Transcript for "Kelsey Doerksen, Space Systems Engineer and Satellite Operator at Planet in San Francisco, California"

Clear Skies Ahead: Conversations about Careers in Meteorology and Beyond

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Kelly Savoie:

Welcome to the American Meteorological Society's podcast series, Clear Skies Ahead: Conversations about Careers in Meteorology and Beyond. I'm Kelly Savoie and I'm here with Rex Herbst-Horner, and we'll be your hosts. We're excited to give you the opportunity to step into the shoes of an expert working in weather, water, and climate sciences.

Rex Herbst-Horner:

We're happy to introduce today's guest, Kelsey Doerksen, a Space Systems Engineer and Satellite Operator at Planet in San Francisco, California. Welcome, Kelsey. Thanks very much for joining us. We're happy to have you here today.

Kelsey Doerksen:

Yeah. Thank you so much for inviting me. I'm happy to be here.

Kelly:

Kelsey, could you tell us a little bit about your educational background and what sparked your interest in science?

Kelsey:

Absolutely. In terms of what sparked my interest in science, I grew up wanting to be an astronaut, I thought being an astronaut would be the coolest job in the world, and I'm still actively working towards achieving that goal hopefully sometime in the future. My educational background [is that] I have a bachelor's degree in aerospace engineering space systems design, and I also have a master's in electrical and computer engineering, focusing on machine learning, and in particular, I did my research focusing on machine learning applications for space weather research. And this fall I'm starting at the University of Oxford's Autonomous Intelligent Machines and Systems Ph.D. program.

Kelly:

Nice. So astronaut. Did you ever get to do any of the simulations?

Kelsey:

I haven't, no. I definitely have on my list getting my private pilot's license and doing things like a zero G flight, and those are things definitely I want to achieve at some point, but I haven't done any simulations to date yet.

Rex:

So at what age did the astronaut bug strike you?

Kelsey:

I would say probably when I was around 10 or 11, I always thought, again, space was one of the coolest things ever, and I wanted to go to the moon or to go to Mars. And when I was in high school around grade 11 or 12, so when I was probably 16 or 17, I really started to think about how I could make that dream a reality and what that would mean to what courses I should take in high school and what programs I should apply to when going to university, and so that's kind of when my journey really began to this career trajectory.

Rex:

And from age 10, you said, or so, to now, has the definition of what an astronaut is changed for you at all?

Kelsey:

A little bit. I think I used to be so focused on astronaut being the absolute only career path for me, or the only way that I'll be "successful in my career," but that's definitely not true, and especially not in the space industry, it takes engineers, scientists, business people, policy, lawmakers, a whole variety in order to make space missions happen, and so I'm just happy to kind of be along for the ride and to have a career in space being only 26.

Rex:

And so when I think of an astronaut I think of someone leashed to a craft floating out in space, maybe repairing a satellite, or kind of just out there I see someone flicking a switch, which is igniting the rocket, and then they get sent up, these are the kinds of things you see in movies. What are some more unexpected parts of the job or ways that are more unique to you about what it would mean to be an astronaut versus those kind of more cultural touchstone images that we get from a lot of popular movies and kind of base assumptions of what the job is like?

Kelsey:

I think I had a unique experience in my master's in that the program I was a part of had a really strong geology department, and in particular, a planetary science and geology department. And so I learned a lot about what it means for space missions and how much astronauts really need to know about geology and that sort of background in order to be effective scientists on the ground when they're reaching new planets like Mars, or going to the moon. And actually one of my professors, he trains the Canadian astronauts in the high Arctic, and does analog missions with them to train them about the basics of geology, which I think is super interesting because I've always been interested in geology, and I didn't realize how much knowledge you really need to know as an astronaut in order to be able to make these decisions when you're deciding which rock to pick up on Mars, or what sample is important and relevant.

Rex:

Right. So you're not just in the middle of space, you're interacting with a lot of earthly science in a way that translates into what rock to pick up. So you've told us a bit about what schools you've gone to, are there any other extracurricular opportunities or things you did outside of the normal curriculum classwork that you found to be beneficial to getting to where you are now in your space systems profession?

