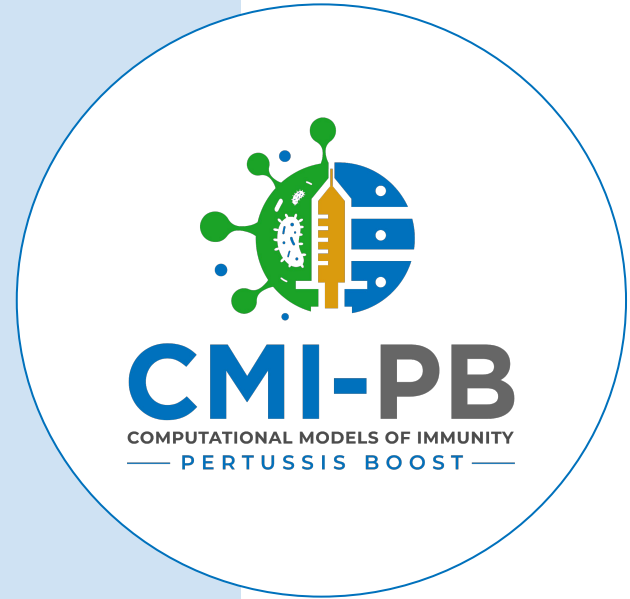


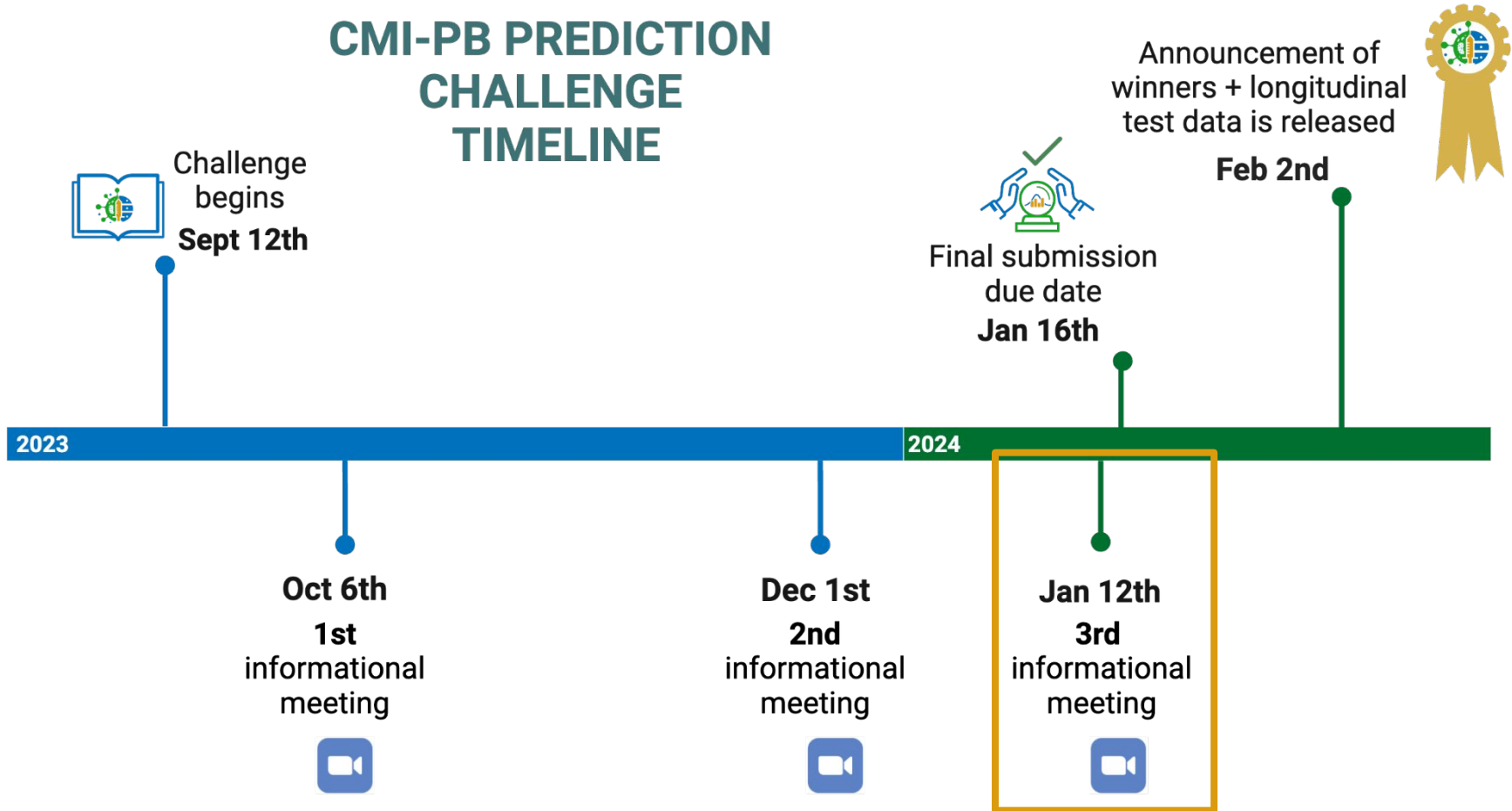
CMI-PB Prediction Challenge

**3rd Informational Session
January 12th, 2024**

La Jolla Institute for Immunology



CMI-PB PREDICTION CHALLENGE TIMELINE



Challenge begins
Sept 12th

2023

Oct 6th
1st
informational
meeting



Dec 1st
2nd
informational
meeting



Jan 12th
3rd
informational
meeting



2024

Final submission
due date
Jan 16th



Announcement of
winners + longitudinal
test data is released

Feb 2nd



Agenda for Today's Session

1.
Datasets & Data
Access

2.
Submission
Process

3.
Evaluation

4.
Announcements
& Reminders

5.
Q & A

Agenda for Today's Session

1.

**Datasets & Data
Access**

2.

Submission
Process

3.

Evaluation

4.

