

**2021 Illini Science Policy Program:
SCHOLARS' IMPACT REPORT**

RUTH ADEKALE

HOST: Representatives Camille Lilly and Sonya Harper along with the Illinois Legislative Black Caucus / Black Caucus Foundation
Extension Mentor: Leonard Parker, Cook County 4-H Youth Development & Metro Education

"I learned that so many factors connect to reveal the issues we see today. That is why it is crucial to never ignore problems that we see, and research more on what we can do to help solve them (financially, communicatively, collaboratively, etc.). A little goes a long way."

Ruth worked with Representative Lilly and ILBCF to look at public policies related to social justice reform and health care issues impacting underserved Black communities in the Chicagoland area. Additionally, Ruth supported Representative Harper to explore summer youth programs for under-resourced communities. With the support of her Extension Mentor, she researched and then created online case-based resources to help Black youth learn about healthy living habits. Two of Ruth's main impacts are highlighted below:

Illini Science Policy Scholar research supports Illinois Legislative Black Caucus Agenda and its Four Pillars designed to rid Illinois of systemic racism, in particular through HB 158

Relevance: Many disparities exist within low-income black communities due to the buildup of systemic racism. These disparities define the four pillars of the Illinois Legislative Black Caucus: Criminal Justice Reform, Education and Workforce Development, Economic Access, Equity and Opportunity, Healthcare and Human Services. In particular, the Health and Human Services pillar that Rep Lilly oversees, has noticed a decrease in resources and support to these communities while also observing an increase in the health disparities that result in hospital closures, minimal health insurance coverage, and low testing/vaccination rates in sensitive times such as COVID-19.

Response: The ISP Scholar conducted in-depth research for Rep Lilly's Press Conferences and hearings/meetings to inform critical race and health related topics. This research dug deep into the loopholes that our system may have overlooked concerning the rights of African American citizens in all socioeconomic classes.

Results: As a result of the ISP Scholar's efforts, her work supported the formation of the Illinois Legislative Black Caucus Agenda designed to rid Illinois of systemic racism in areas concerning all 4 pillars. Governor J. B. Pritzker signed the Health and Human Services House Bill 158 in Springfield, IL on April 27, 2021. This bill addressed health disparities within the system that put Illinois black communities with a certain zip code at a disadvantage. More funding will be provided resulting in better healthcare access for those who cannot afford it. HB 158 addresses the following aspects of healthcare and human services: Behavioral Health, Mental Health and Substance Abuse, Children's Health and Women's Health, Health Care Access and Improved Care, Older Adults, Public Health, and Racism & Implicit Bias.

Article of HHS House Bill 158 Signing: <https://www.rrstar.com/story/news/state/2021/04/27/jb-pritzker-signs-law-promoting-health-care-equity-illinois/4860641001/>

Illini Science Policy Scholar builds case-base scenarios to bridge lack of knowledge and resources for Black youth in health education

Relevance: Many low-income African American communities lack the essential community resources that will help fulfill their needs for living a quality, healthy life. One crucial factor is that the education system has deprived so many black youths of the necessary information to excel. Schools in many underserved communities do not contain basic tools for quality education (ex. teachers, laptops, books, college prep courses). This leads to high drop-out rates in educational facilities and ultimately contributes to the cycle of poverty that is visible today.

Response: ISP Scholar conducted in-depth research on the root causes of the poverty cycle in these Black, low-income neighborhoods and how it relates to health. Used volunteer experiences (crisis nursery & Hispanic family health program), U of I journal articles, YouTube videos, books (Black Man in a White Coat), and informational webinars from U of I Extension to help find ways to get minority youth better health, education, and opportunities to bring out their fullest potential and lead them on a pathway to better personal health choices.

Results: Created an original case-base website “**InspirerThim**” for youth to gain knowledge on physical, mental, and social (community) health with a touch of mentoring and professional development. The website is intended for those that do not have the resources to access this information by normal means.

ANA PAULA SANCHEZ BUSTAMENTE BAILON

HOST: Senator Aquino and the Illinois Legislative Latino Caucus and Latino Caucus Foundation

EXTENSION MENTOR: Sonia Harper, Cook County Community Health Education

“I always have been interested in protecting the environment, and as I go through my career, I realize this issue cannot be tackled without having community engagement on the plate. I think this is a wonderful opportunity to contribute to Latino communities using research skills I have learned in graduate school while also learning more about policy and project development.”

