

More

# Corona Virus Science

This blog explains some of the science related to the corona virus (COVID-19) € perspective. Most posts contain links to the underlying research.

## COVID-19 Model Projections

This page contains graphs with the latest COVID-19 projections for the US from the "Data Trend Model". Previous predictions can be downloaded from Github.

### Last model run

October 21, 2020 with Johns Hopkins Data from 10/20/2020.

- **Predicted daily deaths on 11/3/2020: 993** (~ 60,000 per 2 months)
- **Predicted daily cases on 11/3/2020: 85,106**
- **Total confirmed COVID-19 deaths predicted by 1/20/2021: 339,803**
- **Total predicted cases by 1/20/2021: 15,622,169**

### Summary

This is the first model run in about 2 months, prompted by the rapid increase in COVID-19 cases in the last several weeks.

The model predicts a 7-day average of 85,000 confirmed COVID-19 cases per day on election day, November 3. This is significantly higher than the about 67,000 daily cases at the previous peak in July. As the graphs below show, the current growth in COVID-19 infections is a result of rapidly rising infections in the vast majority of US states. This is quite different from the earlier peaks in April and July, which were primarily due to rises in a limited number of states.

As before, the model assumes that any future growth in case numbers is limited to 14 days. While this was a reasonable assumption in the past, it may be too optimistic now, since there is a growing reluctance to issue or adhere to new restrictions. Therefore, the picture painted by the graphs below may well be too optimistic.

Even so, the number of confirmed COVID-19 deaths on January 20, 2021, when the next president of the USA will be inaugurated, is predicted to exceed 339,000. A recent report from the CDC has shown that the official COVID-19 death numbers *understate the actual number of deaths linked to COVID-19 substantially*. For the period until October 3, 2020, the actual number of excess deaths was about 50% higher than the number of death certificates that listed

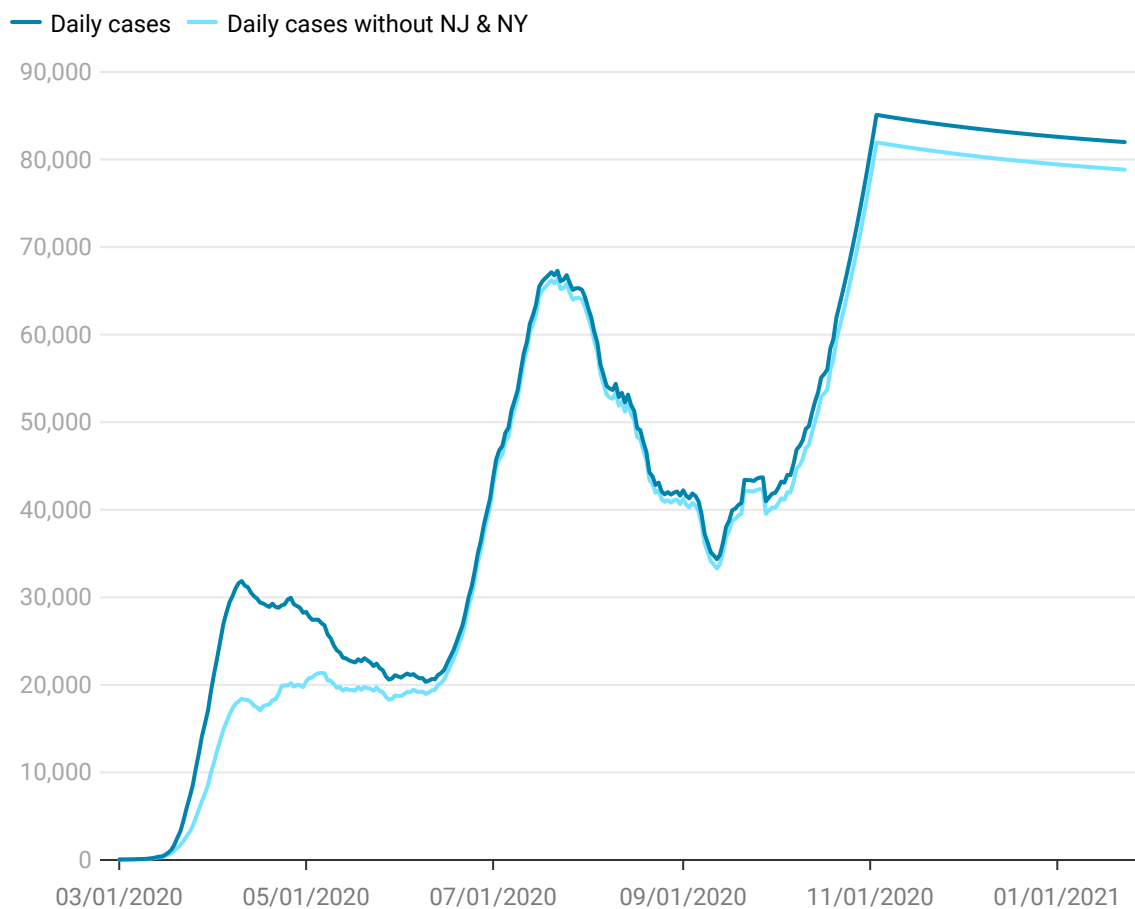
COVID-19 as a cause of death. Under the assumption that this ratio will remain the same over the next 3 months, there will be a total of 170,000 excess deaths that will not be officially attributed to COVID-19.