Kelsey:

Yeah, absolutely. I think, for me, extracurriculars was a massive part of being able to get the job that I am in currently now because I didn't do any sort of internships, which is sort of the norm when you're doing an engineering degree, a part of your undergrad, I didn't do any sort of technical internships. So I got a lot of my technical expertise out of the extracurriculars I did.

Kelsey:

Friends of mine and myself, we founded the Carleton Planetary Robotics Team. So this is a team of engineering students and science students that build a Mars Rover every year, and we compete at the University Rover Challenge, which is hosted at the Mars Desert Research Station in Utah. And so that was an amazing experience because you get to really start from nothing, just a design that you want to make, to building it, to operating the rover, to competing with other students, and learning from other students. And that gave me a lot of experience in this rover technology in general. And I think that really helped me in order to get my internship at the NASA Jet Propulsion Lab in which I was actually working on Mars rover technology.

Kelsey:

So really, it started as a student group and kind of an idea, and it ended up being the reason why I think I was able to spend that time at the NASA Jet Propulsion Lab. And I've also done quite a bit of volunteering in my university. I'm a part of the Mechanical and Aerospace Society at Carleton University, also a part of the Graduate Planetary Science Society during my masters as well, and I was also involved with this Space Generation Advisory Council. This is the world's largest network of students and young professionals that are interested in space, and we do events every single year. Our flagship event is called the Space Generation Congress, and we have applications open for delegates between June 1st and 30th, 2021 so if folks are listening and it's within that time range, please do apply. And I think being able to build my network and learn from other students has really opened doors and opportunities for me that I otherwise wouldn't have because I learned a lot from the people I've worked with.

Rex:

So a couple of follow-up questions. That's great that you found all these opportunities outside of the internship path. It was more of, "If I can't find an internship or I don't want to, I'll make one instead." So I love this rover contest. Sort of a very high-tech box car derby. How do you test one team's rovers against another team's? What are the standards? If one short circuits, if one can't cross a boulder, or has trouble navigating a certain type of terrain? What is that final get together when everyone's rovers are in the same place? What do you guys talk about or do there?

Kelsey:

Yeah, absolutely. So there's a bunch of different sort of tasks and different competitions as part of the overall University Rover Challenge series. So for example, terrain traversal, so having your rover drive across a different course of rocks, and boulders, and different types of sands, so whether it's compacted, or more loose, and that your wheel might be able to get stuck or something like that is one of the competitions or challenges we had.

Kelsey:

We also had a science task where we were tasked with having our rover drive out into a field, and this was all remotely operated so we had to use the actual cameras on the rover to navigate. We weren't able to see where our rover was going. And then we had to collect a rock sample or drill in the sand and collect that sample, and then do any sort of onboard science analysis with the instruments we had on board the rovers, like soil moisture detection, or pH level for example.

Kelsey:

We also had an autonomous traversal task where essentially you're clicking go or start on your rover and it has to navigate through a path without any sort of input from the operators. So there's a variety of different tasks that we had a part of the challenge, and it changes a little bit every single year, and that's where you can compare between teams who gets the most points based on who performs the best, whether that be the fastest, or gets the greatest science objectives done, or is able to traverse autonomously the farthest, things like that.

Kelly:

Well, not only does that sound super fun, but it gave you so much great experience. So I'm assuming that all those extracurricular activities helped you get your first job in the field. And what was that first job, and how did you end up where you are now?

Kelsey:

Absolutely. So I guess my first technical job I would say was my internship at the Paris Observatory. So although it's not necessarily a full-time job, post-grad, this was my first real technical work experience. And how I got this position was I actually did a short course at the Paris Observatory. So this is Paris, France. I know there's Paris in the United States as well. I did a short course there, it's a one-week summer school on natural space risks so it was focusing on space debris, near earth objects, as well as space weather. And I had no previous experience in any of these sort of areas of space, but I was interested in it, and I did the one-week summer course. And after the course was finished, I just emailed the two lead teachers of the program and said, "Hey, can I come back next summer for an internship, I really enjoyed my time?" And they ended up agreeing, and that's kind of how I've started my first job really in the technical field.

