NYU SCHOOL OF GLOBAL PUBLIC HEALTH

جامعة نيويورك أبوظبي
NYU ABU DHABI

UNIVERSIDAD AUTÓNOMA DE QUERÉTARO

NYU Applied Global Public Health Initiative

Annual Report 2020-2021

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I. Acknowledgements

This document was elaborated by Robert Torino, Oscar San Roman Orozco, and Cat Hartwell with support and revision from the Satellites Lab E-board, and the new central lab e-board who met periodically during its preparation and who are listed below:
Robert Torino, Oscar San Roman Orozco, Cat Hartwell, Tiffany Truong, Maliha Mathew, Mariel Miranda, Laura Ramírez Tlapa, Koki Ajiri, Tsedenia Denekew, Zhong Chen Tan, Ashlyn McCool, Indeed Janda, Misty Tabora, Rayza Sison and Punit Shetty.

We want to acknowledge Dr. Chris Dickey; for your continued motivation and support as Faculty Director of the Applied Global Public Health Initiative.

To Kiera Bloch, for always being there to lend a hand to the lab board and all of our members. We couldn't do it without you.

To all AGPHI members around the world from 2020-2021, for your commitment to our mission and unwavering passion. AGPHI is only ever as strong as its members, and in this most trying year, it is your resilience and drive that has kept us together and made AGPHI better than ever.

II. Executive Summary

In line with the AGPHI's mission to empower students to get involved in the work of creating better health circumstances in New York City and beyond through collaborating with outside organizations to find innovative solutions to public health problems; the 2020 -21 board presents this report. 2020 and 2021 have presented some unprecedented challenges to the lab, the public health field, and the world as a whole. Even so, AGPHI has been able to adapt and grow as we continue to fulfill our mission. The following report will outline the goals that were set for the previous year and how many of them were accomplished. Descriptions of each of the projects completed and ongoing within AGPHI are also included. Finally, a message from the new AGPHI Board for 2021-2022 looking forward to the next year of AGPHI.

III. Mission & Goals

Our mission is to provide practical and applicable real-world public health experience while tackling the public health issues we are currently facing in various areas of the world as well as right here in New York.

In 2020, we set out more specifically to expand our lab in both visibility and global footprint. These have previously been weaknesses in our work, as much of what we completed was not publicized well. Additionally, being a globally minded group, we looked to grow our group by making new connections outside the United States to forge partnerships for future collaboration. The COVID-19 pandemic of course placed some limitations on this but we were still able to make great strides this past year.

IV. Objectives & Targets

In early 2020 a list of objectives and targets for the year was established. As a benchmark, we set a goal to publish 3 articles in peer reviewed magazines, and submit at least 7 oral or poster presentations in different conferences. Additionally, we agreed to increase the visibility of the lab by forming at least 3 new partnerships and establishing a sub-committee for an annual summit/showcase of lab work.

We were able to accomplish many of these ghouls, while coming just short in a few.

Publications: Neonatology Today (ISSN: 1932-7137) and Salud Pública de México (00363634, 16067916).

Conferences: The American Public Health Association Annual Conference; Congreso Nacional COVID-19 in Spain and the Global Summit of Internal Medicine and XLIII Congreso Nacional de Medicina Interna in Mexico.

Satellite labs: Two new satellite labs were established at the Universidad Autónoma de Querétaro (UAQ) in Querétaro, México and at the New York University Abu Dhabi Campus in Abu Dhabi, UAE. A third satellite lab is currently in discussion however it has not been officially established.

Annual Summit: Hosted by the satellite lab at UAQ the first annual Summit on CLimate Change and Public Health was held at the end of April 2021. This summit will continue next year in New York.

V. Challenges & Limitations

Our main challenge this past year was certainly the COVID-19 pandemic. We as a group needed to make some big changes to our operations and to the projects we were working on. We transitioned to an entirely online format in March of 2020 and remained that way for the entirety of the 2020-2021 term. This posed some challenges, specifically in community and relationship building. While we brought in a large group of promising first year members it was difficult to create the same sense of community and build strong working relationships without having in person activities.

Additionally the COVID-19 pandemic caused us to shift the scope of many of our projects, and some could no longer continue at all. While it was challenging to adjust, many new projects were born of this adversity. In New York we successfully began a Mental Health and COVID-19 initiative, which eventually became part of our partnership with UAQ. We also began multiple joint research projects related to COVID-19 with the team at UAQ.