This means that when president Trumps current term ends, **more than half a million people in the US will have died due to the COVID-19 epidemic**. These are *additional deaths*, above the number of deaths that would have been expected without COVID-19 - or if the US government had launched an effective response to the epidemic like many other countries have done.

The current model run includes a couple of changes to the model. The first change is a simplification: the predictions are now based on extrapolating the (smoothed) trends from the last 7 days only. Previous model runs had also considered the 15-day trends, and selected the more optimistic of the two. The second change should increase the accuracy of the death number predictions: the case fatality rate (CFR) used for the predictions is now based on the observed CFR for the last 45 days only (time-adjusted by 14 days between case report and death). Previous model runs had used the time-adjusted CFR for the entire year, which included artificially high CFRs from the early phase of the pandemic when testing was extremely limited. The calculated time-adjusted CFR for the entire US was 1.77%; however, the model used state-specific CFR rates, which ranged from 0.4% for Utah to 3.5% for Florida.

## Daily actual and projected COVID-19 cases

Using 7-day averages for actual cases; future growth limited to 14 days.

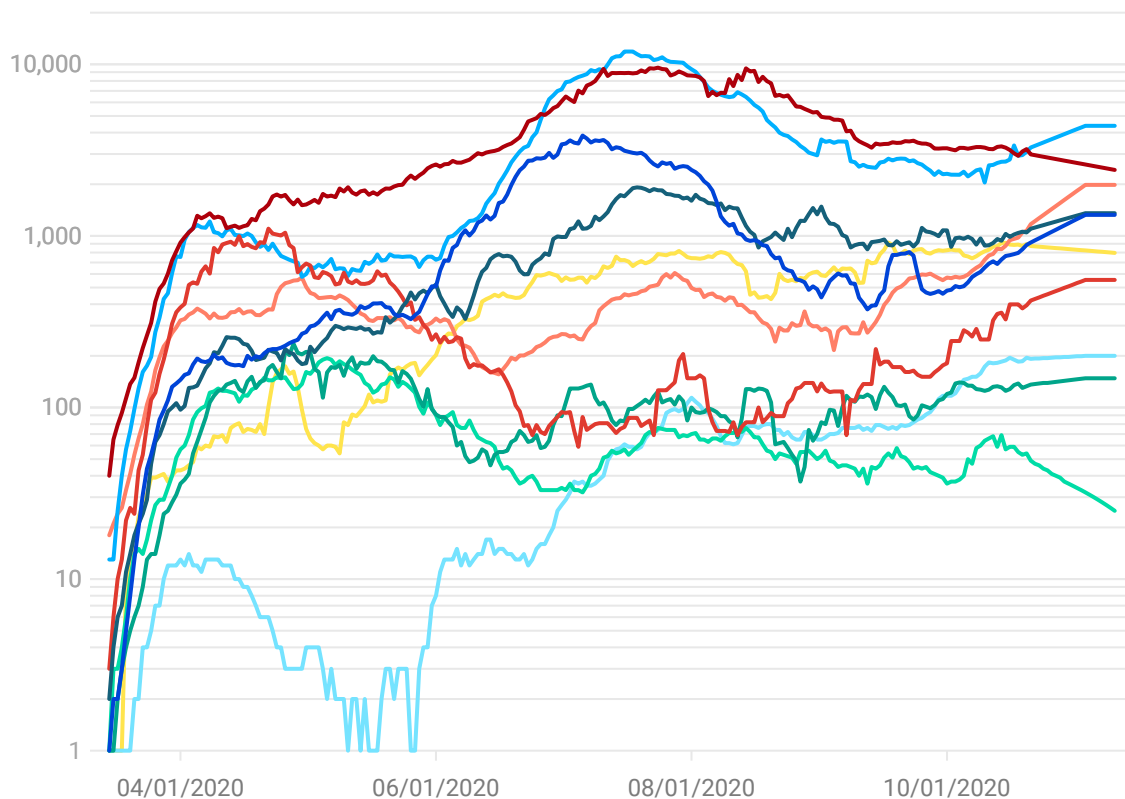


Daily model projections at <https://covid19science.blogspot.com/p/covid-19-model-projections.html>

Chart: covid19science.blogspot.com • [Get the data](#) • Created with [Datawrapper](#)

## Actual and projected daily COVID-19 cases by state (AL-DC)

Alabama Alaska Arizona Arkansas California Colorado Connecticut  
Delaware District of Columbia Florida

