

# Introduction to the WhereCOVID-19 Platform

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*Geospatial Fellows Program @ Zoom*  
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# Team Members

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- Nattapon Jaroenchai
- Young Liang
- Anand Padmanabhan
- Shaohua Wang
- Shaowen Wang

# Many Where Questions!

- Where COVID-19 cases are and will likely be?
- Where vulnerable populations are?
- Where containment and mitigation measures should be applied?
- Where health services might be overwhelmed?
- Where additional healthcare resources should be deployed?
- ...

# Pick the Right Tool at Each Step

The image illustrates a workflow for geospatial data science, centered around a globe and network visualization. Key components include:

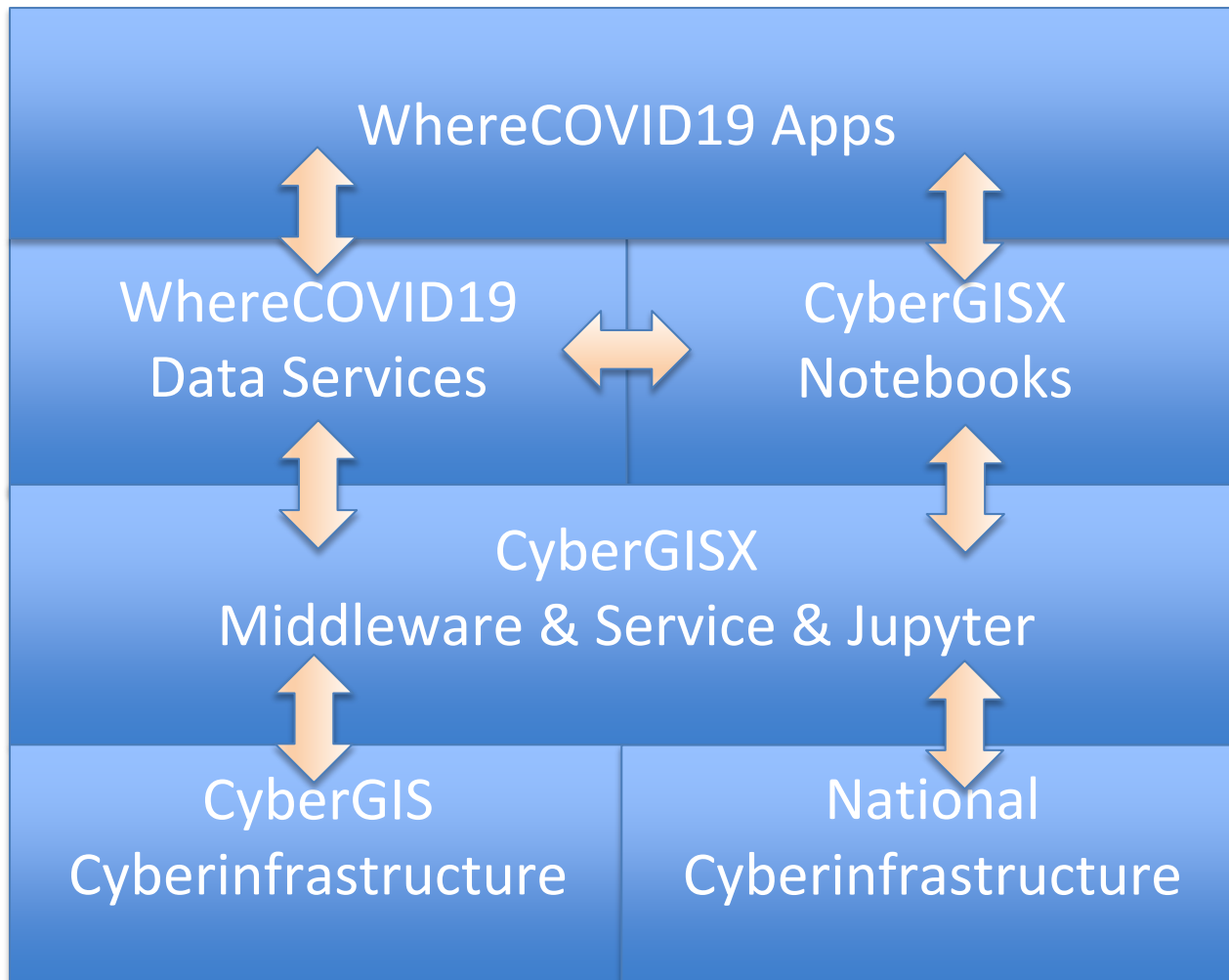
- Question Mark:** A 3D figure with a large red question mark, symbolizing the initial problem or uncertainty.
- Logos and Resources:** Logos for the CDC, World Health Organization, and The New York Times, along with a 'Coronavirus Resource Center' box, indicating the source of data and information.
- Geospatial Data:** A network diagram with nodes labeled 'health', 'GIS', 'atlas', 'data', 'URRS', 'place', and 'community', representing the integration of various data sources.
- Research Paper:** An icon of a document with a magnifying glass, representing the analysis and publication of findings.
- Dataset:** A yellow box with the text 'Dataset . DATA SCIENCE' and a network icon, representing the processed data.
- Compute Cluster:** A diagram showing a 'User / Scheduler' connected to a 'Compute Cluster' of servers, which is linked to 'Data Storage', representing the computational infrastructure.
- Jupyter Notebook:** A screenshot of a Jupyter notebook interface with code and a 'jupyter' logo, representing the environment for data analysis and visualization.

