

Tanya Domi: Hi, this is Tanya Domi. Welcome to The Thought Project, recorded at The Graduate Center of the City University of New York, fostering groundbreaking research and scholarship in the arts, social sciences, and sciences. In this space, we talk with faculty and doctoral students about the big thinking and big ideas generating cutting edge research, informing New Yorkers and the world.

The Advanced Science Research Center at The Graduate Center of the City University of New York is an internationally recognized center of excellence in interdisciplinary scientific research and discovery that is focused on nano science, photonics, structural biology, neuroscience, and the environmental sciences. Located at the GC's uptown campus in West Harlem, the ASRC has a mission to promote science in the public interest.

Late last year, the ASRC opened the IlluminationSpace, an education center designed to promote scientific understanding across New York City's diverse communities. Through a new hands-on education center, the IlluminationSpace has an array of events and programs that the ASRC makes science accessible to New Yorkers of all ages and backgrounds. To tell us more about the IlluminationSpace is Camille Santistevan, who is the associate public relations director at the ASRC and the brainchild behind this new and exciting STEM education space. Welcome to The Thought Project, Camille.

Camille S.: Hi, Tanya. It's great to be here.

Tanya Domi: It's good to have a colleague here. First of all, congratulations on the opening and the launch of the IlluminationSpace at the Advanced Science Research Center. You were among the first employees to be hired at the ASRC, specifically for the purpose of launching this education facility with a public facing and engagement mission. Can you share with our listeners what the goals and the programs are of the IlluminationSpace?

Camille S.: Sure, yeah. It's been quite a journey since I started at the ASRC in December of 2014. The ASRC was really ... Just to back up and explain what the ASRC is, in case some of your listeners don't know what it is, it stands for the Advanced Science Research Center and we are an interdisciplinary research facility committed to doing science in the public interest. We are doing that in several different ways. The first was we spent the last four years recruiting faculty to our five research initiatives, which are nano science, photonics, structural biology, neuroscience, and environmental sciences. Those faculty have recruited postdocs and graduate students in those areas and also have been charged with opening core research facilities. The bottom line is that the Advanced Science Research Center is meant to be a resource for science, not just for faculty, staff and students at CUNY, but really the entire New York City and New York region.

Part of our mission was always to make sure that the research that we're doing in the public interest is that we're sharing the product of that research with the public. The major goal of the IlluminationSpace is really to foster positive attitudes towards science and technology among our visitors. Our visitors span in ages from 13 to 18 primarily, though we are happy to also welcome adults, CUNY college students, and really anybody who is interested in learning more about the research taking place at the

Advanced Science Research Center, to show them the human side of research and how science is relevant to their day to day lives.

Tanya Domi: What are the goals? I mean, you have a number of activities that you do provide to the CUNY undergraduate students. What are some of those activities and how you involve them in the IlluminationSpace? Also, how do you involve the ASRC staff because they do play a really interesting role?

Camille S.: Yeah. I like to think about the IlluminationSpace as sort of a three pronged program. Of course our goal is to serve the visitors who come and make sure that they're leaving with positive attitudes towards science and a greater understanding of interdisciplinary research and our five research initiatives, but like you said, we also work with undergraduate students at CUNY. We partner with the CUNY Service Corps to bring in about three undergraduate students who help us lead field trips. The second prong, if you will, is we're training undergraduate students, many of which are studying a STEM field on basics in science communication. They learn how to translate, essentially, some really complicated stuff into something that's going to make sense to a 14 year old. I really like to emphasize that we're training undergraduate students as well.

You also mentioned that we have ASRC research volunteers. We have about 10 to 12 volunteers each term sign up to help us lead these field trips. They also get a training session. My lovely colleague Kendra Krueger, organizes a training at the beginning of each term to make sure that our volunteers are prepared to, again, it's all about this act of translating, to translate their work. They can get into the weeds and just remember their audience and also the importance of sharing their work to a broader audience.

Tanya Domi: Really this is really about becoming literate in science. I mean one of the things that all of us do in communications is we're always trying to translate complicated ideas into ways that a lay audience can interpret that and understand it. This is particularly an acute situation when we talk about sciences with the general public. They're really getting some really useful skills at a much earlier age in a very conscious way.

Camille S.: Yeah, I really love this idea of literacy. When you're speaking to somebody who speaks a different language, it's easy to be afraid. What we want to do is kind of break down the fear that some of our visitors be bringing to the table when they think about science and technology. Portrayals in the media often are kind of negative towards science and we want to show that science is diverse, that there is a diversity of perspectives and that diversity is actually essential to solving the most challenging problems that we face today.

Tanya Domi: When you have these goals ... I mean, give our audience some idea of who comes, who actually comes. It's a lot of kids from school, right, local schools in the area?

