

# GEO VIRTUAL SYMPOSIUM 2020

Session 1: Earth Observations for COVID-19 Response and Recovery

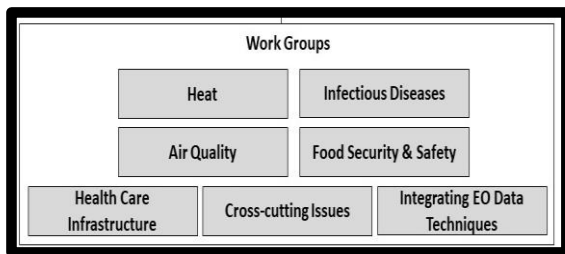
## **Selected Community Resources**

15 June 2020



## Improving Health Decision-Making Using Environmental Observations

**Global network of governments, organizations, and observers, who seek to use Earth observation data to improve health decision-making at the international, regional, country, and district levels**



**Teleconferences on Earth Observations and COVID-19:  
A Virtual Round the Room Update**

## COVID-19 Teleconferences

### Teleconferences on COVID-19 Activities

The Group on Earth Observations (GEO) Health Community of Practice is pleased to host a series of teleconferences on **Earth Observations and COVID-19: A Virtual Round the Room Update** in March, April, and May 2020. These teleconferences will provide an opportunity to share research applications and related activities that use Earth observations to advance knowledge on COVID-19 transmission.

Community members are encouraged to share their relevant COVID-19 activities as part of the **GEO Community Response to COVID-19**. Please send a brief description of the activity to the **GEO Secretariat**.

#### Friday, March 27, 2020 (10:00 AM - 12:00 PM EDT) (GMT-4)

GEO HEALTH COP TELECON - 27 MARCH 2020

Seasonality

Air Quality

Health Infrastructure 1 (Italy)

#### Friday, April 3, 2020 (11:00 AM - 12:30 PM EDT) (GMT-4)

GEO HEALTH COP TELECON - 3 APRIL 2020

Health Infrastructure 2 (Japan)

COVID-19 Funding & Challenges

**Next COVID-19 Teleconference:  
Tuesday, June 23, 2020  
8:30-10:00AM EDT (GMT-4)**

#### Thursday, April 9, 2020 (11:00 AM - 1:00 PM EDT) (GMT-4)

GEO HEALTH COP TELECON - 9 APRIL 2020

COVID and Temperature

Copernicus (Italy)

Health Infrastructure 3 (Italy)

United Nations Office for Outer Space Affairs (UNOOSA)

#### Friday, April 17, 2020 (11:00 AM - 12:30 PM EDT) (GMT-4)

GEO HEALTH COP TELECON - 17 APRIL 2020

OIS for COVID-19 Response

Socioeconomic Data and Applications Center (SEDAC)

Aerosols (India)

### Funding Opportunities & Challenge Competitions related to COVID-19 Activities

The Group on Earth Observations (GEO) Health Community of Practice has compiled a list of relevant COVID-19 funding opportunities and challenge competitions. Community members are encouraged to share potential opportunities by sending a brief description to the GEO Health Community of Practice.

#### Funding Opportunities

##### Ongoing

NIH's Support for Understanding the Impact of Environmental Exposures on Coronavirus Disease 2019 (COVID-19) (May 1, 2020 - May 4, 2021)

NASA's Rapid Response and Novel Research in Earth Science (February 14, 2020 - March 29, 2021)

COVID-19 High Performance Computing Consortium Request

#### Challenge Competitions

COVID-19 Open Research Dataset Challenge (CORD-19)

MIT COVID19 Challenge (April 3-5, 2020)

COVID-19 Response and Recovery Innovation Hub: A Global Initiative for Sharing and Seeking Solutions