Kelsey:

And that internship really changed, I think, the course of my career, it was a huge turning point for me because it introduced me to space weather, which I had previously no experience with. I was able to travel abroad, which I had never previously had an experience with, especially as a student, those things are quite challenging due to financials. And that internship shaped what my master's thesis ended up

being, which was focusing machine learning on space weather and specifically coronal mass ejection detection.

Kelsey:

And then from that sort of machine learning experience, I got my internship at the NASA Jet Propulsion Lab which was again using machine learning for rover technology. And then from that internship, because I had developed the programming skills and the data analytics skills, I was able to get my job now as a full-time space systems engineer at Planet. And so I really think that observatory internship was kind of the first snowball that really cascaded my career to what it is now.

Kelly:

So how did you find out about the workshop in the first place, was it listed at school, or from an advisor?

Kelsey:

So I had what I guess I'd call a mentor or someone that I really looked up to at Carleton University. He was a few years older than me, so he's an upper year student, and he actually had sent me a link to this summer program. It was the first time it had ever run as well so he didn't know anything about it, but he knew that I was really passionate about space sciences and that I wanted to be an astronaut. And so he had sent it to me and said, "Kelsey, this sounds like something you might be interested in. I don't know much about it, but I think you should apply."

Kelsey:

And so I really relied on him a lot for guidance, and just career advice, and education advice because I looked up to him and I thought that he was on the trajectory to success and I would strongly encourage any students or young professionals listening to also kind of reach out to upper year students or upper year management to kind of seek out that mentorship because that was definitely one of the reasons why I've been able to be successful in my career was through mentorship and listening to those older than me about what to do or ideas of what to do.

Kelly:

Yeah. We hear that a lot. Mentoring is key.

Kelsey:

Absolutely.

Rex:

Does the science culture in France feel different than the American science establishment in any way that you could elucidate us on?

Kelsey:

Yeah, I think... I mean, living in Europe and working in Europe is very, very different from North America. I think a lot of it just comes down to the work life balance culture. I think in North America we're very much live-to-work oriented, or tend to be, whereas Europe is more work-to-live, and they enjoy spending time outside of work. And that really translated into my relationships with my supervisors at the observatory as well. We're still very good friends and colleagues, and we still continue to research.

We're working on papers together on space weather and space debris research. And so I would think those are two very stark differences I noticed, especially now I work in Silicon Valley area and the Bay Area where it's very work-oriented. But that would be the biggest difference I found is that work is not your life in Europe, at least, whereas it can tend to be that way a little bit more in North America what I found. Although in California, people are pretty relaxed.

Rex:

Those ocean vibes. Was the work space in Paris more multi-lingual, did you happen to pick up different European languages, or other languages from other parts of the world being a little bit more removed from sort of the, I guess, American bubble, or the English bubble in the United States?

Kelly:

Oui, parlez-vous français? [Speaking in French: “Yes, do you speak French?”]

Kelsey:

Un peu. [Speaking in French: “A little.”] Yeah, that's a good question. Luckily for me, because I didn't speak fluent French when I got the internship, I could do any sort of science work in English and our papers we were writing and things like that are all delivered in English. I guess I can also say that the summer program I went to was delivered in English, which was nice.

Kelsey:

And so work was in English, but in terms of casual conversation at lunch, or coffee breaks, or things like that, that was normally purely in French. So I definitely picked up a lot of French while I was there, and it's more so just trial by fire, it's either, "I'm going to learn French and be able to communicate with different colleagues and meet people, or I'm going to be struggling because I can only speak English."

Kelsey:

And I think that was definitely an eye-opener for me as well, living in Europe, is most people speak multiple languages and it's not "special" to speak multiple languages, whereas even though I come from Canada where we do have two official languages, unfortunately I'm not fully fluent in French, but that is something I'm actively working towards since I still do work with the Paris Observatory quite a bit, and spend time over there, it's just nice to be able to speak the native language if you can.

