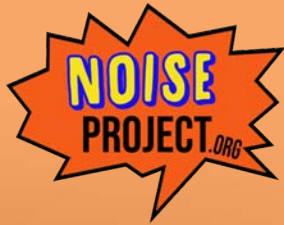


Developing the Processes and Potential to Engage Historically
Underrepresented Communities in Public Participation in STEM
Research Through Authentic and Impactful Collaboration



Year 4 Final Report
DRL #1811234



IMPACT STATEMENTS



*How has
this project
impacted
you?*



COMMUNITY PERSPECTIVES



Illustration of NOISE Project mascot by Jay Williams

JOHN ANNONI, Co-PI

In my career, there are many experiences that could qualify as life-changing. But, the most transformative experience was being named a Co-Principal Investigator for the Noise Project. I have taught for over 3 decades in a place not many want to be and finally had a chance to work, hand in hand, alongside an institution and foundation many desire to be with. My learnings while supported by Cornell and The National Science Foundation were driven by the people I worked directly with during this three-and-a-half-year noise pollution education and research effort. The other Co-PI's, Community Science Collaborators, the Cornell staff and the people in Allentown, both City Government and everyday people all played a part in me becoming a better listener, data collector, speaker and citizen scientist. Embracing a role that is awarded based upon decades of hard work sets up a frame of mind that can make a person cautious but also tremendously caring. That theme of conscientiously caring is what I hope I gave to the project and to the people it touched. The research we focused on, noise and community, are commonly found in discussions but at times exclusive. I tried to make them more inclusive. My work also focused on the opportunity for a community leader being able to develop and deliver a piece of science work traditionally led by institutions. This fresh attempt was a break from the norm and a new beginning for what science may be seen as. Our efforts were helpful in bridging the gap between science and communities, especially underserved communities. As a leader in the project, I lived by our four pillars: Commitment and Collaboration, Power and Privilege, Realities and Reliance and Trust and Transparency. I carried them into the community as a source of light. The most obvious thing that I discovered was the advantage of working as part of many subgroups. I learned that when Trust and Transparency is the foundation of discussion it leads to innovative ideas and less fear of true open dialogue. It becomes obvious that everyone has their own point of view, and many different ideas can be produced. I found our foundation of group participation rules made me feel more energetic about contributing but in a manner that was thoughtful of other perspectives. I could give to others my views while still being accountable to my sense of person. That one simple fact of sharing while caring is a BIG win and definitely a deeply developed part of my leadership style. I learned that good teamwork is the key to success in designing activities and strategic planning when time and resources are limited. However, learning how to hold your words or reframe them can be just as productive when working with limited time. Our non-negotiables that have been developed allowed me a framework to work within comfortably, setting tables for personal engagements. In fact, our developed list of non-negotiables is a sample and recommendation I would suggest for all collaborative efforts that require dialogue from different perspectives. Reflecting back on the time I have spent with many good people trying to build a bridge between community and institutions in and with science, makes me realize just how much I have grown. I went from being a teacher, (and CEO of a community nonprofit) that was not confident in his abilities to lead a project of this magnitude into someone who found his own leadership science relatable style. I became effective, engaging and efficient for those I attempted to help. While I look back at the project, it was a journey which went far beyond noise pollution. I became my own experiment, taking myself through a personal scientific method of guessing, trying, failing, correcting and learning and for that process and opportunity, I'll be forever grateful.



Illustration by Jay Williams

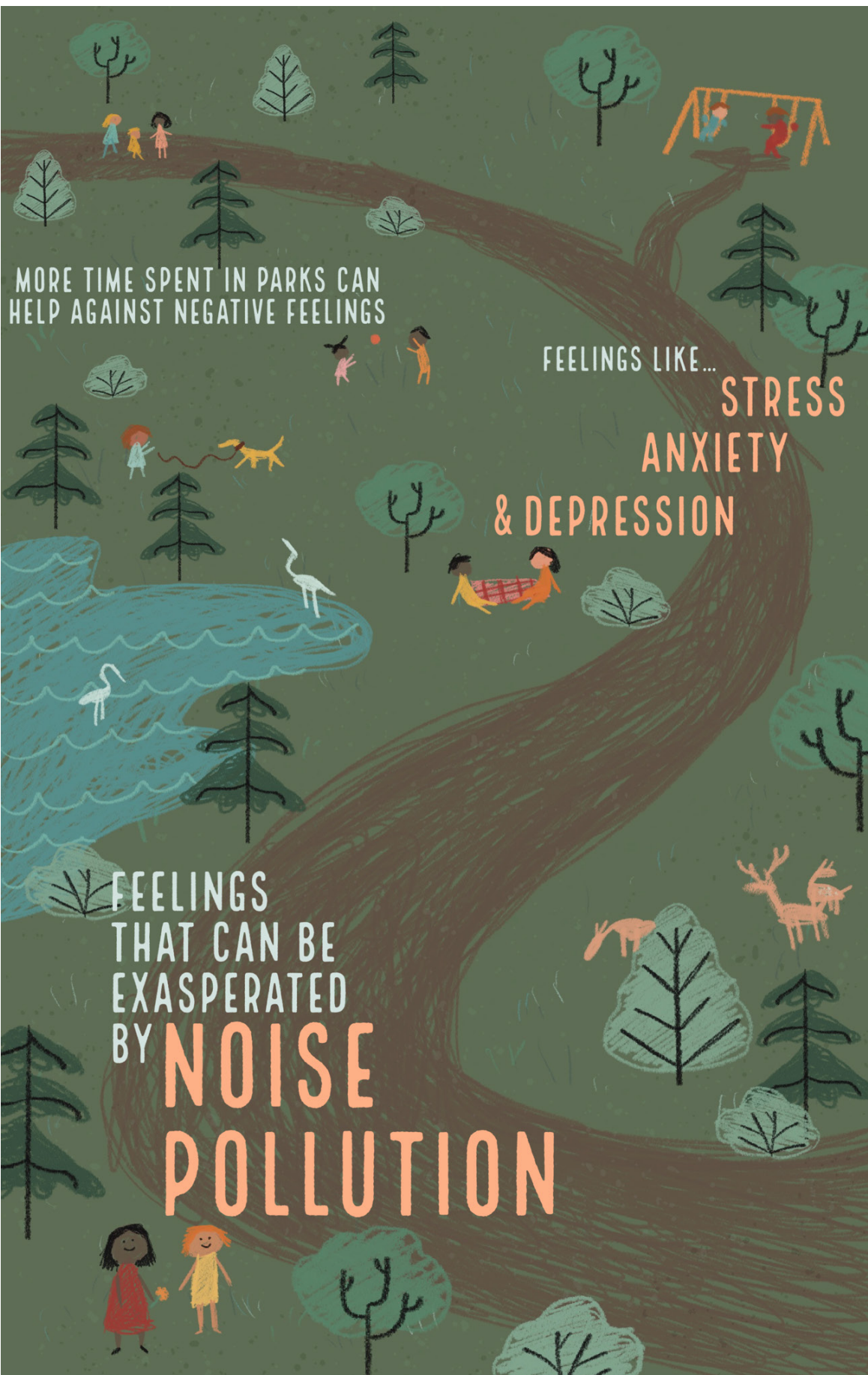
TANYA SCHUH, Co-PI

As I process what the last 3.5 years have held, it is quite the mixed bag. On one hand, it has been so powerful to be a part of a group that works so hard and so intentionally to improve the experience of diverse communities engaging in spaces where they have been historically underrepresented. There have been trials and errors, and then many successes, in finding equitable ways to hold all voices as equals as we collaborate, co-create, make decisions, and disseminate our findings. It has been powerful to see the ways that this team has been able to support each other as we learn and grow, but also have the opportunity to use our expertise in settings where it hasn't been historically valued. It has been amazing over the years to see such positive response from the various audiences as we present our research, framework, and ways of working. I am hopeful that many institutions, communities, and various settings are impacted, in big ways and small, by learning from our work, research, and example.