# WhereCOVID-19 Platform

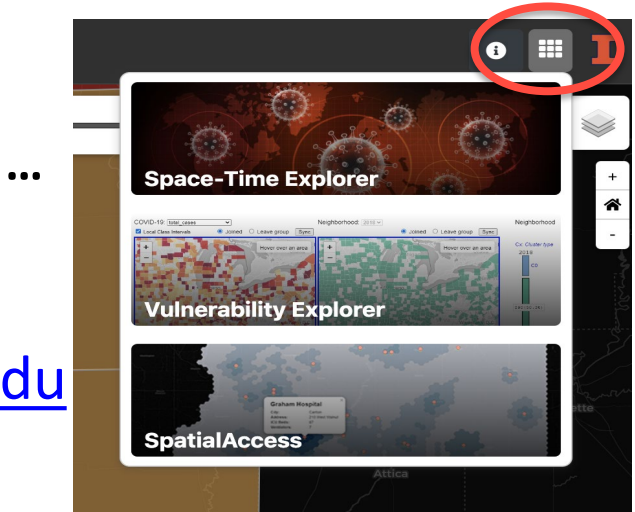
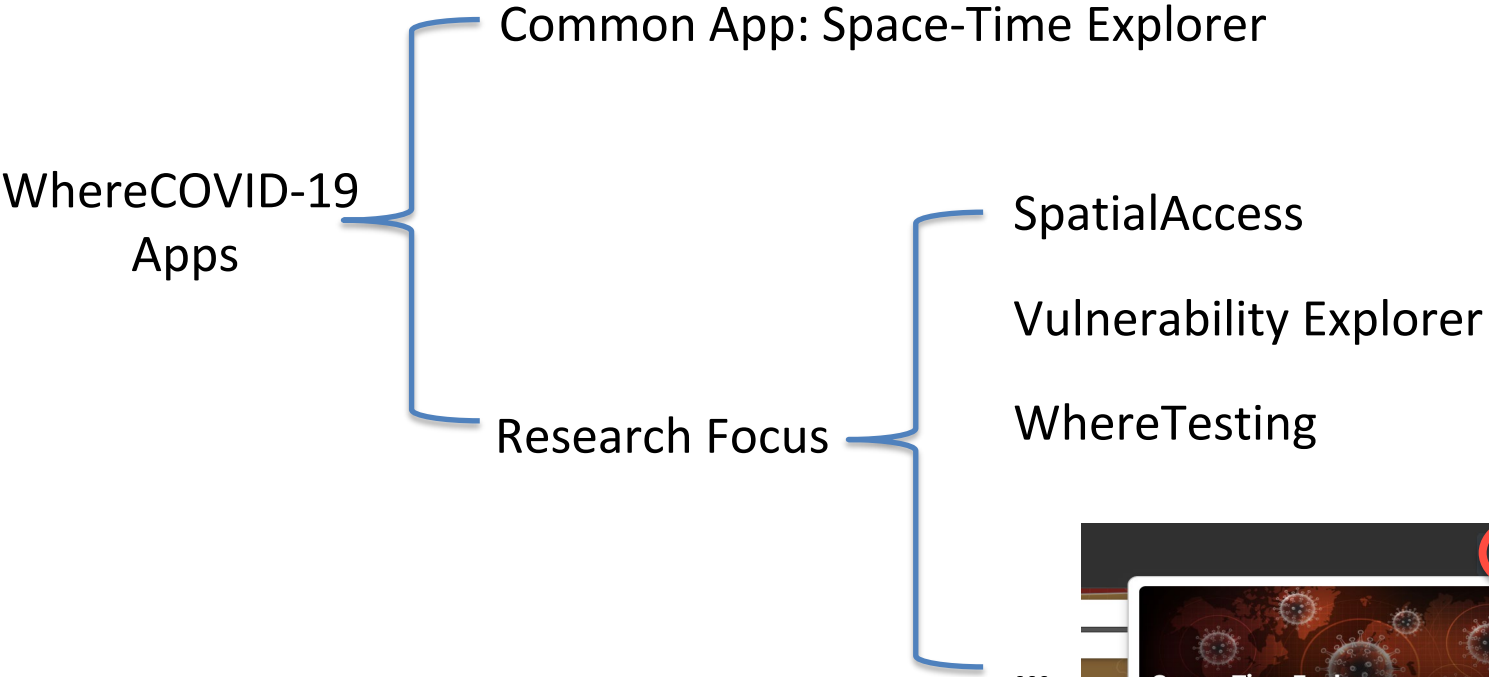
- Leverage CyberGISX capabilities and services
- Automate data collection & pre-processing for pandemic and related geospatial data
- Facilitate integration with built-in geospatial libraries in the Jupyter notebook environment
- Streamline access to advanced cyberinfrastructure resources
- Enable sharing of research outcomes
- Support collaborative research



