

Transcript

Virgil

What is the NIH Green Labs program, in your words?

Bani

So just to give you a one sentence definition: in my mind, and I think this is how we envisioned it, [the] Green Labs Program is a tool that provides information and increases awareness on NIH environmental programs for labs to choose from to reduce their environmental footprint. I think it's one definition to explain how the Green Labs Program is. And if you want I can get further in describing what we mean by 'reducing the environmental footprint'. Do you want me to get deeper into that?

Virgil

Sure, yeah!

Bani

So, environmental footprint, this is a term that I've seen readily being used by EPA. I think it was 2011 when they drafted their sustainability framework, and [in] that, they explain what is meant by environmental footprint and the indicators for sustainability, especially the environmental sustainability aspect of it. They talk about not only reducing the energy intensity or water intensity or the greenhouse gas emissions, but our overall ecological impacts and material impact as well as reducing toxic substances. All of which, ultimately, should be reduced in such a way that we can continue to function efficiently and in a sustainable manner. So that is ultimately what sustainability is all about; that you're ensuring that future generations have something left. [That] there are resources for them.

Virgil

Right.

Bani

[It is] how you function now that will help you in sustaining in the future. So these are definitions pretty much straightaway coming from EPA.

Virgil

Sounds great, yeah! Well, thank you for that. It is pretty apparent that the Green Labs Program and sustainability in general represent things that are extremely important, not only for now but for the future. I personally am glad that it exists for this very reason. So how did it actually get started at the NIH? How was that process?

Bani

Good question, Virgil. It was January 2016. So, Susan [Hinton, my previous branch supervisor] and I, we were discussing our plans for that year and the goals that we would like to accomplish. This is an idea we have had for a while, being floated in DEP. Kenny always wanted to develop something called the 'Green

Labs Program' before even I had joined, but it never reached any fruition for whatever reason. Maybe it was just destined to be my program, (laughter) and then become *our* program!

Virgil

(laughter)

Bani

So, I was new, [but] I said "Yeah, let's do it! Green Labs Program, sure!" I have extensive background working in the labs and I work on so many things, so many aspects in my day-to-day life. Let's give it a shot. And so that's how we started that. Let's see what we can do, where we can encourage labs to not only learn about what's happening at NIH, but also give them credit for what they are doing. In other words, recognize them for the efforts that they have put in for so long, and then motivate new people to consider participating in the various program areas that we have. The reason was primarily to reduce the environmental footprint. As I mentioned, our environmental impact, in other words.

But at the same time, we know that whether Green Labs Program exists, or it doesn't exist, NIH has been a strong supporter and a proponent of promoting environmentally safe [practices], and [is] a very mission-driven place. So not only are the Institutes and Centers working towards their mission, but at the same time, the NIH mission is there to focus on human health and how we can protect and how we can promote health and well-being and safety. So we thought: how about we have a program that will provide them with all such tools, increase their awareness, achieve NIH mission, and also help us in reducing our environmental impact, which is ultimately what DEP is all about? Our mission is for that. So that's how it got started and we came up with the name 'The Green Labs Program' because that was a term that had been used somewhere. I was new, so I was learning about it in the process.

Virgil

That's an interesting history. I'm glad it all coalesced and that you were able to lead the effort. That's awesome.

Bani

Mhm!

Virgil

I think we'll probably skip the next question of 'why GLP is important' [because] in the past two questions you went ahead and answered that. Not unless there's something else you wanted to add?

Bani

Yeah! This is my understanding now after running the program for so many years since [the] inception of the idea in 2016. We finally launched the program in 2018. It took us a long time to understand the program, how tests [were] developed, the formatting, the structure. We went through a lot of stages of development. I realized [at] that time: I didn't engage the scale at which we were thinking of launching. We have nearly 2000+ labs in Bethesda, and there are many other labs at different NIH locations. So close to 3000 or 4000 labs, or maybe a little less than that. The program is so important because we

cannot reach [out] to each and every lab. We cannot conduct an outreach or training on the various environmental programs that we have. We have to develop something that is available to people.

Green Labs Program was developed very differently. It is a program that provides information within the program itself as a self-assessment tool. But it is providing information as a hyperlink. So not only [are] people are learning how to self-assess their labs, but also they're learning about the programs because the links and the information are embedded within that program itself. They really do not have to call us up every single time. But they can take a look at these respective programs and choose from these programs whatever fits their needs. We felt that it was a different way of conducting an outreach at a much larger scale than we could have anticipated.