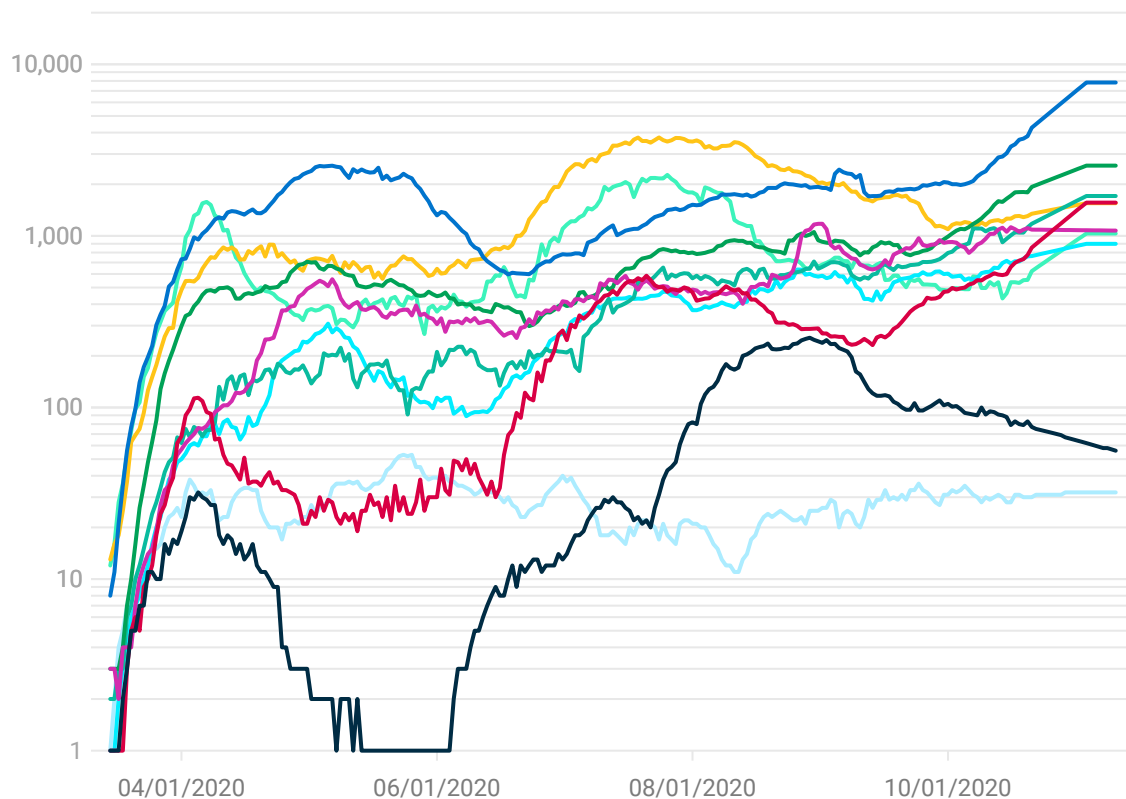


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## Actual and projected daily COVID-19 cases by state (FL-LA)

Georgia   Hawaii   Idaho   Illinois   Indiana   Iowa   Kansas   Kentucky  
Louisiana   Maine