Rex:

Wonderful. So we've made it to the point where you've arrived in Silicon Valley, you're a space systems engineer, you work in satellite operations. What does that mean? What's a day on the job like in this aerospace environment? How many satellites are you working with? What do those satellites do? What do you do? Are you welding those satellites together? Are you designing the code that's running them? Tell me about what your day-to-day job is like so someone else can imagine if that's the type of job they'd like to hold.

Kelsey:

Absolutely. Every day in satellite operations is very different, which makes the job exciting because there's never a dull moment in satellite operations, and if it's ever a quiet day, it's kind of nice, you could take a little break. So day-to-day, it really varies, but at a high level, I'm responsible for the overall health

and safety and productivity of the Dove Satellite Constellation from Planet. So Planet, our Dove Constellation, the goal, or the mission of Planet's Dove Constellation is to image the entire earth every single day. And the idea is that we can then use that imagery to assess global change, to be actionable, and make impactful change through being able to observe the earth over time in a way that it's never previously been done before.

Kelsey:

And so I'm responsible for hundreds of satellites, I'm on a team of nine operators with a new one coming so the total is 10 operators for hundreds of satellites. So a lot of my job is writing code that runs in space, which is always really cool, that essentially automates the operations of these satellites. Because there are so many satellites and so few operators it's really necessary that we can rely on automations to do a lot of the work for us. So for example, if a satellite voltage for the computer is low, that will trigger an alarm and it will trigger a process for the satellite to run a task to be able to kind of mitigate that problem.

Kelsey:

Our team is split into two so we have half of our team in San Francisco and the other half in Berlin. So we almost have 24 hour operations because during their daytime is our nighttime and vice versa, which is nice. And so, yeah, a lot of my job is writing Python code to automate operations, I also do a lot of data analytics so I mentioned my job is to make sure the satellites are healthy and productive, and the way that we assess that is through gathering spacecraft telemetry and different metrics and pieces of information from the satellites that they down link, and create either visualizations or different reports that essentially give an output of, "How well is my satellite performing today? How much data has it down linked? How many pictures did it take? Are all of the subsystems operating correctly? Is there anything that's out of family?" And that's kind of at a very high level, what I'm responsible for.

Kelly:

I was just going to asked about shift work because you have to monitor these things 24 hours a day, and what a great idea to have half the team in Berlin so that nobody has to do these crazy overnights. So, I mean, that is a definite positive to that job.

Kelsey:

Absolutely. I think it's one of the really nice things about sort of the new space era and really adopting automation in satellite operations is that it's not necessary for someone to be on call 24/7, and that our satellites can almost take care of themselves in a way. Of course there are anomalies and different problems that come up in which operator intervention is necessary, and of course that happens all the time. But it's not like I need to wake up at 3:00 AM in order to make sure the satellite isn't going to crash into the earth, that sort of thing doesn't happen, which is really nice.

Kelsey:

We do have rotating on-call so once every week a different operator will be responsible for if there are any sort of on-orbit anomalies that really need operator intervention, they'll be on call, but again, that's not during the evenings, that would just be during your workday and on the weekends as well, to do a full satellite check-in. So we have one operator responsible for checking in on the entire fleet every day, it takes about an hour to two hours, and just making sure that there are no satellites that are sort of acting out of family, or any sort of on orbit anomalies that need to be assessed.

Kelly:

So you said every day is a little different, what do you like the most about the job?

Kelsey:

I think because every day is different that's one of the things I really like about the job is that it's never a dull moment and that I'm constantly learning things is really cool, especially as someone that's really early in their career. I think also what's particular to Planet and likely more so related to the startup space is that you get to really contribute and know that your work is impactful because you have such a small team.

Kelsey:

So for example, I've been at Planet for just over a year now and in January of this year we launched our latest flock of satellites, we launched 48 SuperDoves, a part of the Transporter-1 SpaceX mission. And myself and another colleague of mine on the Berlin team, we were both responsible for the commissioning of these satellites. So that is the process from right after we launched the satellites, we deploy them into space, and then we de-tumble them to make sure they're not spinning too fast, and we deploy their solar panels, and get them ready to start taking pictures. And myself and another colleague were responsible for that. And both of us had only been at Planet for a year, which I think is really amazing that we've got the opportunity to do that so early in our careers where I know that normally it would take decades, potentially, to be able to have that sort of responsibility. So that's one of my favorite parts is that I know for sure the work that I'm doing is making a difference.