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& Reminders

5.

Q & A

Recap on prediction tasks

1) Antibody titer tasks

- 1.1) Rank the individuals by IgG antibody titers against pertussis toxin (PT) that we detect in plasma 14 days post booster vaccinations.
- 1.2) Rank the individuals by fold change of IgG antibody titers against pertussis toxin (PT) that we detect in plasma 14 days post booster vaccinations compared to titer values at day 0.

2) Cell frequencies tasks

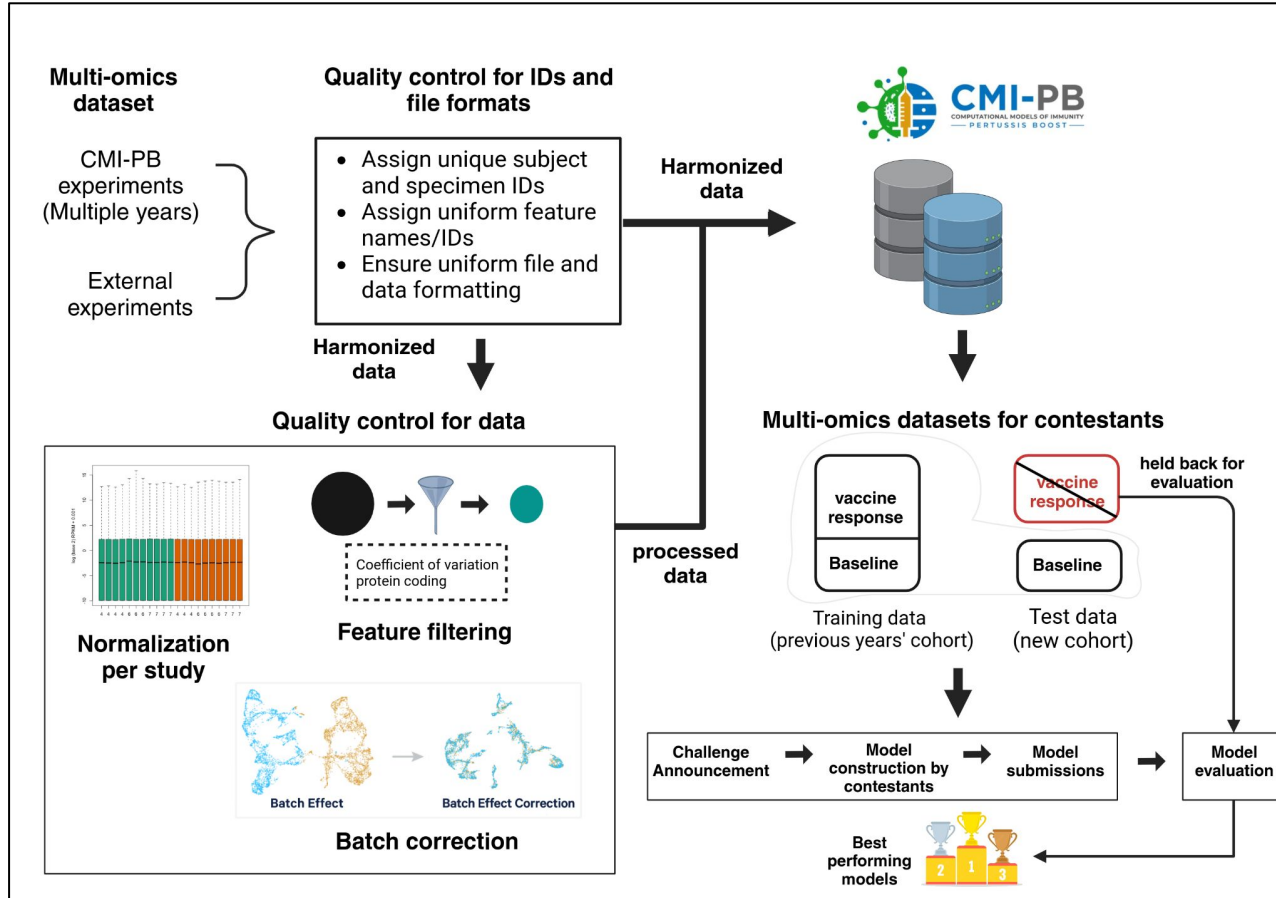
- 2.1) Rank the individuals by predicted frequency of Monocytes on day 1 post boost after vaccination.
- 2.2) Rank the individuals by fold change of predicted frequency of Monocytes on day 1 post booster vaccination compared to cell frequency values at day 0.