While it was certainly a major adjustment this year, we were able to successfully continue our mission. We are hopeful that 2021-2022 will bring a return to more normal circumstances and alleviate the limitations that the COVID-19 pandemic placed on the lab in 2020-2021.

VI. 2020 - 2021 Project Summary

Mental Health & Covid 19

In the Spring of 2020, AGPHI students brainstormed ways to apply knowledge that they had learned at the NYU School of Global Public health in response to the then-unfolding Covid-19 pandemic. Lab members created a Mental Health Initiative which worked with a senior living facility in Queretaro, Mexico on a short term project to support the mental health of the aging population Additionally, a Covid-19 & Mental Health Research study was created in partnership

with the Autonomous University of Queretaro. For this study, team members in Mexico conducted a survey to measure the mental health of health care workers at the UAQ Covid-19 clinic in Queretaro. The results for this study have been analyzed. The team plans to replicate the study and expand the sample size during the summer of 2021 with the goal of publishing after the second set of study results have been analyzed. Another project developed in the lab as part of the Covid-19 response was the creation of a research study of the effects of Mobility Restrictions on Covid-19 cases in New York City and Miami, Florida. The findings of this study have yet to be reported.

The lab is also in the nascent stages of a Behavioral Communications Strategy project in Queretaro as well. This project is a joint effort with team members from both the Queretaro and the New York University AGPHI labs who will implement a risk communication and community engagement strategy in Mexico and report the findings in a research publication. This project is currently in the IRB approval process and should continue through the rest of the year.

Decolonization & Antiracism

During the late spring and early summer, members of the NYU AGPHI lab put together a Racial Determinants of Health Toolkit Infographic in response to the national uprising for racial justice following the murder of George Floyd. The toolkit presented public health statistics that identify the negative health outcomes that result from racial inequality in the United States. Additionally, at the beginning of the fall semester, a collection of lab members composed a petition with specific measures calling for the Decolonization of Global Health which was circulated within the NYU School of Global Public Health and presented to Dean Cheryl Healton and other SGPH administrators. This collective action has driven the SCPH administration to provide more open communication lines related to their efforts with students. Advocacy from lab members continues on these issues.

Environmental Justice & Climate Change

In the Fall 2020 semester, the Climate Change Task Force was created within AGPHI to focus on issues lying at the intersection of public health, environmental justice and climate change. The group is working closely with The POINT CDC, a community based organization in the South Bronx, and the Greenest Fern, a sustainable design firm, in support of those organizations' efforts to develop green infrastructure in the Hunts Point neighborhood. The Climate Change Task Force also planned the lab's first "Environmental Justice Month" programming in April 2021. During the same month, the satellite lab in Queretaro, Mexico planned the first International AGPHI Climate Change Summit which brought high profile speakers from across the globe, students and faculty together for a three-day virtual event during Earth Day Week.

Maternal & Newborn Health

Since the fall of 2019, the AGPHI lab has partnered with the Newborn Foundation to support their research and efforts surrounding the measurement of blood oxygen levels in newborns

with the BORN Project (Birth Oximetry Routine for Newborns). The goal of the BORN Project is for earlier detection and treatment of congenital heart disease, sepsis and pneumonia, which are the three leading causes of newborn mortality.

In the fall of 2020, AGPHI formed a new project with the Birth Justice Defenders based in New York City. This team created a survey to identify bottlenecks in healthcare services for Latinx communities in New York City. The survey has been administered and this project will continue through the summer as results are analyzed.

Other Global Health Projects

AGPHI worked closely with the **World Health Organization Universal Health Coverage Partnership (WHO UHC)** in 2020 and 2021 to discuss and finalize research questions for a study examining health sector governance structures in Somalia and the role of UHC-P in the advancement of universal health coverage as it relates to Somalia's "Essential Package of Services." The team has completed a working draft of research questions and methods, and the project is expected to continue into the 2021-2022 academic year.

