Abigail Turner:
This is Alumni Aloud, a podcast by Graduate Center students for Graduate Center students. In each episode we talk with a GC graduate about their career path, the ins and outs of their current position and the career advice they have for students. This series sponsored by the Graduate Center’s office of career planning and professional development.

Abigail Turner:
This interview was recorded by Catherine Rivera Gomez, who is a student in the biology PhD program at the Graduate Center. She interviewed James Lendemer, who got his PhD in biology and works at the New York Botanical Gardens in the Bronx.

Catherine Rivera-Gomez:
Oh, hi James. Can you tell us your name and what do you do for a living?

James Lendemer:
Sure, so my name is James Lendemer and I am an Assistant Curator in the Institute of Systematic Botany at the New York Botanical Garden where I studied lichens.

Catherine Rivera-Gomez:
Can you tell me a little bit about your academic background?

James Lendemer:
So I have a bachelor's in biology and I came to the CUNY PhD program in biology in 2007 as part of getting my PhD, I also got a masters in biology and plant science.

Catherine Rivera-Gomez:
When did you realize that you wanted to pursue a PhD in biology?

James Lendemer:
Well, I actually realized that I wanted to move on to do doctoral research and ultimately pursue a career in biodiversity science sometime around 2006 or 2007 and after my finishing my undergraduate and after working in a museum during my undergraduate and prior to that for about 10 years.

Catherine Rivera-Gomez:
Can you tell us a little bit about your current position at the New York Botanical Gardens and at the Graduate Center?

James Lendemer:
So I'm basically a staff researcher at the Botanical Gardens. So I had a lab and I have graduate students who also are associated with the City University of New York. They're in the exact same PhD program that I came through as well. And I study lichens, which are fungi that enter into symbiosis with algae for the purposes of obtaining nutrition. They're a really cool lifestyle, it's really unique and basically I developed an externally funded research program on my own to do this kind of research and then also a curation of the collections there. That's sort of part of my job as well, and it dovetails with the research
that I do. And my relationship with the Graduate Center and with CUNY is that I'm also faculty in the biology program here. So I have graduate students that come through the program here through which I serve as their primary mentor. And then I also sit on committees of students in the plant sciences and now also the EEB program potentially.

Catherine Rivera-Gomez:
Can you tell us what's a typical day at work like for you at the Botanical Gardens?

James Lendemer:
I will honestly tell you that I don't have a typical day, so no two days are alike and that's partially because of the freedom that I have as a full time researcher, is really that most of my time is not necessarily spent here in New York City or on campus at the Botanical Garden. So I'm carrying out my research and my outreach and education objectives really wherever they may lead. And so for instance, a lot of my work, because the organisms I study are highly sensitive to pollution and disturbance, there are not as many species in urban areas like New York City. And so the areas that I work in are often a 12 or 16 hours drive away. So when I'm doing work in the field, I'm typically gone for two to three or four months out of the year, spaced throughout the year working 24 hours a day, more or less myself and my students and my collaborators, to sort of accomplish various projects that we have.

James Lendemer:
And then when I'm actually at the Botanical Garden, a day could be as diverse as sort of sitting and crunching numbers and analyzing data in my office on a computer. I could be in a lab doing chemical analyses, thin layer chromatography, I could be extracting DNA, sending DNA out for sequencing, I could be doing any number of things and I could also be examining specimens sent by other people to verify their identifications or doing work like that, and then also curating the collections. Literally no two days are the same. And you never know what the next day will bring. It's sort of a matter of prioritizing all of the different tasks that I have. And that's in addition of course to editing journals and books and writing my own papers and doing things like that and mentoring students. It all fits in the schedule somehow, one way or another.

Catherine Rivera-Gomez:
Can you tell us about the journey you took from the Graduate Center to when you graduated from your PhD to the New York Botanical Gardens?

James Lendemer:
Sure. So for me it was actually kind of a direct road, more or less. There aren't very many places in the United States and really the world where you can study what I wanted to study for my PhD. And so that's part of the reason why I chose to apply to the Botanical Garden and CUNY to our joint program was that really it was the only place where I could go and develop an independent research program, studying the things that I study. There just was not the kind of mentorship available anywhere else. So the experts that I needed to have training from were at the Botanical Garden and at CUNY. And it just so happens that it really turned out, I thought to be a really great atmosphere with a diversity of colleagues and a diversity of research interests, and that really prompted me to realize that if I was going to continue doing the kind of work that I was doing, I really wanted to continue doing it at the Botanical Garden and CUNY because it was the primary place to do it.
James Lendemer:
And I thought that it was the best place to sort of advance my goals as well. And so after graduating from the PhD program, I collaborated with another colleague at the Botanical Garden and a colleague who was then at Duke University to get a NSF Grant, which my colleague from Duke and I were both the PIs and postdocs on. So we essentially wrote an NSF Grant, which funded our own postdocs. So that allowed me to stay at the institution where I ultimately wanted to obtain a position.