Secondly, the most important thing was that we had the NIH senior leadership buy-in. Their support was there, which was extremely, extremely helpful. Personally, I learned a lot from the NIH senior leadership of how to run a program, how to launch a program, develop a program; the basic nuances of managing a program at this scale. In terms of the program development, it was very helpful because, once you have their support, they will connect you with specific people or they will provide you with the resources that you might need to continue with your outreach, or whatever goals you have for the program. We were able to reach out not only [at] a grassroots-level to the labs, but also to NIH senior leadership because the Intramural Research Program support. We had [a] multi-pronged approach for disseminating information and educating people at different levels. It was helpful for us. So, that's why I think the program is important.

Virgil

That's very insightful into just how much went in the development of it leading up to where we are. All of the machines and gears that are inside of the program itself; this is a pretty complex beast here. On that note, what do you think is the most difficult part about running the Green Labs Program currently? [Also,] there's two sides to every coin. So, what would you say would be the most difficult, and also, what would you say would be the most fun part?

Bani

So, for the difficult part, as I was talking to you about the NIH senior leadership, it was very, very hard to get a new program running when nobody is aware of that concept. There is so much that I learned along the way; terms like 'branding'. Green Labs Program is a brand now. We have established certain things that we do with the program, and we follow a process. Again, I have to give credit to the NIH senior leadership, particularly the Sustainability Management Team and high-level inputs and directions from the Intramural Research Program staff. They helped me develop the program, which is a process. It's an approach for developing a program that I still use even today. Having said that, it was difficult for us at the beginning to develop the program. Based on the type of Green Labs Program[s] I had come across.

I have to also give credit [to] My Green Lab; it's a nonprofit organization that I just Googled to see if there is anything out there that I could use to understand what all elements our program could have. Astonishingly enough, there were so many comparable entities. With their program[s] and what all NIH does in the environmental program management realm, it was a no brainer to develop a program specifically designed for NIH. So, I have to give credit, despite the difficulties in developing, because My Green Lab existed and they had their Green Labs Assessment. It was helpful for us to adapt their format

and structure, and easily create our own Green Labs Program, because NIH has very well-established environmental programs that have been running here for more than several decades now. But it was difficult to get started.

Secondly, once we got started, we had to find stakeholders who will be interested in helping us with the beta testing, and this was an idea that came from the Intramural Research Program folks. To beta test, we had to reach out to many lab members. I still remember: I was so new, nobody knew me, I didn't know anybody, and I had to reach out to the lab folks. We started with the lab managers group: go talk to them, see if they're interested. There were more than 50 people who were interested. I [ended up] interviewing 64 lab staff [personnel], and that's why it took so long.

Virgil

whistles in astonishment

Bani

There were many, and we acknowledged them in one of our meetings. I met with them in person. Sometimes we conducted virtual meetings. Sometimes we met in a group setting. We had developed a lot of questions to begin with, I think 50+ questions. After brainstorming with all of them, we chiseled it down to 30+ questions. That was [a] difficult part: developing a questionnaire in such a way that lab staff have reviewed [it and] blessed it [off]. It's not a [full] representation of all the lab staff that we have here and on the campus, but at least this would help us in getting [to] the next level of the program development phase.

The other challenge was: since we have so many NIH environmental programs, finding out what is of significant importance is key. We cannot write 100 questions pertaining to 1 program area. So, I had to act like a liaison between our environmental program leads at DEP and other divisions, and then understand their needs versus lab folks' concerns. I had to listen to the issues that DEP folks and environmental program leads had and the challenges that the lab staff were encountering. I had to figure out; what could we do to improve our customer services or program outreach to the labs? The lab staff had ideas for incorporating different aspects of a program or creating new ways of promoting the program. These [were] environmental programs [that] helped with improving the Green Labs Program in the long run. So, these were a few initial hurdles that we had to go through. It was a lot of discussion that [we] went through to develop that draft, which is 34 questions, in 2018. It was a long inception time, long development time, and then we had an implementation time where we had to again conduct outreach [for] the program.

Again, at that point, it was difficult. How do we conduct outreach? Where do we begin from? What all sources should we use for promoting the program? Again, I was new, so I was learning on the job different ways we could do that. I had to coordinate with a ton of people, whether it was through newsletters, again through presentations to fellows, visitors, occupational safety people, lab managers, our own meetings like Green Team Leads and Sustainable Lab Practices Working Group, and institutes-focused meetings. That needed a different level of coordination, and we did not necessarily have [a] point of contact for each and every Institute Center. We tried to go through the Safety Committee people, but it was a challenge, because one has to have an established contact with someone so that you can continue to promote your program.

Virgil

Right.

Bani

These were all difficult challenges at the beginning. The fun part is that I was fortunate, and I'm thankful to our DEP senior leadership. They gave me all the freedom to create, communicate, collaborate, and build teams. Today, we have an established group of people whom I reach out as my Green Lab Program Ambassadors (or Champions of Change). There are [also] many who are behind the scenes, but they are actively there. Without their support, this program cannot be successful at all. So, the fun part is that we have developed relationships. We have developed that camaraderie to work together. We all share the same passion and interest in protecting the environment, reducing our environmental impacts, protecting human health, and making sure that we have left something sustainable for our future generation.