I have been struck by the depth that has come through community coding, when research isn't done by a few and with only the institutional perspective. In the past project, I have seen how watered down and broad the traditional, institutional-led research results were. As a representative from a community-based organization, the results represented my experiences, however, they were presented in a way that did not fully explain the specific challenges that we often face when working with science institutions. Seeing these results made me wonder how true change can happen when the real issues are not being addressed in meaningful ways. In contrast, seeing the research and recommendations that were presented by us ICBOs made me hopeful that real changes could come in these types of collaborations – which is one of the main reasons why I decided to join this second project (in addition to the access and opportunities that it would create for my students and graduates). Again, I'm proud of the research that our ICBO collaboration and the team has done – the research shines a light on many issues of inequities between collaborations, the reasons they exist, and truly highlight what must be overcome in order to advance science in ways that are truly equitable and involve all communities.

It has not been an easy road. As our work and ways of working go against the status quo, there have been many issues working within the confines of a traditional science institution. Besides systemic issues regarding funding and processes, we have not been supported by many people or systems within the institution. These issues have caused drama, significant delays in the work, and ultimately, the unilateral decision to deny us the opportunity to apply for a supplement. Seeing codes and research results play out in real time and in real life has made it even more evident why our research and work is so important.

I am hopeful that while within the institution, we have encountered numerous obstacles, that the NSF will use their power and privilege and take our research, our stories, and our recommendations and create real change within the field. I hope that the NSF sees the value in communities and invests in community leadership, encouraging change within the field and leading by example. There are plenty of reasons why it would be “too hard” or “too inconvenient” to lead and prioritize these changes. However, the risk and loss that would come by not is far greater.



MORE TIME SPENT IN PARKS CAN
HELP AGAINST NEGATIVE FEELINGS

FEELINGS LIKE...

**STRESS
ANXIETY
& DEPRESSION**

FEELINGS
THAT CAN BE
EXASPERATED
BY

**NOISE
POLLUTION**

Illustration by Jay Williams

BOBBY WILSON, Co-PI

The last twelve months have been filled with challenges, to say the least. The NOISE Project is poised to take its place in pandemic history between the tale of two cities—the good and the bad. We have seen success and we have seen failure. We have come a long way, and despite our successes, we have experienced significant setbacks.

Personally, I have the feeling that the NOISE Team is facing the possibility of fracture. And yet, from my lived experiences as an African American male let me know that everything will be alright. There is no doubt in my mind that each one of us will go on to have bigger, brighter, and greater impact by centering justice, equity, diversity, and inclusion within the communities that we serve. Why? Because of the NOISE Project, each of us has benefited from the exposure to and learning of a language that has empowered us to speak our truth, to name injustice, to work together in solidarity and mutuality to improve the quality of life for those who we have been called upon to serve.

March 7, 2022 was a day filled with uncertainty from the perspective that each of the NOISE Team members who participated in the call with Ian Owens. The Co-PIs and ICBOs poured out our hearts and our souls in a very professional way—a way that I have never witnessed over the last eight years that we have been working together.

I am proud to be a part of this great team and the great work that we have done. I look forward to crossing paths with my colleagues as often as opportunity will allow.

After three years of co-creation, we now have a NOISE App, a white paper, and an article published in *BioScience*, a major science journal. We have reached a point in our research where the focus has shifted to communication and dissemination. The question I raise now is, how can we, as individuals and as a collective body, continue to communicate, disseminate, assist, and assess our efforts in changing the way that large institutions collaborate with community-based organizations? This question centers on equity and continues to be at the heart of moving this great nation forward. For the record, I make no apologies for the statements that I made in “The Soul of a Man”.

MAUF is committed to communicating and disseminating this work beyond the walls of our collaboration. We are communicating with HBCUs and disseminating the research and the app to the young minds within those institutions. We are sharing the research and the app with elementary, middle, and high school students from marginalized and underserved communities, with marginalized and disadvantaged farmers, other community-based organizations like MAUF, as well as with families, friends, and acquaintances. This work has been and will continue to be at the core of what we do at MAUF.

The candle that centers on equity has been lit. Yet, it appears that those with power and privilege desire to cover it under a bushel basket. What began as the flicker of a candle is now a forest fire and it is burning within the hearts and souls of the Co-PIs, the ICBOs, and of those of us who are disseminating this great work. For those with power and privilege who desire us to go away, they are in for a rude awakening. The impact that we are having upon our communities and upon the next generation is too significant for us to abandon now. The NOISE Project and its impact is here to stay.

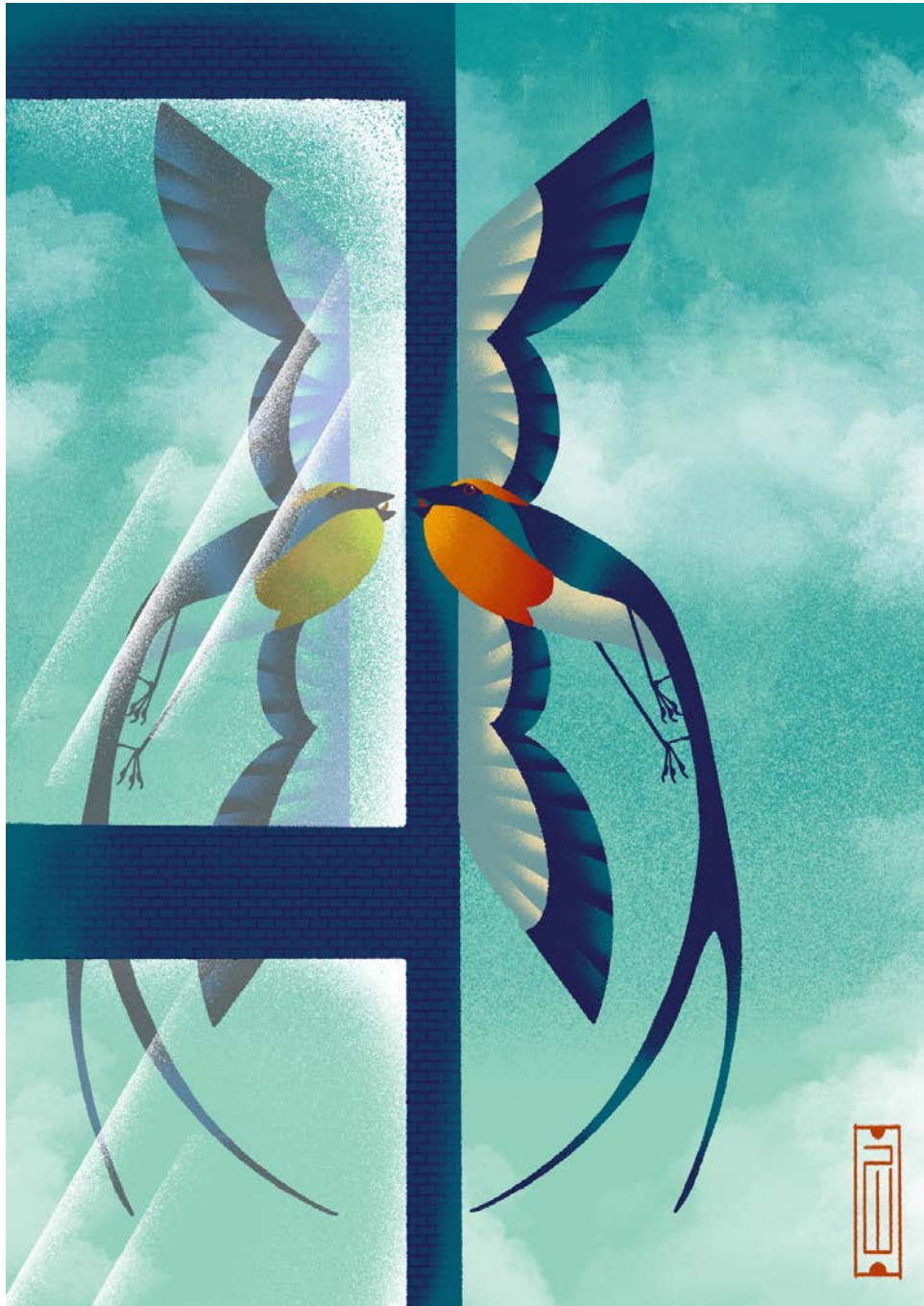


Illustration by Jay Williams

“The candle that centers on equity has been lit...”