3) Gene expression tasks

- 3.1) Rank the individuals by predicted gene expression of CCL3 on day 3 post-booster vaccination.
- 3.2) Rank the individuals by fold change of predicted gene expression of CCL3 on day 3 post booster vaccination compared to gene expression values at day 0.

Please note that you can choose how many prediction tasks you would like to attempt.

Data pipeline overview





Dataset Changes

- Participants have noticed minor issues with the dataset (i.e. actual dates relative to boost, differences in cell population names, missing data) which has prompted us to change the assay data.
- The final update was on **January 5th, 2024** and you can find this data set [here](#).


2nd Challenge Dataset changes tracking

■ Invited Participants Challenge
 ■ website
■ api-access




Pramod 



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As the 2nd challenge progresses, contestants might notice inconsistencies or issues in the dataset. This might result in challenge datasets to undergo modifications over time. This page is dedicated to organizing and tracking all changes related to the datasets. Older (legacy) versions of the dataset are stored in the [legacy repository](#), and the updated (current) datasets are available [here](#) .

.../legacy/.../2023-10-05

- Datasets are made available to 2nd challenge contestants via [API](#) and [direct download](#) .
- This version of the dataset can be found in the legacy repository [here](#).


.../legacy/.../2023-12-04






- Few contestants reported issues when accessing the data files. The identified issues include:
 1. Inconsistencies in the actual dates relative to the boost.** A more detailed discussion on this can be found [here](#) .
 2. The names of cell populations in the prediction dataset differed from those in the training dataset.** A more detailed discussion on this can be found [here](#) .





.../legacy/.../2023-12-21

- Our student contestants reported issues of missing antibody titer data for subject_id 98 in "2022BD_plasma_ab_titer.tsv" file. We checked and confirmed that there was indeed missing data for antibody titer data for subject_id 98. We fixed this issue and replaced the old data files with a new correct file that includes Antibody titer data for subject_id 98 (specimen_id's = 740, 741, 742).

.../current/... Current and final dataset version (updated on Jan 05, 2024)

In response to a suggestion from one of the contestants, we have taken the initiative to process the prediction dataset in a manner similar to the training dataset, to ease prediction. To this end, we have provided both the processed data and the relevant code. This is the current version of the challenge dataset and is accessible [here](#) . You can still access the old data file in [here](#).

