Cat Hofacker: Good morning, good afternoon or evening to you all wherever you're tuning in from. My name is Cat Hofacker and I am the staff reporter at Aerospace America, AIAA's flagship magazine. I'm joined today by Laura McGill, one of two candidates for AIAA president-elect in the upcoming 2021 elections. Laura, thank you so much for joining us. Because we have so much ground to cover, I wanted to kick it off with where it all started: How and why did you first join AIAA?

Laura McGill: Well, I was involved just like any you, know, undergraduate student: a little bit at my university. Didn't get involved too much, wish I had now recognizing all the great value that the membership provides. For me, it really started after I started my professional career. I was doing wind tunnel work, doing aerodynamic testing, and I had the opportunity right at the time that AIAA started opening up membership on the technical committees for younger members to join. So I was one of the first associate members that joined a technical committee. It was a ground testing technical committee, and it opened up a whole world for me. I got involved in the activities and worked in a number of subcommittees and in various areas. It exposed me to all kinds of things: conferences, standards, involved in writing white papers for Congress, student paper competitions. So I got engaged in there and I stayed with it, and it's just continued to evolve and grow as I've been a member.

Cat Hofacker: And now potentially the evolution of that involvement could be as president-elect. And while all the AIAA presidents are important, I think it's accurate to say the next one will occupy a special place in the institution's history because of the current moment — exciting technological advances and the ongoing challenges with the pandemic and post-pandemic world. So what do you think the role for the next president will be at this moment in time, and why are you the right person for that role?

Laura McGill: I look at all that as an opportunity for the institute. Our membership thrives on innovation. We're all in this industry because we love being at the leading edge of capability and performance for the systems that we work on, so I think that does translate to the institute and what we're able to do and leverage what we've all learned about this new environment we're in. To your point, it's kind of an inflection point for us to go take all that and use it to evolve and invigorate our membership and our capabilities as an institute to continue to advance the industry as a whole and the working professionals to support it.

Cat Hofacker: So great segue to talking about your goals if you become president-elect. Before we dive into some of your specific ideas, at the high level walk me through this framework. Is it about creating a new vision for the institute or implementing one that already exists?

Laura McGill: I think it exists to a large extent already, but I think it refreshes it a bit. It also builds on what we had before, because we have so much that is really intrinsic about the membership and how they engage in so many different threads of the institute. So I don't see it as changing that because that's a great foundation to build on, and I want to be able to do that, but it also allows us to think freshly about some new ideas and how we can make the membership more relevant for all of our participants.

Cat Hofacker: So going back to the word relevance, what does that look like? What's that look like, and how can AIAA continue to be relevant?

Laura McGill: I think there's three aspects of that. The first is I want AIAA to be a great resource for our members to help them in their everyday work, and that includes things like the network that they build through AIAA. It's been really rewarding for me to be able to reach out to people I've worked with over the years through AIAA, that I've worked with on committees or working groups or various projects and be able to get information or bridge partnerships between organizations that have actually helped me in my everyday job. I want to be able to do that for members, make those resources more accessible and make them aware of what the opportunities are, to build on those aspects that make them more successful in their everyday work. The second element is to support their career advancement. Now of course, being successful in where they work, the first one actually helps that quite a bit, but there's also having the tools that help them recognize what their opportunities for career advancement are. A lot of us are engineers and scientists in AIAA, but that can evolve into numerous different career paths as technical experts, as chief engineers, program managers. All that builds on those technical foundations, and I think AIAA can take a better role in helping members to realize their career aspirations in any one of those different directions they might want to go. The third one is what's been greatly satisfying for me with AIAA: In addition to my day-to-day job, I have a lot of interest in aerospace and technologies that aren't necessarily a key part of my role in my job. I love that I get exposed to those through forums, in exchanges with other members, in various resources that AIAA provides to me, so I want our members to realize that benefit, that they could explore for their personal satisfaction all those technical and scientific interests that they have.

