

# COVID-19 RESPONSE FUNDING UPDATE

June 5-June 11, 2020

## FACTS

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\$96,748,372

Funds Mobilized

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699 Grants Funded

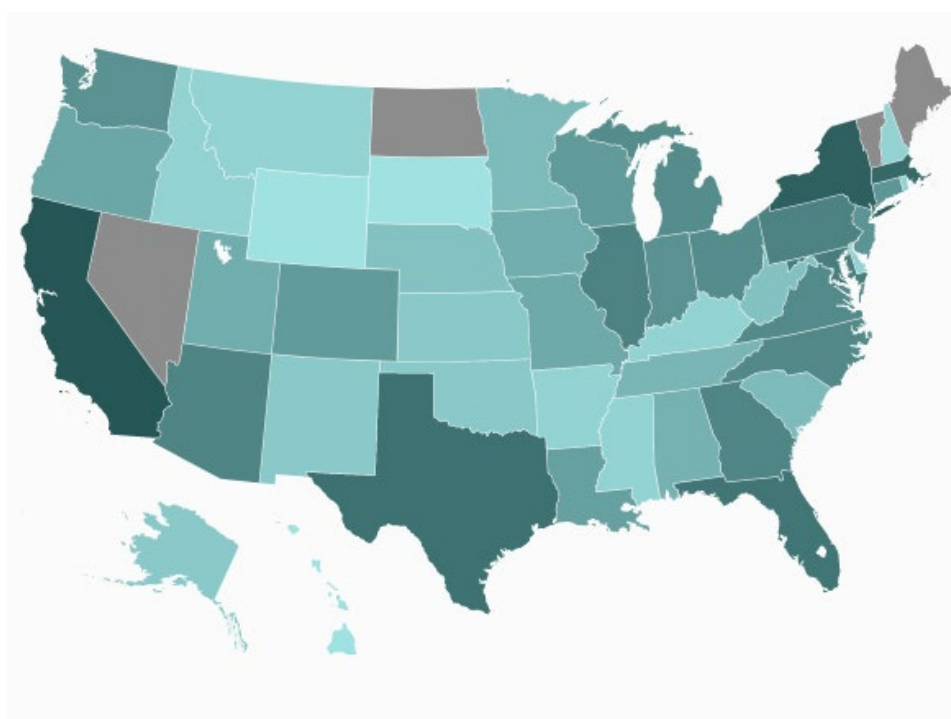
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# OVERVIEW

In response to the COVID-19 virus, the National Science Foundation (NSF) is mobilizing funding from the FY2020 budget and supplemental appropriations through the Coronavirus Aid, Relief, and Economic Security (CARES) Act. CARES Act funding supports a wide range of research areas to help the country fight and recover from the COVID-19 crisis through several research funding mechanisms, including Rapid Response Research (RAPID), a fast-tracked grant process to accelerate critical discoveries.

## AWARDS



COVID-19 related awards by state, shade of blue correlates to number of awards.

	CARES Act	All COVID-19
<b>Number of Awards</b>	469	699
<b>Funding Deployed</b>	\$67,483,107	\$96,748,372

This update spotlights several recent awards, just a snapshot of the essential work NSF is funding through the CARES Act and FY2020 appropriations. You can explore all of the COVID-19 related research grants awarded through the National Science Foundation at [this link](#).

## DIVISION OF SOCIAL AND ECONOMIC SCIENCES

### FY2020 \$66,375

<b>Title</b>	RAPID: Working Parents and Childcare during the Coronavirus Disease (COVID-19) Pandemic
<b>Institution</b>	University of Iowa; Iowa City, IA
<b>What</b>	In March 2020, most U.S. public schools and daycare centers closed in an effort to stem the spread of COVID-19. This research will examine how working parents managed the care of their children and the possible effects of closing childcare facilities on such things as economic competitiveness and public health.
<b>Why</b>	How working families manage childcare has a direct impact on the labor supply and productivity of the U.S. workforce. Findings will help inform childcare policies for future extreme events, so decision-makers in government and business can better understand the sociological and economic effects of family structure, gender, and job requirements.