Kelly:

That's such a great job, you must love it when somebody asks you, "What do you do for a living?" And you're like, "Oh yes, I get to talk about this cool job that I have."

Kelsey:

Absolutely, yeah. I really do love my job.

Rex:

Do you know how long Planet has been around? Have they always been in this same field?

Kelsey:

Yeah, so Planet was founded in 2010 by a group of ex NASA scientists and they've been having the same mission ever since its inception, which was to image the entire Earth every single day. And we've had, I'm going to probably not have the exact numbers off the top of my head, but we've had over 400 satellites deployed, 30 launches, we've had a large growth in the past few years and we're continuing to grow, which is really exciting. And it's only been just over a decade since Planet was formed.

Rex:

Great. So we've talked about lots of exciting things. What's the most challenging thing that you'd want someone to know if they dropped into your job tomorrow that they might not anticipate?

Kelsey:

That they might not anticipate? I think it's similar to what I said was my favorite part of the job, which is that it's always different so there's no sort of busy work to put it lightly, I guess. There's always different problems that are arising and it's super interesting, but it also can be extremely challenging.

Kelsey:

There's definitely not a lot of days where I can just kind of have something up on my monitor and be typing away. I'm going to be probably actively problem solving and operating these spacecraft every single day, which is super exciting, and I'm extremely thankful that it's my job, but it's also of course, kind of a high stress environment because you are responsible ultimately for these satellites operating. And so it can be a little stressful at times to know I am the person responsible for operating this specific spacecrafts.

Kelsey:

But at the same time, we have an extremely supportive team that's a wide variety of backgrounds and experience levels at Planet, and they're willing to support you. So a lot of it might be self-induced stress on my end and being a little mixed with imposter syndrome, but either way, it's enjoyable. Even the "difficult parts" are extremely enjoyable.

Rex:

So it's remembering that you're behind the wheel, you're driving a vehicle, so to speak, in that same way that you don't want to fall asleep at the wheel because there's something else going on, it's kind of a similar feeling with the way you're attached to the satellite.

Kelsey:

Exactly. Yeah. I still remember the day I sent my first command to a satellite and I was so worried I was going to break something. I thought for sure I was doing something wrong.

Kelly:

You're going to crash the satellite.

Kelsey:

Exactly. I was like, "I'm going to be the single person responsible for ending Planet's mission." But of course it fine, and nothing that I would send up would immediately crash the satellites into each other or anything like that, but I still remember it was a very stressful time, but super exciting. And I wrote it down, I don't have the date on me, but I wrote it down the day I did it so that I'd always remember the first time I sent a command to space.

Kelly:

So I want to go back to the internship that you had in Paris. You said you had not learned much about space weather until then. And if a student right now is interested in space weather, what types of courses or extracurricular activities would you suggest that they get into in order to pursue that type of career?

Kelsey:

I would say they should absolutely look into attending the AMS Annual Meeting. That was one of my first experiences at a sort of space weather focused conference, or really anything related to what AMS has, it has weather, climate, anything related to AMS and meteorology is a great resource. I would also honestly, don't underestimate the power of Google, I did a lot of Googling to figure out opportunities specific to what I was interested in so I would really just enter “space systems student workshop,” or things like that. I know this Space Weather Workshop is hosted every year as well. So I would definitely encourage students to take advantage of those types of free workshops or workshops that are more accessible with price for students and things like that.

Kelsey:

I know for an example, the space weather conference that's hosted every year at the AMS Annual Meeting, I help out with organizing that and we're working on also developing different tutorial sessions as well as different, I guess, lecture sessions or plenary sessions so that students can really gain these technical skills to be able to learn more about what skills are relevant for the space weather community, but also just have a stronger resume and CV when they are applying to these types of jobs.

Kelly:

So what about a major or certain coursework? Well, there might be, but I don't think there's a major specifically in space weather. Would with someone just major in meteorology, or atmospheric science, or aerospace, astrophysics, what would you suggest that would get them the same type of experience?