Camille S.: Yes, that's correct. We offer field trips to high schools primarily, though we have been experimenting with middle schoolers. We've had students as young as 7th grade all the way up to 12th grade and we've also been experimenting with community college students and just general college students as well. The experience that they have is they

spend about 30 minutes, 45 minutes in the ASRC IlluminationSpace, which is an interactive visitor center where they essentially play games to learn fundamental concepts of each of our five research initiatives and also explore how our initiatives are interrelated and relevant to daily life.

Then they meet our ASRC research volunteer and receive a tour of that volunteer's laboratory and have a conversation about how that researcher came to be at the ASRC. We really try and emphasize the stories of our scientists and the diversity of those stories because no one's ... They're all different. Everybody came to the ASRC from different paths. I think a lot of the high school students that we meet are really kind of anxious about their journey and feel like they need to have everything all figured out at the age of 16. I think they leave feeling relieved that there is a diversity in pathways and not a single answer to reaching their goals.

Tanya Domi: The public should know that this facility in our uptown campus in West Harlem is really ... It's huge. It's 200,000 square feet, and as you mentioned, five initiatives, scientific initiatives, so it has the state of the art technology, labs, equipment. These are really scientists leaning forward in innovation. There's really no other facility like it in the world, isn't that correct?

Camille S.: It's very unique. It's very unique in that we've put our five initiatives in one roof. There are many research institutes that are organized around maybe one of our initiatives, but to put all five under one roof is very unique. That interdisciplinary perspective is really our take home message that makes us unique from some other programs that exist in New York and across the world.

Tanya Domi: Since you've been at the ASRC you've cultivated partnerships with the World Science Festival, the really famous Child Mind Institute here in New York City, Girls Who Code, which is also a pretty famous too, and Math For America. Just recently you were awarded a fellowship by the American Association for the Advancement of Science, which is the top professional association in the United States for scientists. This is called a community engagement fellowship. Really, since I do know you, I'm going to say this is in recognition of your own excellence, but also the mission that informs the fellowship. Could you tell us about that mission?

Camille S.: Yeah. It's a really exciting time to be in the world of science and STEM education and science communication. There's a ton of stuff happening in New York City. You mentioned some other organizations that are doing fantastic work in this area. The fellowship is all about trying to professionalize people who have similar roles as me, who are responsible for engaging not just the public but also our internal communities.

Tanya Domi: That's an important distinction on this fellowship. It is an internal community.

Camille S.: That's correct. I've been really ... The fellowship just started, but I've been reflecting a lot on the intersection of internal community engagement and public engagement. I really think that they're closely related. I kind of have a hypothesis that I'd like to test this year, basically that public engagement is an act of performing an organization's

mission. Only when we have a solid internal community will we be able to represent our organizations to the public effectively, or we will at least be able to do it more effectively.

I've been working with my team to think about how we can add some more intention to some of our community rituals and traditions. For example, every Friday since the beginning of the ASRC's opening, we've met pretty much every week, maybe not always on Friday, for coffee. It's just kind of this informal gathering where we introduce new members to our community and share our stories and share our research. That's been a very important part of building. When I started at the ASRC four years ago, there were 20 people at the ASRC, now there's about 150 and with an additional probably 50 core facility users coming in and out every day. There's a lot more activity.

How can we be doing those types of activities with intention and measure the impact that those kinds of activities have on our community and think about, again, establishing a common literacy, because one of the challenges that we face at the ASRC is very similar to the challenges that some of our researchers face when talking to the public. It's this act of translation. We have environmental scientists who are trying to talk to photonics researchers, very different languages. The expectation at the ASRC is that these faculty members and graduate students collaborate. Establishing this common language is going to be essential for us to deliver on that promise.

Tanya Domi: Well I think your fellowship also reinforces the work of the IlluminationSpace too because you have an internal audience that you're appealing to saying, "Come and help support the IlluminationSpace." You're sort of getting these internal community, you're getting them tuned up to talk to children and think about how you do that, and then that gets out-pictured. It has a public facing engagement role when the kids come into the space.

Camille S.: Exactly. One of the things that I've been talking about, again with my colleague Kendra, is how can we scale up the training that we have been doing for the IlluminationSpace research volunteers and think about offering that to all folks at the ASRC or maybe even broadly, more broadly. We do a survey at the end of our training sessions and one of the things that our volunteers said that they'd like more of is training in science communication. We were thinking about other workshops and trainings that we can offer throughout the year that use the IlluminationSpace as an opportunity to think a little bit more broadly about science communication and professional development training.

Tanya Domi: I see intersections between everything that you do as the public relations director and in your out facing, public facing roles, and then this really, really exceptional fellowship. Also, part of the fellowship, when I was reading, preparing for our conversation, the real output or the real tangible outcome centers around what's called the community playbook. Can you explain that to people? What does that mean in real terms, in the fellowship, in your work? How does that get outputted into this community playbook?

