2 PHASES IN 3 MONTHS

PRIZE DESCRIPTION

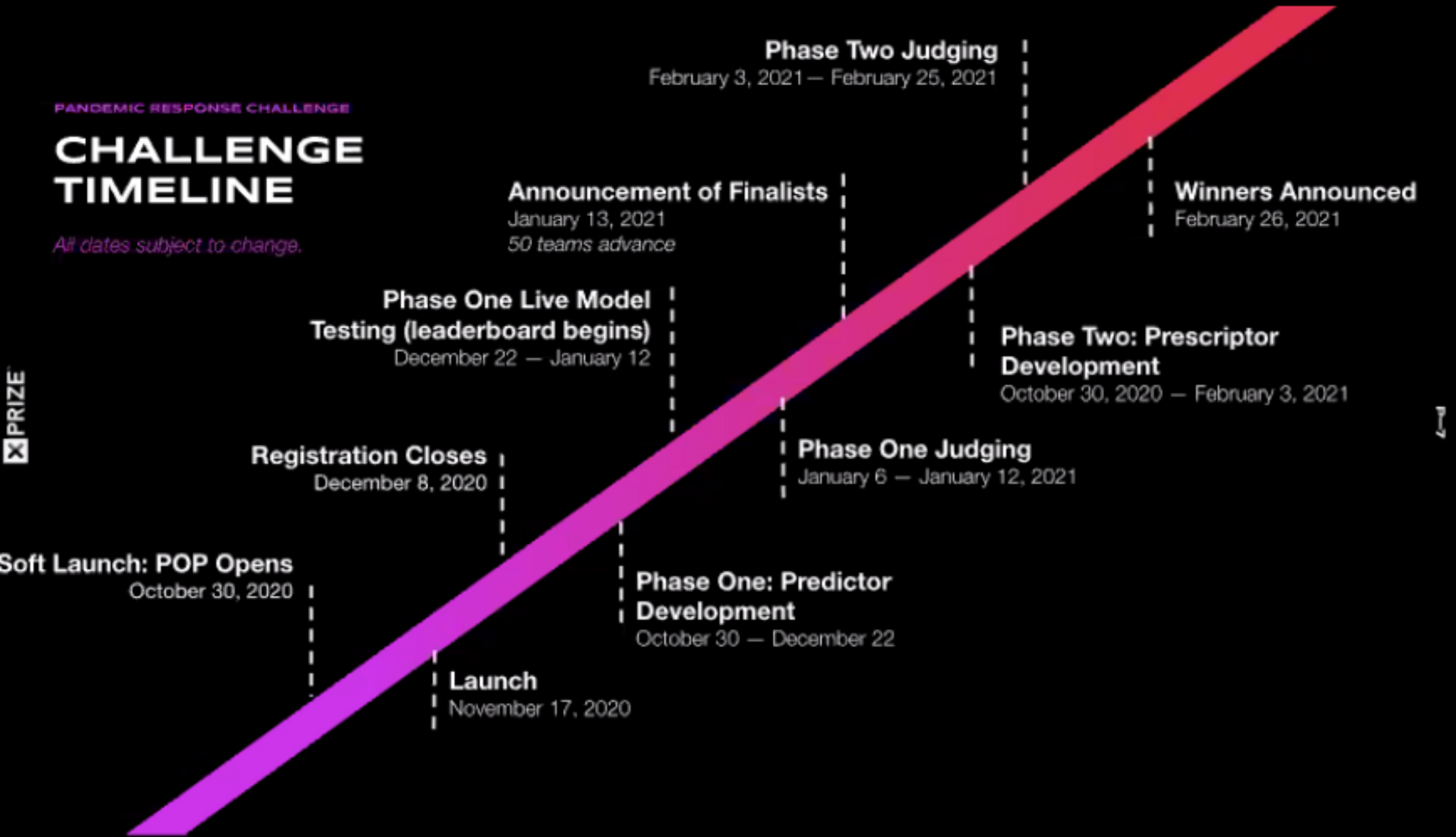
The Pandemic Response Challenge will catalyze the development of data-driven systems to construct plans that regional governments, communities, and organizations can implement to minimize harm when reopening their economies.