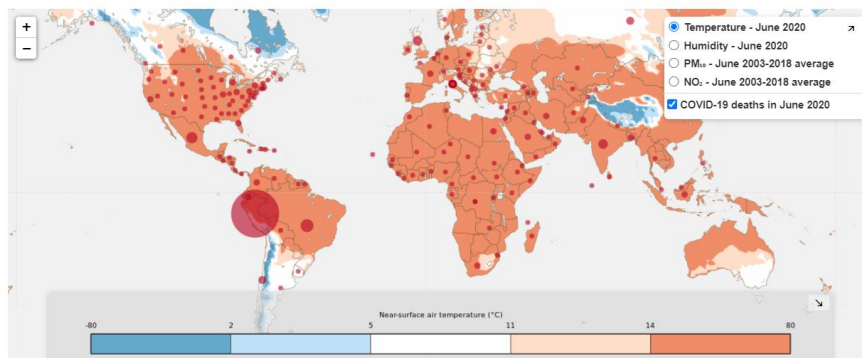
USG Health and Human Services: Broad Agency Announcement funding opportunities

# COVID-19 Data Portals I

## EU: Copernicus' Climate Data Store

Climate Data Store - Monthly climate explorer for COVID-19

Recently published papers have suggested that, as happens with the diffusion of other viruses, air temperature and humidity could alter the spread of COVID-19. Papers in discussion also suggest that air pollution, particularly fine particulate matter, could be involved in the morbidity and mortality due to COVID-19 and might also play a role in spreading the SARS-CoV-2 virus. This application, provided by the Copernicus Climate Change Service, allows the user to explore some of these claims by plotting the average air temperature and humidity of the most recent months, alongside climatological air pollution levels from the Copernicus Atmosphere Monitoring Service and the mortality data obtained from Johns Hopkins University.



## NOAA: Environmental Datasets for Infectious Disease Modeling

The screenshot shows the NOAA Climate.gov website. The main navigation bar includes 'News & Features', 'Map Data', 'Teaching Climate', 'About', 'Contact', 'FAQs', 'Site Map', and 'What's New?'. Below the navigation bar, there are links for 'Data Snapshots', 'Dataset Gallery', 'Climate Data Primer', and 'Climate Dashboard'. The 'Climate Data Primer' section is highlighted, with the title 'What environmental data are relevant to the study of infectious diseases like COVID-19?'. Below the title is a large image of blue and yellow virus particles.

Copernicus: <https://cds.climate.copernicus.eu/apps/c3s/app-c3s-monthly-climate-covid-19-explorer>

NOAA: <http://climate.gov/covid>

# COVID-19 Data Portals II

## NASA: COVID-19 Data Pathfinder

### COVID-19 Data Pathfinder

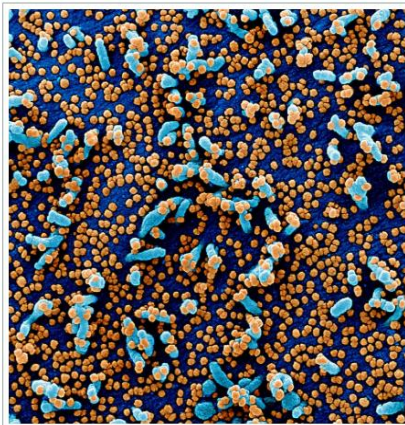


In January 2020, the World Health Organization (WHO) began investigating a cluster of medical cases caused by a new strain of the severe acute respiratory syndrome (SARS) coronavirus, SARS-CoV-2. SARS-CoV-2 causes the disease COVID-19, which has spread rapidly throughout the world. Scientists know very little about it.

Researchers across the globe are studying the novel virus to discover the key forces in the virus' spread. In addition, remote sensing scientists are looking at the potential changes in the environment due to the change in human behavior—quarantine and stay-at-home measures.

Satellites cannot detect the spread of the disease from space, but they can measure changes in Earth's environment due to changes in human behavior. NASA and other federal agencies use satellite and airborne data to assess regional and global environmental, economic, and societal impacts of the COVID-19 pandemic. (See the Rapid Response and Novel Research in Earth Science funding solicitation [here](#).)