Ana Paula worked with ILLCF and Senator Aquino to research public policy in underserved Latinx communities with a focus on environmental justice, including Chicago’s Little Village and Humboldt Park neighborhoods. Ana Paula supports the new leadership of the Latino caucus on issues related to environmental justice, agriculture, and housing. With her Extension Mentor, Ana Paula designed Spanish-language education opportunities on environmental health, particularly lead exposure. Three of Ana Paula’s main impacts are highlighted below:

Illini Science and Policy scholar seeks sustainable funding to scale urban agriculture in Humboldt Park.

Relevance: The Humboldt Park community is a predominantly Latinx community with a rich Puerto Rican cultural heritage. However, its residents face the burden of low wage salaries, gentrification, and food scarcity. Many are not unaware that food insecurity is a main factor of many issues that challenge this community. The Puerto Rican Cultural Center (PRCC), an organization with a long history of social justice, has envisioned a food sovereign community, where people are able to eat nutritious dense food without the injustice of having to choose between eating healthy or paying bills. However, there is lack of funding to implement the type of project that would be necessary to enrich this food dessert. As a result, the ISP Scholar along with her host mentors decided to work with the PRCC in the creation of a research-based proposal that could help reach the goal of making the community food secure.

Response: After meeting with the PRCC staff the following actions were taken:

- Research urban agricultural projects and learn their components, mission, vision, founders, funders, etc.
- Incorporate research findings into our vision of an urban agriculture project and develop a power point proposal.
- Meeting with PRCC for feedback.
- Working on the feedback: infusion of cultural lenses, Puerto Rican talent, food justice approach not just food security, ancestral and senior knowledge in all the aspects of the proposal.
- Proposal drafted and will be distributed to various potential funding agencies / organizations / etc..

Results- Accomplishment: A full proposal for an urban agriculture project tailored for the needs and interest of the Humboldt Park community was completed. The proposal has the goal to find funding for this project through several institutions and foundations and set a model for further increasing urban agriculture in the community with lenses of food justice and food sovereignty.

Illini Science and Policy scholar researches an Environmental Justice issue in Little Village – a Smokestack implosion – identifying legislation gaps that allowed the tragic health and environmental disaster to happen.

Relevance: On April 11th of 2020 a smokestack implosion was carried out in the former Crawford coal plant in the Little Village community creating a massive cloud of dust that covered the surrounding neighborhoods. Besides the strenuous sound in the middle of the morning, the dust coming from a former coal site raised concerns about the toxicity of the dust and its impacts on the health of a community that already faces poor air quality and suffers from related conditions such as asthma. This unfortunate event happened in the middle of the Covid-19 pandemic where respiratory disease that was already hitting hard underserved Latinx communities. This situation highlighted the Environmental racism these communities suffer. The scholar role was to find why this was allowed to happen and what needed to change in terms of legislation to prevent this to happen in underserved communities.

Response: To further investigate the events leading to the implosion and its consequences, a diligent investigation of the events was carried out by reading digital newspapers, letters emitted by the different stakeholders, social media, institutions' reports and so on. In these efforts a wide variety of voices was included for example local newspapers, community-based organizations statements, and local government officials' letters. With this ongoing investigation, the scholar was able to develop:

- A power point presentation with a chronological order of events preceding the implosion event and the aftermath events.
- Identifying points of conflict between different stakeholders, blind spots in terms of information given by different institutions and what needs to be further investigated.
- Creation of a Miro mural with the purpose of developing a mind map, further identifying stakeholders, and gather information creatively in one place.
- Reading the City code, the state law, and the administrative code.
- Full report written and submitted to legislators

Results/Accomplishments: A report with a chronological map, a stakeholder's map, and analysis of the legislation gaps that may have contributed to the smokestack demolition- as a case of Environmental justice. This report includes further recommendations to include in state legislation.

Illini Science Policy Scholar used native language first to improve health conditions for Latinx households.