$500,000 in prizes will be awarded by XPRIZE to teams who develop prediction models that estimate daily COVID-19 cases with greatest accuracy and create prescriptive models that minimize infection cases and economic costs.

PANDEMIC RESPONSE CHALLENGE

CHALLENGE TIMELINE

All dates subject to change.



XPRIZE

THE WINNING TEAM WILL

HOW TO WIN

- Winning teams will develop prediction models that estimate future numbers of daily COVID-19 cases with the greatest accuracy and will produce the best prescription models for Intervention Plans.

PANDEMIC RESPONSE CHALLENGE

REGISTRATION REQUIREMENTS

To become a fully registered team, you must:

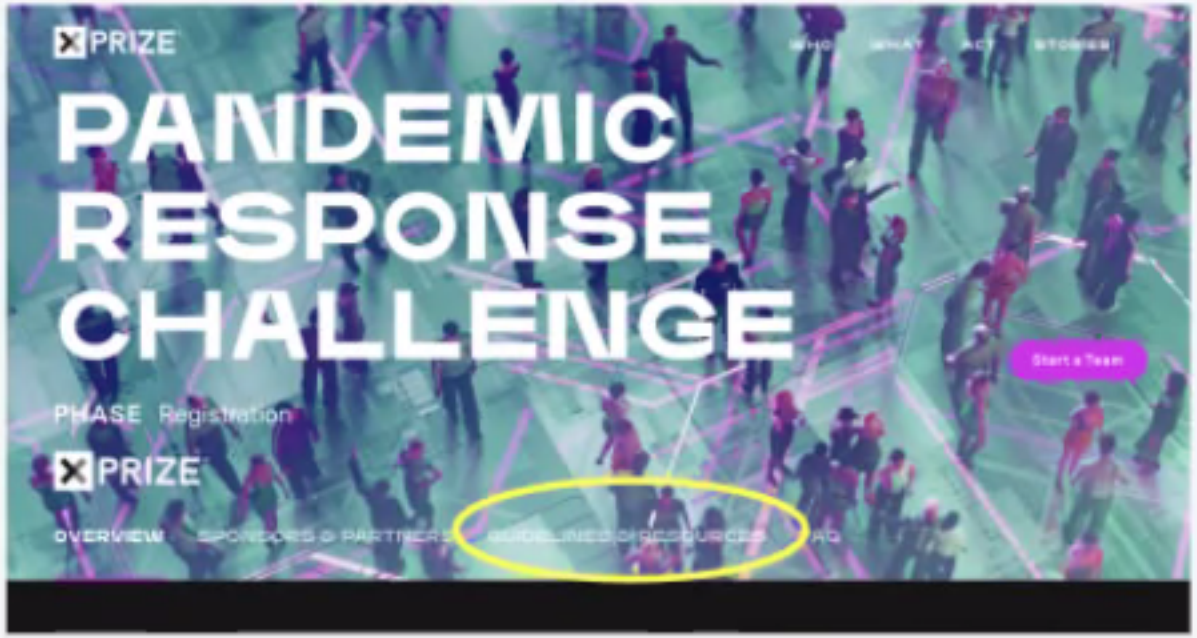
- Create a POP Account *(Prize Operations Platform)*
- Create a Pandemic Response Challenge Team
- Complete the Competency Assessment
- Pay the Registration Fee
- Sign and Submit the Competitor Agreement

