# Lyme Disease Data Innovation & OCDO Website Launch

## United States Department of Health & Human Services (HHS)

Kristen Honey, PhD, PMP — Chief Data Scientist, Office of the Assistant Secretary of Health (OASH), HHS
Nikolaos Ipiotis — Acting Chief Data Officer, Office of the Chief Information Officer, HHS

CIVIC DIGITAL FELLOWSHIP

**Ella Kim**
University of Washington
B.S. Applied & Computational Mathematical Sciences

# Office of the Chief Data Officer Website

CIVIC DIGITAL FELLOWSHIP

# Website Purpose

- Introduce the Office of the Chief Data Officer: who they are, and what they do
    - Expose HHS **data resources**- open data, data sharing/visualizations, etc.
- Explore the use of modern innovative technology to share information and show the potential to create **collaboratory** or **supplemental sites**
    - Expose OASH's **InnovationX**, their resources and competitions/challenges for data use, and their website
    - Expose the Office of the Chief Artificial Intelligence Officer (**OCAIO**) and their website

# Methods & Results

- Federalist documentation
- Updated page content and improved page layout/features on GitHub
    - File types- .md, .yaml, HTML, CSS, etc.
- Temporary site/demo

CIVIC DIGITAL FELLOWSHIP

# Future Plans

- Receive approval to **publish the official site** from all administrative agencies
- Officially launch **base pages** after approvals (estimated ~2 weeks following August 19, 2022)
    - Update and add content as later approved

CIVIC DIGITAL FELLOWSHIP

# Lyme Disease Geographical Data

CIVIC
DIGITAL
FELLOWSHIP

# Purpose/Problem Area

Inspiration from **Health Equity DataJam Challenge**

- "How can we address Lyme disease, and **improve health equity** for all tick-borne diseases, using emerging technologies that couple the power of the crowd and patient insights with **data**?"
- **"State and Local Data Visualization**: Lyme disease cases are reported by county and states, yet **policy and budget decisions** often happen at the level of the U.S. Congressional districts, so what innovative maps and extrapolation methods can **map case counts to Congressional districts**?"

CIVIC DIGITAL FELLOWSHIP

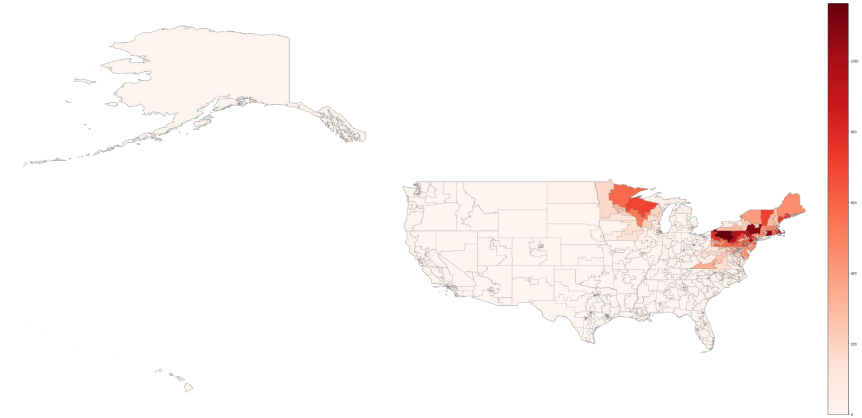
# Sources/Methods

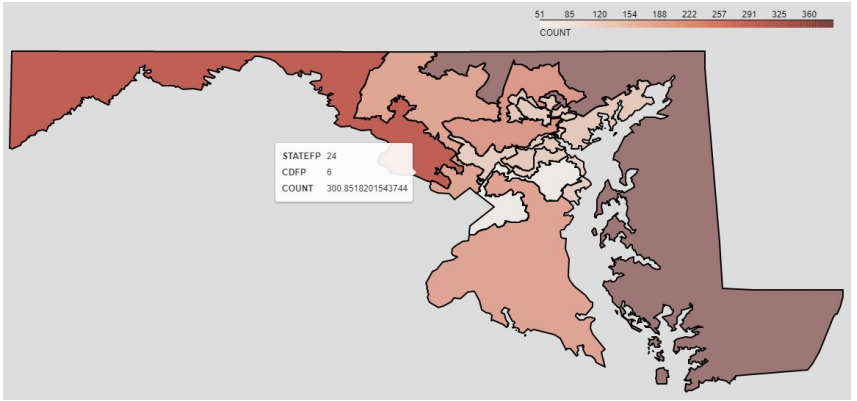
- Geographic information system (**GIS**) files of the US counties and Congressional Districts: U.S. Census Bureau Mapping (2013-19)
- Lyme disease cases: CDC Lyme disease surveillance data
- **Python** (.ipynb): Matplotlib, GeoPandas, and Pandas packages
- Methods Documentation:
    - Describes issue of county territories are split up between many Congressional districts
    - Explains various approaches for **splitting county cases** and additional cases
    - Addresses **caveats** to methods and case counts

CIVIC DIGITAL FELLOWSHIP

# Results

- Depending on **user input**, produces a **interactive** or **static** heatmap of:
  - **National map** of inputted year (2013-2019): static map for 2015 shown on top map
  - **State map** of inputted year: interactive HTML file for Maryland, 2015 (screenshot shown on bottom map)






CIVIC DIGITAL FELLOWSHIP

# Improvement/Future Plans

- Improvement:
  - Implement cases for other tick-borne diseases
  - Add other **count-splitting** and **visualization** methods (i.e., report count per 100,000 people)
- Planned presentation of algorithm & documentation:
  - Publish to HHS Github
    - **Publically available** for organizations/individuals to explore or implement

CIVIC DIGITAL FELLOWSHIP

# Thank you!

Many thanks to Coding it Forward and the US Department of Health and Human Services- Office of the Chief Data Officer and InnovationX for this experience!

CIVIC DIGITAL FELLOWSHIP