The AGPHI lab has had an ongoing **partnership with the Mycetoma Research Group** for several years. This past year, the team conducted a literature review and is currently in the process of developing a surveillance platform for eumycetoma across endemic nations in the Mycetoma belt. The team is in conversation with the Ministry of Health in Ethiopia, which could lead to interesting developments for future ongoing collaboration on potential implementation of mycetoma detection and surveillance platforms within the Ethiopian infectious disease surveillance system. Additionally, two proposals were produced for a potential mobile app to identify cases of eumycetoma in the field by minimally trained healthcare workers. Neither were chosen for grant funding, however, they remain viable for adaptation and potential future use.

During the summer and fall of 2020, the AGPHI lab partnered with the NGO **Hope Spring in Nigeria** to support their research on accessibility of clean water, safe sanitation and hygiene in health care clinics in Enugu state. The AGPHI team analyzed survey data and created infographics that were ultimately presented to the Ministry of Water Resources, Ministry of Health, and Ministry of the Environment. This project concluded at the end of the fall semester, however the partnership has the potential to be revived by future lab members as Hope Spring's WASH work is extensive.

Finally, AGPHI is thrilled about the most recent partnership with the **WHEELS foundation** in India. This project consists of two phases including a data analysis phase which will examine trends in telemedicine from six sites in India and a second phase which will include the administration of a digital survey. This project will launch during the summer of 2021 and will be ongoing for years to come.

VII. Satellite Labs

Universidad Autónoma de Querétaro; Querétaro, México.

The AGPHI-UAQ Satellite Lab began with activities in November 2020. The first projects were carried out in collaboration with the COVID-19 UAQ Clinic:

"The impact of mobility restriction measures on the Covid-19 reproduction rate in the city of Querétaro, Mexico." This study analyzes the history of SARS-CoV-2 in Queretaro, Mx. and compares the reproductive number (R0) and the effective reproductive index (Re) of SARS-CoV-2 with the mobility trends during the time period presented by Google. This research was presented at the "COVID-19 National Congress" in Spain (09/13/2020). Along with two other posters: "The development of asymptomatic COVID-19 and level in a population cohort of Querétaro, Mexico." and “Patients reactive to SARS CoV-2 by PCR: frequent comorbidities and associations”.

Undergraduate students from different disciplines were admitted, the first sessions were for everyone to learn the basic knowledge in the area of global public health and we had distinguished speakers like Dr. Chris Dickey with “Systems thinking”, and Dr. Carlos Chirinos spoke to us about the cultural determinants of health.

By consolidating the executive committee, the activities of each member were established and the calendar of activities for each week was organized until the end of the school semester at the Autonomous University of Querétaro in December 2020.

COVID-19 Egress Data Release Protocol

In collaboration with Dr. Chris Dickey, Dr. Isidro Gutierrez and Dr. Debra Laefer from the Center for Urban Science & Progress, and the Department of Civil and Urban Engineering, the Egress Data Release Protocol COVID-19 was launched in the city.
The aim of the protocol was to follow people leaving the hospitals and record their behavior. Data collection lasted 10 weeks and approximately 1,500 records were obtained. The team is made up of 6 local coordinators and a group of student volunteers (12). All records are updated on a web platform. This leads us to follow in real time how people behave outside of hospitals. Now in May, the team is working on analyzing the database and organizing the abstract to be delivered for the 3D GeoInfo 2021 virtual conference and the 3D cadastre workshop.

Risk Perception

In the first phase of this protocol, a pilot study of optimism bias, risk perception and behavioral outcomes in the context of COVID-19 began at the Autonomous University of Querétaro’s Community. A survey based on Qualtrics was distributed through the University Social Media

from which more than 800 responses were collected, and the findings supported the framework for a Behavioral Model in the Mexican population that will be proposed and analyzed with a second phase study. This is being written and the team continues in weekly meetings to finalize the research protocol and send it to the Institutional Review Board.

Communication and Dissemination Strategies to Facilitate Information

This team was established to develop information dissemination strategies on what is being developed in the satellite laboratory and also on trending issues in health This project is still underway. One of the objectives is to use social platforms and be active publishing posts, videos, infographics.

Mental health

The health workers of the COVID-19 UAQ Clinic participated in an online survey; the objective was to measure symptoms of anxiety, depression, stress, insomnia, substance use, perception of support and safety at work. Furthermore, to determine relationships between these variables. On April 23, 2021, the team assembled the research protocol in a presentation at the "State Forum for Health Research"

New York University Abu Dhabi; Abu Dhabi, UAE.