Relevance: Communities of color are more likely to be exposed to lead in their water, because the areas that have old houses are highly likely to have pipes that contain lead. For decades placing pipes made of lead connecting street water mains to individual properties was mandatory. In 1986, this requirement was banned by the federal government. However, some Illinoisans still must face the burden of drinking water that might be toxic and possess dangerous health risks. Additionally, old houses are more likely to have paint in their walls and windows that contains lead because in the past lead-based paint was common-place. The chips and dust released by lead-based paint can be inhaled and consumed posing a risk to human health, especially children and pregnant persons.

Response: With her extension mentor, the ISP Scholar designed a webinar which has two sessions. The goal of these series is to inform Latinx communities about lead risks in their communities and what they can do to reduce the risk of poisoning. The webinar design was a careful well-thought process, we chose the topic because it's an intersection between both our areas of expertise, Environmental Science and Public Health. The Scholar and her Extension Mentor wanted to make the most of out the opportunity of working together. After selecting the topic, these are the specific actions performed:

- In depth research about lead in general, and lead in the area considering the history and the current context. Lead studies and lead legislation in Illinois.
- Research about government programs currently available, what they offer, the requirements and the blind spots of the program.

- Develop a webinar using Prezi as the design tool, incorporation of ice breakers and activities to keep the audience engaged.
- Carry out a pilot presentation with Extension staff and both mentors Sonia Lopez, and Layla Suleiman.
- Incorporate feedback from pilot presentation, develop two webinars for different target audiences: parents and community organizers. Develop a handout with a summary of talking points.
- Present the webinar to multiple family groups, to community-based organizations and childcare business.
- Evaluate the efficacy of the webinars.

Results: The main goal for these webinar series is to increase access to relevant information to Latinx Spanish speaking communities. The goals for the webinar given to Latinx parents was promoting a behavior change in terms of adopting new strategies to avoid lead poisoning by providing information that directly affects children, families, and the community in general. A second goal was promoting interest in advocating for lead pipe replacement in Latinx neighborhoods. For the Latino community organizations, the goal was to reach to more families through providing information in their native language about lead poisoning risks and inspire these organizations to directly advocate for their communities for lead pipe replacement. The use of native language first was to connect with the community and to remove any unnecessary barriers to understanding. The results from this project were a webinar for Latinx parents with two sessions, and a webinar for Latinx community organizations. Along with these webinars, a tailored flier for each audience was provided to inform the audience of the events, along with handout summarizing the talking points for each session.

HANNAH PRICE

HOST: Illinois Department of Agriculture, Meat and Poultry Division

EXTENSION MENTOR: Teresa Steckler, Extension Education – Commercial Agriculture

“This program exceeded my expectations and connected me with individuals who shared my passion for meat science and being part of an industry that provides a safe, high-quality product for consumers.”

A former 4H member, Hannah worked with IDOA to research the state meat and poultry inspection process and seek ways to make the process more efficient. Hannah also worked with Extension’s Commercial Agriculture team to research ways to address anaplasmosis, an infectious disease in cattle, in order to reduce production losses and improve farm-to-table pipeline. Two of Hannah’s main impacts are highlighted below:

Host Impact: Illini Science Policy Scholar conducted study to evaluate Illinois Meat and Poultry Inspection System.

RELEVANCE: The standards listed in PHIS (Public Health Information System) were designed for larger facilities and are not fully applicable for small establishments. Therefore, there is a need to gather data indicating what is a reasonable amount of work that could be performed by an inspector, in any of the processing establishments, during an eight-hour day. The goal is to measure the time and travel needs to complete inspection tasks at different establishments with consideration of the different HACCP (Hazard Analysis Critical Control Point) plans in establishments based on the type and amount of product being produced. In addition, the information on how inspectors spend their day completing their tasks may become valuable to supervisors when working on assignments and scheduling within each region, as well as, evaluating the need for more or less inspectors depending on inspection demands.

RESPONSE: The initial plan for this study was to spend time shadowing inspectors at various establishments to evaluate how they spent their time throughout the day. Data was collected on establishment size, number and type of tasks completed, time spent completing tasks, time spent completing administration duties, and time spent traveling. Unfortunately, travel was ceased due to the pandemic, and information was collected remotely through a voluntary survey. The survey asked questions about productivity, staffing needs, travel requirements, department response to COVID-19. The survey also allowed the respondents to give suggestions for ways to help improve inspection efficiency.