Camille S.: Sure. The community playbook is really kind of a workbook for how ... We have this mission. We have these goals. It's, how are we going to get there? What the community playbook is supposed to be is a road map for making sure that we're holding ourselves accountable by engaging in activities that are going to help us reach our larger goals. I'm sorting out what exactly the format of our community playbook is going to be, but I've been thinking a lot about ... We have a lot of new members. Something some of the older members of our community take for granted is ... We know what the ASRC mission is. We were hired and we're really passionate about it, but how can we make sure that we're onboarding newer members to our community and introducing them to some of our traditions, like the science cafe that I mentioned before and the importance of participating in those activities?

Another aspect of our community playbook will be setting some guidelines for collaboration. Most of the folks at the ASRC have chosen to work at the ASRC because they're really excited about interdisciplinary collaborations. That said, the system of science, to kind of put that bluntly, doesn't incentivize collaboration very much. We kind of need a little bit of a push or some parameters to make sure that we're collaborating on projects that are going to, again, advance our mission. It's meant to be really a guidepost to hold us accountable to our mission and goals, but it's also very practical in that it is a toolkit that folks can reference so they're not having to start from scratch every time they have a great idea and know that they want to work with somebody else to achieve this really lofty goal.

Tanya Domi: I think one of the challenges in higher education, and this is a big buzz topic about interdisciplinary, and a lot of places really talk about it, but they don't necessarily deliver it. What's unique about the ASRC at The Graduate Center is that both facilities are each in one building. I think actually the architecture yields more to collaboration, even though I know you have different floors for different initiatives at the ASRC, but the fact that you are all contained in one building and you're not spread across a campus, I actually think yields to more collaborations across disciplines. I think that that is really the best outcome for the public, generally speaking.

Camille S.: Yeah, absolutely. I think we're lucky to have a lot of space. We have an auditorium. We have two seminar rooms and of course the IlluminationSpace and break rooms. There's a lot of space to convene. I have to really say that each of our initiative directors have done an excellent job at establishing communities within their fields. All of our faculty were recruited from outside of CUNY. I think it's really important to remember that they were building, kind of from scratch, these research initiatives and having to engage departments across CUNY, collaborators outside the institution. Having that space to work together and not compete for space, especially in New York City, it's very difficult to find places to just to meet. That's something that we're really lucky to not have to worry about.

Tanya Domi: You have been bringing in members of the community into the ASRC for quite some time.

Camille S.: Yeah. Well, the IlluminationSpace took about four years to build. We didn't want to wait. We did launch a pilot field trip program using some of the empty lab space on our second floor. We modified that now that the IlluminationSpace is open, but we wanted to build relationships with schools so we weren't starting from scratch as soon as the IlluminationSpace was open.

Tanya Domi: This summer we can expect a lot of children at the ASRC.

Camille S.: Yeah, it's really interesting. In promoting our field trips for this spring, we're already starting to get a lot of interest in bringing groups and summer programs to visit. We're really excited to be able to stay open during the summer as well.

Tanya Domi: I think another aspect of CUNY in its uniqueness as a big system with this incredible facility uptown is that a lot of undergraduates are engaging there, which is really, I think, pretty exciting.

Camille S.: Yeah. Just to say a few more words about that, the Alfred P. Sloan Foundation recently awarded CUNY's Central office a very generous award to fund. It's called the CUNY Summer Undergraduate Research Program. While the grant was awarded to CUNY Central, the placement sites for the undergraduate research will all be at the ASRC. This summer we will have 20 undergraduate students. Most of them will be from CUNY doing research in each of our five research initiatives. We're really excited to be hosting that program this summer.

Tanya Domi: Well, that's it. This is a great program. It's great for CUNY. We want to congratulate you once again on becoming a community engagement fellow for the AAAS.

Camille S.: Thank you. I just want to also extend that thanks to my wonderful team uptown. I couldn't do what I do without our science education coordinator, Kendra Krueger and our wonderful science explainers. This year it's [Rosa 00:23:00] and [Esteban 00:23:00]. We also have [Rema 00:23:03], our administrative coordinator and [Juliet 00:23:06], our communications intern. It's really a team effort and I'm very grateful for all of them.

Tanya Domi: Thanks for being with us today, Camille.

Camille S.: Thank you, Tanya.

Tanya Domi: Thanks for tuning into The Thought Project and thanks to our guest, Camille Santistevan, the creator and designer of the IlluminationSpace located in the Advanced Science Research Center at The Graduate Center, CUNY.

The Thought Project is brought to you with production engineering and technical assistance by Sarah Fishman. I'm Tanya Domi. Tune in next week.