The AGPHI-NYUAD satellite lab was formed in December 2020 and began recruiting team members and advising faculty in January and February of 2021. The first few projects taken on by the team include the following.

“Exploring health challenges and food behaviors of South Asian youth living in Emirates (SAYLE):

This is a collaboration with the NYU School of Global Public Health to develop a mixed methods study on the key health needs of young South Asians who grew up in the Emirates. The project is overseen by Shahmir H. Ali, PhD candidate at NYU’s School of Global Public Health. 6 students from the NYU Abu Dhabi campus were recruited (including the Project Manager and Project Coordinator) from a pool of 14 candidates. Faculty advisors include Dr. Ralph DiClemente (PI), Dr. Niyati Parekh, and Dr. Alexis Merdjanoff from NYU GPH, Saba Karim Khan from NYU Abu Dhabi, and Dr. Raghib Ali from NYUAD’s Public Health Research Center. The project aims to examine the health needs and food behaviors of young South Asians living in the Emirates, an often-overlooked population in public health research. Study methodologies include surveys for quantitative research, network analysis, and qualitative focus group interviews.

In addition, four NYUAD students have participated in the *Behavioral Communication Strategies for Global Epidemics: Social Behavior Change for Vaccines* course that was offered in Spring 2021. The course allowed NYUAD students to collaborate with WHO, MoH, and NYU GPH masters students to create a country/region-specific behavioral intervention plan to increase

vaccine uptake. The experience was particularly eye-opening and valuable to NYUAD's undergraduate students, and we hope that it inspired the students and their peers to engage more with the AGPHI lab in the near future.

VIII. Example Products

Racial Determinants of Health

Education

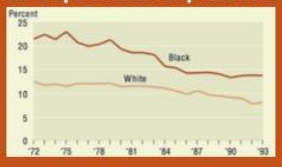
Elementary School:

Black children start elementary school with less preschool experience than white children, & a gap in preschool enrollment rates has developed.

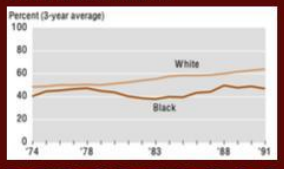
High School Completion:

With a higher dropout rate, black students are less likely to finish high school & graduate than white students.

Status dropout rates for persons 16-24

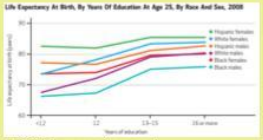


College Enrollment:



Education & Life Expectancy:

In the highest level of education (≥16 years), white people have a life expectancy **5 years longer** than that of black people.



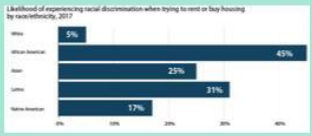
An alarming disparity of life expectancy at birth was observed between highest educated whites & lowest educated blacks:

- **14 .2 years** of difference for males
- **10.3 years** of difference for females

Housing

Access to Housing:

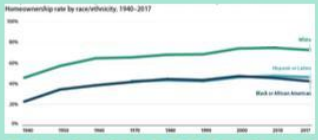
In the US, **45%** of black people report experiencing discrimination when trying to rent or buy a home, compared with only **5%** of white people.



Racial bias reduces access to housing & affects property values.

A study found that homes in black neighborhoods were undervalued by an average of **$48,000** due to racial bias, resulting in **$156 billion** in cumulative losses nationwide.

41% of black households own their home, compared with more than **73%** of white households.



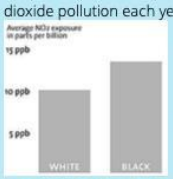
The typical white household has **10x** more wealth than the typical black household.

Environmental Factors

Pollution:

Climate change disproportionately affects low-income communities & people of color across the nation.

People of color are exposed to **46%** more nitrogen dioxide pollution each year than the white population.



A case study in The Bronx, NY found that individuals who live close to noxious industrial facilities & waste sites were **66%** more likely to be hospitalized for asthma. These same individuals were **13%** more likely to be people of color.