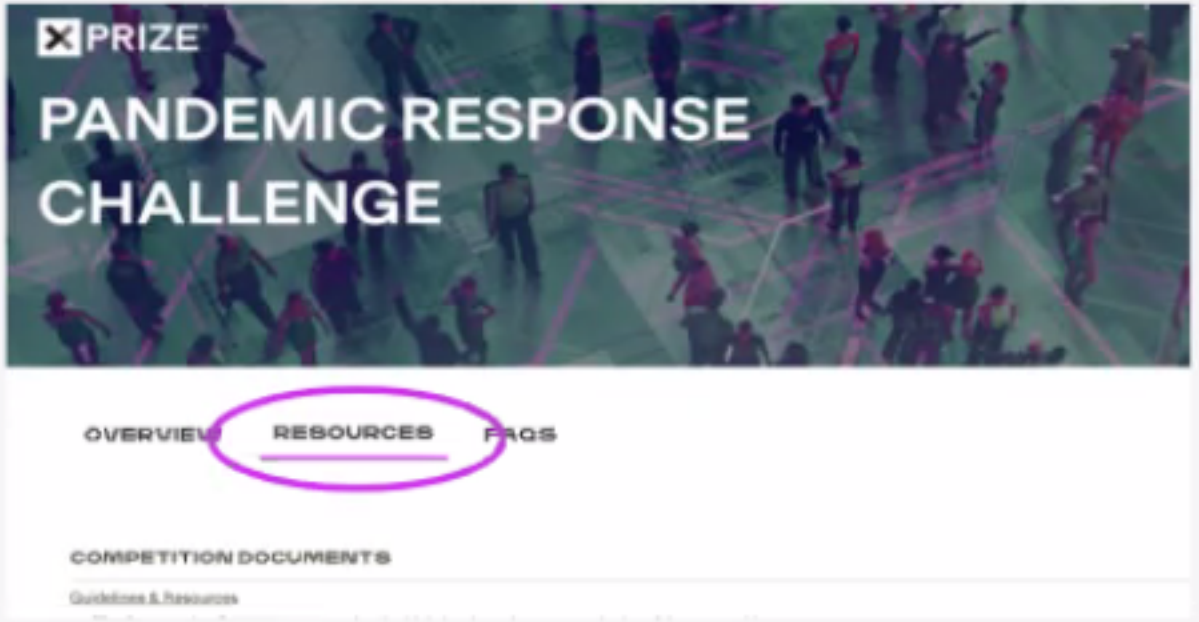
Only the first 200 fully-registered teams will advance to Phase 1 of the competition.

Registration Deadline: December 8, 2020

PANDEMIC RESPONSE CHALLENGE

HOW TO FIND THE GUIDELINES





PRIZE

PHASE 1

TRAINING ENVIRONMENT

- AWS cloud credits will be made available to teams who do not have access to a training environment to develop and test their models.
- **Only fully registered teams** will have access to the cloud credits. Teams must fill out a Google form which will be emailed once a team is fully registered.
- Recommended training configuration:

Phase	Instance Type	Instance Config Details	Price per Hour
Phase-I	t4g.2xlarge	8 CPU, 32 GB Mem	$0.2688 per hour

XPRIZE

PHASE 1

GITHUB

- The GitHub repo provides access to example predictors, prescriptors, and data
  - Sample predictors and prescriptors provided by Cognizant, in the form of Jupyter notebooks and python scripts
  - Sample implementations of the "predict" API and the "prescribe" API, which you will be required to implement as part of your submission
  - Sample IP (Intervention Plan) data to test your submission
- GitHub Link: https://github.com/leaf-ai/covid-xprize

PHASE 1

EVALUATION SANDBOX OVERVIEW

- After teams develop, train, and finalize their predictor models, they will load them into their evaluation sandbox on the XPRIZE Data Collaboratives.
- This sandbox will be used to evaluate the predictor models prior to and throughout the evaluation period and is **NOT** intended for training.
  - Teams should only run inference on the sandbox
- Teams can upload newer versions of their model into the sandbox up to the December 22 deadline. Data generated from models prior to December 22nd will **NOT** be used for judging.
- Configuration
  - Predictor must return a prediction in less than 1 hour for up to 180-days of prediction for up to 300 regions when it is called.
    - OS: Ubuntu Bionic 18.04
    - CPU: 2
    - RAM: 8 Gb

PRIZE

PHASE 1

HOW TO ACCESS EVALUATION SANDBOX

- The evaluation sandbox will be made available to teams on December 9, 2020 so they have sufficient time to upload and run their models prior to the start of judging on December 22nd.
- Fully registered teams will receive an automated email with a link to access **data.xprize.org**
- Log in and request your sandbox from the user drop down menu

PHASE 1

SUMMARY OF EVALUATION SANDBOX FOLDERS

- /work folder summary:
  - predict.py
  - Any additional file:
    - model
    - data
    - etc.
  - predictions folder with generated predictions
- predict.py will be call automatically each day at 9am UTC

PRIZE

PHASE 1

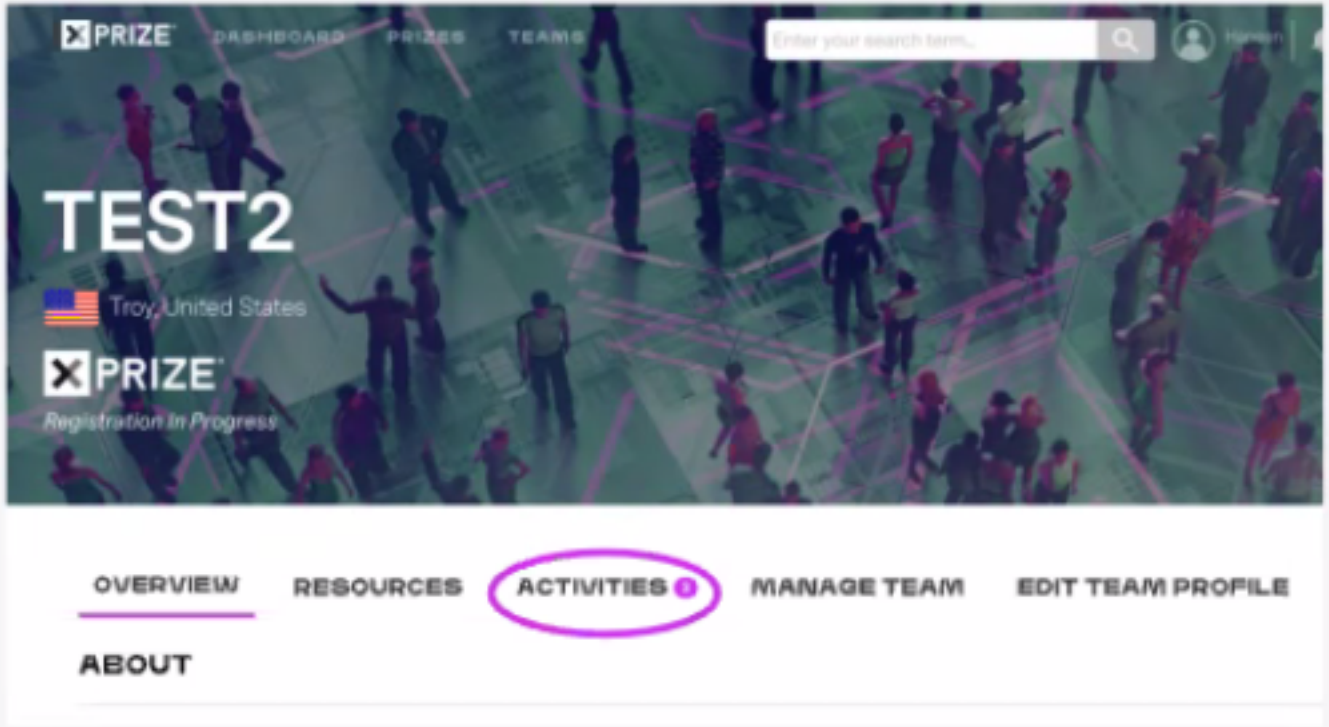
PREDICTOR MODEL SUBMISSION

- Submissions are due December 22 including:
  - Team's model in a compliant API
  - Data used to construct the model
  - Optionally, teams can provide a list of "speciality regions." These regions are the focus of a team's predictor model. In these regions, their performance will be measured and judged separately.
- Your final upload before the deadline will count as your submission
- Once the deadline for submission passes, the evaluation sandbox will be locked and no further changes will be allowed.

PHASE 1

QUALITATIVE SUBMISSION

- Submissions are due December 22
- All qualitative submissions will be submitted through the POP platform (pop.xprize.org)
- Teams will submit a short description of the approach taken in developing the model addressing innovation, generality, collaboration, and other qualitative judging criteria
- A POP submission “activity” will be available soon



PHASE 1

LIVE MODEL TESTING

DECEMBER 22 - JANUARY 12

- Models will be tested over three weeks with live data, from December 22, 2020 to January 12, 2021. Team results will be compared to other competitors and to data from the University of Oxford COVID-19 Government Response Tracker. Results will be displayed on a leaderboard and accessed on POP.

