



April 2018

Rules for Partners HealthCare Biobank Disease Challenge

Official Rules

These are the official rules that govern how the Biobank Disease Challenge will operate. This challenge will be simply referred to as the “challenge” throughout the rest of these rules and may be abbreviated on our website, in our documentation, and other publications as BDC.

In these rules, “organizers”, “we,” “our,” and “us” refer to Partners HealthCare System, Inc. (Partners); “participant”, “you,” and “yourself” refer to an eligible challenge participant.

SECTION 1 Challenge Description

Partners is conducting an artificial intelligence and machine learning data analytics challenge. The focus of this challenge is to enable major translational data science players to leverage the Partners HealthCare Biobank Repository to develop phenotypic algorithms that will aid in determining a patient’s disease status.

This is a skill-based challenge and chance plays no part in the determination of the winner(s). All eligible entries received will be judged using the criteria described below to determine the winners.

SECTION 2 Tentative Challenge Schedule

The registered participants will be notified by email of any change in the schedule.

- April 23, 2018 // Registration Opens
- June 29, 2018 // Registration Closes
- July 1 – August 19, 2018 // Practice on Platform
- September 13 – October 10, 2018 // Competition

SECTION 3 **Eligibility**

You are eligible to enter this challenge if you meet the following requirements:

- (a) You are an individual or a team of people desiring to contribute to the tasks of the challenge and accepting to follow its rules; and
- (b) You are a United States institution with an established reputation.
- (c) You are not an immediate family (parent, sibling, spouse, or child) or household member of an employee of Partners or Dell/EMC or a person involved in any part of the administration and execution of this challenge.
- (d) An authorized signatory from your United States institution and each of the participants (you) are willing to sign a Data Use and Individual Investigator Agreement with Partners HealthCare.

SECTION 4 **Entry**

To be eligible for judging, an entry must meet the following content/technical requirements:

- (a) **Entry content:** The participants are required to submit results, by way of a complete and functional Jupyter Notebook or R Markdown Notebook in R/Python on the Data Enclave. These documents should be embedded with analysis code and results, including visualizations. To be part of the final ranking the participants will be asked to fill out a survey (fact sheet) briefly describing their method. There is no other obligation to publish.
- (b) **Pre-requisite:** There is no pre-requisite to participate, including no requirement to have participated in previous challenges.
- (c) **Use of data provided:** All data provided by Partners is available to the participants from the Data Enclave of the challenge under license terms provided with the data.
- (d) **Submission:** The code or logic entries of the participants will be submitted via the Data Enclave. Please see the Participant Instructions and Documentation for detailed submission instructions.
- (e) **Original work, permissions:** In addition, by submitting your entry into this challenge you confirm that, to the best of your knowledge:
 - (1) Your entry is your own original work;
 - (2) Your entry only includes material that you own, or that you have permission from the copyright / trademark owner to use; and
 - (3) Tools for use in the Data Enclave are limited to Python and R as described above. There will be a process for importing associated libraries for these

platforms that will include some, but not all libraries, including a method for importing personal libraries.

SECTION 5 **Potential Use of Entry**

Other than what is set forth below, we are not claiming any ownership rights to your entry. However, by submitting your entry, you:

- (a) Are granting us an irrevocable, worldwide right and license, in exchange for your opportunity to participate in the challenge and potential prize awards, for the duration of the protection of the copyrights to:
 - (1) Release the contents of your submission under an MIT License/X11 License.
 - (2) Use, review, assess, test and otherwise analyze results submitted by way of your code submission and other material submitted by you in connection with this challenge and any future research or challenges sponsored by Partners; and
 - (3) Feature your entry and all its content in connection with the challenge of this challenge in all media (now known or later developed);
- (b) Agree to sign any necessary documentation that may be required for us and our designees to make use of the rights you granted above;
- (c) Understand and acknowledge that you and other entrants may have developed or commissioned materials similar or identical to your submission and you waive any claims you may have resulting from any similarities to your entry;
- (d) Understand that you will not receive any compensation or credit for use of your entry, other than what is described in these official rules.

If you do not want to grant us these rights to your entry, please do not enter this challenge.

SECTION 6 **Submission of Entries**

- (a) Follow the instructions to submit entries by way of a complete and functional Jupyter Notebook or R Markdown Notebook in R/Python on the Data Enclave.
- (b) The participants will be registered as mutually exclusive teams. Each team may submit only one single final entry. We are not responsible for entries that we do not receive for any reason, or for entries that we receive but are not functioning properly.
- (c) The participants must follow the instructions. We will automatically disqualify incomplete or invalid entries.

SECTION 7 **Judging the Entries**

Partners will select a panel of judges to judge the entries; all judges will be forbidden to enter the challenge and will be experts in diseases, statistics, machine learning, or a related field, or experts in challenge organization. The judges will review all eligible

entries received and select three (3) winners based upon the following aspects of the challenge:

Part 1: Phenotype Algorithms

Average AUC _____ (1-20+)

The Average AUC category is the only objective category. Each team's average AUCs will be ranked and the score will be your inverse rank.