1 



 Edit

created	last reply	2	135	2	2	3	
 Oct '23	 Oct '23	replies	views	users	likes	links	 

Agenda for Today's Session

1.
Datasets & Data
Access

2.
**Submission
Process**

3.
Evaluation

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& Reminders

5.
Q & A

Submission Process Demonstration

<https://www.cmi-pb.org/>

Creating an account



Ab titer [Sign in to CMI-PB](#)

Sign in to CMI-PB

The mission of CMI-PB is to provide the scientific community with a comprehensive, high-quality and freely accessible resource of Pertussis booster vaccination.

LEARN ABOUT THE PROJECT The NIH funded CMI network What is pertussis vaccination?	UNDERSTAND THE DATA How do we measure immune responses?	ACCESS THE DATA Data statistics Use the API in your programs
--	---	---

Step #1: Click **“Sign in to CMI-PB”** in the upper right hand corner



Ab titer [Submit prediction](#) [Sign Out](#)

cmi-pb-contest@lji.org Submit prediction Sign Out

The mission of CMI-PB is to provide the scientific community with a comprehensive, high-quality and freely accessible resource of Pertussis booster vaccination.

LEARN ABOUT THE PROJECT 	UNDERSTAND THE DATA 	ACCESS THE DATA
------------------------------------	--------------------------------	----------------------------

Step #4: Confirm that when you are signed in, your email is shown in the upper right hand corner

CMI-PB SOLUTIONS CENTER

Welcome to CMI-PB SOLUTIONS CENTER

An account is required. Please create an account or log in to continue.

Step #2: Click **“Sign Up”** to create a new account

Welcome!

Let's create your account

Email
Never shown to the public.

Username
unique, no spaces, short

Name
your full name (optional)

Password
at least 10 characters

By registering, you agree to the [privacy policy](#) and [terms of service](#).

Step #3: Fill out registration form or use SSO with Google

Making a submission



Ab titer [Submit prediction](#) [Sign Out](#)

cmi-pb-contest@ijli.org

The mission of CMI-PB is to provide the scientific community with a comprehensive, high-quality and freely accessible resource of Pertussis booster vaccination.

LEARN ABOUT THE PROJECT UNDERSTAND THE DATA ACCESS THE DATA

Step #1: Once logged in, click **“Submit Prediction”** in the upper right hand corner



Overview Data and resources Prediction tasks Past submissions Solutions center [Submit predictions](#)

2nd CMI-PB Prediction challenge Submission

[Table of contents](#)
• Prepare Submission File
• Make Submission

Welcome to the 2nd CMI-PB Prediction challenge. We now have 23 donors that have been characterized by their immune state prior to the vaccine. Please follow the steps below to submit your prediction challenge. If you have any issues, use our [solutions center](#) to post your questions.

Step 1: Prepare Submission File

Create a model and complete your analysis. We only accept submissions in the given TSV file format.:

1. Download the [submission template](#)
2. Submit your prediction in the prescribed format.

Step 2: Make Submission

Your submission should be a TSV file with 26 rows including a header and 10 columns.

Select a submission file: No file chosen

I'm not a robot

Step #2: Follow all steps, click the **“Choose File”** button, and make your submission

Submission File Errors

Subject ID	Age	Biological Sex at Birth	Vaccine Priming Status	1.1) IgG-PT-D14-titer-Rank	1.2) IgG-PT-D14-FC-Rank	2.1) Monocytes-D1-Rank	2.2) Monocytes-D1-FC-Rank	3.1) CCL3-D3-Rank	3.2) CCL3-D3-FC-Rank
97	35	Male	wP	14				LJI	
98	28	Female	wP	3				4	
99	22	Female	aP	7				15	
100	20	Female	aP	20				9	
101	18	Male	aP	19				1	
102	18	Male	aP	5				2	
103	27	Female	wP	21				10	
104	32	Female	wP	15				7	
105	27	Female	wP	9					
106	25	Female	aP	1					
107	23	Female	aP	2					
108	26	Female	wP	10					
109	32	Female	wP	8					
110	24	Female	aP	12					
111	25	Male	wP	11					
112	25	Male	aP	4					
114	31	Male	wP	13					
115	19	Female	aP	18					
116	21	Male	aP	8					
117	27	Female	aP	17					
118	23	Male	aP	16					

Step 2: Make Preliminary Submission

- We've begun accepting preliminary submissions for testing. Kindly note that these submissions will not be assessed. The official window for final submissions will open on Dec 1, 2023. Detailed submission guidelines provided at our Solutions center [here](#).
- Your submission should be a TSV file with 22 rows including a header and 10 columns. The maximum allowed file size is 100 KB.
- Sample submission files are available [here](#).