Kelsey:

I think it really depends on what they're interested in. I think at the end of the day, you should make sure that whatever you're studying, you're interested in. So for example, my degrees are in aerospace engineering, and electrical and computer engineering, which maybe when you hear that at first you wouldn't think that that would relate to space weather at all, but I do still research with the Paris Observatory and do research in that vein, although I don't have a meteorology degree, or an atmospheric science degree. I think that regardless of the program that you're in, you can kind of make those opportunities for yourself.

Kelsey:

And so I think relevant skills that would be particular to space weather research would definitely be anything related to sort of data analytics, computer programming, it doesn't have to be Python, but anything related to sort of being able to aggregate data, and visualize it, and communicate it in a way that you're able to assess the scientific objective that you want to assess. I think those are definitely skills that you can get regardless of the program that you're in.

Kelsey:

And I would definitely strongly encourage folks not to be worried that they're in the wrong program because there's always opportunity to curate your career to be what you want to be. And so just gaining those skills, like data analytics and programming were really huge for me to be able to be successful in the career that I'm in and in the space weather area that I'm in, and so I definitely would encourage students to focus on those topics.

Rex:

Let's back up a bit and talk about, a little bit more philosophical, the professional journey that you've gone on. And if you had a chance to maybe speak to a collection of recent college undergraduates at their graduation ceremony, and you're there to help set them up for success, what is a professional journey, what does that mean to you? What have we not asked you that you really want to make sure people know?

Kelsey:

I think at the end of the day, it's really important to know that no path is linear, no matter how far in advance you try to plan something, we can never account for things that will come up, or different opportunities that might come up, or rejections that might happen, or job offers that might happen that you weren't necessarily expecting. And so it's important to be open to as many opportunities as possible. I think that's something that I've really taken to heart is that I've applied to probably hundreds of different opportunities between job applications, short courses, graduate schools, things like that over the past few years of my early career. And I've just tried to apply to anything I found interesting, and I take the rejections in stride, I try not to take anything too personally because it's all kind of part of the process and a part of the journey, and that perseverance overall is really, really important.

Kelsey:

And I know for sure, I recognize that applying for jobs and starting your career can definitely be quite daunting, but it really just starts with that first application. And you're not going to get what you don't apply for so you might as well just apply for it and see what happens. That's kind of my biggest sort of life motto is just apply for it anyways, and if you get rejected, that's okay, but you might not. And that's what happened with me at Planet, I didn't know anyone at the company, I thought it was a really cool mission that Planet had, I thought it was a really cool company, and so I applied and this is how I got my job there. I didn't necessarily have to know anyone to get in. And I think that's something that might be a little misunderstood is that folks think they have to have a really huge network or they have to know someone to get in there, but it's not necessarily the case. And I think don't count yourself short and don't count yourself out.

Kelly:

So you mentioned the trajectory to get to where you are now. So now that you're in the position that you're in, you had mentioned the AMS Annual Meeting, are there any other professional development opportunities that you take into consideration? Any workshops or anything through your work that would fund any of those?

Kelsey:

Yeah, so I'm very fortunate in that Planet is extremely supportive of career development and they have been since the beginning. I had approached my manager last fall and let her know that I wanted to apply to Ph.D. programs, and the first thing she said was, "How can Planet support you and what do you need from Planet in order to support you to do that?" So I was really thankful for that. And I didn't have to worry that my manager was going to be upset with me, they only want the best for me, which I'm really happy about.

Kelsey:

And I mean, one of the biggest sort of professional development and career development things that I'm involved in is the Space Generation Congress, which is hosted this fall, both online and in person, and Planet is sponsoring this year. And I'm also the manager so I'm responsible for hosting the event and organizing it. And it's a way for like-minded individuals, a part of the space industry between the ages of 18 and 35, regardless of your background, but definitely related to space weather and meteorology, to come together and share ideas. And so, yeah, that's one of the biggest things from my side related to sort of professional development. And I've been very lucky that Planet has a part of their sort of benefits program with their employees is that they encourage career development and encourage folks to go to workshops and do things like this podcast and things like that.

Kelly:

That's great.