Catherine Rivera-Gomez:
Are there any mentors that helped you through your PhD? Are you still connected to them?

James Lendemer:
Well, so the funny thing is, and this is I think actually very true for students in the EEB and especially in the plant sciences subprograms and the biology PhD program here at The Graduate Center, is that a lot of the students actually come in already with like a lot of baseline-like knowledge of what they are interested in, a potential plan for what they want to do, and they're here to get that work done. You know, I don't necessarily think that's the case in a lot of the other PhD programs here, maybe it is, but just to be able to speak for sort of the student body there. I think a lot of the students come in with sort of like I am already kind of an expert on a thing, I need to get a degree to advance my career.

James Lendemer:
And so you find someone that also has overlapping interests or skillsets or what have you to work with, but a lot of the faculty are, I won't say hands off, that's not the right way to say it, but really encourage this sort of independent, original research model of sort of, "Okay. Pursue the thing that you are already very interested in." So I've worked with a lot of great people over the years here who I learned a tremendous amount from, some of whom are retired, some of whom are unfortunately no longer alive. This wasn't as horrifying as it is now 12 years ago that I entered the PhD program. So, I don't think it's that long, but at the same time it's amazing how things can change.

James Lendemer:
The mentors that were for me, most important in my career were the people who early on, the scientists early on at the Academy of Natural Sciences in Philadelphia where I worked before I entered the graduate program here. Those were the people who really at a fundamental way, shaped how I think about science and how I approach science and collaboration and mentorship and training of students and things like that. Like, those early, and I suspect that's the case for many people, if you're already coming into a PhD program saying, "I'm motivated, I have an idea of what I want to do. Maybe I don't know the specifics but like I know I'm going to work on this thing and like I really might do that." You've probably already had these sort of like fundamental experiences earlier than that that have shaped so much of how you will ultimately function as a graduate student.

James Lendemer:
You'll have great mentorship here for sure and you'll learn lots of great things and you'll have great lifelong friends and colleagues and collaborators, but you know, I think at a baseline level there's just sort of those initial interactions, hopefully all very positive, that can really shape how you sort of move forward in your entire career. Those first steps are so important for folks and that's how I sort of view working with students.
Catherine Rivera-Gomez:
Postdocs are a common first step for many science PhDs leaving graduate school, do you have any tips on applying to them?

James Lendemer:
Well, I think the first thing I would say is that when searching for a postdoc mentor, the first thing that you want is to find someone who you know that you can work with because it's the same kind of thing as entering into a master's or a PhD. The reality is that the person that you're going to work with, you have to be able to get along and if you don't get along and you don't think you'll work well together, that should be a red flag that you should maybe not consider that as an option because it could ultimately not work well for you. And beyond that, I think that what I really encourage recent graduates or soon to be graduates who were looking for postdocs to think about is whether the postdoc that they are potentially walking into is going to serve them and serve advancing their careers.

James Lendemer:
So how much original research are they going to be able to carry out? How much of their own work are they going to be able to do? How many papers will they be able to author and what opportunities will they have for professional development, especially in terms of applying for their own external funding to further their own research and potentially take that as a next step after a postdoc. Are they walking into a situation like that or is it a situation where really they're sort of working within the confines of a larger project and they might not be afforded all of those opportunities. There are certain things like your own research time, not necessarily related to the projects that you might be paid from that you can negotiate certainly, and I think maybe some students don't know that you do have the ability to negotiate this.

James Lendemer:
A postdoc is essentially a job. That's really for me, I think that's why I basically tried to fund my own was that I wanted to be able to pursue what I was interested in and what I thought was worthy of being pursued and advancing my own career that way. I thought that was sort of the best thing to do. So if there's a way that you can prioritize that and make that happen, I think that's really, if your goal is to ultimately be someone who is doing independent, original research, getting external funding, then that is what you should be doing from day one because you have to demonstrate that you have that ability and that you are trying to advance those causes in order to get a job ultimately.

Catherine Rivera-Gomez:
That's always an interesting question.

James Lendemer:
Do you get different answers for that?