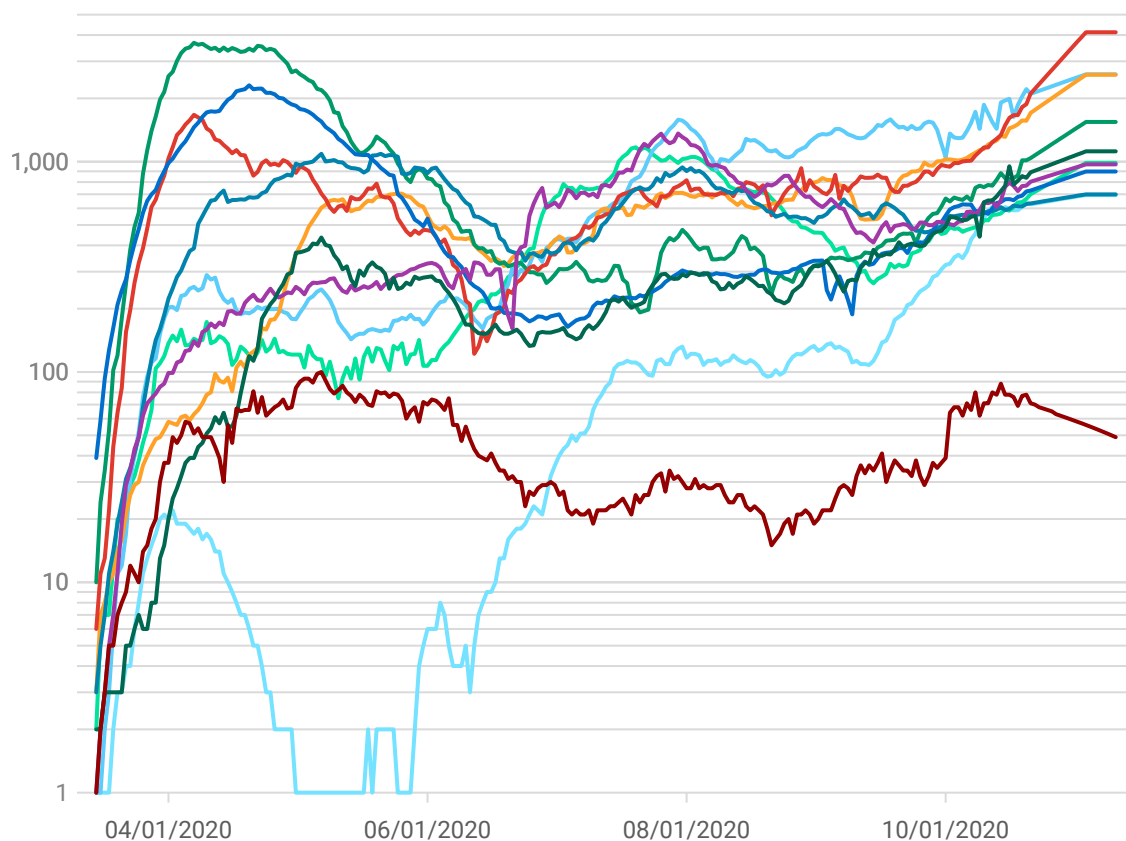


Daily model projections at <https://covid19science.blogspot.com/p/covid-19-model-projections.html>

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## Actual and projected daily COVID-19 cases by state (MD-NH)