Rex:

It's great to hear that you're not having to plan your Ph.D. in secret, but you can do it in the open and with the support of your employer. So I'm aware you're also a member of the AMS Committee on Space Weather, that's a volunteer group, maybe you found out about it at the AMS Annual Meeting, but I'd like to hear it from you: how you joined that committee. And then what is the mission of that committee and what do you do when you're attending a board meeting for them?

Kelsey:

Absolutely. So I did find out about the Science and Technology Committee, or STAC as we call it, on space weather at the AMS Annual Meeting in 2018. I didn't know much about the AMS in general, but I had written a paper or created a poster related to space weather research I had been doing at the observatory, and I found out about the AMS Annual Meeting, and I thought it would be a great place for me to sort of present this work. And I had met the two co-chairs at that conference when I was doing my poster presentation, and they had invited me to join the space weather committee after seeing my poster presentation, which was really fantastic because I had very little experience in the space weather community, and especially related to the North American space weather community as all of my research had been done in France, and so I didn't know a lot of folks on this side of the pond.

Kelsey:

And the mission of the Space Weather Committee is essentially we curate a comprehensive and diverse program for the AMS Annual Meeting for the Space Weather Conference. So related to all facets of the space weather field, whether that be education outreach, machine learning applications for space weather, new instrumentation for space weather, the different relative government agencies and their outlook on the future of space weather research. And so, our job is to kind of curate this program so that folks can present their work and learn more about space weather at the AMS Annual Meeting.

Kelly:

And there had been some talk in the past about possibly creating a certification for space weather, and I'm not sure if your committee is still considering that, but we do have options now where organizations and groups can submit proposals for new certifications. So it would be great if the committee would consider that in the future.

Kelsey:

Absolutely. I'll definitely bring it up at our next board meeting. We are looking at this year as well offering different tutorial sessions, a part of the AMS programming or AMS Annual Meeting programming, like a introduction to machine learning for space weather. As I know, it's really a very popular field, especially just machine learning in general is gaining a lot of popularity. And so, that would be fantastic, I'll definitely bring that to our next board meeting as well.

Kelly:

So Kelsey, before we end the podcast we always ask our guests one last fun question. I want to ask you, if you could meet one famous person, alive or dead, who would it be?

Kelsey:

I would meet Alexander Hamilton from, of course, history, but I'm sure made very famous in pop culture from the musical, *Hamilton*. I feel I resonate a lot with his general work ethic and I love the story that he came from a small island with nothing, and came to America, and founded the financial systems that America is built on. I'm interested in personal finance in general so I thought it was just a commendable story and his general work ethic for just going for what he wants is incredibly inspiring, and I definitely listened to that musical on repeat while finishing my final year of university, while writing my thesis so it was a great motivator to get that submitted to get my degree.

Kelly:

I think I'm one of the few people that has not seen that show yet. I really want to, but it's so difficult to get tickets all the time and they're so expensive. I have to wait until it dies down a bit, and everybody's already seen it, and then I might be able to get an opportunity.

Kelsey:

Yeah, exactly. I definitely sold a lot of my furniture and stuff before I was moving from between apartments to afford tickets to see it in New York City and no regrets.

Rex:

No couch, but Lin-Manuel Miranda in your ears sounds like a fair trade to me. Thank you so much for joining us, Kelsey. I guess we'll see you at your Ph.D. program at Oxford. We wish you the most success in that. And maybe we'll see you in space one day from our television set, or whatever futuristic device we might be watching on. We're so grateful for you sharing your work experiences with us today.

Kelsey:

Thank you so much for having me.

Kelly:

Well, that's our show for today, please join us next time, rain or shine.

Rex:

Clear Skies Ahead: Conversations about Careers in Meteorology and Beyond is a podcast by the American Meteorological Society. Our show is produced by Brandon Crose and edited by Peter Trepke. Our theme music is composed and performed by Steve Savoie and the show is hosted by Rex Horner

and Kelly Savoie. You can learn more about the show online at www.ametsoc.org/clearskies, and can contact us at skypodcast@ametsoc.org if you have any feedback or if you would like to become a future guest.