In addition, because of long-term data collection



Colorized scanning electron micrograph of a VERO E6 cell (blue) heavily infected with SARS-COV-2 virus particles (orange). Image courtesy of the National Institute of Allergy and Infectious Diseases Integrated

## NASA: COVID-19 NO<sub>2</sub> Page

NASA  
National Aeronautics and Space Administration  
Goddard Space Flight Center

Atmospheric Chemistry and Dynamics Laboratory (Code 614)  
**Global Nitrogen Dioxide Monitoring Home Page**

Home README/FACs News Publications Personnel Data Access & Links

**AURA OMI average tropospheric NO<sub>2</sub> maps**  
Please **README** to better understand the data  
(You may need to enable popups on your browser)

NO<sub>2</sub> images will be displayed by clicking on a diamond or  
[Select a City] [v]

NO<sub>2</sub> time series data (csv files) are **now** available  
[Select a City] [v]

For a bigger picture, select a region  
[Select a Region] [v]

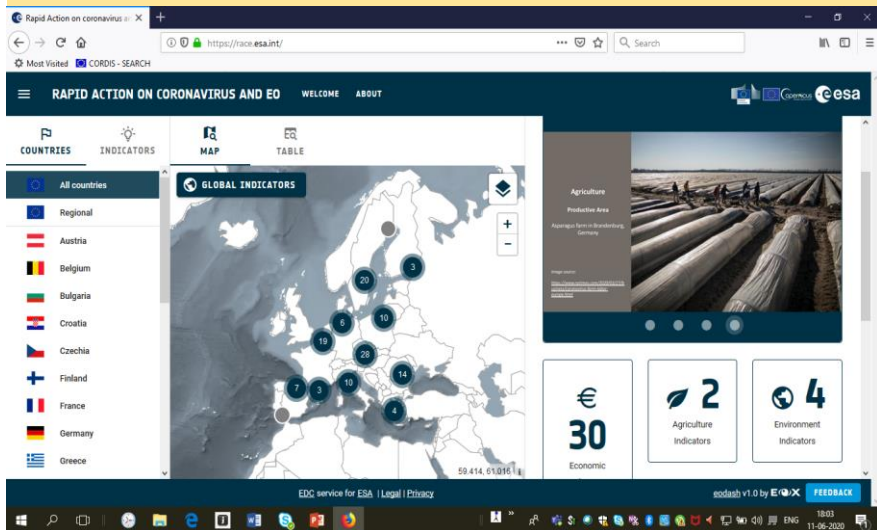
Or a video of a region  
[Select a Region] [v]

**NASA:** <https://earthdata.nasa.gov/learn/pathfinders/covid-19>

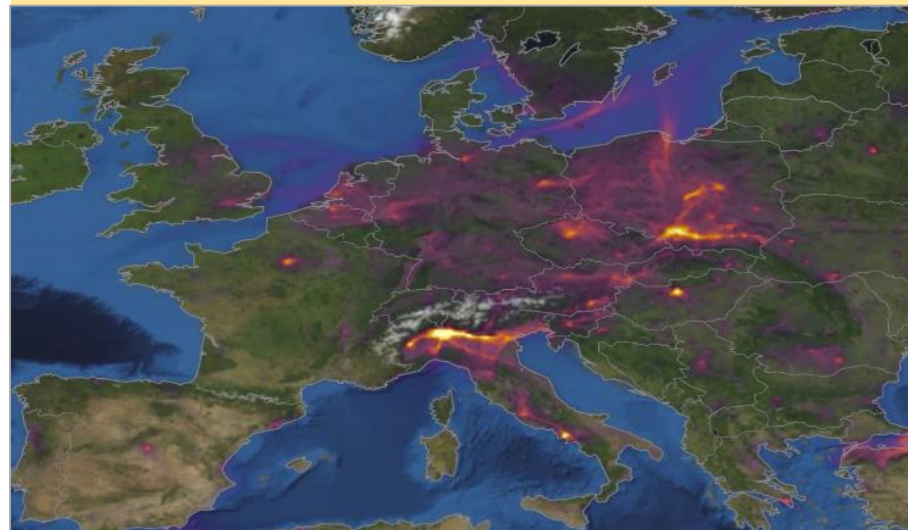
**NASA Goddard:** [https://so2.gsfc.nasa.gov/no2/no2\\_index.html](https://so2.gsfc.nasa.gov/no2/no2_index.html)