# Architecture

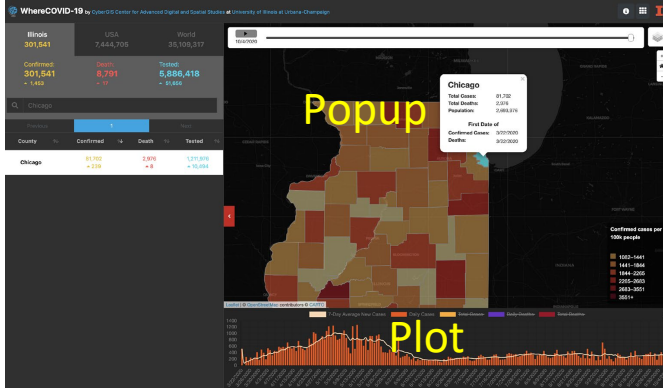
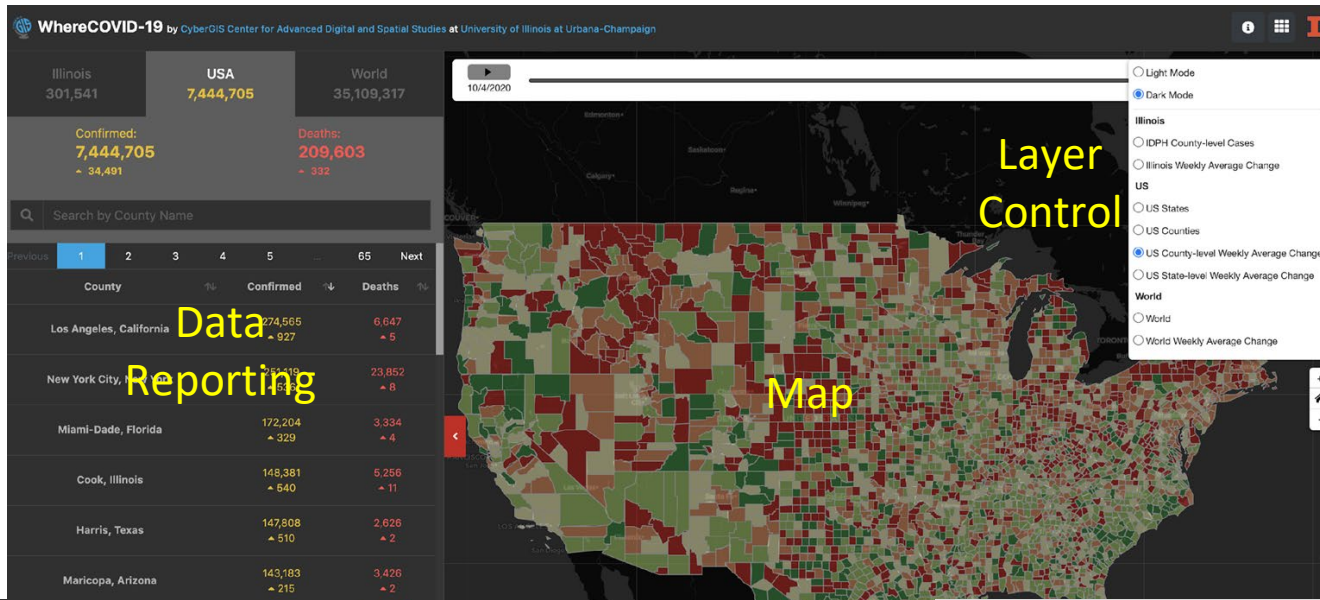