Catherine Rivera-Gomez:
No, but I feel like the postdoc question is always interesting because it's like you have so many ways of like choosing a mentor.
Right. But I guess what I always tell incoming graduate students who are going to work with me is I am not looking for a student per se. I'm looking for a colleague and a collaborator. So I want someone that's going to come and bring skills to the table, but is also going to learn skills that I have, knowledge that I have to transfer. But at the same time, I want it to be a sort of situation where we're collaborating on work that they are leading because ultimately it's their career and their advancement that I care about. I mean, I'd also like to get my work done, believe me and advance my goals, but the success of your students is also sort of success of your own work as well.

James Lendemer:
And I think it's the same situation for a postdoc. I mean, you want somebody that's going to treat you as a colleague and a collaborator. I think that's the ideal relationship. It does not always happen that way, and it can be a gradation between the extremes, but at the same time, to me that's really important. If you're trying to get a job somewhere, then you have to show that you are independent and capable of obtaining funding and grant writing and writing papers and everything and taking the lead in leadership positions, and that can be hard to do in certain contexts.

Catherine Rivera-Gomez:
So the New York Botanical Gardens must source its specimens from around the world. Do you get to travel a lot in this position?

James Lendemer:
Yes. The New York Botanical Garden is like one of the largest and sort of most active botanical research institutions in the world and our scientists work all over the world.

James Lendemer:
So, I wouldn't say we source our specimens from all over the world. We do, but it's mainly that our research and our activities are carried out all over the world, especially in the new world tropics, that's historically been a place where the Botanical Garden has had a primary interest and role going back over a century to its founding. But also, equally important going back that amount of time is work in the Southeastern United States and in the United States in general. You know, we've had a lot of scientists who have worked in, in the U.S. in general and that's where most of my research is focused. I think that's personally where I have the most connection to that area, and that's where I'm from and I think I can have the most impact sort of in a more applied way of education and all of the things like that. Capacity building and sort of incorporating things into like actual meaningful policy and actions on the ground in that region.

James Lendemer:
So I travel all the time. I was just out to dinner last night and someone pointed out, they go like, "You've been away a whole lot." And I was like, "What are you talking about? I was only in North Carolina a week ago." And then they started listing the places and I'm like, "Oh, that's right."

James Lendemer:
In the last four months I had indeed been in Tucson for a botany conference. I was in Spokane visiting my colleague Jessica Allen, where she teaches at Eastern Washington University to sequence a genome. I was all over Quebec and Ontario for a workshop that I lead and with a colleague from the Canadian
Museum of Nature. And then I guess after that, there was also like this two week trip to Tennessee and North Carolina and I’m leaving next week or Sunday for Colorado to work with colleagues there at university of Colorado Flora Dimensions, biodiversity project. And then I come back and two weeks later I’m working in Eastern Tennessee on a project looking at sort of the impacts of a dam that was built in the 1930s on lichens in a remote area of the Southern Appalachian mountains. So that’s like a standard three month travel window right there.

Catherine Rivera-Gomez:
Oh wow. So it sounds like collaboration is very highly encouraged in your field.

James Lendemer:
Yes, absolutely. Yeah. But that's science in general. And also that's just like everything. I mean, no one can exist as an island on their own, right? Especially now everything is so sort of interdisciplinary and sort of integrative that you can't just be one person doing one thing. You have to collaborate with other people, with other skillsets, and others sort of interests and life goals and things because really, you never know where it will take you. And I mean, I think that's important to recognize that. I'm a scientist, right? I'm a scientist and I think most people think, Oh, scientists collaborate with other scientists and they produce more science. Right? Yeah, that's true science begets science and that's great. But we also collaborate with like actual people that are managing lands, people who manage the national forest, or manage and protect resources in the national parks or the Nature Conservancy, restoring ecosystems in various parts of the United States.

James Lendemer:
And then at the same time we collaborate with artists. So like I just collaborated with an artist who had a show on Governor's Island with the Lower Manhattan Community Council, LMCC, about extra painted species from New York city. And he had one of the lichens that is not growing here anymore that I brought from North Carolina growing in the exhibition. And so it was sort of, from my perspective it's a great opportunity for people to sort of be made aware of the fact that there are these things and they are not here anymore. And you know those are just like three random examples. You never know where the collaborations will come from, but it's always important to sort of just take them and do what you can with them because you never know where they'll lead and who will see them and what will come of it. The important thing is recognizing that you have to collaborate and collaboration is very key.

Catherine Rivera-Gomez:
It just leads to progress.

