

# COVID-19 Open Innovation Efforts

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**Disclaimer:** This wiki page is not an official list of COVID-19 resources and is not intended to endorse any non-governmental product, service, or entity. The purpose of this page is to provide examples of different types of open innovation efforts emerging in response to COVID-19. For official COVID-19 information, please visit: [Coronavirus.gov](https://www.cdc.gov/coronavirus)

The following is a curated list of links to novel coronavirus COVID-19 open innovation efforts and other interactive dashboards, maps, and visualizations from the usual and unusual players, as well as other spontaneous open innovation efforts around the world. Federal agency acronyms and other source information are included in parenthesis. For the Community for Data Integration (CDI) members with login access, feel free to update this page with resources you know of or provide comments below with any questions, comments, or feedback (such as how to best organize, display, and tag each resource as the current categorization is rough). Hopefully these COVID-19 open innovation resources inspire similar work at USGS and CDI in terms of how we integrate and communicate data, how we understand and communicate risk, and how we contribute and use open innovation efforts that can inform the decisions we all are having to make in our professional and personal lives right now in this global crisis.

## Interactive Dashboards, Maps, Visualizations

### Government Resources

- [Coronavirus.gov](https://www.cdc.gov/coronavirus) (White House, HHS, CDC)
- [CDC Coronavirus \(COVID-19\)](https://www.cdc.gov/coronavirus) (CDC)
- [Government Response to Coronavirus](https://www.usa.gov/government-response-to-coronavirus) (USA.gov)
- [WhiteHouse](https://www.whitehouse.gov) | [FEMA](https://www.fema.gov) | [HHS](https://www.hhs.gov) | [CDC](https://www.cdc.gov) | [OPM](https://www.opm.gov)
- [DOI Office of Emergency Management](https://www.doi.gov/emergency-management) (*Only accessible to DOI Bureaus*)
  - [All DOI Employees COVID-19 Information Portal](https://www.doi.gov/emergency-management)
  - [Interior Operations Center \(IOC\) Common Operating Picture](https://www.doi.gov/emergency-management)
  - [COVID-19 DOI Unit Status](https://www.doi.gov/emergency-management)
  - [USGS COVID-19 Event Support Map](https://www.doi.gov/emergency-management) (USGS Emergency Management Dashboard)
  - [NPS COVID-19 Incident Response](https://www.doi.gov/emergency-management)

### The Usual Players

- [WHO Coronavirus COVID-19 Map and Graphs](https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports) (WHO)
  - [WHO Situation Updates](https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports)
- [JHU COVID-19 Dashboard](https://coronavirus.jhu.edu) (Johns Hopkins University)
- [KFF COVID-19 Coronavirus Tracker](https://www.kff.org/coronavirus/) (Kaiser Family Foundation)
- [Esri Disaster Response COVID-19 GIS Hub](https://www.esri.com/pressroom/2020/04/esri-disaster-response-covid-19-gis-hub/) (Esri)
- [AEI COVID-19 Action Tracker](https://www.aei.org/covid-19-action-tracker/) (AEI)
- [Google Coronavirus Search Trends](https://www.google.com/covid19/) (Google)
- [COVID-19 Geospatial and Situational Awareness Resources](https://www.napsg.org/covid-19-geospatial-and-situational-awareness-resources/) (NAPSG)
- [Coronavirus Map: Tracking the Spread of the Outbreak](https://www.nytimes.com/2020/04/16/us/politics/coronavirus-map-tracking-the-spread-of-the-outbreak.html) (New York Times)
- [Mapping the Wuhan Coronavirus Outbreak](https://www.esri.com/pressroom/2020/04/mapping-the-wuhan-coronavirus-outbreak/) (Esri StoryMaps)
- [Notable maps visualizing COVID-19 and surrounding impacts](https://www.mapbox.com/visualizing-covid-19/) (MapBox)