# WhereCOVID-19 Apps



<https://wherecovid19.cigi.illinois.edu>

## Space-Time Explorer



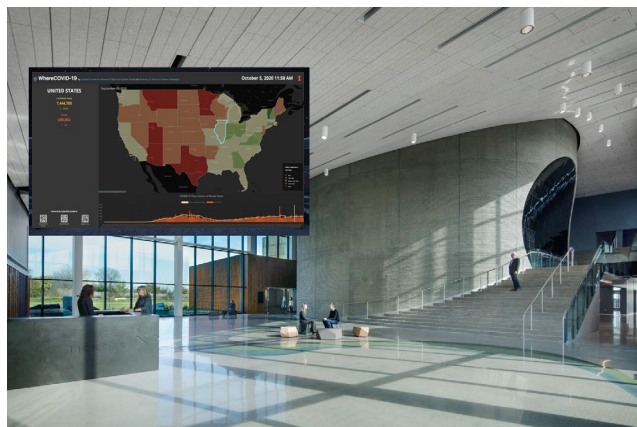
<https://wherCOVID19.cigi.illinois.edu>



# Open-Source, Customizable & Referenceable



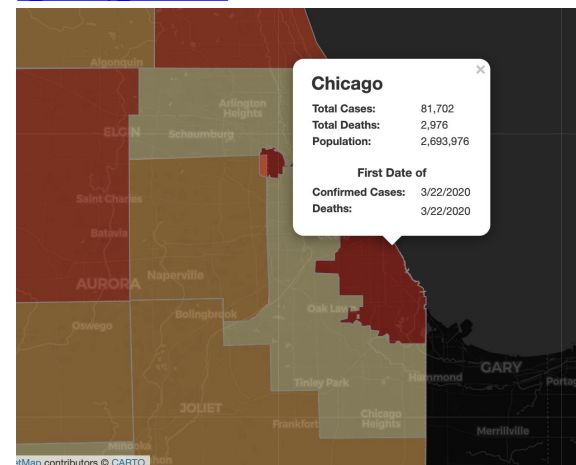
Open-Source Stack & Technology



Demo & Exhibition

Share Map with Link

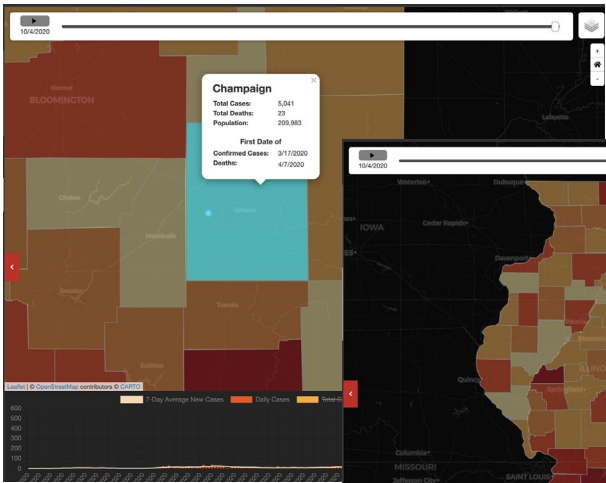