James Lendemer:
Yes. Yeah, exactly. Especially now. I mean the only way to sort of address big questions and solve big problems, which incidentally in case no one realized, is what the world is facing right now. The only way to deal with those things and advance sort of understanding and solve problems is with collaboration and collaboration with people that you might never have thought you would collaborate with.

Catherine Rivera-Gomez:
Definitely. Does your curator position allow you to continue your own research?
James Lendemer:
Yes. So one of the benefits of the position I have, which is unusual in some regards, is that I really do have the academic freedom to pursue the research that I am interested in pursuing. And granted it does have to be funded. So it has to be in some way often externally. So it's not just that I just do whatever I want. It does have to actually have some basis in reality and some relevance to society. But that being said, I really am lucky in that I have the freedom to pursue the lines of inquiry that I want to take me where I'm interested in going, but also where the work leads.

James Lendemer:
Not being forced to sort of study one thing and instead being able to pursue these different lines like, Oh Hey, we worked for four years in this region. We did this amazing giant study. It had lots of great stuff to it. Yeah. There's all these other questions that, are in many ways more interesting and relevant to those outside of my narrow field of biology. And so I'm really lucky that I have the ability to sort of pursue that and also pursue funding and where it may come from in that regard as well. So I don't have to get funding from, for instance, The National Science Foundation consistently to study that one thing. Like if I want to apply for funding from conservation organizations and National Wildlife Service or The National Park Service, those are also options as well. It's not always just 100% hard science. We also are sort of encouraged to try to apply things boots on the ground as well. Which again, is I think a little bit different from how it works in other places.

Catherine Rivera-Gomez:
Are you actively publishing right now?

James Lendemer:
Oh yeah. We're expected to publish just like anyone else. You can do the best work possible, but if it's not published it's basically not out there and it might as well not exist. However insignificant some result may seem it might actually be relevant. So it's important to aim for sort of these really big, broad grand syntheses of things that are really important hypothesis driven studies, that's really great and that's really important. We do that. I definitely do that, but at the same time finding a new population of a rare species in New York City, merits a note that's being published somewhere. And that getting published can potentially have a lot of impact at a different level than something else that's perceived maybe is of more value to science, let's put it that way.

James Lendemer:
I will say that working on lesser studied and sort of what I call a neglected bio-diversities of things like insects and fungi, things that are the basis of the food chain and the ecosystems around us, those sorts of organisms are, I would say broadly speaking, not as well appreciated. So a study that might be about pandas will be instantly given a higher priority or given more option of being published. Whereas if you just changed panda to lichen, it just will be probably set aside and rejected outright by most larger journals because it's not seen as being broadly relevant. So I study basically tens and thousands and thousands of species dispersed with a unique lifestyle, disbursed approach across all the fungi organisms which constitute millions of species on earth and are fundamentally important to ecosystem function and ultimately to our society, and yet when I submit a paper about that broad subject, it's seen as being too narrow.

James Lendemer:
Whereas someone who studies a single species that's much higher profile can submit the same paper and will not get back criticism. And I mean that's just something we have to know and acknowledge, but I actually think it's a really prevalent, important phenomenon to understand that people sort of generally recognize exists in the sciences, but at the same time it's never really, to my knowledge, been quantified. And that's hugely important, for not only the science itself and for getting the research out there and for funding, but also for people's careers. Right? I mean if it's harder for you to get a paper in a given journal because of the organisms that you study, then that's going to impact certain people's career trajectories more than it may others. So I think it's important to step back and say for a second and say... So my career has spanned the paper age to the digital age, right?

James Lendemer:

My first manuscripts I was submitting like type written, maybe not type written, written in word and printed out in triplicate and sent to a journal where like someone physically sent those paper copies to someone, they marked them up with a red pen and then returned to them to you to then correct and send a returned version to them. So I've experienced that style of publishing moving to now when everything is digital, right? Including the actual publication process where most things are sort of going away from print and moving to digital platforms. And to me what that has resulted in is this leveling of the playing field in terms of availability to science. So you know, most things, I think that within my narrow field, if there is a paper published on lichens, every single lichenologist has the potential to read it because the reality is there isn't comparatively that much out there.

James Lendemer:

So there's a lot out there, but at the same time it's pretty manageable for like one person to see it all. But that being said, I think in the past if that was published, it was really hard for workers in other fields, be it science or conservation and management, whatever, to access and even know that that information exists. Whereas now it's a lot easier with sort of just online search tools for people to find that information. So I think like from the science perspective of getting your work out there, that playing field has really started to be leveled in a lot of ways. You know, maybe people aren't doing the searches necessarily, but if they did the search they could find that stuff a lot easier than they would otherwise regardless of where it was published potentially. But you know, that's one side of it.