## Open Innovation Efforts

### Federal Open Innovation Efforts

- [Foldit Coronavirus Binder Design](https://www.foldit.com/coronavirus/) (NIH, NSF)
- [Call to Action for Machine-Readable COVID-19 Dataset](https://www.ostp.gov/covid-19/) (OSTP)
- [COVID-19 Open Research Dataset Challenge \(CORD-19\)](https://www.ostp.gov/covid-19/) (OSTP, NIH-NLM)
- [Pandemic Response Hackathon - Hack COVID-19](https://www.hhs.gov/davant/hack-covid-19/) (HHS, Davant)
- [FDA Efforts to Connect Manufacturers and Health Care Entities](https://www.fda.gov/covid-19/) (FDA)
- [MIT COVID19 Challenge](https://www.mit.edu/covid19/) (VA)
- [COVID-19 Innovation Hub](https://www.usaid.gov/covid-19/) (USAID)
- [COVID-19 Maker Challenge](https://www.va.gov/covid-19/) (Veterans Health Administration)
- [FEMA Crowdsourcing Unit COVID-19 Activation](https://www.fema.gov/covid-19/) (FEMA)  
[FEMA-Crowdsourcing@fema.dhs.gov](mailto:FEMA-Crowdsourcing@fema.dhs.gov)
- [Disaster Lit on Novel Coronavirus Disease 2019 \(COVID-19\)](https://www.nih.gov/covid-19/) (NIH-NLM)
- [NASA @ WORK Coronavirus Response](https://www.nasa.gov/covid-19/) (NASA) - Politico Article
- [SNAP Retailer Locator](https://www.usda.gov/covid-19/) (USDA)
- [HealthIT.gov Interoperability Proving Ground COVID-19](https://www.hhs.gov/covid-19/) (HHS)
- [NIH 3D Print Exchange - COVID-19 Supply Chain Response](https://www.nih.gov/covid-19/) (NIH, FDA, VHA, America Makes)
- [FDA FAQs on 3D Printing of Medical Devices, Accessories, Components, and Parts During the COVID-19 Pandemic](https://www.fda.gov/covid-19/) (FDA)
- [NIH Literature Hub Curated Collection on COVID19](https://www.nih.gov/covid-19/) (NIH)

### Citizen Science

- [Foldit Coronavirus Binder Design](https://www.foldit.com/coronavirus/) (NIH, NSF)
- [EteRNA](https://www.eteRNA.com/)
- [Covid Near You](https://www.covidnearyou.com/)
- [Safecast](https://www.safecast.org/)

### Challenge, Prize Competitions, and Hackathons

## Open Innovation Efforts Continued

### Contact Tracing - Crowdsourcing Mobility

- [Google Coronavirus Search Trends](https://www.google.com/covid19/) (Google)
- [COVID-19 Community Mobility Reports](https://www.google.com/covid19/) (Google)
- [Mapping Mobility Changes in Response to COVID-19](https://www.github.com/covid19-tracing-projects)
- [Covid-19-Tracing-Projects on GitHub](https://www.github.com/covid19-tracing-projects)
- [Covid Watch](https://www.covidwatch.org/)
- [CoEpi: Community Epidemiology in Action](https://www.coepi.org/)
- [PrivateKit: Safe Paths](https://www.privatekit.com/) (MIT)
- [TraceTogether](https://www.trace.together.sg/) (Singapore)
- [Unified research on privacy-preserving contact tracing and exposure notification for COVID-19](https://www.stop-covid.tech/) (Stop-Covid.tech)
- [Stop-Covid.tech - Tech vs COVID-19](https://www.stop-covid.tech/)
  - 13 things tech companies can do to fight coronavirus: An open letter from technologists, epidemiologists & medical professionals
- [COVID-19 Mobility Data Network](https://www.covid19-mobility.com/)
- [Facebook Data for Good Mobility Dashboard](https://www.facebook.com/goodmobility/)

### Crowdsourcing Curated Lists

- [Coronavirus Tech Handbook](https://www.facebook.com/coronavirus-tech-handbook/) (see Facebook Group)
- [COVIDbase](https://www.covidbase.com/) (Eri Gentry COVID Accelerator and Negative)
- [COVID-19 Knowledge Centres](https://www.scientificknowledge.com/covid-19-knowledge-centres/) (Scientific Knowledge Services)
- [Covid-19-Tracing-Projects on GitHub](https://www.github.com/covid19-tracing-projects)
- [Coronavirus Misinformation Tracking Center](https://www.coronavirus-misinformation-tracking.com/) - (Newsguard)
- [COVID-19 Social Science Research Tracker](https://www.covid-19-social-science.com/)

