NVF-PITU-University of Virginia-Subgrant-012803-2020-11-12
Final Report

1. Narrative Report

a. Goals and objectives, with results achieved

This generous PIT-UN funding supported a youth-focused community effort to delve into the local impacts of global climate change. Our team of faculty members, data scientists, graduate students, community partners, interns, and local youth co-created data visualizations, art exhibits, curriculum, and youth programming that was adaptive and responsive to community interest and needs. We believe this truly highlights the promise of public interest technology. Community-engaged scholarship necessitates flexibility in scope and timing. During the course of our grant period, we had to make several changes to the project, including focusing on a more specific topic and extending the timeline for an additional 6-month period. The goals and objectives of the project stayed consistent however. We co-created a regional Equity Atlas, mentored area youth, created accessible data platforms, taught community members how to use data sources, generated new data resources for our community, and modeled community co-creation.

The primary goal of the proposed work was to co-create a regional Equity Atlas with a wide cross-section of community residents and youth. The Equity Atlas team held initial discussions in the Spring of 2021 with community members and organizations including: area nonprofits the Boys & Girls Club of Central Virginia, Charlottesville's Community Climate Collaborative (C3), Cultivate Charlottesville, the Jefferson School African American Heritage Center, and Wildrock; Albemarle County and Charlottesville City's Offices of Climate Protection; and UVA Sustainability. Through these discussions the scope of the Regional Equity Atlas was narrowed to focus on Climate Justice in the Charlottesville Region. This broad coalition of community partners worked to support youth working on several programs that intertwined and culminated in a public art showcase at the Jefferson School African American Heritage Center.

Mentoring students and area youth was a secondary goal in our funding application. In the Summer of 2021, PIT-UN funding was used to support six UVA data interns (4 graduate students and 2 undergraduates) who were trained in equitable data analysis processes and who worked with the Equity Atlas team to support youth-focused programming throughout the summer and fall. As our work with community partners deepened, we were able to work with 6 high school interns who were employed by C3, who assisted the Boys & Girls club in creating a Climate Justice visualization in the form of a large mural showing the average temperature variation over time. Six interns were employed by Cultivate Charlottesville worked with Buford Middle School students to plan a community garden and imagine a justice and verdant future. Finally, Wildrock's Cimate Justice youth programming served 176 elementary and middle school students.

Together the Equity Atlas team, data interns, community partners, and local youth worked together to build an accessible data infrastructure, replicable data collections, and web platforms to tell different narratives surrounding the climate justice:

- The Charlottesville Regional Equity Atlas (https://virginiaequitycenter.shinyapps.io/climate-app/) is an open-source visual guide to climate and economic indicators across the regional area surrounding Charlottesville.

- Picturing Climate Justice: Data Stories (https://virginiaequitycenter.github.io/picturing-climate-stories/) features interactive data in a storytelling format to show the local effects of climate change on *Heat Islands, Health Outcomes,* and *Energy Burdens.*
- ~~Global~~ *Local Warming* (https://local-warming.vercel.app/) is an audio/visual exploration of the increase in local temperature over the past 60 years.

These visual tools were presented publicly, accompanied by related photographs and works of art by area youth. The exhibition *Picturing Climate Justice* was open to the public for three months in the spring of 2022. During this time, a public opening session featured guided tours of the interactive exhibits so that community members could access these data-intense stories. This exhibit was highlighted in local news stories and area blogs. Schools took students to explore the exhibit on field trips and community partners held their own celebrations and data sessions using these data platforms and narratives. For example, local nonprofit C3 used these materials to create a climate justice curriculum aimed at K-12 ages and UVA School of Architecture's *Project Pipeline* summer program collaborated with Wildrock to work with middle schoolers to design climate resilient gardens. The open-source code for these data visualizations is widely available on the Equity Center's github sites, and can be modified and replicated in communities across the nation.