So, we all came together. Even today, as we speak, we are planning on conducting some other form of research outreach in the future. This is the relationship that's important. The second thing is the like-mindedness and positive energy that I get from my folks. I'm literally saying they're my folks, they're all NIH lab staffs! They're working on different things in the labs, this is a voluntary program! They're volunteering their time, but it's their motivation and energy that I get that helps me move on and continue with this mission. If I fall back, there is someone else to motivate me, and they will push me to the next level. "Let's give it a shot. Let's try something."

Last but not least, the Green Labs Program has helped us launch NIH at the international level in terms of sustainability. We were fortunate that our director, as well as senior management, are very open to exploring new platforms and avenues or showcasing and sharing data on sustainability. We were fortunate; we were part of the International Institute with Sustainable Labs where we presented. We were able to showcase NIH as a leader of sustainability. We have been able to motivate and increase awareness about sustainability initiatives, not only within NIH but outside of NIH, including other federal agencies. We have also presented many presentations with different institutions, universities, actually at different universities, and at various other conferences. We have been invited as guest speakers or panelists. A few of the Green Lab Champs have also been reached out [to in order] to do that at the individual level as well.

From the time that we launched the program, it's been seven years now. With the program launch, I think [that's] four and half or five years. We have been able to demonstrate NIH at a higher level and prove what people have done, promoting NIH as a strong supporter of environmental sustainability or sustainability in general. So, lot[s] of good things, and at the end, it's building relationships. We have built a lot of relationships with people across this area at various points during the program['s] development.

Virgil

Oh yeah, this is awesome. It's impressive to see how it's grown and how it's went from just impacting our little bubble, to going to the international stage, to almost building a sort of community around it. I'm glad that you can get a sense of motivation and positive energy from that since, in general, that's really important to have in any space. So that's good to hear. My next question was going to be if there

were any notable results from the Green Labs Program, but you've already kind of said that getting boosted to the international level, making community, and of course having those sustainable aspects that impact future generations. Speaking of the future, how do you hope to see the NIH Green Labs Program grow in the future? What do you want it to look like in the next couple of years, maybe even decade?

Bani

I have a few things to add to your 'results' [question]?

Virgil

Sure, yeah!

Bani

What happen[ed] is that, every year, we started talking more about the program and what we achieved every year. The Green Labs Program, from what I have seen, has motivated at least one individual; after taking the assessment, they felt passionate and inspired to spearhead something. In 2018 itself, we had Mary Ellen Urick; she wanted to reinstate the Styrofoam Take Back Program. We were at the juncture where we were thinking of phasing out the Styrofoam Take Back Program, but Mary Ellen Urich spearheaded the program [and] reinstated it in Building 50. [The] Styrofoam Take Back Program still exists in NIH, we did not close the program, it's been ongoing ever since due to many other supporters.

Then in 2019, another person took the lead in Building 49. She led within that building and Minoo [Shakoury-Elizeh] has been a strong proponent as well. They [have] continue[d] the Styrofoam Take Back Program for a while. The following year, Minoo, was interested increasing awareness regarding phasing out dark rooms and promoting digital photography. We have had other people that have reinstated other programs. One GLP awardee, Ana Pasapera, from last year is trying to identify opportunity for nitrile glove recycling. She has taken up on this challenge of spearheading the non-contaminated nitrile and latex gloves recycling at NHLBI. Again, they are Green Lab Program awardees who felt passionate, who are happy to see that a group like this exists, and that they [are] not alone in this realm.

The other thing that happened with the Green Labs Program results: we have travel awardees for [the] Green Labs Program. In 2019 we had Barbara Murphy, she was shortlisted to receive the Green Labs Program Travel Awards to go to the International Institute of Sustainable Labs (I²SL) Conference. When she went there, we saw CDC and other institutes being recognized for meeting the requirements for the International Institute for Sustainable Labs Freezer Challenge. Barbara, when she saw that, she's like, "You know what? I can do it! Our lab can do it!" The following year, they achieved it. As [of either] 2019 or 2020, their lab won the individual category in the Freezer Challenge at I²SL, as well as NIH won the Freezer Challenge award at the International Institute of Sustainable Labs. We were in the government category and we won that award. It was 2 awards [total] in the Freezer Challenge realm. Green Labs Program motivated someone through the travel awards the previous year to consider taking on this challenge of participating in the Freezer Challenge.

This year again; Jessica Hale, she's from NHGRI. Their lab has been awarded in the individual category [for] the Freezer Challenge. She's another one who did that. In addition to that, we have had Green Labs Program awardees who have started spearheading Green Labs Program [campaigns] for their own

locations. They have started launching their own Green Teams. They have started reaching out to more people. At Rocky Mountain Labs, Brandy Williamson is conducting an extensive outreach to establish a Green Team. They are trying to launch their Green Labs Program, which will be held along with our NIH Green Labs Program. That will be focused more towards the Montana regulations and not just Bethesda specific.