MAKEDA CHEATOM, Co-PI

I've been on this journey for 8 years ago with my colleagues, the ICBOs from different parts of the nation working for their communities to have a more livable community. As a community organizer living in a town of conservative values doing cultural work and not receiving help or recognition, we were welcomed with open arms. We've all joined together for the same cause of social change in our communities. We have seen throughout the years that grassroots community-based organizations run by BIPOC communities have always had to prove their expertise. It has been no different at the WorldBeat Center. Located in Balboa Park, San Diego, a central location for nationally recognized cultural institutions, WorldBeat Center has been excluded from collaborations with institutions. It took a national collaboration like the Noise Project to be recognized and respected as an institution and as a director.

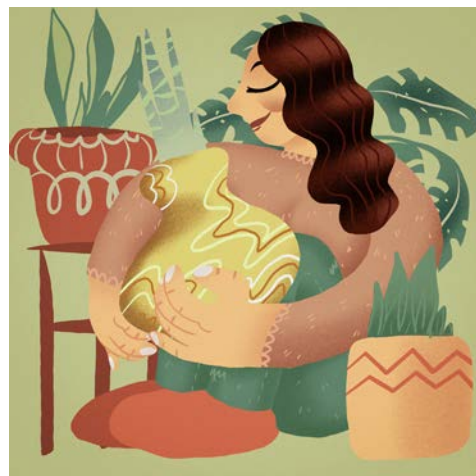


Illustration by Jay Williams

Within a year, WorldBeat Center and I were invited to form various collaborations in the Park as well as be members of various committees. These committees have historically lacked diversity and have shown prejudice toward those who did not hold to their standards of degrees, experience, and class. Balboa Park and its institutions have also protected their reputation and after the protests that came from George Floyd and it became a national trend to commit to Equity, Diversity and Inclusion, the institutions and committees invested in everything they could think of to show they were also committed to EDI.

Some of the committees that come of Balboa Park's Cultural Partnership Committee for EDI that Makeda is now a part of include the Balboa Park Cultural District Advisory Board which aims at helping guide the development of an Experience Plan by including a diverse set of community voices from all sectors of San Diego with a variety of expertise. In addition, I am the leader of the Inclusion, Diversity, Equity, and Accessibility Task Force for the Balboa Park Cultural Partnership which is helping guide an IDEA framework for the Partnership.

Most recently, I have been invited as a project advisor for a new grant project proposed by the Reuben H. Fleet Science Center. My experience as a CO-PI in the Noise Project and trust within the BIPOC community have highlighted me as an asset for collaborations.

With the Noise Project, I was able to bring back the research to my community in San Diego and show that science is for all. In the site research, I was able to combine art with STEM and do STEAM. What gave me the greatest satisfaction was to see the community engaged in the Noise Project. It was rewarding to share education on the health effects of noise pollution. This experience as a community CO-PI is dedicated to my parents who weren't able to finish elementary school, my ancestors, all community leaders and the future generations.

CATHERINE PHAM, ICBO Advisor

Hi! I'm Catherine Pham in Washington, D.C. My background is in clinical social work and education. I first became involved with the Cornell Lab of Ornithology through the Celebrate Urban Birds program nine years ago. At the time, I was working in a large social services organization, Miriam's Kitchen, working with people experiencing chronic homelessness. I lead a weekly walking/birdwatching group, and we were thrilled to receive a mini-grant from the Lab. In addition to our weekly outings and data collection efforts, at the end of our grant year, we threw an amazing bird festival in our dining room, attended by hundreds of people - think bird yoga groups, bird-themed snacks, spontaneous bird poetry, a bird party playlist, a bird-themed art exhibit, a bird call contest, and so much more. It was quite an event! I left Miriam's Kitchen in 2017 and soon after began to teach nature and outdoor education to the pre-K grades at Sacred Heart/Sagrado Corazon, a bilingual (Spanish/English) Catholic School in DC. Being in nature with 3 and 4 year olds was entirely different, with new joys and challenges. We were fortunate to receive a Celebrate Urban Birds mini-grant at Sagrado Corazon, and our events engaged the school community and neighborhood as well. (In fact, when we hung our homemade bird feeders around the school we got some complaints from neighbors because of the increase in bird droppings!) One of our favorite experiments was studying which type of bird seed our focal species preferred. As you can imagine, the two projects I worked on were very different from one another. On the surface I have explained some of our activities. But here are the most important things: At Miriam's Kitchen, our group of participants who lived outside were contributing to science. The data we submitted to Cornell was part of a citizen science project. One of our group members said to me that being a part of this project was important to him because it gave him an identity other than being homeless. At Sacred Heart, we also contributed to citizen science - even at ages 3 and 4. Those kids knew so much about the eight bird species we were focusing on, and by the end of each school year, the kids considered themselves citizen scientists who contributed to the Lab's bird counts and helped keep the birds in DC's Rock Creek Park safe. Being part of the CUBs program helped science become accessible to the students in a way that boosted confidence and showed them a possible future in science. As one tiny citizen scientist told me "My work is important, and the birds depend on me." Being part of the CUBs program was a completely positive and enriching experience for me and the participants in both of the settings I described. I am forever grateful to Karen Purcell and Marilu Fretts from the Lab, as they went out of their way countless times, including sending pens and fun stuff to a Miriam's Kitchen guest who moved into housing (!), and comforting a class of pre-K3 year olds who found a dead bird on one of their expeditions and were inconsolable. (In this instance, Karen hopped onto a Zoom call with us and explained about wildlife's "cycle of life.") I have been a part of the NOISE Project since the beginning. I am grateful to have been a part of this project and to have met so many people I would never have crossed paths with - scientists, IT specialists, app creators, and Cornell Lab leadership. While I am proud of the work the NOISE Project has done, it has been difficult pretty much every step of the way. On the one hand, the work of the ICBOs has been sought after and needed, but only if it fits into the university's academic mold, including how funding is organized, and how decisions are made. I feel that what has happened with our project in many ways mirrors what has been happening in our country and in communities that I am part of in Washington, DC. Specifically, I mean that "systems" are being nudged to change so that more voices can be at the table, and in particular voices of black and brown people. I hope that the Lab's future includes more emphasis on including diverse voices on staff, in leadership, and in general. It matters. Thank you.



YAO FOLI, ICBO Advisor

The NOISE Project has geared me towards understanding community-led science projects. I joined the ICBOs in 2018. I was naive about equity, diversity, and inclusion before joining the ICBOs. The realities and challenges of our communities are inevitable. In addition, with the system's hidden agenda and structure, it is adverse for the advancement of science and the benefit of science. How could a community thrive without knowing its worth?

Working with community leaders and scientists all over the United States has given me the exposure to learn and better understand the barriers communities encounter in collaborations.

This project has also helped me understand the importance of process and decision-making as a community leader and a community educator. I had the understanding that inclusivity opens the door for diversity and leads to equity and justice standing for all but not for one.

With all the knowledge, the skills, the tools, and the packages the noise pollution research provided, I am currently drafting a noise pollution project and food justice research for the Learning Farm and Enfield elementary school in Enfield, New York.

The noise pollution research focuses on monitoring sound levels from the earphone and loudspeakers and identifying safe sound levels from the earphone and loudspeakers.

I have been conducting noise pollution research focused on the corn mill machine in Hohoe, Volta Region, Ghana. The corn mill machine produces 100 decibels.