Cat Hofacker: And that's the great thing about the forums, right? There's a lot of niche areas to explore that I'm sure you don't get in your day-to-day job on the defense said of aerospace. Going through those points one by one, let's talk about the evolution aspect first. Dan Dumbacher lately has been talking about the idea of skating to where the puck's going to be. The challenge there is figuring out where that is, so where do you think it is? How do you think some of the changes we're already making, like hybrid forums, play into it?

Laura McGill: I think Dan's taking us in a terrific direction, Basil's taking us in a great direction. To try to explore that, I think a lot of it just has to do with using all the tools of technology and community, different communication forms and not thinking of those as disparate methods of communication, but really integrating all that together and being able to use it. Our workforce uses all those tools, so we want to be able to make it easy for our members to interact with each other. I think part of it is technological evolution, but also it's just how we engage as members. We do see a lot of members who engage at their local sections, levels, and regional activities, and then there's national activities. We don't always connect those together, and I think there's an opportunity here to get more interactions between those two different types of forums and integrate those much better than we have in the past. Technology could be part of that.

Cat Hofacker: Is this something we can start immediately or is more of a long-term process? Like, what do you think is possible in this new virtual, hybrid world we're building, and will some things have to wait until we are mostly back to in-person?

Laura McGill: Some things may have to wait, but that's a minor part of it. I think all of us are surprised in industry at how effective we've been in this different environment we find ourselves in when we're having to do more remotely. We've really learned that there's a lot more capability than we realized until we were forced to do it. I actually would say that until we were forced, we didn't think we could do it, and now we realize all that. So we can leverage all that for AIAA. The other aspect is not just about the technical capability, it's partly cultural. It's partly about how we open ourselves up to engage in different activities and on different communication platforms to make ourselves open to that.

Cat Hofacker: Right, we're building a new world, and obviously a lot of the things we try might not stick. What do you think are some things we need to move away from to meeting the evolving needs of members?

Laura McGill: One thing is our timelines have to be faster. I'll just give a couple examples — if you have information that you want to convey through a briefing at a conference, that's like a year lead time. That very relevant, key information that's important today may wait until you submit an abstract, the abstract gets reviewed and then gets put into a conference program that's a year away. We have to figure out how we accelerate that whole process so that we can get late-breaking information out to the community much faster in those forums. That's an example that follows a lot of our processes: standards release or public policy development, student activities. They all have really long lead times that I think are opportunities for us to accelerate.

Cat Hofacker: So what are your ideas for tailoring some of these resources for members at different stages of their careers? You know, obviously a college student who is perhaps still figuring out the industry and someone who is very immersed in their field have very different needs, so how do you target those?

Laura McGill: Part of it is there's a lot of resources available through AIAA that I don't think the membership is universally aware of and taps into. Part of it is helping them to understand what those are and then helping, continue to advance those and expand those offerings by having the community be directly involved in that. The analogy I'll use is crowdsourcing. It's a platform we're using a lot in the workplace now, where instead of the old suggestion box where things would accumulate and somebody had to go through them all and then follow up and write responses, with the crowdsourcing type of platform you can have the community directly engaged in problem solving. Somebody can put out a request, "hey does anybody know how to do this?" and you can get immediate responses from the crowd. And not only that, the crowd vets the responses. It also really engenders a lot of community engagement to solve problems

that are relevant. So I think that I think those kinds of platforms are really important for us, and I love the culture that it builds of people working together to solve problems.

Cat Hofacker: It sounds like some of the dialogue that's already happening on Engage. I love to see all the different threads on the different topics. So is Engage one of those resources, or what others are there you don't think are being promoted enough to members?

Laura McGill: Absolutely, Engage is a great vehicle. I think it could be expanded for some additional capability, but it's a great start and it shows that AIAA is moving in the right direction to engage the broader community.

Cat Hofacker: So this communication aspect of engagement, is that where our resources need to be? Or does that extend also to more technical resources, for instance?

