, the first resource in China's quest for independent innovation. And I think that's the kind of priority level that should be given it here as well.

**BLANCHETTE:** So, I don't want to put you in a position of making a partisan comment. But looking at the past few years, we've seen the Biden administration put a pretty focused emphasis on this issue of talent. We've seen as a downstream effect of the CHIPS Act, we've seen the Commerce secretary talk a lot about innovation ecosystems and what's needed. You're seeing more and more companies, especially in the semiconductor space, who are thinking about building out our own industry here, talk about these talent ecosystems. What would be your grade for how well we're doing now to address an issue that we've maybe been overlooking for too long? What does the Biden administration, or I should say, maybe what has the U.S. government as a whole gotten right? And what do you think are the areas we've either missed the ball or haven't necessarily emphasized sufficiently?

**ZWETSLOOT:** Yeah, I think it's a complicated set of questions. Some of this is in the hands of the executive branch. Some of it, I think a lot of it is actually in the hands of Congress. And there is bipartisan support for some of these issues. And some of the ways that this has gone wrong is more procedural almost than disagreement on the merits. So, one of the things that we've been seeing in terms of the attention that's been paid to these issues, Jake Sullivan called out this talent advantage that the U.S. has over China in terms of being attractive to international talents. In a speech he gave, Secretary Blinken when outlining in his big China speech what some of the U.S. advantages are relative to China talked about the ability of the U.S. to retain Chinese students who come here for Ph.Ds. and education. The House Armed Services Committee had a Future of Defense Task Force. It was a bipartisan committee of members that looked at what's going to impact defense over the next 10 to 30 years. And here we're going to get into some of these procedural and jurisdictional questions.

Somewhat surprisingly, they really called out STEM immigration as an issue that threatens the U.S.'s national defense, saying that we're losing talent that wants to stay, including to competitor countries, and we have to make more visas available if we want our defense industrial base to be robust over the course of 10 to 30 years. That task force was co-chaired by Jim Banks, who's in Republican House leadership.

And we saw also last year a letter by around 50 national security leaders, including Trump's deputy secretary of defense, Bush's secretary of homeland security, and a lot of other career defense and intelligence senior officials saying this talent competition is critical to technology leadership and to U.S. national security. So, I think a lot of progress has been made in terms of making this a recognized priority from a bipartisan perspective.

I think where some of this is difficult is that immigration is obviously a very political issue in the United States, and it's hard to disentangle some of these more consensus STEM national security questions from these broader immigration debates. And so, you often see national security leaders call for targeted reforms in the space that was called for in the letter. It almost happened during the CHIPS and Science Act. There was an amendment to the House version of that act that would have created a lot more green cards for foreign STEM talent in the United States. It ultimately didn't make it to the final version, in part because the Judiciary Committee, which traditionally owns immigration, said we don't want to set a precedent of national security and technology bills taking this issue and being able to do things on immigration.

So, Chuck Grassley in the Senate was one of the people who were opposed to it. And he actually told journalists, look, I agree with this measure. I think it's good. I used to not think that we should have more green cards for foreigners in general, but I've changed my mind. These STEM issues, technology, competition with China is super important, but I don't want to set a precedent of national security bills being able to do immigration because that's Judiciary Committee turf.

And so, I think that political piece where unless you're able to decouple some of these consensus issues from the broader immigration debates, it's hard to see Congress making progress on it. And so I think that's where we're stuck, because a lot of this sort of green card caps, which were set in the '90s, have not been updated in decades. The numbers are way too small for today's economy and for the workforce needs the U.S. has been competing with China, but it's going to take an act of Congress to change those caps, and that's the challenge.



**BLANCHETTE:** Just an a editorial, personal comment here. But what I find so frustrating about that is on the one hand, you see a growing consensus that is framing China as the most significant challenge the United States is facing. One we've got to move all of government effort, we've got to move heaven and earth to be able to compete with China. And then you find that consensus actions like increasing the cap on green cards, which is such a forehead smacker obvious measure, gets caught up in domestic politics. And I'm not sure if we recognize the signal we're sending to third countries is we don't really think it's such a pressing challenge or we're just not willing to expend any political capital to meet what we're framing on our own terms as our most significant long term challenge. It's just so frustrating and self-defeating, I think.

**ZWETSLOOT:** Yeah, I mean, you mentioned third countries there. I think that hasn't really come up in this conversation, but is a big piece here, which is you look at the United States bar, it looks like a great party, but you don't know you're going to get in. You look at the China bar, looks really open, but I don't know if you go in there, is someone going to steal your beer, like—

**BLANCHETTE:** —but Australia looks fun—

**ZWETSLOOT:** —Yeah, but Australia and Canada —

**BLANCHETTE:** —Canada looks fun.

**ZWETSLOOT:** Exactly. Those have active parties and the door's wide open. So, I think that is the thing that looms in the background here where actually I think when you look at who the United States is competing with for international talent, often it is the countries like Canada, Australia, the UK.