RESULTS: Early results suggest that the responses from the survey have the potential to provide some valuable information to the IDOA, Meat and Poultry Inspection Division. The results will allow the department to have a better understanding of inspector needs and the demand of more inspectors. As a result, the department could implement potential system changes, more robust trainings, and include new areas for training as indicated by the survey data.

Accomplishments: Scholar developed an online survey to help evaluate the Illinois State Meat and Poultry Inspection system. The survey was developed to help gather information and get insight on how the inspection system is currently working by asking all field staff (inspectors, supervisors, and veterinarians) to participate. The survey was 17 questions with a combination of multiple choice and open-ended questions giving the field staff a platform to speak and let their voices be heard, which can be extremely valuable to any program in order to improve morale and retain employees over time. Specifically, this survey was built to find ways to improve efficiency and identify areas that need adjustments, as well as an evaluation of the Illinois Department of Agriculture, Meat and Poultry Inspection Division and their response to COVID-19. This survey reached over 75 IDOA field staff employees with over an 80% response rate. The results from this survey have the possibility to make some real-life valuable changes for the state inspection system and the potential to be used by others.

Illini Science Policy Scholar helped with industry relevant study to improve profitability of farmers by reducing losses due to infectious disease.

RELEVANCE: Anaplasmosis is the most prevalent tickborne disease of cattle worldwide. It is transmitted via ticks, biting flies, needles, dehorning, and tattooing and the U.S. cost of clinical anaplasmosis was estimated at \$400 per animal with annual beef industry losses of approximately \$300 million. In addition to death, abortions, weight loss, and decreased milk production, anaplasmosis impairs the immune system resulting in animals at increased risk for antimicrobial treatment. Reducing disease transmission through improved management will enhance the overall health of herds and protect public health and the environment by reducing antimicrobial use in beef production. Therefore, there is a strong need to enhance the health, welfare, and sustainability of beef production by identifying cost effective strategies to control anaplasmosis.

RESPONSE: ISP Scholar Conducted a field-based study with 4 Illinois beef producers (approximately 550 cows and their calves) to collect real-world management, disease and production data on uninfected, subclinical, and clinically infected cows and calves. The study includes a three-pronged approach; blood sampling, on-farm data collection, and producer surveys. Statistical analysis of both management and production data will be used to help identify risk factors for disease transmission and the role of anaplasmosis on animal productivity and health.

RESULTS: All data for this project has been completed but analysis and reporting are still in progress. However, results from this study will be disseminated to industry stakeholders through extension outreach and publications, providing information to conduct herd specific cost-benefit analysis of anaplasmosis prevention and control programs.

ACCOMPLISHMENTS: Scholar contributed to an ongoing field work focusing on the need to reduce economical and production losses due to infectious diseases in cattle. The results could have a longstanding impact on farm to table production including the direct impact on the cost to produce cattle, amount of quality cattle for consumption, and ultimately the cost of beef to consumers.

DIAMOND RUFFIN

HOST: Illinois Department of Commerce and Economic Opportunity, Office of Broadband

EXTENSION MENTOR: Nancy Ouedraogo, Extension State Specialist, Community Economic Development

"In the beginning, I wasn't sure what to expect. I was first introduced to communities and then set to work with them on my

own. I was being looked to for guidance as the leader and that gave me confidence. I realized that I was the one who knew things and they respected that. It was the game changer."

Diamond worked with DCEO as a digital liaison for 12 Illinois communities, that were awarded funding through the Connect Illinois grant, helping them identify gaps in access to promote digital equity in their community broadband development plans. Diamond partnered with Illinois Extension's Community & Economic Development Program to create resources that help communities plan for equitable access to broadband services and presented these to leadership throughout the state. Two of Diamond's main impacts are highlighted below:

Illini Science Policy Scholar fills need for digital equity liaison for communities throughout Illinois.