With the help and support of Celebrate Urban Birds and the Cornell Lab of ornithology via the NOISE Project, in 2021, I started a birds education project called, Bring back the birds. Bring back the birds is to help explain the relationship between birds, humans, and the environment in our local dialect, Ewe. Bring Back the Bird is an initiative that will take place in Hohoe, Ndor, and Tonglo communities in Ghana. The goals of the project are to use equity-based processes, co-creation, non-negotiables, and agreements to work with the community to bring a great connection with birds.

The noise pollution research did not only teach me many things, but it has also connected me to great minds!



Illustration by Jay Williams

HOW DO
YOU

STOP
THE

NOISE?



CECILIA ALVAREZ AND JUAN FLORES, ICBO Advisors

For us, participating in this project has been an honor and we have been able to learn about the importance of collaborative work and co-creation. This not only generates a positive impact on each of us as people, but also helps us understand the impact that reference frameworks can have on projects. When the frameworks under which an investigation is conducted come from the point of view of the dominant culture, they may not have the necessary impact within the community; instead, when we conduct our research with a framework that is created from the perspective of the community, it is accompanied by equitable processes from the beginning, where the community is part of the entire process, from creating the protocols, establishing the research questions research, data collection, analysis and dissemination of results in creative ways and in a way that the community can understand and why not, that are an inspiration and example, either to continue the research or to answer other questions that have arisen from it.



Illustration by Victor Puga

During the project we were able to learn about how noise affects us and why it is important to know its repercussions on our health, how we can take care of ourselves, what laws protect us and how we can become aware of the noise that we ourselves generate, how we can have changes in our behavior to take care of our health and that of our neighbor, how we can create refuges of silence for our home, work and our community and why they are important for our well-being.

After learning, the next thing was to share with our community, and find ways to do it. We understood that we have different audiences and different ways of learning in our community, so we had to find different ways of disseminating knowledge. One of them was art, another was through talks with students, we gave workshops for the general public, where people could express and share their experiences with drawings and talking about what was happening at home or work and how they were dealing with pollution. acoustics.

Banners were also printed with the most important information to be able to make itinerant exhibitions where people can, through a QR code, learn more about the project and learn more about this important issue that affects us all.

We did a year-long investigation to find out about noise and birds, how decibels are related to the number of species that can be observed in a certain place, and if there is a relationship between a higher number of decibels and fewer species. For this investigation, 6 points were chosen (3 for noise and 3 for silence with similar characteristics) in 3 Protected Natural Areas, one Federal, one State and one Municipal. In addition, an important fact is that each of them is in areas of high, medium and low economic level and also provides interesting data regarding it. Since noise is also directly related to this issue, when you have an area with a higher purchasing power, you have less noise pollution. Another important thing about this project is that when analyzing how the data would be obtained and what equipment would be used, we thought that we wanted this project to be easily replicable by any community that wanted to do it, without having to invest too much in it. The app was in the process of being created, but today it is a reality and it can help in an incredible way, for when we did the project we used a camera, a sound level meter, binoculars and a notebook to document the bird species, later they were uploaded to the ebird platform. It is important to point out that during this project we had the pandemic and the support of the authorities, both from the government and from the Natural Protected Areas, was essential to carry out our work without interruption, since there was restricted mobility in the city. We also suffered from tropical storms and two hurricanes during September and October of that year. Another relevant thing is that a new species could be registered for the list of the Nichupté Mangroves ANP, the Wedge-tailed Sabrewing. The results of this project have been shared through talks via zoom due to the pandemic, through the ecology secretariat, public and private universities, the Quintana Roo planetarium network, among others.

In collaboration with Celebra las Aves Urbanas, Green Jay Bird Conservancy and teacher and artist Victor Puga, we made an e-book called “Equity in birdwatching, reflections and experiences” which is a tool to invite you to reflect on issues such as equity, inclusion, discrimination, social justice and community-led science. In the same way, we share examples that help to carry out actions to learn and better understand the great responsibility that we have as a community and as individuals, so that all people can know and participate in the different activities that are carried out in the Community, such as Bird Watching. Addressing these issues and knowing them from different perspectives will help enrich knowledge to apply it for the benefit of less privileged groups, who have been victims of discrimination and also send a message that helps preserve the natural wealth of the planet. The events caused by racist acts, the COVID-19 pandemic and the wars that take place every day around the world, commit us to know and work more on these issues. Birdwatching is an activity that is constantly growing in different parts of the world, it is important that it is carried out under the principles of fairness, equality, justice and without discrimination. We have the firm conviction that knowledge, science, education, care for the environment and dialogue are the main strengths we have to achieve structural and significant changes that help us to have fair, equitable and inclusive societies.

I want to mention that having the opportunity to work closely with the IT Team in the creation of the app was incredible, this co-creation was a complex process, but the result of this application and its impact is incredible. Many communities can use the data generated not only to learn more about noise pollution, but also to demonstrate to the authorities in which areas of the community there are more problems and with data they can even generate changes in public policies.

The community-led research coding was a whole learning process, definitely throughout the days you can feel how you are changing, the learning is unquantifiable, not only do you learn about co-creation but you also learn in depth the importance of giving it the correct name to things and that by naming them you can visualize them better. Meaningful talks and discussions with a variety of voices, realities, opinions, and stories definitely teaches you, nurtures you, and makes you a better human being. Understanding inequities, how systems work, the characteristics of white supremacy, power and privilege, community perspectives and the value of different perspectives for science, just to give a few examples, gives us as a community learning and a new perspective that is born from co-created work. We want people to know the process by which we have reached our working agreements, our research framework from a community and non-extractive perspective, and to learn how we organize our community review board and what our non-negotiables are when we work in co-creation. May this work be an inspiration for other community organizations that understand the power of the work of united communities to generate structural changes, changes in systems, changes to make science better, science with more perspectives with different forms of knowledge, better science , where the communities lead the investigation and are involved in the entire process.

Being part of the research analysis team allowed me to work on something I had never done before and it was an opportunity to be integrated into the entire process. What a wonderful experience! An experience of life. Now begins the work of disseminating the results. It is exciting to think about all the ways in which we want to get the information to reach the largest number of sectors of the population. May this work be known and replicated by all communities in the United States, Mexico and the world.