Laura McGill: I think it's technical resources, but I also think it's career development resources as well, professional training. That's sort of a mix. In a lot of bigger companies, you have a lot of resources that are already available to their employees, but we [AIAA] also have a lot of members who work for smaller companies that may not have those resources and also may want to branch out and develop their careers and get professional training in areas that they're not in today. So I think there's a lot of room for us to develop additional materials, and I'm not talking just about training materials. A lot of it, I think, is engagement with other practicing professionals in the community who work in those types of areas to be able to engage directly with members who aspire to those positions and those roles so they can get direct insight to it. There's a lot of learning that goes with that, right?

Cat Hofacker: Kind of an informal mentoring. Alright.

Laura McGill: Yeah, I would say very direct, and I'll tell you: engineers and scientists, we love our work, and we enjoy talking about it. If you set up the right forum in the right dynamic, it can really take off on its down.

Cat Hofacker: just to clarify there, when you say "forum" you mean "platform" or "setting," not a forum as in SciTech, right?

Laura McGill: Yeah, platform, whether it's through Zoom or Teams or something like that, but also set up some parameters that help guide it because the other things we struggle is "OK, I'm willing to do it. Tell me what that looks like." So provide some guidance, some examples of how it can be successful.

Cat Hofacker: Right. Another question I think falls under the resource category — one thing that's grown out of the pandemic is an awareness about what the industry and AIAA needs to do around discussions on diversity and inclusion. As you may know, internally we've been elevating conversations like that and trying to find places in forums, et cetera. How do you see those efforts fitting in the resources that members need?

Laura McGill: Absolutely. I think AIAA has a great power of our membership to demonstrate how we can be a very diverse and inclusive organization. It allows our members to see other members engaged in different ways and hold up those role models that we have within AIAA and the successes that those people have had. People seeing people who look like them in successful roles goes a great way toward wanting people to join the community. And we do struggle in all the tech fields, STEM fields, of getting more diverse people interested and going all the way. It's what I love about AIAA; they really extended their K through 12 programs to really reach out to younger people who are thinking about their careers, to get them to see what a professional life could be a STEM-type of career. I think AIAA has a great opportunity to continue to build on that and then build up a much more diverse aerospace workforce.

Cat Hofacker: That's a good point, because we mentioned the different stages of membership, but of course there's the category of future members who may become the industry's future if we start doing the outreach work today.

Laura McGill: And I'll tell you, this is where AIAA is especially powerful. I think everything I've seen, all the studies out there, that one of the biggest influences on a person's decision to pursue a career in STEM has to do with seeing a positive role model who is successful, enjoys their work, likes talking about it — that's engineers and scientists for sure. Getting to make that connection with a positive role model who's present for them and to see that that could be their future as well. That's a great influencer in those [career] decisions.

Cat Hofacker: Yeah. So slight tangent, but I think it's related to the diversity conversation. As a woman myself, I often have mixed feelings about asking other women about the gender question, but the fact remains that based on what I've seen you might be the first woman president-elect for the institute if you're elected next year.

Laura McGill: I think we had one before. I think Sheila Widnall.

Cat Hofacker: Oh great, I'll have to check my numbers then. But in either case, one of very few women members who have served as president. What would that mean to you personally?

Laura McGill: I've been in a male-dominated career for so long that it doesn't really, I don't think about that. I do recognize that because of that I could be a role model, which is great. I think in any way that I can offer a positive role model for people I think is terrific, but I guess I'll say that there's certainly challenges with coming from an underrepresented demographic in our field. But also we often forget that that balances out; there's a lot of positives that come with that too. My view through my career has always been that the positive balance out the negatives, and so I don't worry about either one. I just try to add value wherever I can.

Cat Hofacker: Right. As I said, I think it's something a lot of women are always so aware of, so I look forward to the day it will be unremarkable. Until then you continue to elevate voices and hope people will see someone who looks like them and be a positive role model.