## DIVISION OF COMPUTER AND NETWORK SYSTEMS

### CARES Act \$199,997

<b>Title</b>	RAPID: Psychosocial Determinants of Successful Remote Learning During the Covid-19 Pandemic: A Study of Promoters and Barriers faced by HBCU Students
<b>Institution</b>	North Carolina Agricultural and Technical State University; Greensboro, NC
<b>What</b>	Research at the largest Historically Black University, North Carolina A&T State University, seeks to understand risk factors for African Americans (AAs), lower income Americans, and individuals with psychosocial risk factors who are disproportionately impacted by public health crises.
<b>Why</b>	In March 2020, after all classes were transitioned to online instruction, over 1,700 students did not attend classes, placing these students at risk for dropping out of college or incurring the financial burden of extending school attendance. Insight will help develop effective interventions to prevent disruptions in remote learning success in preparation for Fall 2020 and subsequent semesters.

## DIVISION OF ELECTRICAL, COMMUNICATIONS AND CYBER SYSTEMS

### FY2020 \$200,000

<b>Title</b>	RAPID: Data-Driven Models to Optimize Ventilator Therapy in ICU COVID Patients
<b>Institution</b>	John Hopkins University; Baltimore, MD
<b>What</b>	Researchers are developing new ways to optimize ventilator functionality using a special class of mathematical models that enable better performance of dynamic systems. These control strategies will enhance how ventilators respond to changes in patient condition.
<b>Why</b>	Ventilators are critical tools for treating severe respiratory distress that COVID-19 can cause, but high-intensity ventilator use that may be necessary to save lives can also cause lung injuries. This engineering approach will help medical professionals improve the performance of ventilator therapies and reduce ventilator-associated lung damage.

## DIVISION OF MOLECULAR AND CELLULAR BIOSCIENCES

### CARES Act \$199,844

<b>Title</b>	RAPID: Molecular Insights into the SARS-CoV-2 Spike Protein Activation via a Novel Interaction with a Human Cell Surface Target Protein
<b>Institution</b>	The Scripps Research Institute; La Jolla, CA
<b>What</b>	Using an advanced Atomic Resolution Microscope—the first of its kind in the United States—researchers will determine how the COVID-19 coronavirus interacts with human cells during infection.
<b>Why</b>	Understanding the physical structures that SARS-CoV-2 uses to infect human cells will help researchers devise new approaches to interrupting that process and protecting against COVID-19.

## DIVISION OF INFORMATION AND INTELLIGENT SYSTEMS

### CARES Act \$95,751

<b>Title</b>	NSF RAPID: Modeling Corona Spread Using Big Data Analytics
<b>Institution</b>	Florida Atlantic University; Boca Raton; FL
<b>What</b>	With innovative big data analytics techniques and tools, and by leveraging experience from modeling Ebola spread, this project will develop a model for the spread of COVID-19.
<b>Why</b>	This model differs from current models. Because it will use automatic process, it could quickly identify virus trajectory in a community to reduce the number of infected patients and related deaths.

## DIVISION OF INTEGRATIVE ORGANISMAL SYSTEMS

### CARES Act \$199,842

<b>Title</b>	RAPID: Adaptive immunity in bats: foundational knowledge for assessing specific pathogen responses in natural coronavirus reservoirs
<b>Institution</b>	Tulane University; New Orleans, LA
<b>What</b>	Bats host a diversity of coronaviruses and have been linked to multiple emerging human infections. This project seeks to understand how the bat immune system detects coronavirus infections.
<b>Why</b>	This project will offer insights into coronavirus infections in people and animals (bats), potentially identifying avenues for treatments or vaccines for COVID-19.

## Related NSF Research News

- [Researchers use machine learning to predict heart damage in COVID-19 victims](#)
- Cleveland 19 News: [Could a breathalyzer detect COVID-19? OSU researchers are hopeful](#)
- North Carolina Health News: [If the coronavirus rebounds, Cary could be the first to know](#)
- KSFM-TV: [University of Arkansas research team using supercomputers to find COVID-19 vaccine](#)
- SciTechDaily: [COVID-19: Domestic Violence Up, Traffic Stops and Burglaries Down](#)
- WLTX 19: [U of SC researchers using Twitter to track COVID19](#)
- WBNS 10: [Ohio State professor's invention could change how people are tested for COVID-19](#)
- Missourian: [Understanding how Spanish flu spread could help state prepare for next COVID-19 wave](#)