Illustration by Victor Puga

LA EQUIDAD EN LA OBSERVACIÓN DE AVES

**Reflexiones y
Experiencias**



The Cornell Lab of Ornithology
Celebra Las Aves Urbanas



Illustration by Victor Puga

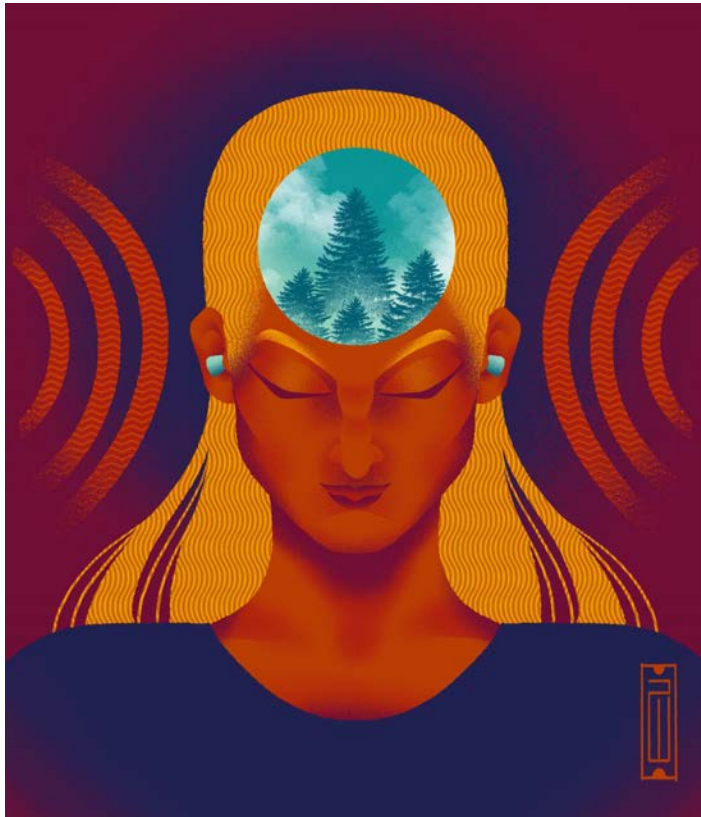


Illustration by Jay Williams

KAREN KITCHEN, ICBO Advisor

The Noise Project was created to raise awareness of the significant negative effects of noise pollution with an emphasis on ways that noise pollution impacts marginalized and diverse communities. Most of our group have been working together for years. We call ourselves the ICBOs (Independent Community Based Organizations). With this project, we engaged directly with our communities to raise the level of awareness about noise pollution and offer solutions and strategies that could directly benefit our communities. For some of us that involved promoting the many health benefits of quietness and the opportunity to listen to hear the softer sounds in nature. We highlighted the importance of creating noise refuges for everyone to be able to access. Other ICBOs worked primarily with urban high school youth and paired the noise pollution awareness with a focus on accessing educational paths of college and career in STEM and STEAM at universities, including the Cornell Lab of Ornithology. We all

shared resources on ways people can protect their hearing and lessen the short and long-term health risks caused by noise. We encouraged the use of hearing protection at loud events such as concerts and also when operating certain household appliances.

The outreach included in-person gatherings, online webinars, conferences, workshops, and the co-created development of other educational resources such as the Noise website, a poster, pamphlets, Stem For ALL videos, our Community Perspectives Facebook page, PhotoVoice projects, an ICBO comic book, an app that transmits the sounds of plants (plant music) and an interactive app that the ICBOs co-created with software engineers at the Cornell Lab of Ornithology. Most of our resources are available in English and Spanish. In addition to the education and community engagement activities centered around noise pollution, we studied how to develop, as our title states, the Processes and Potential to Engage Historically Underrepresented Communities in Public Participation in STEM Research Through Authentic and Impactful Collaboration”.

Using the frame-work we developed in a previous research project, and using Grounded Theory and Critical Race Theory, we examined ways that collaborations and partnerships between community-based organizations and science institutions can be improved in areas of equity, diversity, and inclusion. In order to achieve true co-creation and equity in collaborations, and to ensure communities really benefit, we must examine, support, and frequently challenge the significant factors of Power and Privilege, Trust and Transparency, Realities and Relevance, and Commitment and Collaboration. These factors must be confronted and evaluated continually on the path to changing systems and status quo, and establishing more equitable partnerships. Equity, diversity and inclusion must always be centered.

Although Covid-19 disrupted our work somewhat, many of us made additional time to focus on the coding of interviews and surveys, analysis, evaluation and dissemination of our findings. We were excited to co-author an article about our research and thrilled that this article was published in the March 2022 issue of the journal BioScience. We showcased our work at CITSCI Citizen Science conferences, STEM FOR ALL, the 2021 International Commission on Biological Effects of Noise conference and several presentations to other departments at Cornell. We prioritized time to have regular meetings, and to focus on strategies and solutions to problems and delays. One unexpected delay was our Noise Project App, but that was finally completed and launched in February 2022, and we are eager to share it with everyone.

Throughout this journey, we relied on our working agreements and non-negotiables to guide us. Respect for one another, and acknowledgement of the gifts that each of us brought to the table were essential to this work. Many of us became close, life-long friends. We feel deep gratitude for what we've learned, what we've achieved, and what we've become through our participation in this rich opportunity to make positive change. Although this particular project has come to an end, our work, our commitment to engage communities around noise pollution and to help communities develop more equitable partnerships will continue.



PHYLLIS TURNER, ICBO Advisor

I am Citizen Science. I have the title ICBO (independent, community-based organization) and I am engaged in community-based participatory action research that focuses on noise pollution. Before becoming an ICBO with the NOISE Project, I was a “seasoned” Community Science Collaborator (CSC) and sponsor of an outstanding group of students from Tri-Cities High School. They were members of the TCHS National Beta Club, and they were called Jr. CSCs. Youth from a marginalized school community were introduced to this informal, community-led research project on noise pollution.

Because this research was already being shared in my community by an enthusiastic Co-PI, Mr. Bobby L. Wilson, I was fortunate to be presented with the opportunity to engage with my students in this exciting participatory action research—the NOISE Project. Wow! In collaboration with the Cornell Lab of Ornithology (CLO), CLO staff, the National Science Foundation, and other independent community-based organizations from across the United States, and Mexico, the students and I were introduced to co-created principles which included a set of Working Agreements and Non-negotiables called PROCESS. And through the process of attending regularly scheduled meetings and getting weekly NOISE updates, we became part of an amazing community of diverse, yet like-minded, individuals. I formed what I hope will be lasting relationships with other CSCs, ICBOs, Co-PIs, CLO staff, and the Principal Investigator with the project. I have learned—a lot. The ‘how’ of communication matters as much as the ‘what’. I learned a new language which I later used to code NOISE interviews. I learned to analyze NOISE data. I have become more aware and empowered. I have shared many of my lived experiences both face to face and virtually because a global pandemic changed the way we have navigated, co-created, communicated, and disseminated through the project.

Voices. My voice is now part of a beautiful chorus of diverse voices that collectively and individually speak our own truths. Our voices that highlight the challenges, changes, and achievements of our communities can be heard and researched as co-created academic publications in science journals! That is huge. Our voices matter. We may not arrive at the destination of justice, equity, diversity, and inclusion together, but we will arrive because we were together on a journey that matters. Through this PROCESS, I have gained a deeper understanding of the complexities of race, institutional racism, internalized white supremacy which I referred to as internalized oppression, and white supremacy culture.

I was introduced to a FRAMEWORK that works. I have a deeper understanding for the value of diverse perspectives in science, as well as other areas of social justice engagement. It is impossible to separate science from social responsibility because social responsibility is the primary function of science. I have learned to use a language that helps me to name the harsh and brutal impact of discrimination and other social injustices. I have learned to work in community and to be more patient and to practice deep listening and loving speech even though I still get excited and can hardly wait to share my thoughts. Forgive and learn from mistakes. I have coded and analyzed into a wonderful new way of communicating and collaborating based on the principle of consensus. I love this NOISE Project—what it has given to me and what I hope has been my meaningful contributions to the Project. I am Citizen Science. I will use this experience to help move the needle towards a more just, equitable, diverse, and inclusive world that includes representation of African Americans and BIPOC communities in science.

Challenges

As we move through the final days of the NOISE Project, the learning continues. Being a part of this illustrious group of people who call ourselves the NOISE Team has exposed me to different ways of knowing and of processing information and experiences. For as amazing as this journey has been and realizing that the life of the project was time-stamped, still there is a sense of an impending feeling of void that will soon fill the hours once scheduled for Co-PI, ICBO, Jr. CSC, or Full Project meetings.

The thought of the project coming to an end is not as bad as the thought of how it is coming to an end. As the newest ICBO, I was anxious to understand the relationship between the NSF, the Cornell Lab of Ornithology, and the community partners. Although the partners, or ICBOs, did not always agree on the how, when, who, or where, the co-created Working Agreements always led them/us back to the point of consensus. And the Working Agreements? Yes, it is part of the process to “let people speak for themselves”

There are many aspects of the NOISE Project and countless artifacts that have emerged from the project. Some are still emerging as the Project continues to live and enlighten us. I would have never thought that a research project focused on the inequities and impact of noise pollution in historically marginalized and underserved communities would have led to and disrobed a deeply rooted system of white privilege and white supremacy in a large science institution. The NOISE Project has effectively revealed a system neatly covered in such a thin layer of fragility that if you get as close as a “funding supplement”, it would be easy to see right through to the core where white supremacy culture lies.