[https://wheremcovid19.cigi.illinois.edu/#9.285492234676061/41.7372/-87.5434/Dark\\_Mode-il\\_county\\_case/152](https://wheremcovid19.cigi.illinois.edu/#9.285492234676061/41.7372/-87.5434/Dark_Mode-il_county_case/152)



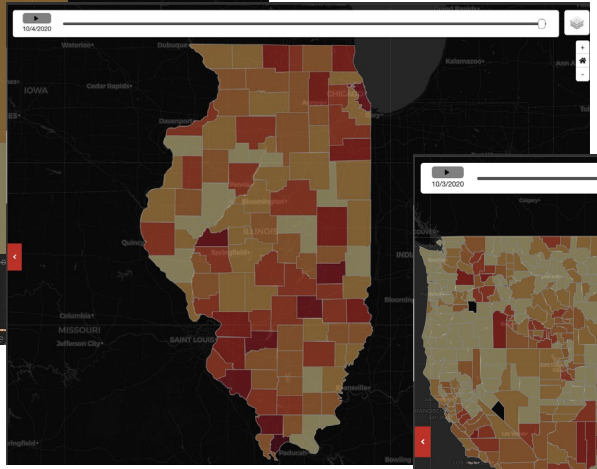


## Data Sources

Mapping COVID data at multiple spatial and temporal scales from various sources

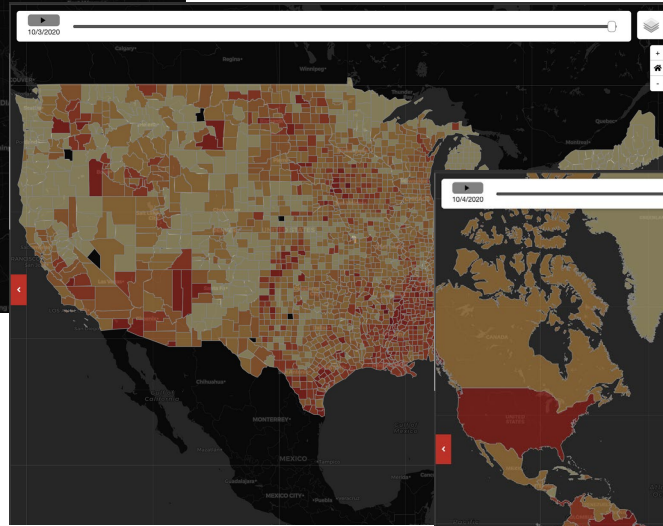


Local



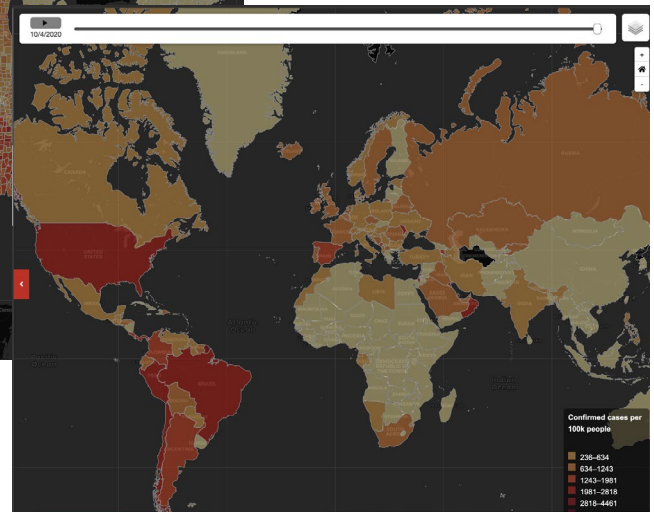
State

(Illinois Dept. of Public Health)