# COVID-19 Data Portals III

## RACE – Rapid Action Coronavirus EO Dashboard



## EU Space Programme COVID-19 Portal



EU Space Programme COVID-19 Portal: <https://www.copernicus.eu/en/coronavirus>  
RACE Dashboard: <https://race.esa.int>

# COVID-19 Information and Workshops

## Global Heat Health Information Network



Updated 25 May 2020

**PLANNING CHECKLIST**

### MANAGING HEAT RISK DURING THE COVID-19 PANDEMIC

This checklist is for local and national authorities coordinating heatwave preparedness and response measures.

It provides a list of measures to consider when adapting heatwave plans and interventions in the context of the COVID-19 outbreak.



**VULNERABLE GROUPS AND SOCIAL SERVICES**

The people who are most vulnerable to hot weather and COVID-19 include older people (over age 65); those with pre-existing medical conditions such as heart disease, respiratory illness or diabetes; those taking certain medications; those who are overweight and obese; those who are marginalized and isolated, including those experiencing homelessness; pregnant women and people wearing personal protective equipment (PPE) in places that are not temperature controlled.

People infected with, or recovering from, COVID-19 are presumed more vulnerable to heat stress, including outdoor workers returning to the workplace.

Vulnerable populations may be in more precarious social and economic conditions due to COVID-19, including from lost wages, increased isolation, and strains or gaps in social networks. This can increase vulnerability to heat risk by limiting healthcare access, transport options, food security and utility access.

Identify your high risk communities by reviewing where local heat islands occur, and where this may overlap with high incidence or risk of COVID-19.

**TECHNICAL BRIEF**

### PROTECTING HEALTH FROM HOT WEATHER DURING THE COVID-19 PANDEMIC

- Heat and COVID-19 Information Series: Planning checklist, Technical briefs
- Heat Health Masterclass Series 2020
- Dialogues (July 28-29, 2020)

## Climatological, Meteorological, and Environmental Factors in the COVID-19 Pandemic August 4-6, 2020

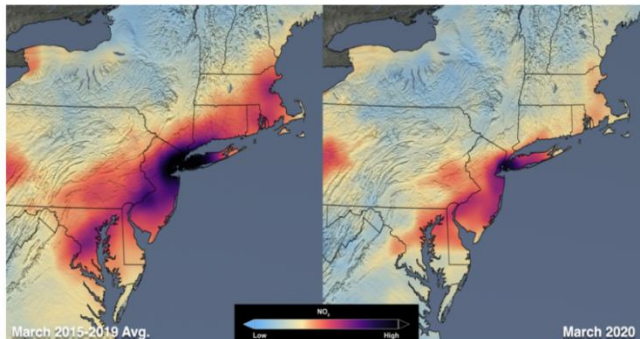
- ❖ International virtual symposium on drivers, predictability, and actionable information
- ❖ Half-day schedule for 3 days
- ❖ Leveraging global expertise through keynote presentations, panels, and group discussions

# Training Opportunities and Other Events



Introductory Webinar: An Inside Look at how NASA Measures Air Pollution

Image Credit: [airquality.gsfc.nasa.gov](https://airquality.gsfc.nasa.gov)



Presentations and hands-on guided computer exercises on how to access, interpret, and use NASA satellite images for decision-support



- ❖ Theme: Using Earth Observations to Learn about COVID-19
- ❖ NASA, ESA, and JAXA partnered to launch the virtual hackathon to develop COVID-19 solutions from May 30-31, 2020

**NASA ARSET:** <https://arset.gsfc.nasa.gov/webinars>

**Space Apps COVID-19 Challenge:** <http://www.spaceappschallenge.org/>



# Thank You!



John Haynes, NASA

Juli Trtanj, NOAA

Astrid-Christina Koch, European Commission

Helena Chapman, NASA