Laura McGill: I think it's changed, it's changed a lot over my career. I definitely see the differences and I think they're all very positive.

Cat Hofacker: That's great. Another area of your platform I wanted to touch on was, I guess I'm calling it exploration; you mentioned this in the sense of exploring new topics beyond your everyday job, and then internally there's AIAA's efforts to expand into related technical fields like cybersecurity. How does that fit in with the personal exploration members do?

Laura McGill: It takes on a number of threads. For me, participating in one of our large forum events brings great opportunity to step into other sessions or go to plenary sessions that are different from normal things I would go to. In fact, early in my career when I would attend a conference, I would attend every session I could in my core area – which early on was aerodynamic testing, flight mechanics and computational fluid dynamics – and that was great, but I realized there was a huge aspect of these conferences that I was totally missing out on. So I started making time to go attend some of those sessions that were at first adjacent to my areas, but then kind of started to stretch out more. I started realizing that were connections there, that I was able to connect dots to things that were going out in the field in diverse technical areas that I could bring back into my home work and be able to apply. One example was bioinspired design. It wasn't something that I had been exposed to, but I just happened to attend a session that looked interesting, and as a result I started following up on that. And there were all kinds of applications to my work that I didn't recognize. So people recognizing that there are so many different ways to build on technologies by just kind of figuring out how they apply in new ways is how the innovation starts in our industry. It's not necessarily creating something that's totally new; it's connecting things that we're doing to other technologies or just other things that have been there for a long time and bringing them in and figuring out how they apply. That's been one area that I would love to see other people be able to explore, because it's actually helped us to advance our capabilities in my home assignment. But also, I'm a techie at heart and so even though I work in defense, I love following space exploration and especially being able to live vicariously through the roles of other engineers and scientists who are doing different missions. I get a lot of excitement and personal satisfaction from that, so I think AIAA really offers that diversity to be able to explore all those different areas.

Cat Hofacker: Definitely. So what's your assessment of our expansion into these related fields? How do we keep pushing that forward?

Laura McGill: We do need to keep pushing that forward, and that is one thing I think that any professional society probably struggles with a little bit, because whatever our members are, that's what we're interested in and that's the content we continue to build. So we have to really think about how we reach beyond our current capabilities to pull those other technologies in and the practicing professionals who are working in those areas by making connections and expanding our portfolio of the technical work we're exploring.

Cat Hofacker: It's almost a catch 22 in that sense. So how do we bring those new people in and make them feel like AIAA has a place for them?

Laura McGill: Here's where I think AIAA has an advantage over a lot of other professional societies, because if you look at them of most them, they're focused on a discipline like mechanical or electrical or test engineering. But aerospace, it's about systems. That's why it's so exciting to work in this industry and be part of AIAA; because since we work on systems, we all in our home organizations interact with people who are working through all those hundreds of science and engineering disciplines that all go into making our system. We're participating in that in our home organizations. The key is how do we bring that into AIAA and expand the content of our forums to include all those other aspects, and it's not even just technical. There's the programmatics and understanding what's going on regulatory environments and being compliant to regulations. All those are other aspects that we have to deal with in developing our systems, so that should be part of the content in a society that is for aerospace professionals. We should be looking at all those aspects, because those all add to the resources that we can then bring back to our home organizations, right?

Cat Hofacker: Do you worry at all about that expansion? Because in my job, I'm aware of how staying on top of all these related topics can feel like juggling a million balls at once, and there's the fear that eventually I'll drop one of them. Is there a balance to strike between the breadth of subjects and depth of experience in particular fields?

Laura McGill: There is absolutely a balance. The foundations of this society are strong, and we certainly don't want to lose that. That is our core, and I wouldn't want to do anything that jeopardizes that, but I do think there's room to build on that. It's all about how we engage the community and make it accessible while building the resources and the membership that support all that. It gets back to crowdsourcing. The crowd will tell you where you need to go, and I think we can use that as part of our guidance.