Select a submission file: No file chosen

Column 3.1) CCL3-D3-Rank: All rank values in the column must be within the specified range (1-21). ✕

I'm not a robot



Submission file error: rank values outside the specified range

Subject ID	Age	Biological Sex at Birth	Vaccine Priming Status	1.1) IgG-PT-D14-titer-Rank	1.2) IgG-PT-D14-FC-Rank	2.1) Monocytes-D1-Rank	2.2) Monocytes-D1-FC-Rank	3.1) CCL3-D3-Rank	3.2) CCL3-D3-FC-Rank
97	35	Male	wP						
98	28	Female	wP						
99	22	Female	aP						
100	20	Female	aP						
101	18	Male	aP						
102	18	Male	aP						
103	27	Female	wP						
104	32	Female	wP						
105	27	Female	wP						
106	25	Female	aP						
107	23	Female	aP						
108	26	Female	wP						
109	32	Female	wP						
110	24	Female	aP						
111	25	Male	wP						
112	25	Male	aP						
114	31	Male	wP						
115	19	Female	aP						
116	21	Male	aP						
117	27	Female	aP						
118	23	Male	aP						

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- Sample submission files are available [here](#).

Select a submission file: No file chosen

Your submission file appears to be empty. ✕



I'm not a robot



reCAPTCHA
Privacy · Terms

Submit

Submission file
error: empty file

Subject ID	Age	Biological Sex at Birth	Vaccine Priming Status	1.1) IgG-PT-D14-titer-Rank	2.1) Monocytes-D1-Rank	2.2) Monocytes-D1-FC-Rank	3.1) CCL3-D3-Rank	3.2) CCL3-D3-FC-Rank
97	35	Male	wP	1				
98	28	Female	wP	2				
99	22	Female	aP	3				
100	20	Female	aP	4				
101	18	Male	aP	5				
102	18	Male	aP	6				
103	27	Female	wP	7				
104	32	Female	wP	8				
105	27	Female	wP	9				
106	25	Female	aP	10				
107	23	Female	aP	11				
108	26	Female	wP	12				
109	32	Female	wP	13				
110	24	Female	aP	14				
111	25	Male	wP	15				
112	25	Male	aP	16				
114	31	Male	wP	17				
115	19	Female	aP	18				
116	21	Male	aP	19				
117	27	Female	aP	20				
118	23	Male	aP	21				

Step 2: Make Preliminary Submission

- We've begun accepting preliminary submissions for testing. Kindly note that these submissions will not be assessed. The official window for final submissions will open on Dec 1, 2023. Detailed submission guidelines provided at our Solutions center [here](#).
- Your submission should be a TSV file with 22 rows including a header and 10 columns. The maximum allowed file size is 100 KB.
- Sample submission files are available [here](#).

Select a submission file: No file chosen

The header does not align with the expected columns specified in the submission template ✕

I'm not a robot



reCAPTCHA
Privacy - Terms

Submit

Submission file error:
missing/incorrect header

Subject ID	Age	Biological Sex at Birth	Vaccine Priming Status	1.1) IgG-PT-D14-titer-Rank	1.2) IgG-PT-D14-FC-Rank	2.1) Monocytes-D1-Rank	2.2) Monocytes-D1-FC-Rank	3.1) CCL3-D3-Rank	3.2) CCL3-D3-FC-Rank
97	35	Male	wP	21.0	0.5184224663718740		1986-03-26	-6.0	
98	28	Female	wP	NaN	0.13537829856527300	7Mit	1983-12-19	3.0	
99	22	Female	aP	8.0			200		
100	20	Female	aP	10.0			2013		
101	18	Male	aP	16.0		1.0	1984		
102	18	Male	aP				1989		
103	27	Female	wP	7.0	0.41319137332251700	mt	1995		
104	32	Female	wP	15.0	0.625817503853245	kR6tp	2009		
105	27	Female	wP	-6.0		hh	199		
106	25	Female	aP	15.0		w	2012		
107	23	Female	aP	12.0		NRuc	198		
108	26	Female	wP	0.7179399154087560			2014		
109	32	Female	wP				199		
110	24	Female	aP	6.0			2000		
111	25	Male	wP						
112	25	Male	aP	2.0		798.0	201		
114	31	Male	wP	14.0		-6.0	2002		
115	19	Female	aP			0.08064911179233690			
116	21	Male	aP				2013		
117	27	Female	aP			0.9132040742497730	2004		
118	23	Male	aP						

provided at our Solutions center [here](#).