Similarly, other people, other locations are also developing their Green Labs Program to encourage and maximize participation within their areas. This is just a handful of notable results. Overall, we have had hundreds of people who have at least continued participating in the NIH Green Labs Program. Last year was the highest [with] 132, but there are repeat participants, they have continued to carry on this journey with us. They are, by far, helping us promote the program beyond just one year and they've continued their relationship with us for a long period of time. They have inspired their own friends, their peers. It's quite a few things. Thanks.

Virgil

Yeah! That is pretty cool to see all of that happening in just five to seven years, from when it first started to now.

Bani

Yeah. Five to six years!

Virgil

Yeah, that is awesome! Already the program is making leaders; it's like a duplicating chain of inspiration. That's pretty awesome. So then, where do you see this chain going in the future? How do you see this program growing in the next five, ten, fifteen years?

Bani

Good question. I'm not sure if I have a good answer, though. (laughter)

Virgil

(laughter)

Bani

If we continue and have the blessings of the senior leadership, I'm hoping there will be more Green Labs Program leaders and champions. We have new people who are interested. We have someone else from NHGRI who's also interested right now. [The] future would be to continue to promote and increase awareness, but I would love to see if we can have 500 NIH Green Lab Program certified labs. We have 2000 labs here. If you can really achieve that level, that will be [a significant] increase [in] awareness. Having said all that, we have a long way to go. These are just [a] handful of people who have been able to help us succeed in various realms, but it's still [the] tip of the iceberg. We need to have extensive outreach and communication.

I would appreciate, [and this is also] what I keep on hearing from other people, if a program like this could be made mandatory. Then I would hope that the participation rate increases. What we see right now are all voluntary interests of people. They're promoting things at the grassroots-level because it's

not a required program that people have to participate [in]. Yet, we have been able to showcase NIH at the international level. We've had articles in the past that are published in journals, nature and scientific magazines, talking about our Green Labs Program and the Freezer Challenge. I would hope that we could continue to publish, promote, and educate folks within NIH and outside of NIH about sustainability. I hope that the program can grow above and beyond what [has been] anticipated in the past, and [that] we can surpass our own goals sooner than later.

But it has to happen at the highest level. Then the lab folks might be able to take out the time to sit down and complete this application. They're swamped with so many things, and I don't blame them at all. This will be an incentive for them if it is a required thing, they will take the time to do it. Once that happens, we are talking at a different level altogether, very similar to how we have the Occupational Health and Safety inspections, which is mandatory. I was just told yesterday, "how about having a Green Labs Program training as a mandatory training as a newcomer, or a refresher course, or for that matter, anything on sustainability, so that we know what we need to do in the labs to promote sustainability?"

People are interested, but the resources [have] not been publicized or marketed at that level. I've been told many times to have mandatory trainings when new people join; that will help in promoting the program. If all of these things are done, then the Green Labs Program's future seems to be much better. But we need a lot of help from senior leadership to continue. They have helped us a lot, but I think we need some sort of requirement that would encourage the lab managers to consider taking the assessment and learning more about the program.

Virgil

Perfect. Thank you for sharing so much about the history, the future, what it means and what it's grown into. Before we end, I do want to ask - I always come into these interviews with a limited perspective. I can only ask what I know about. So, is there anything else you'd want to share at all about this?

Bani

The Program itself is a good way for anyone to learn about the various programs that we have on the campus. It's almost like a cheat sheet or a central repository of what we have. But the program can only provide so much information. I would encourage and hope that people take the time to visit our NEMS site that we have, nems.nih.gov, take a look at the range of environmental programs and sustainability programs we have here, and reach out to us if they are interested in learning or participating in any of those programs.

Also, feel free to take a look at the [Green Labs Program page](#) to learn about the evolution of program self-assessment form from 2018 all the way to 2023. We have tried our best to address many Green Labs Program Awardees' concerns regarding the length of the questionnaire, which we have shortened. We have 27 or 28 questions for this year. If we reduce further, I'm not sure if you will be able to actually score them.

Virgil

Ah.

Bani

Within 30 questions seems to be manageable and they're fine with that. But this could change. If the program becomes mandatory or requirement, then we could have few more questions. Of course, not burdening the NIH lab community at all, but to gauge different aspects, whether it's regarding inventory management or telecommuting or any other ways of conserving water or energy, or any other outreach or communications that they are part of, or events within and outside of NIH to understand their participation and attendance across these program areas. I would just encourage them to get back to me or to anybody to learn more about these programs. Thank you!

Virgil

Yes, thank you!