It is not my intent to negate the invaluable learning that I have gained nor the lifelong relationships that I have formed because of the NOISE Project. But neither will I ever forget perhaps one of the greatest lessons of all—that when white supremacy is threatened, it will reveal itself with answers to questions formed by stringing lots of fancy words together in broken sentences that need not make any sense. But to a person of privilege, these broken sentences are used as a conveyor belt to move him through the moment. “Obviously” (7 March 2022 meeting with CLO Lab Director Ian Owens), the purpose of these fancy words is not to move the needle towards justice, equity, diversity, and inclusion.



Illustration by Jay Williams

The NOISE Project has resembled a major stage play production, of sorts, starting with Act I, the communities' partnership with the CLO. After moving through Acts 1 – 9 (CLO, PI, Co-PIs, ICBOs, CSCs, Jr. CSCs, the App, Publications—BioScience, Informal Science, Coding & Analysis) and we approach the final act, the CLO reveals that it failed to read and understand its role. So now, because it did not like Acts 1 - 9, it decides not to go on stage for the final act. The audience—the community partners and their beneficiaries—are waiting with great anticipation for the last act, ready to offer a thunderous applause for all the hard work that went into planning—the funding (NSF), the location and budget (CLO), the script, edits, and final approvals (the communities and CLO), and even the possibility for an encore (the supplement).

I am disappointed, to say the least, that the CLO director showed the nerve to speak of the NOISE Project in such glowing terms, describing the project as an “important topic, innovative, fascinating, successful, and impactful”. Although I agree with his assessment, in his own words, he knows very little, if anything, about the NOISE Project.

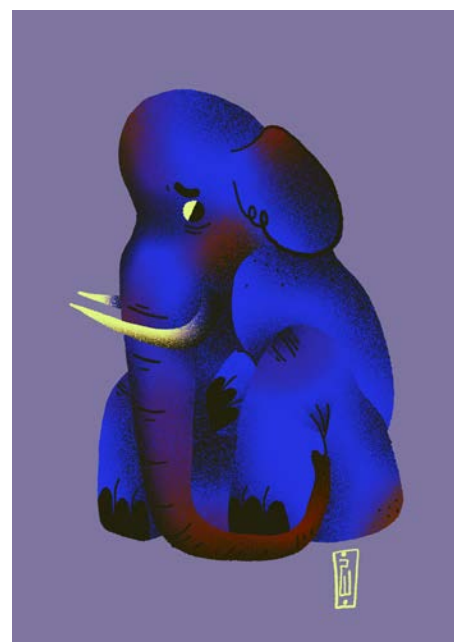


Illustration by Jay Williams

As the new leader of the lab who, by default, became an ex-officio partner on this \$2.6 million-dollar project of which the lab was awarded 69%, he did none of his own research to understand the nature of nor the need for this work. The NOISE Project was in its final year. The Lab had already accepted 69% or more than two-thirds of the total grant. The fact that we were in Year 3 should have been an indication of the lab's previous commitment to see the project through to completion. Despite the inequitable distribution of the award, the communities did the work in historical fashion “with less”. To add insult to injury, instead supporting our efforts and desires to fulfill the goals of the grant, the new “leader”, again by his how admission, relied on second-hand information on which to base his decision to deny our request to pursue supplemental funding. This raises a question about the timing and justification of this “strategic refresh”, as he called it. How could his “expertise” allow him to overlook the inextricable connection between science and social responsibility?

To make a quantum leap from the bi-weekly meetings in the early days of the project to where we are now—local community events, coding, analysis, reflections, final reports, impact statements, and manuscript preparation, one would have to use vivid imaginations to visualize the impact of this very exciting multi-generational journey involving communities from across the United States, Mexico, and touching Ghana who historically have been excluded from the sciences. Some of us are feeling uncertainty about the future of our research, its impact, and the future of our team. Some of us are wondering whether this country will ever understand the value of science to communities or the value of diversity for the sciences. Perhaps, if there is access to community-based research. For the NOISE Project, the final act is dissemination. The Cornell Lab of Ornithology, you are Center Stage.

WHAT IS

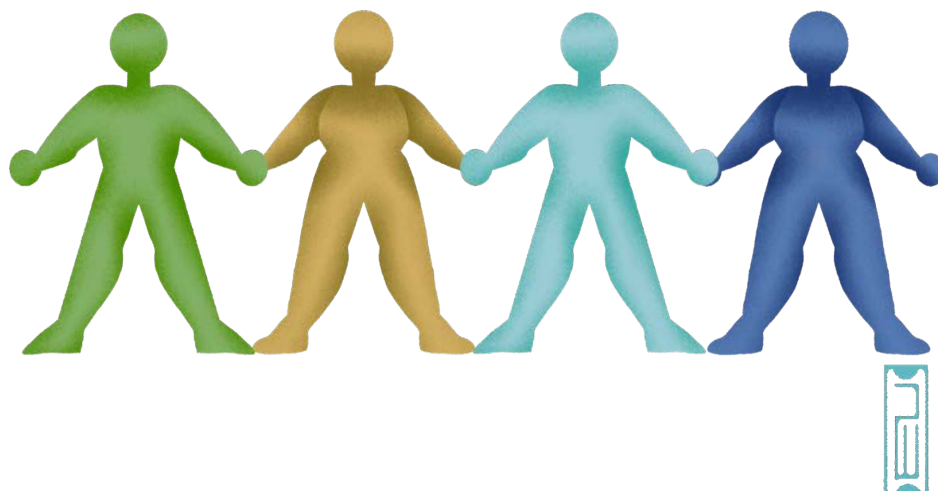


NOISE?

MATEO CASTELLI, Student Research Team

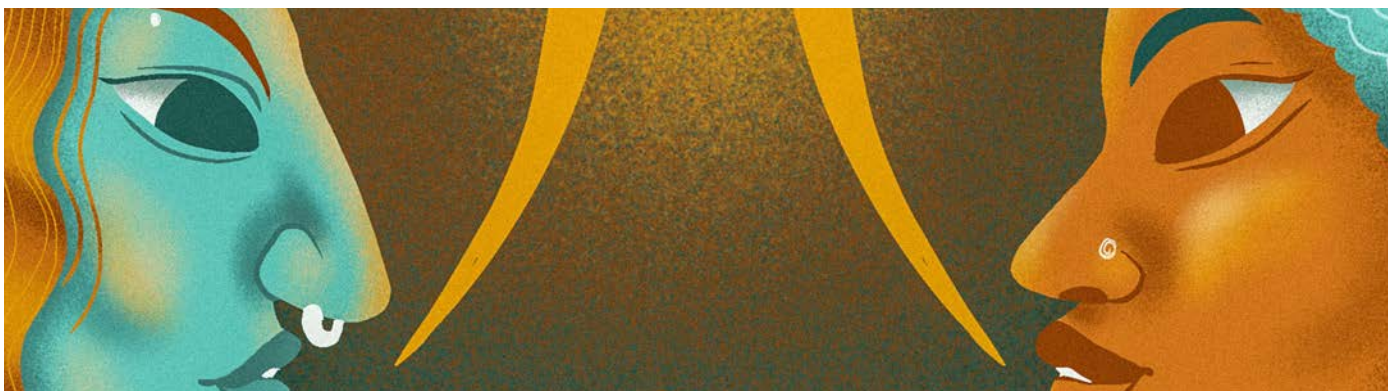
My involvement in the noise project allowed me to dip my toes into numerous roles, from being a part of the student research team to collaborating on our Noise App design to coding and analyzing our qualitative data. Across all these positions and roles, I have felt the impact of this work. It's difficult for me to conceptualize the 'impact' of this project in a straightforward manner. Traditionally, I could point out the project's level of engagement with partners, successful publications, and data-driven results to measure the impact. The Noise project covers all of these bases. Our workshops and presentations leave participants impressed and intrigued. Our Noise App, tool kits, workbooks, and art have a broad reach in community and academic settings. Our public access publication for Bioscience will impact how researchers and partners think about collaboration by sharing years of inspiring work. However, it's not accurate to speak about these things as the project's central impact. In my view, the real impact of the project occurred (and will continue to occur) on the interpersonal level. Specifically, where the interpersonal level engages with the dominant culture. Institutions and systems of power are terrifying to challenge—individuals who do so need to be united by love, faith, hope, and wisdom. The Noise project is all of that, and its greater impact occurred because our group was constantly sharing and spreading these values. We did so through our documentation, meetings, conflicts, and celebrations. The moments our group faced inequity and responded with intention and purpose brought the project's mission and values to life. These moments of honesty, transparency, and growth offer a vision of the future of collaborative research.