We did a study at CSET with my colleague Zach Arnold, led this looking at Canadian immigration data and between 2017 and 2019, more than 20,000 temporary residents in the U.S. So, people who are here, largely Indians on H-1B visas or other visas, moved to Canada during that period because presumably they didn't really see a prospect for staying in the U.S. long term, whereas Canada said, you can apply, our system is very transparent. You will get permanent residency if you hit these in these criteria and it's a very attractive job market, very attractive quality of life. And so, I think that's a lot of the competitive dynamic you see now.

**HASS:** Well, I grew up in Bellingham, Washington, which is just across the border from Vancouver, British Columbia. And I can attest to the fact that Vancouver is a wonderful place to live. And I don't begrudge any innovator who chooses to live there. There is an argument that's been made, Remco, that it's okay for the United States if a talented individual decides to go to Canada or Australia, the United Kingdom, they're our friends, We can innovate, we can friend shore, we can collaborate. We have companies who have branches in these places. So, as long as they're not in China, we still gain the advantage. How do you think about that?

**ZWETSLOOT:** I would say there's certainly something there. And I think also when talking about how does the United States in general do technology alliances, cooperating on the talent front with some of these allies and partners is really important. And you don't only want to see this as a zero sum dynamic where you're competing for folks. And so, I think there's definitely some truth there.

At the same time, especially also from a job creation in the U.S. perspective, what you want is for talent to be available here where companies, when they're deciding do I start

my startup in the U.S., do I launch another office in Silicon Valley or Toronto, you want the U.S. ultimately to look attractive there. Instead, we've been seeing in the last few years is when Microsoft is deciding where to set up an office often Toronto looks attractive because they have that immigration security.

And that's one of the effects that, you know, economists have found when they look at the effect of immigration restrictions. It's not just on where people decide to locate, but it's where companies decide to locate their offices. And so, I think that's an important dynamic from a long term competitiveness perspective. It's on the one hand, you want to collaborate with allies on these things, but on the other hand, you also do want to continue to have that talent base and that industry base here. So, tough tension to navigate.

**BLANCHETTE:** In a way, it just reminds me our last conversation was with the governor of Indiana, and there's something of a similar dynamic of having aggregations of human capital outside of the state redounds to Indiana in certain ways. But you're also trying to compete to make sure in your own state you've got jobs and tax base. So, it seems like in this whole idea of an allied innovation ecosystem, we have some of the similar dimensions that are positive sum, but also some narrow concerns where it's necessarily zero or close to zero sum.

**HASS:** Remco, given the constraints that you've shared with us, what should our listeners be looking for in terms of guidepost or signpost that progress is being made in making the United States a more attractive place for global talent to come?

**ZWETSLOOT:** Yeah. I think the big piece is that how are we going to square the circle with Congress and green cards and whether it's possible to do targeted STEM reforms that don't get caught up in the broader immigration politics. So, I think that's just the biggest piece to look out for. And I would think if, for example, the new China Select Committee in the House makes this a priority, it's going to be interesting to see what direction they go into on that issue. Is it similar to the House Future of Defense Task Force? Are they sort of going to lean into that as they're trying to competition issue? And if so, maybe there's momentum there and we actually can get some meaningful progress.

There's a way to make that very targeted. You can do green cards for STEM folks broadly. You can also say what are the most critical industries for us right now? For example, semiconductors. Gets back to some of these questions of what do we want to prioritize. Do you just want to go really broad and feed the whole ecosystem or do you want to say, okay, we have critical shortages for the next three years? But depending on where they come down there, you could even make it semiconductor specific, You could make it computing specific. You can put in biotech there if you want different ways to draw those lines. But I think that's just the key piece I would look for.

There are smaller things the administration can do just on executive authority. One of them is looking at where shortages exist in the U.S. economy. The Department of Labor has the authority to declare certain occupations as being in shortage, which means that you can then skip certain parts of the green card process that often lead to a lot of backlogs. So, they could say we need more AI scientists or we need more semiconductor technicians, whatever the economists who study that would point to. And that would do some good. But ultimately, if it doesn't increase the number of people who can come in, that's not the major change we need. And so, I think, yeah, looking at Congress, seeing if there's room for progress there are, ways to build coalitions around this, I think that's the big piece.

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**HASS:** Well, you've defined the yardstick very clearly for us. We know what to be looking out for. We really thank you for the thought leadership and guidance that you've given on this issue and look forward to continuing to follow your research going forward.