This experience reflects the true value of community co-creation and engaged scholarship. From the initial planning sessions, the project direction was guided by a broad coalition of university and community partners of all ages and backgrounds. Local youth and community members shared their stories of climate impacts, visions of a just future, and questions and interests in climate change. University researchers and students worked to build platforms that were responsive to community need and interest, and freely available to community members and other researchers.

b. Challenges encountered / lessons learned

As with any project structured around community engagement, numerous aspects of this project were dependent on community partner capacity. During the past two years, cycles of COVID-19 prevalence in our community lead to delays in meetings and planning sessions. We were forced to extend our project timeline to accommodate partner organizations – especially in planning the exhibit that was the culmination of all the previous work.

The timing of the exhibit was also delayed to accommodate partner capacity and schedules. However, we were thrilled to see that the final results of our efforts, an exhibit combining digital media, technology, arts, and space, resulted in a positive experience for public. We ultimate believe that this combination of fields and presentation styles resulted in data that was accessible, stimulating, aesthetically pleasing, and popular. Complex topics were translated into more digestible formats, which resulted in a positive experience for everyone.

Our team spent time learning how to work with a wider arrange of data types – satellite imagery, climate forecasting data – and new data sets. We were surprised to learn how poorly documented some publicly available sources were and worked to generate better local documentation and explanations of each data source as we built a codebase that could more readily be updated going forward and a curated collection of regional climate, infrastructural, hazards, and socio-economic data that can be accessed and integrated by all interested users.

c. Copies of any publications or media generated as a result of the project

Media Coverage:
Picturing Climate Justice exhibit opens, NBC 29: https://www.nbc29.com/2022/03/07/picturing-climate-justice-exhibit-opens/

Picturing Climate Justice, UVA Sustainability blog post: https://sustainability.virginia.edu/picturing-climate-justice

Picturing Climate Justice Opens this Weekend!, C3 blog post: https://theclimatecollaborative.org/blog/2022/3/4/picturing-climate-justice-opens-this-weekend

Charlottesville Intersections: Climate, Environment and Justice, Jefferson School African American Heritage Center video: Charlottesville Intersections: Climate, Environment and Justice

d. Certification:

All University of Virginia activities conducted with the Grant funds were and are consistent with charitable purposes as set forth in Section 501(c)(3) of the Internal Revenue Code, and University of Virginia complied with all provisions and restrictions contained in this Agreement, including, for example and without limitation, those provisions relating to lobbying and political activity.

2. Financial report

See attached spreadsheet

3. Intellectual property

Claibourn, M., Dawson, C., Goldstein-Greenwood, J., House, J, Karefa-Kargbo, K., LeBoeuf, L., Lemma M., Lindsay, H., Odukoya, T., and Salgueiro, M., "Charlottesville Regional Climate Equity Atlas," The Equity Center, A UVA Democracy Initiative Center for the Redress of Inequity through Community-Engaged Scholarship, 2022, https://virginiaequitycenter.shinyapps.io/climate-app/
- GitHub: https://github.com/virginiaequitycenter/cville-climate-atlas/

Dawson, C., Claibourn, M., and Salgueiro, M., "~~Global~~ Local Warming," The Equity Center, A UVA Democracy Initiative Center for the Redress of Inequity through Community-Engaged Scholarship, 2022, https://local-warming.vercel.app/
- GitHub: https://github.com/chasedawson/local-warming

LeBoeuf, L., Lemma, M., Dawson, C., Claibourn, M., and Salgueiro, M., "Picturing Climate Justice: Data Stories," The Equity Center, A UVA Democracy Initiative Center for the Redress of Inequity through Community-Engaged Scholarship, 2022, https://virginiaequitycenter.github.io/picturing-climate-stories/
- GitHub: https://github.com/virginiaequitycenter/picturing-climate-stories

The Equity Center, University of Virginia. "Cville Region Data." 2021. https://github.com/virginiaequitycenter/summer-sandbox/tree/main/cville_region_collection