I have felt this impact personally and cannot envision a future in academia, research, or collaborations in which these values don't continue molding my choices and actions. Every person who has come into contact with our project shares this impact in one way or another. Even those who have not internalized our group's drive towards equity have had to face their power and privilege head-on through their interaction with the Noise Project. Those who have internalized these values now walk into other collaborations fortified by the understanding that they hold knowledge, experience, and truths that can create better and more equitable research. In this way, the impact of the Noise Project is not quantifiable or observable because it will continue to blossom and spread in ways that we won't be able to track or measure. Not because it isn't 'real impact.' Quite the opposite; because it is authentic, the impact of the Noise Project will go beyond even our visions and hopes.





Illustrations by Jay Williams



OWEN SULLIVAN, *Student Research Team*

I joined the NOISE project almost exactly three years ago. I was then just a freshman student at Cornell, and I'm now preparing to graduate as a senior. I spent the summer of 2019 in Ithaca at the Lab of Ornithology, working alongside Brigid, Adam, Mateo, Karen, and Chacha in person, and the rest of the team virtually. From the start of my time on the project, I could tell that this work of which I had just become a part was simply different—different in its goals, its methods, its frameworks, and perhaps most importantly, in the way it treated its members. I can vividly recall Karen and Marilu requiring us, the student team, to take nature walk breaks. That's right, a project in which your bosses required you not to continue working until the report was done, or to stay late until the filing was finished, but to enjoy the sounds of the birds chirping in the Ithaca summer. I was made to feel as though I was not merely a research assistant, but a member of a family, one that understood and upheld the worth of all of its members. Although it's certainly difficult to distill the entirety of my experience on the NOISE project into one short impact statement, I'd like to take the pages that follow as an opportunity to describe just a few of the lessons I've been fortunate enough to learn from the project.

As a Cornell student on the NOISE project, I feel as though I've learned by unlearning. In other words, the project has challenged preconceived notions with which I entered the project, and in their place, has provided me with new ways of understanding. And, as a Cornell student coming from a privileged background in terms of my positionality and lived experiences, I sure did (and still do) have a lot of unlearning to do. Perhaps the first notion I "unlearned" was the idea that one's level of expertise, intellect, and broader worth varies in accordance with the level of prestige of their academic qualifications. A Cornell researcher with a graduate level degree is an all-knowing sage, while a researcher from a small, community-based organization is worthless, and included in scientific research only when the experts at Cornell are feeling charitable. If this language sounds harsh, well, this is very much the common narrative put forth at institutions like Cornell—dressed up in the language of social justice, though, to preserve the institution's progressive nature and commitment to equity, diversity, and inclusion, of course. What I've learned, in place of this previous notion, is that expertise need not come in the form of a diploma. Every day on our community coding calls, I was fortunate enough to hear firsthand the expertise and wisdom that our community partners shared of their communities, of the ways in which institutional racism affects community-based research, of the subtle mechanisms of the institutional racism just described. Even if I was to study and earn a PHD, such a degree could not substitute for the expertise that our community partners possessed, garnered through their lived experiences and "other ways of knowing" beyond just a traditional, institutional path.

The second lesson I've "unlearned" is the idea that equity, diversity, and inclusion is merely an issue of social justice, and has no benefit beyond this. Rather, I've seen through our work, especially through our community coding process, the way in which a diverse team and an equitable process leads to better work itself. It's certainly the case that the issues of EDI are indeed issues of justice, equality of opportunity, and redressing past wrongs, but their benefit should not solely be stated in these terms. Had our team of community coders been composed exclusively of institutional researchers of one identity group, there is not a doubt in my mind that an enormous amount of the depth and nuance contained in the interview answers would have gone undetected. I can recall many instances during coding in which I read an answer, thought nothing of significance of it, only to hear members of our team with vastly different experiences from myself explain the way in which the response connected directly to some broader structure or theme. Answers that I, as a white man from Cornell, read to be completely innocuous, in actuality embodied the logic of institutional racism, for instance. From an article I wrote for the project, discussing this lesson: "If an answer is analyzed from one perspective—let's say only I looked at and coded the answer—I may subconsciously or even consciously interpret their answer in a particular way as a result of my perspective. However, when a diverse group reads an answer, and all see that answer through a different lens and worldview, multiple people all volunteer their interpretation of the answer. Once these multiple interpretations are brought forth, we are able to discuss each of them until we reach a collective understanding of an interview answer—an understanding that was created by meshing various different perspectives and interpretations."

Thirdly, I unlearned the notion that promoting equity, diversity, and inclusion means treating everyone although they are the same, and rather, learned that it entails consciously and directly addressing the disparities in power and privilege that exist. It means more than just treating everyone nicely, and instead means that we ought to disrupt the systems that generate inequity in the first place. There has long been a relationship of extraction and inequity between dominant culture institutions and underserved communities. If there is ever to be equitable collaboration and co-creation between the two groups, these same dynamics cannot continue but with a friendlier demeanor and an anti-racist training sprinkled in here and there. It must be the case that, at the level of organization, the extractive structural dynamics that have historically been in place are upended, and at the level of the individual, those of us who have benefited from such dynamics must recognize this and work to undo past damage caused. This entails an unapologetically honest discussion of past inequities that have existed, and also necessitates material actions that shift the balance of power to communities. There can be no real equity nor justice for communities until this end is accomplished—milquetoast institutional methods of addressing EDI, while these same institutions perpetuate systems and ways of researching that are fundamentally inequitable, will do little. The ways in which this structural rearrangement of power ought to take place is certainly a complicated conversation, but my point is that if we are to reach a place of equity, diversity, and inclusion within the sciences, it is a conversation that we need to have.

These are just a few of the many lessons the NOISE project has taught me in my three years here. It's been an absolute joy working alongside the team, and my only hopes are that our work was of benefit to the amazing independent community based organizations that form the core of our project, and that we succeeded in moving the sciences forward even slightly towards a place of greater equity.

ALYCIA BASQUIAT Student Research Team

Part I

I was born into the world as a black girl and had no choice but to run into the concept of diversity and equity. When people think of diversity, I'm one of the first images that come to mind, which is weird since it hasn't always been a thing in my mind. The meaning of diversity, equity and inclusion (DEI) has been ever changing throughout my life, as well as its importance to me, from the time I first was introduced to it to now. This is the story of me and DEI.

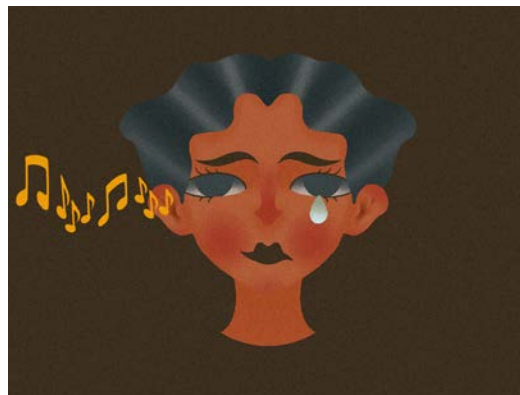
DEI and I first met in middle school. I sometimes wonder if that is too late or too early compared to other children, especially black children. I had just been admitted into a highly selective program that prepares students to apply to and attend independent private schools. This was when a whole new world was introduced to me. The program was for students of color, and the sub-component of the program that I was a part of was for Black and Latinx students who were being prepared to go to boarding school. Up until then, I had no reason to be introduced to the idea of diversity, equity, and inclusion because I attended predominantly black public schools in Queens, New York. I felt that I actually hadn't experienced any effort towards DEI because my schools felt that it wasn't needed considering the environment. But, once I began my academic program, that all changed.