Interpretability of the models: _____ (1-10)

Assigned by judges

Part 2: Innovation/Insight

Design of Methods / Analysis _____ (1-5)

Clarity of Results / Visualizations _____ (1-10)

Clinical Importance _____ (1-10)

Innovation _____ (1-5)

The judges will determine all of the above scores.

The final team ranking will be based on the sum of all category scores. You must participate in both parts of the contest for your submission to be judged.

The decisions of these judges are final and binding. The distribution of prizes according to the decisions made by the judges will be made within three (3) months after completion of the last round of the challenge. If we do not receive a sufficient number of entries meeting the entry requirements, we may, at our discretion based on the above criteria, not award any or all of the challenge prizes below.

SECTION 8 Prizes

Partners is the financial sponsor of this challenge. The following prize awards are as follows:

First place: \$15,000

Second place: \$10,000

Third place: \$5,000

SECTION 9 Notifications

If there is any change to data, schedule, instructions of participation, or these rules, the registered participants will be notified at the email they provided with the registration.

If you are a potential winner, we will notify you by sending a message to the e-mail address listed on your final entry within fourteen days following the determination of winners. If the notification that we send is returned as undeliverable, or you are

otherwise unreachable for any reason, we may award the prize to an alternate winner, unless forbidden by applicable law.

Winners who have entered the challenge as a team will be responsible to share any prize among their members. The prize will be delivered to the registered team leader or to the institutional official designated by the registered team leader. If this person becomes unavailable for any reason, the prize will be delivered to be the authorized account holder of the e-mail address used to make the winning entry.

If you are a potential winner, we may require you to sign a declaration of eligibility, use, indemnity and liability/publicity release and applicable tax forms. If you do not sign and return these required forms within the time period listed on the winner notification message, we may disqualify you and select an alternate selected winner.

SECTION 10 Online Notification

Any changes in the rules as well as the names of confirmed winners (after challenge decisions are made by the judges) will be posted online at <https://datachallenge.partners.org>.

Conditions. By entering this challenge, you agree:

- (a) To abide by these official rules;
- (b) To the extent allowable under applicable law, to release and hold harmless Partners HealthCare, its respective parents, subsidiaries, affiliates, employees and agents from any and all liability or any injury, loss, damage, right, claim or action of any kind arising from or in connection with this challenge or any prize won.
- (c) That Partner's decisions will be final and binding on all matters related to this challenge; and
- (d) That by accepting a prize, Partners may use your team name, your name, and your place of residence online and in print, or in any other media, in connection with this challenge, without payment or compensation to you. The declaration of eligibility, use, indemnity and liability/publicity release provided to the potential winner will make reference to obtaining his/her free consent to use his/her name and place of residence. In any case, the lack of such consent does not prevent the winner from receiving the prize.

SECTION 11 Unforeseen event

If an unforeseen or unexpected event (including, but not limited to: someone cheating; a virus, bug, or catastrophic event corrupting data or the submission platform; someone discovering a flaw in the data or modalities of the challenge) that cannot be reasonably anticipated or controlled, (also referred to as force majeure) affects the fairness and / or integrity of this challenge, we reserve the right to cancel, change or suspend this challenge. This right is reserved whether the event is due to human or technical error. If a solution cannot be found to restore the integrity of the challenge, we reserve the right to select winners based on the criteria specified above from among all eligible entries

received before we had to cancel, change or suspend the challenge subject to obtaining the approval.

Computer “hacking” is unlawful. If you attempt to compromise the integrity or the legitimate operation of this challenge by hacking or by cheating or committing fraud in any way, we may seek damages from you to the fullest extent permitted by law. Further, we may ban you from participating in any of our future challenges, so please play fairly.

SECTION 12 Sponsor

Partners HealthCare

Address to use: 399 Revolution Drive, Somerville, MA 02145

Email to use: BiobankDiseaseChallenge@partners.org

Privacy

Please read the privacy policy on the challenge entry page before accepting the official rules and submitting your entry. Note that by accepting the official rules you are also accepting the terms of the Partners privacy policy: <https://www.partners.org/Notices>



Certificate of Prize Acceptance for the Partners HealthCare Biobank Disease Challenge

Team Name:

Contact Name:

Address:

Email:

Rank in Challenge:

Prize Received:

By accepting this prize, I certify that I have read and understood the rules of the challenge and that I am a representative of the team authorized to receive the prize and sign this document.

To the best of my knowledge, all team members followed the rules and did not cheat in participating in the challenge. I certify that team complied with all the challenge requirements to the best of my knowledge, all information provided is correct.

I recognize that I am solely responsible for all applicable taxes related to accepting the prize.

I grant Partner's, the right to use, review, assess, test and otherwise analyze results submitted or produced by our code and other material submitted by you in connection with this challenge and any future research or challenges sponsored by Partners and the right to feature my entry and all its content in connection with the challenge in all media (now known or later developed).

Partners may use the name of my team, my name, and my place of residence online and in print, or in any other media, in connection with this challenge, without payment or compensation.

Name:

Date:

Signature: