

University of Massachusetts Amherst

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Preliminary Report on Aggregated Expert Predictions on COVID-19

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Executive Summary

We have conducted eleven weekly surveys that asked infectious disease modeling researchers to assess their collective expert opinion on the trajectory of the COVID-19 outbreak in the US. The following page is a brief summary of the results from the eleventh survey, administered on April 27th and April 28th, 2020. Participants are modeling experts and researchers who have spent a substantial amount of time in their professional career designing, building, and/or interpreting models of infectious disease dynamics and/or associated policy implications in human pops. Questions asked and expert consensus predictions are available at https://github.com/tomcm39/COVID19_expert_survey. In addition to experts, we teamed up with [Good Judgment Inc](#) and [Metaculus](#) to evaluate the added insight from crowd-sourced forecasts. Good Judgment Open—a forecasting platform open to any interested member of the public worldwide—included 72 forecasters. Metaculus—a forecasting platform and aggregation engine with an established track record in predicting the timing and impact of scientific and technological breakthroughs—enrolled forecasters who predicted the number new cases, total cases, the death toll, and GA cases.

Results from Survey 11 (administered April 27-28, 2020)

1. **Experts predict between 1.1M and 1.15M cases will be reported by [COVID Tracker](#) on May 3rd.**

Predicted number of cases	Predicted Probability		
	Experts	GJ Open predictions**	Metaculus predictions**
[0, 1.05M)	0.05	0.00	0.02
[1.05M, 1.1M]	0.18	0.02	0.07
1.1M, 1.15M]	0.32	0.34	0.41
(1.15M, 1.2M]	0.27	0.56	0.43
(1.2M,)	0.18	0.08	0.07

*Numbers do not sum to 1 due to rounding ** Predictions made as of April 21st at 4:00PM

³The range (X,Y] contains all numbers after X and up to and including Y, [X,Y) contains numbers from X up to but not including Y, [X,Y] contains numbers from X to Y inclusive, and (X,Y) contains numbers between X and Y.

2. **Experts expect there are 14M (80%CI: 4.8M—28M) total SARS-CoV-2 infections in the US as of April 27th. The Metaculus crowd predicts 12.6M (80%: 5.8M—28M) total infections are present.**

3. **Experts predict the number of new deaths per week will drop below 5,000 in late May, June, or later.**

When new deaths will drop below 5,000	Predicted Probability	
	Experts	Metaculus predictions**
On Saturday May 2 (from Sunday 4/26) or May 9 (from Sunday 5/3)	0.05	0.05
On Sat. May 16 th or May 23 rd	0.13	0.18
On May 30 th or June 6 th	0.21	0.31
On June 6 th or June 13 th	0.26	0.23
After June 20 th	0.36	0.24

4. Experts expect GA state will observe an average 1,044 (80% CI: 579 – 2,292) confirmed cases per day during the week of May 10-16th. Had GA not relaxed stay-at-home orders, experts predicted GA would observe only 487 (80% CI: 273-1,156) cases. The Metaculus crowd predicts 702 (80% CI: 319—1535) cases, and if GA did not relax stay-at-home orders, the crowd predicted a smaller 433 (80% CI: 110—1200) cases.

5. **The above results include answers from 17 experts***. Experts who participated in the survey twice are listed. The names of those who participated this week are in bold. (*Experts are not required to answer all questions)

Expert name	Affiliation
Benjamin M. Althouse	Institute for Disease Modeling, University of Washington, New Mexico State University
Andrew Azman	Johns Hopkins University
Dr. Caroline Buckee	Harvard TH Chan School of Public Health
Donald S. Burke, MD	Graduate School of Public Health University of Pittsburgh
Mary Bushman	Harvard T.H. Chan School of Public Health
Lauren A Castro	Los Alamos National Laboratory
Sarah Cobey	University of Chicago
Natalie Dean	University of Florida
Sara Del Valle	Los Alamos National Laboratory
John M. Drake	University of Georgia
Stephen Eubank	University of Virginia
Meagan Fitzpatrick	University of Maryland School of Medicine
Sebastian Funk	London School of Hygiene & Tropical Medicine
Lauren Gardner	Johns Hopkins University
Dylan George	In-Q-Tel
William P. Hanage	Harvard T. H. Chan School of Public Health
Andreas Handel	University of Georgia
Michael L. Jackson	Kaiser Permanente Washington
Helen Jenkins	Boston University School of Public Health
Stephen Kissler	Harvard School of Public Health
Justin Lessler	Johns Hopkins Bloomberg School of Public Health
Bryan Lewis	University of Virginia
Marc Lipsitch	Harvard T.H. Chan School of Public Health
Andrew A. Lover	University of Massachusetts- Amherst
Maimuna Majumder	Harvard Medical School
Jeff Morgan	Catholic University of America
Nicholas Reich	University of Massachusetts at Amherst
Steven Riley	Imperial College
Caitlin Rivers	Johns Hopkins Center for Health Security
Roni Rosenfeld	Carnegie Mellon University
Aaron Rumack	Carnegie Mellon University
Samuel V. Scarpino	Northeastern University
Justin D. Silverman	Penn State University
Shaun Truelove	Johns Hopkins Bloomberg School of Public health
Srini Venkatramanan	University of Virginia
Cecile Viboud	Fogarty International Center, NIH