### Open Science

- [COVID-19 Open Research Dataset \(CORD-19\)](https://www.semanticscholar.org/collection/COVID-19) (Semantic Scholar)

## The Unusual Players - Spontaneous Efforts

- [Novel coronavirus \(COVID-19\) Outbreak Timeline Map](#) (HealthMap)
- [Novel Coronavirus Infection Map](#) (University of Washington)
- [COVID-19 surveillance dashboard](#) (University of Virginia)
- [Geographical distribution of COVID-19 cases worldwide](#) (ECDC)
- [Coronavirus: The new disease COVID-19 explained](#) (South China Morning Post)
- [Tracking COVID-19's Impact on Global Internet Performance](#) (SpeedTest)
- [COVID Testing By State Tracking Project](#) (Democracy Labs)
- [Coronavirus Atlas App](#) (Democracy Labs)
- [nCoV2019.live COVID -19 Dashboard](#) (17 year old high schooler launched in December 2019)
- [COVID-19 Public Tableau Dashboards](#) (900+ Vizzies)
- [COVID-19 US State Measures and Global Travel Restrictions Maps](#) (HealthcareReady)
- [Novel Coronavirus \(COVID-19\) Infection Map](#) (see [Github Source Code](#)) - (Dr. Bo Zhao - University of Washington Humanistic GIS Laboratory)
- [COVID-19 Coronavirus Outbreak](#) (Worldometer)
- [Abacaba Data Visualization Videos](#) - (Cary Kaiming Huang - Stanford Masters Student)
  - [Data Sources and Tools: Google Sheet, HGIS Infection Map Data, NYT Developer API, Countries of the World Flags, Processing graphics library software](#)
  - [How does Coronavirus compare to Ebola, SARS, etc?](#) - February 12, 2020
  - [Hear the Sound of Coronavirus's spread to 89 countries](#) - March 9, 2020 (Great example of Data Sonification)
  - [Coronavirus vs. Every 2000s Epidemic Fatality comparison](#) - March 19, 2020
  - [Who's STILL infected with COVID-19?](#) (Read description) - March 21, 2020
  - [Is Coronavirus really "just like the flu"?](#) - April 3, 2020
  - [Coronavirus in each US state and Korean province](#) - June 27, 2020

## Other Resources

- [Natural Hazards Center Quick Response Grant Proposals for COVID-19](#) might help provide some funds
- [Esri Provides Free Mapping Software for Organizations Fighting COVID-19](#)

- [Pandemic Response Hackathon - Hack COVID-19](#) (HHS, Datavant)
- [Call to Action for Machine-Readable COVID-19 Dataset](#) (OSTP)
- [COVID-19 Open Research Dataset Challenge \(CORD-19\)](#) (OSTP, NIH-NLM)
  - [COVID-19 Open Research Dataset \(CORD-19\)](#) (Semantic Scholar)
  - [COVID-19 Global Forecasting Challenge](#)
  - [COVID-19 Local US California Forecasting Challenge](#)
- [FDA Efforts to Connect Manufacturers and Health Care Entities](#) (FDA)
- [MIT COVID19 Challenge](#) (VA)
- [Anti-Coronavirus Hackathon - Ideation Challenge for Social Good](#) (Topcoder)
- [COVID-19 Challenges](#) (Innocentive)
- [New York Academy of Sciences - Challenge: Combatting COVID-19](#)

## Crowdsourcing with Digital Volunteers

- [FEMA Crowdsourcing Unit COVID-19 Activation](#) (FEMA) - [Crowdsourc eEM.org](#)
  - [FEMA Coronavirus How to Help](#)
  - [FEMA Continuous Improvement Program IdeaScale](#)
  - [GISCorps COVID-19 Resources](#)
    - [COVID-19 Testing Sites Locator](#) (GIS Corps, Coders Against COVID)
    - [CEDR Digital Corps Coronavirus](#) (@CEDRdigital)
    - [Hunger Free America | World Central Kitchen #ChefsForAmerica | Food Finder | SNAP Retailer Locator](#) (USDA)
    - [Corona Community](#) (Crisis Cleanup) | [Crowdsourc eRescue Coronavirus Campaign](#) (Crowdsourc eRescue)
    - [Find the Masks](#)
- [U.S. Digital Response for COVID-19](#)
  - [Covid Act Now](#)
  - [National PPE Coalition](#)
  - [The COVID Tracking Project](#)
  - ["Ask a Scientist"](#)
- [Open Innovation Initiatives to Address COVID-19](#) (Luminary Labs)
- [COVID-19 Healthcare Coalition](#)