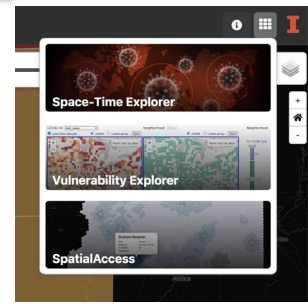
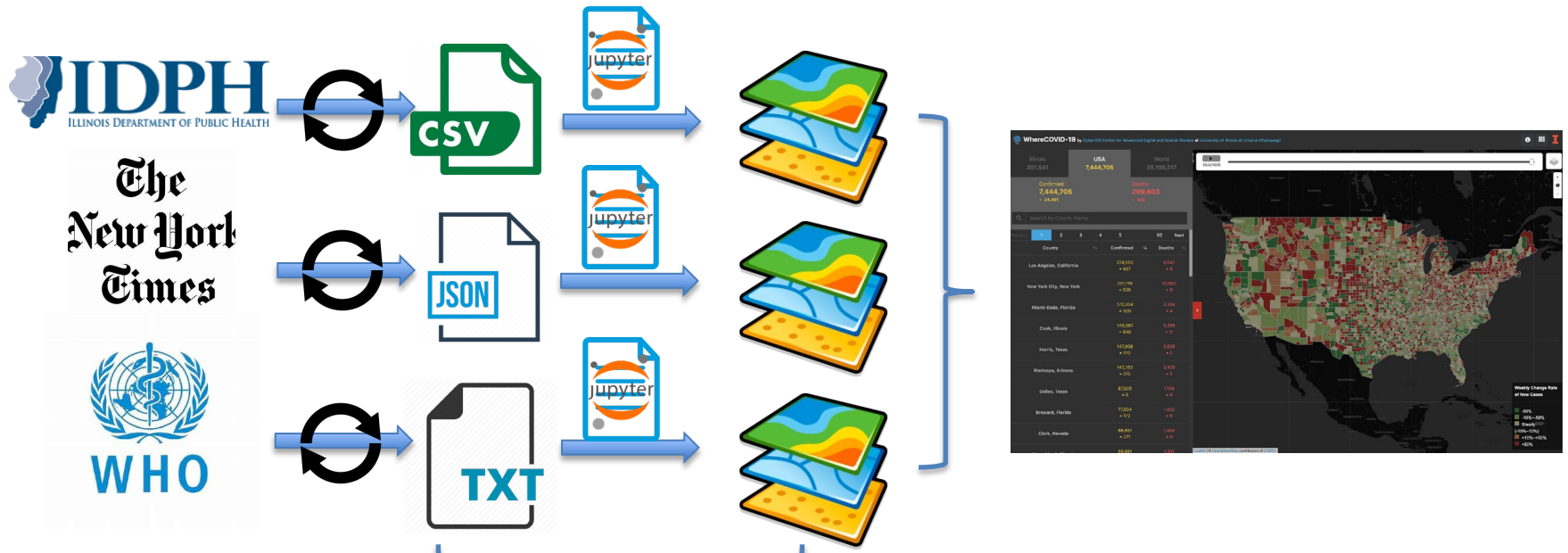
National

(New York Times)



Global (WHO)