RELEVANCE: 7% of Illinoisans live in areas where there is no broadband infrastructure that provides minimally acceptable speeds. 62% of Illinoisans live in areas where there is only one provider. Even where infrastructure is available, broadband may be too expensive to be within reach. 14% of Illinois households do not have an internet subscription. Access to, adoption of, and use of broadband are the problems being addressed.

RESPONSE: The Illinois Office of Broadband and the Benton Institute are addressing this issue one community at a time. Through the Illinois Connected Communities (ICC) grant, and other work, there are 12 communities receiving funding and mentorship for improving broadband in their area. The areas selected are typically underserved and under-resourced areas.

RESULTS: As a result of the ICC's work, the Benton Institute realized that what was lacking in conversations and decision-making surrounding broadband was a perspective on equity and access that went beyond cables and wires. The educational background and expertise of the Illini Science Policy Scholar elevated conversations to handle the complex issues of equity and access. The ISP Scholar's expertise in people and not technology made her contributions unique to the team and thus the position of digital equity liaison was created so she would consult and help the communities understand equitable broadband efforts.

Accomplishments: With 12 communities totaling over 200,000 residents, Illinois Connected Communities has had a broad reach. Each community is doing something unique to tackle the issue at hand. While some are giving away free laptops and hotspots, others are looking into ways to pay for year-long subscriptions. In service of working with these communities, the ISP Scholar, in her role as the digital equity liaison had some specific accomplishments that allowed the communities to make informed decisions throughout their broadband journey: a weekly email blog promoting digital equity and adoption, surveys, documentary consultation and interviews, equitable steering team formations, equitable broadband efforts, sourcing for additional broadband funding, a public access location directory, grant program development, a program evaluation template, 6 community Lift Zones, merit reviews for potential grantees, IOB and the Teams platform website review and revision. Additionally, and most significantly, the scholar created a data set for future funding and support for Illinois Connect Communities and established a continued partnership with DCEO and Illinois Extension.

Illini Science Policy Scholar promotes increased communication among key leadership throughout Illinois to help communities plan for equitable access to broadband services.

RELEVANCE: Although key leaders and administrators are tasked with making critical decisions regarding broadband issues in their communities, many lack significant and comprehensive knowledge on broadband adoption efforts around the country and how this knowledge would impact the needs of their community.

RESPONSE: Illinois Extension through its partnership with the ISP program worked with the digital equity liaison to develop a communication strategy that would allow a way for leaders throughout the state to have comprehensive, critical, and universal information. This included a weekly email highlighting a program, event, resource and/or person that addresses broadband adoption.

RESULTS: As a result of the weekly communications, awareness and knowledge of broadband adoption efforts has increased. For example, six communities have implemented Lift Zones, webinar attendance increased, networks were expanded, and some leaders personally acknowledged the efforts of the ISP Scholar.

Accomplishments: This effort is an ongoing process in which we are hoping that the increase in awareness as indicative by the fact that more people are attending our webinars and continue to join the webinar series despite busy schedules reflect that this need to understand broadband from not just a technical, but also an equity and access perspective as it relates to community members is evident.

ALLISON WHEELER

HOST: Illinois Department of Innovation and Technology, Education Group

EXTENSION MENTOR: Lisa Bouillion Diaz, 4-H Assistant Dean and Director

"I really didn't know how this all would work out under COVID, but it exceeded my expectations! To jump on a call or to be in the field and realize that you are a trusted colleague because of the skills and knowledge you have is just amazing and then to be mentored in other areas and to be around individuals who model the very best of what it means to do public service was a great experience for someone just starting out."

Allison worked with DoIT's Education Group to make resources readily accessible in STEM and STEAM (Science, Technology, Engineering, Art, and Math) for students, educators, and their families in order to close the digital divide. Allison also has partnered with Illinois Extension 4-H to provide extension educators and volunteers with high-quality, up-to-date map of locally available STEM resources, enabling them to coordinate and build cutting-edge STEM programs in communities across the state.

Illini Science Policy Scholar builds out STEAM education and career resources for marginalized Illinois communities.