My academic program was rigorous, not only in the fact that I was doing college-level work as an eighth grader while still going to my regular school, but especially because of the steps they took to "prepare" us for our future in private schools. By "prepare" they meant introduce us to the hardships we might face as students of color in predominantly white institutions that were not made for us. I had a psychology class during the program dedicated to identity and understanding how to deal with situations in which my identity was being villainized, looked down upon, or minimized. I vividly remember sitting in the classroom and listening to a then junior at a boarding school talk about her experiences on campus. She said she went to school with Donald Trump's son, sometimes felt that she was a token black woman, and that her school only wanted her there to meet a "diversity quota." She also mentioned the multiple microaggressions she experienced and the hate crimes that occurred at her school. This wasn't the only time I had heard this from current students. It made me begin to question the purpose of me going to a boarding school. Was I only going to be accepted only because they wanted my face on their school brochure to promote diversity? Or was I going to be ostracized by people my own age because of my identity? Was a better education worth all the racism and discrimination I might face?

All these questions were a lot to handle as a 13- year- old. The fact that the first time I was formally introduced to the idea of diversity and inclusion was through the lens of trauma from a PWI, made me believe that the concept was a lie. How could somewhere promote diversity, equity, and inclusion so much, but execute the exact opposite? But despite all the questions, traumatic anecdotes, and warnings, I decided to remain on the path to boarding school. I ultimately believed that I could get farther in life with the opportunities there.

Part II

Fast forward through the many months of academic rigor and applying to boarding schools, I finally accepted an offer to attend Phillips Academy. I was very excited to step foot on campus as a matriculated student, but not for the reasons you may think. Yes, of course, I would finally have independence away from my family and the chance to study abroad (which I immediately took advantage of by the way), but I would also finally get to see if everything I heard about the black experience at boarding school was true. The very first day, move in day, was when I met a few of the people who I still consider my friends to this day. They were also young black women and happened to live in the room right next to mine. As we all went through our first term at school, we talked about how different being there was from home. Although, our first term there was unlike any other. It was during this time that the 2016 presidential election was happening and consuming our lives. We were in constant worry about what would happen. I remember peacefully going to sleep after a long night of watching the news coverage on the election because it seemed that Clinton would win, only to wake up to what felt like the worst news I have ever received.



Illustrations by Jay Williams

The campus that day was desolate, except for the white boy who ran around campus with a huge American flag shouting his excitement. There was sadness in the air and that morning before heading to class I comforted one of my friends who was genuinely scared for what was to come. All my teachers that day paused their lessons to give us the opportunity to journal our feelings or to just be. It felt like my life as a young black woman was about to worsen. Suddenly, there was a number of white people that became emboldened in their racist beliefs, including one who wanted to shut down the multicultural center at school that was a safe space for students of color.

Accompanying all these feelings of sadness, fear, and disappointment, was oddly enough what I saw as a community coming together (well except for the people who were happy about the election). That was one of the first times that I felt that I was being supported by some of my white peers and even teachers. This was not an experience the older students told me about back in middle school.

As I continued through high school, I began noticing small things that made me hyper aware of my blackness: stares when my friends and I would sit at the dinner table together and be authentic in our blackness, my old white male teacher pausing his lecture to question the angry look on my face when in reality I was just being attentive (which was a pattern my other female friends of color also experienced), and having to constantly advocate for myself. Luckily, I had a space to bring these concerns to - affinity clubs, teachers and staff of color, and my friends - and didn't feel alone in my experience. Within my bubble on campus of the BIPOC community, I was completely happy and satisfied, but every time I stepped out of that bubble and was reminded of the school I went to, some of that satisfaction faded away.

The year after the election, when I was a sophomore, my school decided to begin new programming on diversity, equity, and inclusion. I thought, “Great, another scheduled time when I have to educate my peers on my identity.” Although, my program leader made it clear that that was not what this class was about. The class covered the definitions of race, equity, equality, and other topics that were integral to diversity and inclusion. Even though the class met maybe only twice a term and didn’t really get into how the knitty gritty of DEI on campus, I appreciated that the terms and topics behind DEI were clearly defined. This is something that should’ve happened and been in place much earlier, but it took a huge push for it to come to fruition.

A book that was introduced to me this year, *Why Are All the Black Kids Sitting Together in the Cafeteria?* (you should check it out), perfectly sums up my experience at boarding school. A large part of my identity is my blackness, but it was not like that until I started going to a PWI and it became the defining part of my identity to other people. Since then, many of my actions have been determined by my identity as a black person: the people I interact with, the people I don’t interact with, where I hang out, and much more. But, as my blackness became more salient to me, DEI started to seem more and more like a buzz word and less like an actual practice. Although my school had this new DEI programming, it felt like it was still to only benefit my white peers and not me. As I applied to college, I thought heavily about if a PWI was the place for me because of this, but I ultimately chose to attend one because of career and financial reasons. Now, I experience DEI in a different way.

Part III

When I came to Cornell in 2020, I didn’t hear anything about diversity, equity and inclusion. Cornell is so much bigger than my high school that it is much easier to get stuck in a bubble and forget there is another world here beyond my own. I began Cornell hyper aware of how I was different from those around me because I was surrounded by non-black people my first three weeks. I was consistently reminded of how inequitable college and PWIs are. Sure, there was diversity, but what did that mean if it wasn’t valued? It wasn’t until I began hanging out at the dorm intended mostly for black students and made new friends that I started to feel diversity was valued. It seems like that is contradictory: how could it seem more diverse in a place where everyone, for the most part, looked like me?

After some reflection, I realized that the diversity in DEI isn’t necessarily just diversity in race and ethnicity, but also diversity in thinking. My first three weeks of school, many of the people I hung out with had very similar thinking and it made me feel like our conversations were meaningless. With my new friends and new environment, I felt that I actually learned more by talking to people because they had different perspectives and weren’t afraid to share them. Sometimes we would talk about world issues, racism, and other concepts that were enriching and valuable. But still, there wasn’t a structure or setting in place that promoted and notably strived for diversity, equity, and inclusion.

It wasn't until I joined the Noise Project team, that I heard the actual words "diversity, equity, and inclusion" at Cornell and them mean what they're supposed to. The Noise Project introduced me to DEI in a way that was applicable and was on a larger scale beyond the organization. My schools only promoted DEI at the school, but not in the outside community or world. That is what made the Noise Project different. It is about achieving DEI in ways that matter, not just in terms of individual interactions. When I was first learning about community coding and collaboration, I honestly did not understand the purpose. I thought that the same result would come about without it. But, I was quickly proved wrong. After attending a number of coding sessions, I finally understood the true importance of DEI: it allows everyone to show up as their complete authentic selves and be confident in sharing their perspectives to further a conversation, initiative, anything. The level of engagement and creation of new ideas was astonishing, unlike anything I had seen before.

Before Noise, I felt like the DEI exploited the experiences of marginalized groups to benefit the education and livelihood of the dominant groups. It felt like my blackness and my lived experience was used in the classroom to teach my peers a lesson on diversity, equity, and inclusion, rather than us teaching each other and moving society forward. At Noise, I feel like everyone's experience, perspective, and voice is valued and because of collaboration, encouraged to be shared equitably. DEI no longer feels like a buzzword, but a mission, and I have my close friends and the Noise Project to thank for that.



Illustration by Jay Williams