**ZWETSLOOT:** Thanks. Great to be with you.

**BLANCHETTE:** Ryan, I think somewhat predictably that was a great conversation and we knew it was going to be because we've had this conversation with Remco before. But still a lot I learned in this and a few points stuck out to me. The one that I think was helpful and clarifying was his metaphor of if you're a foreign talent and you're looking at your options set, it's almost like you're walking down a city street and you're looking to your left and your right, and there's China, which the door is open, but you peer in and it feels like the path to success is a bit uncertain. Increasingly so as we see political crackdowns, volatility, tech crackdowns, China's increasing isolation. You look to the right, you see the United States—doors are cracked just a bit, but you can look inside, you can hear the music thumping, it looks like a great party, but you're unsure if you can get in.

I think that's how you and I've been thinking about this for much of the project. But what Remco also added is there's other locations where the doors are open and there's a party inside, and that's Canada, which has a very vibrant tech innovation ecosystem. There's the UK, there's Australia. So, this is, I think, important for us to continue to remember that folks have options now.

**HASS:** I think that the differentiation of this moment from previous moments is an important one because Remco also talked about the comparison to the Soviet Union, competition during the Cold War, and the fact that we had roughly comparable population sizes with the Soviet Union during that period. And the real contest was to see which society could produce more productive workforces. That's not an apples-to-apples comparison that we enjoy with China today, both because to your point, there are other options for talent around the world beyond just the United States and China, but also because China has four times the population of the United States. And even if in the aggregate their per capita productivity is below ours, they do have the benefit of numbers to offset some of those disadvantages.

**BLANCHETTE:** Yeah, and a final point that Remco brought up—and I think in an offline conversation you and I have had with a few technology companies, making the important point that when we think about what is often positioned as a tradeoff or a one or the other of either its investment in your domestic workforce or you fill those gaps with expanded green cards or facilitation of high skilled immigration—Remco made the point, as we've heard tech companies say, which is it's really not an either or. It has to be a both strategy. And if I remember correctly, something that we had heard from a company is saying, Look, we'd like to hire and we need to hire domestic labor for a plant that we're looking to build. But there's this very critical node of talent that is essential to basically starting the machines up that we just don't have here in the workforce pool that exists in that specific area. So, if we're not able to bring in that foreign talent, we're not hiring anybody. I'm not sure that's fully sunk in here that we need to start thinking these as not just complementary but essential dual components of our sort of domestic HR plan.

**HASS:** Yeah. It's so right. And Jude, brother, we've had an amazing journey. Eight podcast, four public events, various writing projects, private convenience with members of the executive and legislative branch. We've learned a great deal. One of the themes that I feel like comes through in all of those interactions we've had, as I reflect back, is a sense of optimism about the United States. Yes, we have challenges, but we also still maintain the capacity to attract global talent, to embed them in interdisciplinary institutions in an

environment of free intellectual inquiry, where there is a predictable legal system. That's a unique framework to the United States that gives us a real asymmetric advantage in our competition with, frankly, the rest of the world. And there's obviously more that needs to be done. But we also should have a certain degree of confidence about where we sit and the inherent strengths that our system provides.

**BLANCHETTE:** And I think following on that, though, I think of the United States as the early '90's Chicago Bulls, where we've got Michael Jordan, Scottie Pippen. We've got these extraordinary strengths and advantages. But we're looking just to our left and our right and behind us. And we see the Detroit Pistons, we see Isiah Thomas, we see Dennis Rodman and they're scrappy and they throw elbows. And I think that speaks to another point we've heard here, which is we've got to understand that even though we have these advantages, we're an extraordinarily competitive environment.

And this is not one where those inherent strengths that we have are sufficient. It really requires consistent investment, including making some of these political choices, which it seems were unwilling to make here. And Remco hit a very important one at the end by saying we just have to be expanding the cap on green cards. This is not something we can delay. So, I think there's just that dual sense of both inherent strengths and advantages, but also I think a really critical need that the United States roll up its sleeve and start addressing some of these shortcomings.

[music]

In the discussion last time with Governor Holcomb, from the state perspective, it's the same, too. It's a ruthlessly competitive environment where companies can go to other states, companies can go to other countries. And so we've really got to be focused.

**HASS:** Well, any time that we're compared to the early '90's Chicago Bulls feels like a good day to me.

But finally, I want to thank our listeners for joining us for this discussion. Our final episode for now of this podcast series. *Vying for Talent* has been a co-production of the Brookings Institution and the Center for Strategic and International Studies. We thank Chubb Insurance for their financial support and their respect for our research independence. To learn more about this podcast and to view all past episodes, visit Brookings dot edu slash Vying for Talent.

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