— Maryland — Massachusetts — Michigan — Minnesota — Mississippi — Missouri — Montana — Nebraska — Nevada — New Hampshire — New Jersey

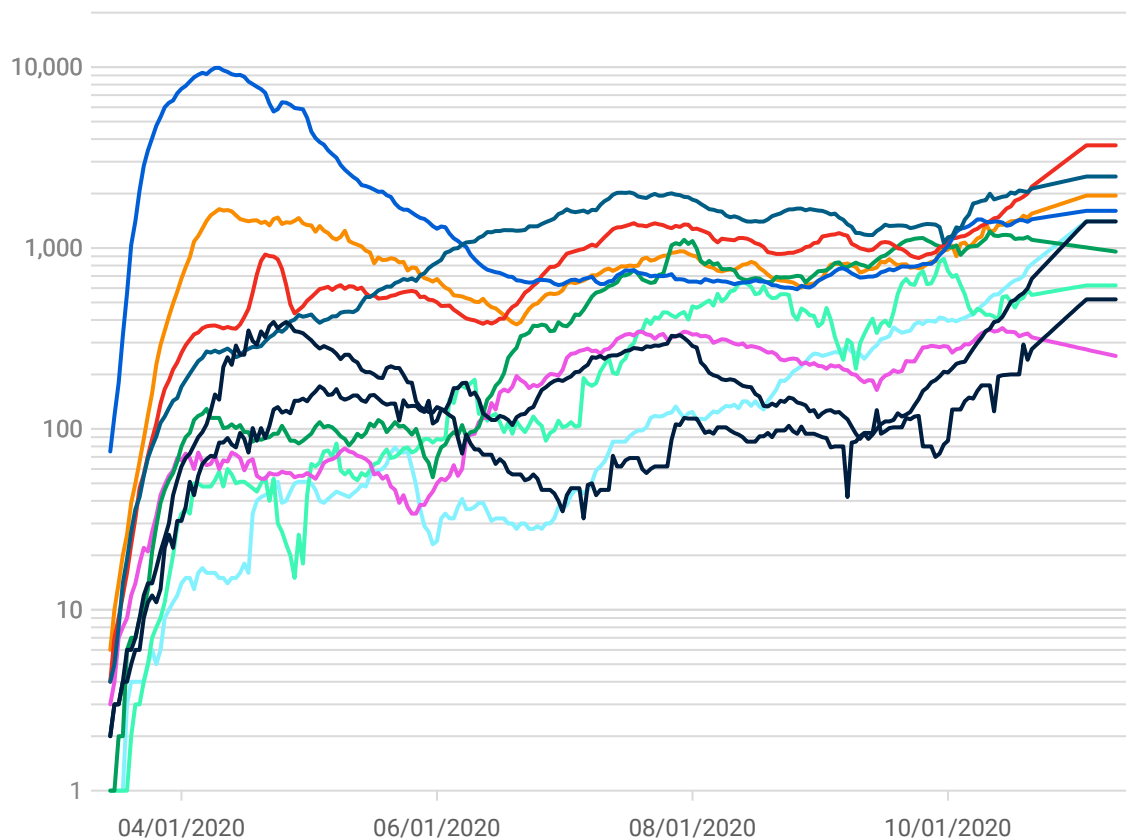


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## Actual and projected daily COVID-19 cases by state (NM-PR)