RELEVANCE: Illinois is one of the most diverse states in the nation in terms of ethnic populations and urban and rural landscapes. As knowledge of STEAM curriculum is vital to a student's education and preparation for post-secondary education and the needs of the future workforce, Illinois needs to equip students, teachers, and families with the necessary resources to be successful and ensure equity in opportunity. There is considerable need to focus on reaching communities typically marginalized in STEAM education and careers.

RESPONSE: Using the platform of an Illinois State Agency (DoIT) with a group dedicated to promoting STEAM Education in the State of Illinois, the Scholar expanded upon the DoIT STEAM website (which provides resources, events, and news) to create a monthly STEAM e-Newsletter that more actively engages the target audience to provide timely and culturally relevant resources that they can integrate within their classrooms and/ or professional development agendas. Additionally, the scholar served a vital role in co-organizing the creation of a STEAM Expo that will happen at the 2021 Illinois State Fair.

RESULTS: After 6 months of this ongoing project, the Scholar collaborated with both teachers and educational not-for-profits in Illinois to help distribute this newsletter to a community of several thousand individuals, primarily K-12 teachers and those aligned with K-12 or higher education in their roles. The scholar expanded the STEAM website to create a Newsletter page, where past volumes of the newsletter are archived so that the resources within each edition are able to be accessed in the future. While the results of the STEAM Expo are yet to come, the aim 5-day event is to expose and educate the general Illinois population, in-person and virtually, on many the STEAM opportunities, organizations, and industries in Illinois. In 2019, 500,000 people visited the Illinois State Fair, and even in an uncertain year, we are hoping that we will still have a great turnout that will come interact and learn from our exhibitors.

Accomplishments: As a result of a year working with the Department of Innovation & Technology STEAM Education Group, the scholar has been able to accomplish the publication of the STEAM newsletter series, is engaging in

organization of a state-wide STEAM Expo, collaborated with K-12 and higher education to create cutting edge virtual reality curriculum, held webinars, and contributed to the overall mission of the work. A key aspect that has guided this work is the commitment to collaboration and engagement external to the organization. The scholar helped create these initiatives and projects that are well-poised to extend beyond their tenure in the program and grow to fit the needs of the organization as well as the needs of the target audiences.

Illini Science Policy Scholar researches statewide assets for 4-H STEM / STEAM related resources

RELEVANCE: Illinois Extension 4-H Directors across all twenty-seven units should know all the STEM/STEAM related resources they have across their mandated counties, but currently do not have a consolidated list or map of what exists. Knowledge of this will help the county directors understand the resources they do and do not have in their unit, and thereby help IL 4-H STEM understand how they can best direct their efforts across the state.

RESPONSE: The scholar spearheaded the research for a project to gather information on out-of-school time related STEM resources (including clubs, outreach efforts from places like higher ed., industry, libraries, etc.) in the state of Illinois, broken down by Extension Units and counties. This information is being collected by the scholar into a comprehensive spreadsheet that will then be broken down by unit to distribute to the County Directors as a living document. This data will be transformed into an interactive virtual map that allows a user to search by resource type and location.

RESULTS: The scholar will have helped Illinois 4-H STEM and the County Directors gain a well-rounded understanding of the STEM resources available across the state of Illinois. It is anticipated that this data will paint a story of abundance versus disparity of these types of resources in the different regions of the state. We hope that this resource will impact the ability of Extension staff and volunteers to find and utilize resources for their 4-H respective 4-H jurisdictions and create and/or fortify valuable STEM connections with the resources in their community. This will in turn help to build local, and thereby state STEM program capacity, and enable Illinois 4-H to continue to push the bounds of cutting-edge STEM programming.

Accomplishments: In the process of creating this resource for both internal Extension as well as community usage, it has become clear that this resource map will hopefully be the beginning of an effort to increase STEM resources available across Illinois, specifically in rural communities, who are often unrepresented within the STEM fields. By creating the building blocks of this project via a data spreadsheet and the correlating map, there is ample opportunity for 4-H staff members, volunteers, and youth to create initiatives and more resources in their communities based off of the story this data will tell. Additionally, the process of compiling the data itself has involved outreach into these communities, such as emails and calls to stakeholders, asking to detail what resources they currently have in place. Hopefully with these methods, curiosity has already been sparked and there's been an opportunity for communities to reflect and start initiatives on their own, even prior to the release