Toxins:

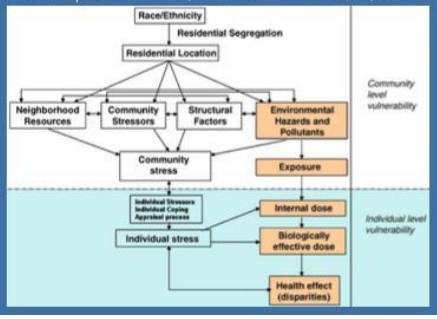
56% of people living within 1.86 miles of toxic waste facilities in the US are people of color.

11.2% of black children are poisoned by lead.

3 out of 5 black people live in communities with uncontrolled toxic waste sites.

Environmental Health Disparities:

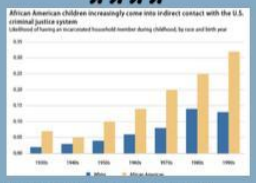
The **exposure–disease–stress model** for environmental health disparities is a conceptual framework highlighting relationships between race, environmental conditions, & health.



Incarceration

Ethnic & racial minorities make up just **30%** of the general US population, but they contribute to **60%** of jail & prison populations.

Black children across generations are **2x** more likely to have an incarcerated household member than white children.



Black adults are **5x** more likely to be imprisoned than white adults in the US.

Lifetime risk of being incarcerated is :

- **5 per 1,000** for white women,
- **15 per 1,000** for Latinas, and
- **36 per 1,000** for black women

Incarceration & Health:

Prison inmates have higher rates of mental health issues & higher levels of stress, anxiety, sleep deprivation, & depression when compared to the general population.

Among those with a history of incarceration, women experience a higher burden of disease than men.

Rates of many chronic diseases in US jails & prisons is **2x** that of the general population.

Children of incarcerated parents tend to have higher rates of learning disabilities, development delays, & often show aggressive behavior.

Racial minorities are disproportionately represented in the criminal justice system, thus contributing to increased health disparities.

Housing & Health Outcomes:

Residential instability is associated with adverse health outcomes, including depression, anxiety, psychological distress, increased alcohol use, & suicide.

Poor housing conditions (i.e. water leaks, pest infestation, lack of ventilation, etc.) have been linked to negative health effects, especially asthma.

Severely cost-burdened renters are **23%** more likely to face difficulty buying food compared to those with fewer financial burdens.

Neighborhood segregation determines access to schools, jobs, & healthcare, influencing health behaviors & increasing crime rates in neighborhoods of color.

Resources

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IX. Looking Forward

Throughout the past few weeks, the 2021 AGPHI Exec Board has discussed our vision and mission of the lab as whole and where we picture the lab in a year. We have defined areas and themes to focus on that pertain to the lab's projects, goals, values, and legacy.

Regarding lab projects, we want to ensure that the goals and values of projects are focused on current trends in global public health. We believe that it's important, for our own personal and professional goals and that of lab members, that we use lab time to keep abreast of and work on issues that are most globally pervasive and important in real-time. As of when this document was written, we identified these trends as: decolonization and equity; mental health; long-term impacts of COVID-19; NCDs (including mental health); sustainability and environmental justice; and the health of vulnerable populations (IDPs, migrants, refugees due to conflict/climate change/etc.). We hope to incorporate these themes and events in our lab discussions and activities, projects and campaigns, as well as in our overall culture, to make meaningful progress on these and other projects to advance global health.

Additionally, we want to continue to diversify the focus of the lab and its projects to create and pursue projects adapting to the interests and goals of lab members. We believe that it is important for lab members to feel personally passionate and invested in their projects, and hope to help cultivate this by bringing in and developing projects which fit the interests and professional goals of lab members.

We hope for lab to be a source of personal and professional development for members. When creating opportunities for lab members, whether through projects, Friday lab meetings, or other channels, we want to emphasize career building, lifetime networking, connections to external opportunities, community-building, and a continuing diversity focus. We hope that lab will enrich their personal experience of public health and the world, as well as connect and provide professional opportunities which benefit them for life.

This year, we also hope to build on AGPHI's legacy and longevity. To do this, we plan to employ community engagement and respect, while simultaneously establishing a global presence through meaningful partnerships. We want to feel empowered and capable of utilizing relevant opportunities to benefit our projects, networks, and lab as a whole. We want to influence and ensure the sustainability and longevity of AGPHI, alumni networks, its partners, and satellite labs for years to come.