# Data Processing Workflow

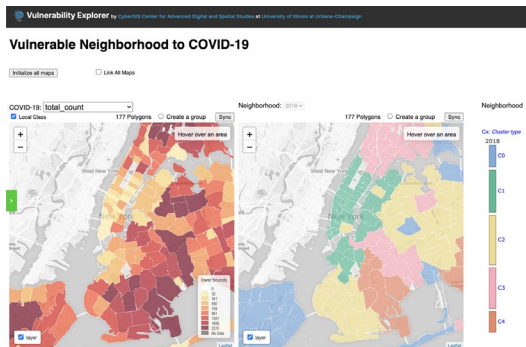
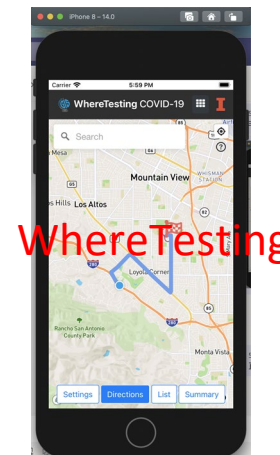
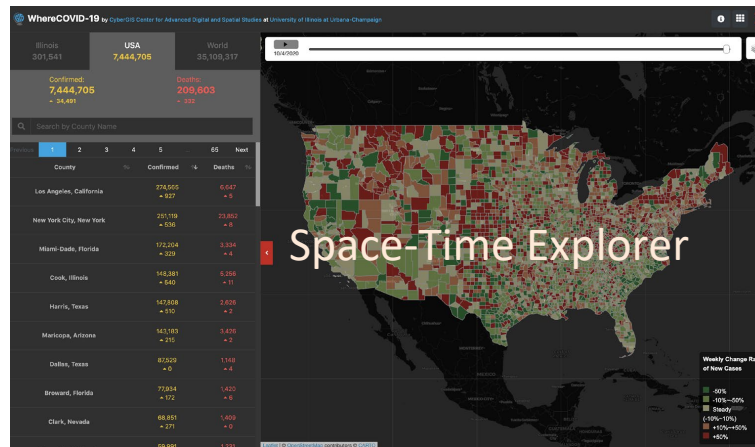
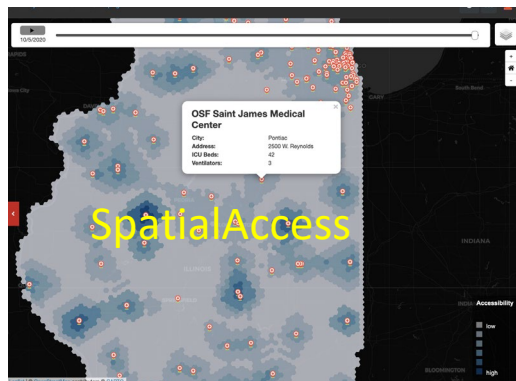


Other Apps

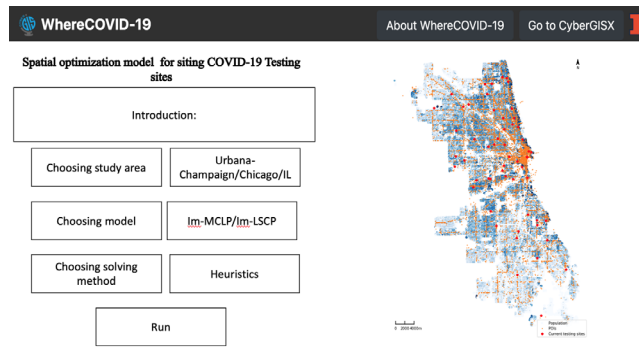


Other Research

## WhereCOVID19 App Ecosystem



Vulnerability Explorer



TestingScope  
(coming soon)