## Distributed Computing

- [Folding@home Distributed Computing Project for Coronavirus](#)
- [COVID.SI](#)

- [Disaster Lit on Novel Coronavirus Disease 2019 \(COVID-19\)](#) (NIH-NLM)
- [Crisis Informatics: Human-Centered Research on Tech & Crises - A Guided Bibliography Developed by Crisis Informatics Researchers](#) (CU-Boulder)

## Open Source Software

- [COVID-19 - Genomic Epidemiology of Novel Coronavirus \(hCoV-19\)](#) (Nextstrain)
- [COVID Tracking Project](#) (Staff Writer at Atlantic)
- [COVID-19 Dashboards](#) (see [GitHub](#) to contribute) (Hamel Husain - Github)
- [CovidCareMap](#)
- [COVID-19 Location History Tool](#) (Taiwan's gOV.tw civic tech community)
- [COVID-19 Watch Heat Map](#) (PhD candidates from around the world)
- [COVID-19 Interactive Jupyter Notebooks](#) (Friedrich Knuth)
- [Coronavirus and Higher Education](#) (Bryan Alexander)

## Open Source Hardware

- [Open Source Medical Supplies](#)
- [Helpful Engineering](#)
- [Open Source COVID19 Medical Supplies Facebook Group](#)
- [Fighting COVID-19 with 3D Printing](#) (America Makes)
- [ICU Ventilators for COVID-19: Design and Manufacturing Challenge](#) (Ennomotive)
- [CoVent-19 Challenge - Open Innovation Effort to Design a Rapidly Deployable Mechanical Ventilator](#) (Massachusetts General Hospital)
- [Open Source Respirator and Low Cost Ventilator Efforts to Fight COVID-19](#) (Ennomotive & MGH projects)

## Maker Movement

- [COVID-19 Maker Challenge](#)
- [GetUsPPE - Uniting the Maker Community](#)
- [Calling All Makers to Sew Face Masks](#) (FreeSewing)
- [Crowdsourced PPE Donations](#) (Sohan Murthy)

- [Do you have COVID-19 questions? Our scientists have answers.](#)
- [Facebook - Keeping People Safe and Informed About the Coronavirus](#)

## Tips & Tricks of Leveraging Existing Crowdsourced Data

- [Google Business Graphs](#): Go to Google Maps online or the app, find the grocery store or restaurant you plan to get food or supplies to see real-time Live Visit Data overlaid onto the Popular Times Graph.
  - [Safegraph: Introducing Places Patterns: Foot-Traffic & Store Visitor Insights Dataset; Revealing SafeGraph's Secret Method For Getting Accurate Store Visits From GPS Data](#)
  - Popular Times Open Source Projects:  
[m-wrzt](#) | [apollojain](#) | [bartleyg](#)

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## Making this Resource Interactive and User-Friendly

### Potential Platforms to Share and Promote these Resources

- Agency Citizen Science & Crowdsourcing Websites, Blogs, Social Media (EPA, NASA, NPS, USFS, USGS)
- [CitizenScience.gov Blog](#)
- [Digital.gov News](#)
- [CrowdsourceEM.org](#)
- [SciStarter.org Blog](#)
- [CitizenScience.org Blog](#)
- [Coronavirus Tech Handbook](#)

### Tools to Develop an Interactive Product

- [GeoPlatform.gov ArcGIS Hub Site](#)
- [Esri COVID-19 Hub Sites](#)
- [Esri Coronavirus Response Solution Released](#)
- [Esri Coronavirus Response: How to Use This Template](#)
- [Esri Disaster Response Resources](#)
- [ArcGIS Insights](#)

### Data Management and Integration

- Metadata, tags, categories
- Using open source tools to avoid licensing issues
- Allow users to like, share, comment, provide recommendations, reviews, etc.

## Citizen Science & STEM Learning Projects for Kids

[Take Your Kids Teleworking with Citizen Science to Understand Our Earth \(Ignite OI Forum - April 23, 2020\)](#)

[Potential Projects for Kids at Home with Teleworking Parents](#)