Cat Hofacker: We're at about five related technical fields right now, I believe. Should we focus more on those for now or what other areas do we need to bring in?

Laura McGill: There's new areas all the time that we need to look at. This pandemic has brought up some: for example, how do we keep our workforce safe? I recently participated in a webinar that we held for the Defense forum that will be coming up next year. We talked about the industry's response to covid and how we've had to adapt and flex and do things we never thought we'd have to do. At Raytheon, we've continued to support test activities, demonstrated flight systems in ranges all over the U.S., and globally as well. So now part of our engineering planning is when we send a team out to new range, "do they have all the disinfectants and wipes?" Going back a few months to when none of those [supplies] were available, my company started making those so we could equip our teams to go out, and not just for them but actually for all the other contractors and government team members that would be out in those block houses with us to make sure they were safe. In our logistics planning, we had to look at what are the quarantine regulations in that state, in that region?

Are the hotels open? Are there restaurants? How will we make sure our teams get food? Where are their planned gas stops? We've had to really evolve our planning, so I think that's just one example of our how industry is actually very good at being agile to adapt to those new requirements. I think we can do that with any area that we have to expand to, cybersecurity being a great example.

Cat Hofacker: Yeah, definitely. And as you mentioned, a lot of these ideas or these goals come back to the big-picture idea of increased engagement. So to focus on that more: if membership growth isn't necessarily a goal, what are the metrics for success? How do we measure if we are getting this increased engagement?

Laura McGill: I think because of the technology that's available to us today, there is ways to track engagement, and to your point, increase membership as a result. But the real goal is engagement. What I want is our members to feel like they are engaged in the society and taking advantage of all the resources available to them. Participation in conferences is one metric we've always used, that we've always tracked: how many people come to our conferences, our various forums. But that's just one element. As we expand our communications platforms through the webs and another commercial platforms that are out there, even on things like Twitter — we can track how people are engaging in the Twitter community for AIAA. Crowdsourcing platforms are a great way — how many people not just submit questions or how many people engage in that community. It's also kind of like citations. If you're in the academic world, where you publish and get citations, on a crowdsourcing platform you also get your ideas rated: likes and dislikes. I think all those are great ways for us to get in and track our engagement. What I really want to do is take that to the next level and not just look at isolated or different events. What I really want to see is are people jumping from a forum where they're talking about some technical subject? Are they breaking out to do public policy and start engaging in those platforms? Especially for me, I'm really interested in tying the national discussions to the regional discussions. Are the people who participate in the sections getting engaged in some of the national forums as well? I think that's an area where I'd really like to see the engagement grow.

Cat Hofacker: That's an interesting point. Why do you think there is that disconnect between participation in regional and national events?

Laura McGill: I think it's mostly time. It does take time. In this industry, we're still going full bore in spite of everything else going on around us. We are continuing to advance our systems, develop new technologies, explore new capabilities in performance. So we're very busy. People in our industry work very hard, work very long days. So how much time do you have left after all that, and your families and other responsibilities? Do you have time to engage at both levels? Where AIAA can help is make it easier and being able to have all forums tied together so they're not having to go engage separately. Get them interlinked so that it doesn't take so much of a time commitment. I think that's the only thing holding us back. I think a lot of people who want to engage at both levels are just run out of bandwidth.

Cat Hofacker: Right. Especially since the pandemic, I've personally noticed how it just takes longer to do certain tasks. Even making more time for logistics planning, as you said earlier. Another thing I often hear hand in hand with this discussion of our digital world is it's giving us time back — tuning into an online event instead of traveling across the country, for instance. But what are we missing in those hallway conversations, the little asides in the café or in passing on the conference floor?