— New Mexico — New York — North Carolina — North Dakota — Ohio — Oklahoma  
— Oregon — Pennsylvania — Puerto Rico — Rhode Island

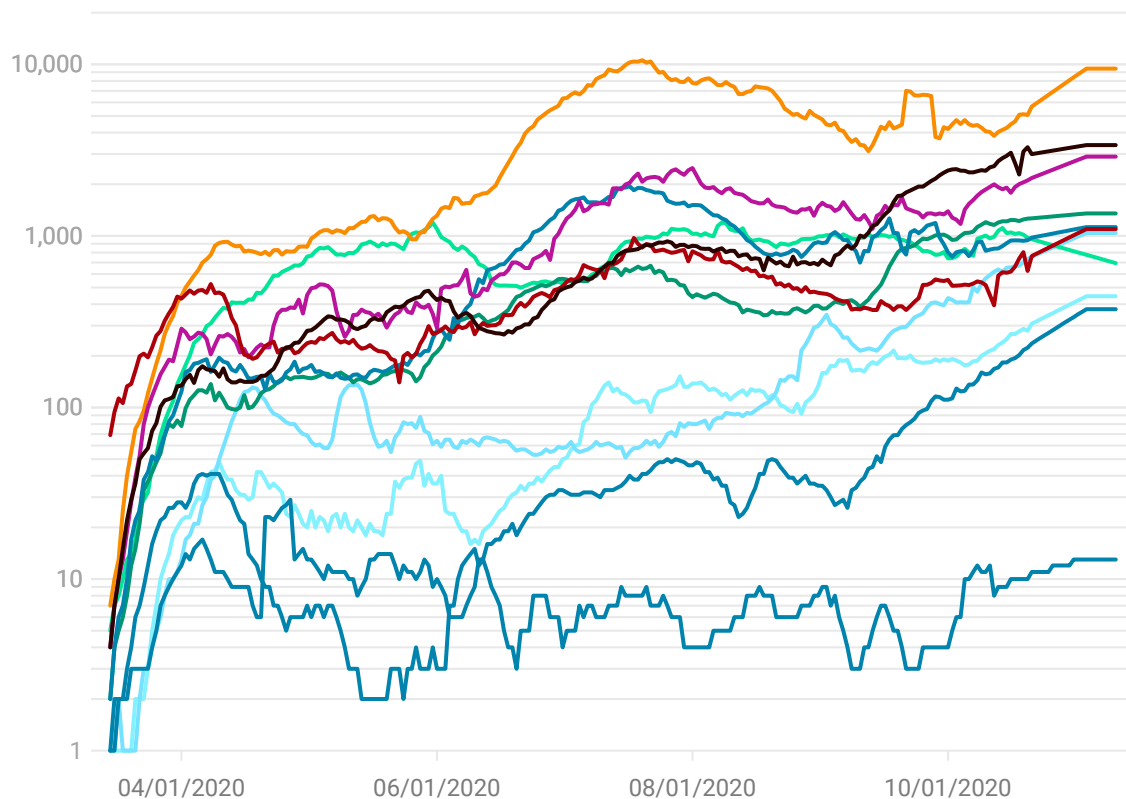


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## Actual and projected daily COVID-19 cases by state (RI-WI)

— South Carolina — South Dakota — Tennessee — Texas — Utah — Vermont — Virginia  
— Washington — West Virginia — Wisconsin — Wyoming



Daily model projections at <https://covid19science.blogspot.com/p/covid-19-model-projections.html>

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