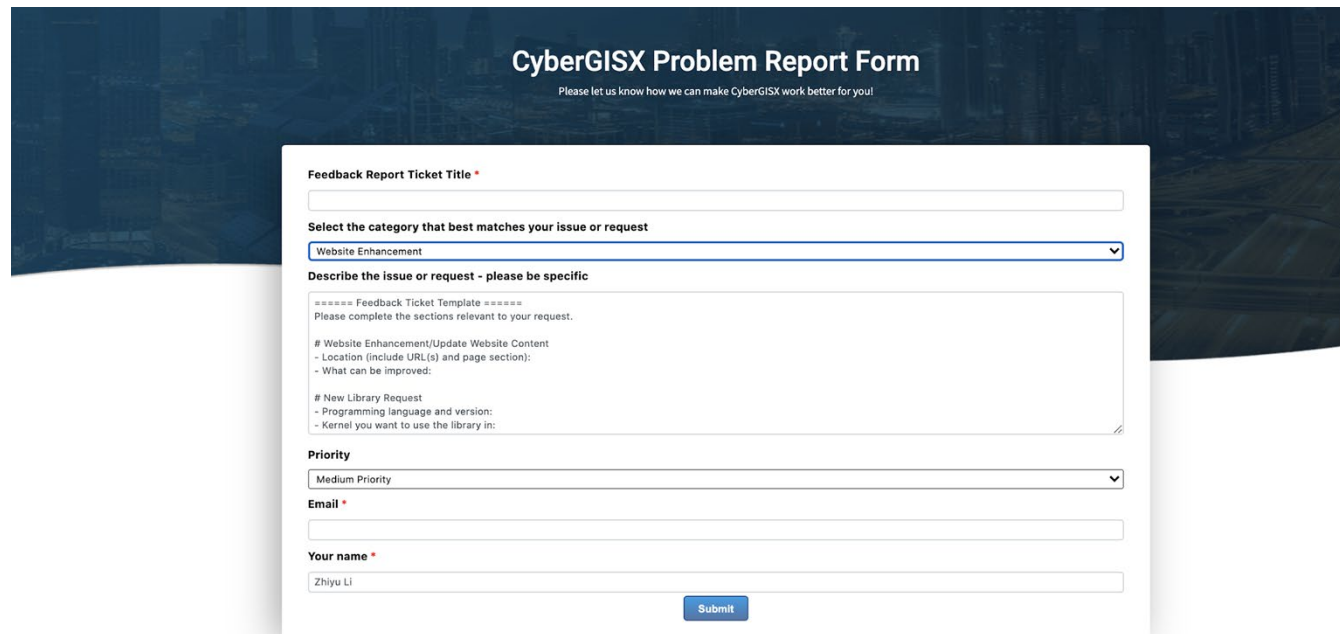
# Access WhereCOVID-19 Data

- CyberGIS collects the latest COVID-19 data from Illinois DPH, New York Times and WHO regularly
  - IDPH (<http://www.dph.illinois.gov/topics-services/diseases-and-conditions/diseases-a-z-list/coronavirus>)
    - Cases, Deaths and Testing time series for Illinois counties
  - New York Times (<https://github.com/nytimes/covid-19-data>)
    - Cases and Deaths times series data for US Counties and States
  - WHO (<https://covid19.who.int/>)
    - Cases and Deaths time series for all member countries
- Raw data and processed data are put in a shared folder on CyberGISX



# Data Request & Share Your Data

- Submit a ticket at <https://cybergisxhub.cigi.illinois.edu/problem-report/>
  - Request to download dynamic/big data for you
  - Request to share your data with other fellows



The screenshot shows a web form titled "CyberGISX Problem Report Form" with the subtitle "Please let us know how we can make CyberGISX work better for you!". The form is set against a dark blue background with a faint map. The form fields include:

- Feedback Report Ticket Title \***: A text input field.
- Select the category that best matches your issue or request**: A dropdown menu with "Website Enhancement" selected.
- Describe the issue or request - please be specific**: A large text area containing a template with sections for "Website Enhancement/Update Website Content" and "New Library Request".
- Priority**: A dropdown menu with "Medium Priority" selected.
- Email \***: A text input field.
- Your name \***: A text input field with "Zhiyu Li" entered.
- Submit**: A blue button at the bottom.

# Acknowledgements

- National Science Foundation
  - 1443080
  - 1743184
- UIUC
  - CyberGIS center for Advanced Digital and Spatial Studies
  - School of Earth, Society and Environment

# Thanks !

- **Comments / Questions?**
- **Email: [zhiyul@illinois.edu](mailto:zhiyul@illinois.edu)**