Laura McGill: I agree, I don't think we even recognize how much we're missing in our workspaces and in conference kind of forums as well. That's unfortunate that we're missing that, but I think if we recognize it, there's ways to improve it. I'll give an example: many years back when I was a program technical chair for the Ground Testing Technical Committee for our conference, one of the things we recognized was that a lot of the value of being at a conference was, to your point, those hallway conversations — but the hallway conversation was between me and one other person. In fact, the way it typically happens is somebody presents a topic, and then afterwards I catch them and say "hey, I'm really interested in this. Here's what I'm trying to do, here's what we're working in our lab. What do you think?" So we thought, "how do we bring that conversation back into the room so that we can have the whole session gain from that?" So we started at that time developing a structure for our sessions where we specifically engage in maybe a topic that was a little controversial. In ground testing what we did is we worked with AMT, Advanced Aerodynamic Measurement TC, and so in that community you have people who are developing things that are newer technology, lower TRL in the labs. In the ground testing community, we want to apply that technology to our aerodynamic testing facilities, so we would purposely bring in topics between people who were building in the lab and the people who are trying to use it but struggling to do so, so that we could have that kind of controversy in the room. I think there's ways we can do that, to try to do our best to bring those hallway conversations into a forum where the rest of the community can participate and benefit from it.

Cat Hofacker: Do you see the crowdsourcing platforms you mentioned as another way to achieve this?

Laura McGill: Absolutely, I think crowdsourcing is terrific. It's a very time-efficient way to be able to share ideas, build on ideas, and there's actually companies out there who have built their whole design model on crowdsourcing. Their products are based on products that were developed in the crowd, which isn't their employees. They are an entire community that supports their products. So I think it's very powerful.

Cat Hofacker: So we're drawing near the end of our time, so I wanted to circle back to one of your big points about how AIAA can continue to be relevant. The big question is why does the aerospace community still need AIAA?

Laura McGill: Because, partly in my world where we do a lot of classified work, it gets difficult to have conversations because there's a lot of restrictions around the work we do. AIAA provides the forums for us to be able to engage in ways we sometimes can't in our workplace. It does get

hard when you work in classified, so we can't do that in a lot of our sessions, but there is still so much opportunity to connect. It does get back to my earlier point of I may not realize there's work going on in a specific area that is relevant to things I'm doing, but through AIAA — and this has been through my entire career —ß I've been able to make some of those connections because I got exposed to it only because of AIAA. Sometimes through a conference, but also through the members, other people that I've worked with over the years that have brought in new topics and who through my network I've built through AIAA have made new connections for me that had never occurred to me. It's a huge resource and the industry recognizes it. You see great participation in AAIAA from industry, government and academia because we all recognize the value that's there.

Cat Hofacker: One final question before I kick it over to you for final thoughts. If you are elected as president-elect, how does our strategic plan fit into the goals and overall framework you've outlined?

Laura McGill: There's a lot of good thought that's gone into that. I want to see everything accelerated; I want it to go faster. And I do think we can do a better job of engaging the broader membership in helping to design what that looks like. I think there's more opportunity to reach out and do that. We have a good foundation in the strategic plan, but we can do it more broadly with broader, bigger engagement from the membership, and we can do it faster.

Cat Hofacker: Right, so now's the time where if you have a few closing words to make your case to the members, please do so.

Laura McGill: What I want to express is AAIAA has been such a great aspect of my professional career, but also has given me great personal satisfaction going from the wonderful, incredibly smart and talented professionals that I've met and been able to work with over the years to the great new ideas and capabilities that it's exposed to me. I value it so much and it's been so much a part of my life, I want all our members to be able to experience that. I want our members to not just be members, I want them to be engaged, to be able to recognize that there's all these benefits available to them. And I want to structure AIAA so it makes those resources more directly accessible and available to our members so they will realize all those benefits of membership. That's what I'm going after. I want increased engagement. Engagement will result in broader membership, but that's not the goal. The goal is for our members to really get the same appreciation for their membership that I have had.

Cat Hofacker: Thank you for your time, Laura. Excerpts from this interview will be available in the Aerospace America January 2021 edition – both in print and on the website. A full transcript of this interview will also be posted on the website. Thank you.