PHASE 1

QUANTITATIVE JUDGING CRITERIA

JANUARY 6 - 12

At the conclusion of the Phase One Live Model Testing, the data from submissions will be ranked via an automated “Robo judge” in each region according to the cumulative error in the 7-day moving average for the number of cases per 100,000 people.

Based on such region-specific rankings, two overall performance measures will be formed. These are the:

- → Mean ranking of teams across all regions
- → Mean ranking of teams across the specialty regions

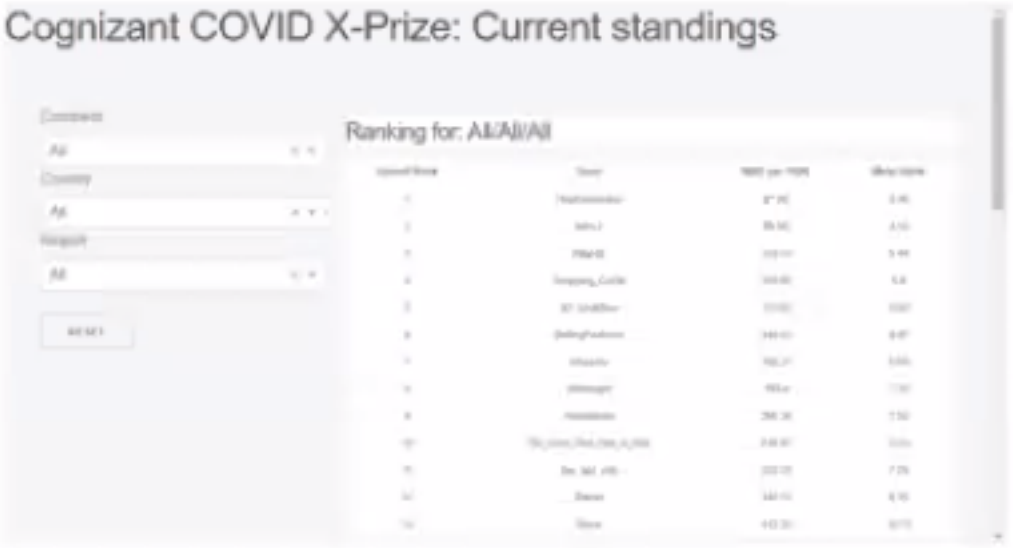
PHASE 1

LEADERBOARD

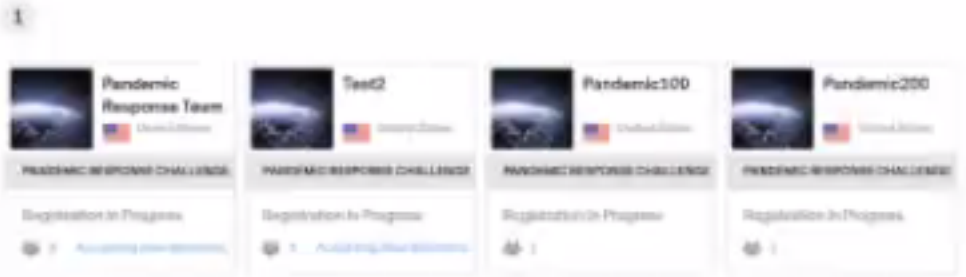
CHALLENGE SPONSOR

Cognizant

LEADERBOARD



REGISTERED TEAMS



PHASE 1

QUALITATIVE JUDGING CRITERIA

JANUARY 6 - 12

In addition to the quantitative judging of the predictor models, teams will also be judged based on the following qualitative criteria:

- **Innovation:** Teams who submit and use additional data, intervention plans (such as vaccination policies and treatments), or otherwise find innovative ways to extend the scope of the challenge may be ranked highly;
- **Generality:** Approaches that perform well in multiple regions may be prized above others;
- **Collaborative contributions:** Data or models that can be used by other teams are valued;
- **Consistency:** Approaches that stay within an acceptable range of accuracy are preferred;
- **Speed and resource use:** Fast and efficient approaches are preferred;
- **Addressing the challenge:** Teams must avoid taking shortcuts or finding loopholes to improve their quantitative performance; and
- **Explanation:** Submissions should include a narrative description of how the model works, the data it uses, and its sources as well as any relevant points related to these themes.