James Lendemer:

The other side is that, which I think is in some ways as important, is getting your work out there to people who will apply it to real world use and more broadly to sort of people in society who it affects, but who they might not necessarily need to know the details of it, but they do need to know that these things are important and we have to protect them and they're not protected and maybe why they're important. So like I do a lot of work in terms of outreach and education. If somebody on Fifth Avenue doesn't understand why it's important, then why did we do it?

Catherine Rivera-Gomez:

What do you find most rewarding intellectually or otherwise about what you do?

James Lendemer:

Broadly speaking, I love nature and being outside and so one of the driving things, even though I grew up in inner city Philadelphia, I spent a lot of time outside of the city in nature, thanks to my family. I was really lucky. An inner city kid that was lucky enough to have those kinds of opportunities. Probably for
me the most rewarding part of my job is that I get to be in New York City in this amazing, diverse, urban place, but at the same time I also get to spend a lot of times in nature. But that being said, I think that when I was younger I witnessed a lot of the sort of large scale urbanization and suburbanization of the Eastern United States. And when I was a kid you could drive from Washington D.C. To Philadelphia and there were farms everywhere and lots of forest and now it's all pretty much suburban sprawl. That for me was one of the driving forces that ultimately led me to try to pursue something in bio diversity.

James Lendemer:

It's really rewarding that I get to now have some kind of impact to sort of understand the natural world and apply the knowledge that we gain to sort of do our best to thoughtfully manage and develop the landscape and also protect the resources that maybe aren't already being protected. There's lots of other ways it's rewarding too.

Catherine Rivera-Gomez:

What are some of the challenges that you've found in your career?

James Lendemer:

I would say that the number one challenge in my career has been convincing people, convincing others, of the value and importance of the work that I do and the organisms that I study, hands down. If there's one thing that I think people should know and that I do my most to sort of articulate to others is that the things that I work on, these fungi, are so cool and so dynamic. They're like the things that are basically around you all the time and you kind of like vaguely recognize as being in your like a daily vignette.

James Lendemer:

Here are lichens. And then not only here are lichens, but here are the crazy things that they're doing in the environment which are incredibly important. Here is all the bizarre evolutionary things that they've developed which are so amazing. And then they have the most complex reproductive biology of any multicellular organisms. So they're crazy. And also that we know like nothing about them. So fundamental questions in biology that are like are known for many other groups of organisms are not known for these things. So that's why I'm always constantly trying to sort of get people to understand there was this huge area of research where there's so many questions to be answered and anyone could answer them.

Catherine Rivera-Gomez:

There's so much potential there for growth.

James Lendemer:

Yes. Yeah, yeah, yeah.

Catherine Rivera-Gomez:

What do you think are the keys to success in your field?

James Lendemer:

I think that there's a lot of bumps along the road in terms of getting criticism for things and peer review is a great example of that. Sort of everyone gets back comments on their first manuscript and it's like,
"Oh my goodness, this is a disaster. What am I going to do? How am I going to deal with this?" And you know, if you don't just step back and say, "Okay, this is an opportunity to make what I did better and to communicate what I did in a more clear and coherent way and to try and address these criticisms. Here's what I think is right, here's what I don't agree with. Here's how I made it better." That gets a lot of people down really early on.

James Lendemer:
And if you don't sort of just develop the ability to say, "Okay, this is the criticism I am receiving, it does not necessarily reflect negatively upon me. Therefore, I have a opinion and a viewpoint that's worth sharing and I just need to figure out how to more clearly articulate it. Or maybe this person just disagrees and that's the way it is. You know, that's a kind of thing that you have to learn over time. And I think that that sets a lot of people back because it's really hard to develop that kind of thing. Those are skills. Those are soft skills that I think are really hard to develop. Yeah.

Catherine Rivera-Gomez:
It takes time.

James Lendemer:
It takes time, but it takes stick-to-it-iveness. You know, you have to really stick to it.

Catherine Rivera-Gomez:
Well, it looks like we're running out of time.

James Lendemer:
The story of my life. [crosstalk 00:28:20].

Catherine Rivera-Gomez:
That's right. Okay, so I would like to thank you for your time today for letting us interview you for Alumni Aloud.

James Lendemer:
Sure. Thank you so much. Yeah, I will always talk to anyone about lichens, especially at the Graduate Center. And I'm going to take this opportunity to go upstairs and visit you and Reed in the biology office anyway. So any day that I get to come to the Graduate Center is a good day.