- Your submission should be a TSV file with 22 rows including a header and 10 columns. The maximum allowed file size is 100 KB.
- Sample submission files are available [here](#).

Select a submission file: No file chosen

Column 1.1) IgG-PT-D14-titer-Rank: All rank values in the column must be within the specified range (1-21).

Column 1.2) IgG-PT-D14-FC-Rank: All rank values in the column must be within the specified range (1-21).

Column 2.1) Monocytes-D1-Rank: All rank values in the column must be within the specified range (1-21).

Column 2.2) Monocytes-D1-FC-Rank: All rank values in the column must be within the specified range (1-21).

Column 3.1) CCL3-D3-Rank: All rank values in the column must be within the specified range (1-21).

Column 3.2) CCL3-D3-FC-Rank: All rank values in the column must be within the specified range (1-21).

I'm not a robot



Submission file with multiple errors

Successful Submissions

Submission with all tasks

Subject ID	Age	Biological Sex at Birth	Vaccine Priming Status	1.1) IgG-PT-D14-titer-Rank	1.2) IgG-PT-D14-FC-Rank	2.1) Monocytes-D1-Rank	2.2) Monocytes-D1-FC-Rank	3.1) CCL3-D3-Rank	3.2) CCL3-D3-FC-Rank
97	35	Male	wP	14	6	15	21	11	17
98	28	Female	wP	3	7	13	15	4	1
99	22	Female	aP	7	2	18	12	15	13
100	20	Female	aP	20	20	10	11	9	6
101	18	Male	aP	19	5	1	8	1	19
102	18	Male	aP	5	21	11	17	2	9
103	27	Female	wP	21	4	4	7	10	12
104	32	Female	wP	15	12	14	16	7	14
105	27	Female	wP	9	15	17	13	20	11
106	25	Female	aP	1	11	3	18	19	3
107	23	Female	aP	2	16	19	10	5	4
108	26	Female	wP	10	17	7	1	21	5
109	32	Female	wP	8	18	12	20	8	15
110	24	Female	aP	12	13	16	19	12	2
111	25	Male	wP	11	8	20	5	14	16
112	25	Male	aP	4	10	5	9	3	20
114	31	Male	wP	13	1	21	14	13	8
115	19	Female	aP	18	3	8	2	18	21
116	21	Male	aP	8	19	8	4	8	7
117	27	Female	aP	17	9	9	8	17	18
118	23	Male	aP	16	14	2	3	16	10

*Populated with random numbers

Submission with two tasks



Subject ID	Age	Biological Sex at Birth	Vaccine Priming Status	1.1) IgG-PT-D14-titer-Rank	1.2) IgG-PT-D14-FC-Rank	2.1) Monocytes-D1-Rank	2.2) Monocytes-D1-FC-Rank	3.1) CCL3-D3-Rank	3.2) CCL3-D3-FC-Rank
97	35	Male	wP	14				11	
98	28	Female	wP	3				4	
99	22	Female	aP	7				15	
100	20	Female	aP	20				9	
101	18	Male	aP	19				1	
102	18	Male	aP	5				2	
103	27	Female	wP	21				10	
104	32	Female	wP	15				7	
105	27	Female	wP	9				20	
106	25	Female	aP	1				19	
107	23	Female	aP	2				5	
108	26	Female	wP	10				21	
109	32	Female	wP	8				8	
110	24	Female	aP	12				12	
111	25	Male	wP	11				14	
112	25	Male	aP	4				3	
114	31	Male	wP	13				13	
115	19	Female	aP	18				18	
116	21	Male	aP	8				8	
117	27	Female	aP	17				17	
118	23	Male	aP	16				16	

*Populated with random numbers

Antibody levels



Search

2nd CMI-PB Prediction challenge Submission

Your submission has been recorded successfully. A confirmation email has been sent to you. Thank you!

Useful links:

- [Past submissions](#)
- [CMI-PB home](#)

Please let us know if you have any questions at our [CMI-PB solutions center](#).

GET HELP

[Solutions Center](#)
[About Us](#)

DATASETS

[Latest build: September 2023](#)
[Version history](#)
[APIs](#)
[Downloads](#)

PUBLICATIONS

[BioRxiv 2023](#)
[JCI Insights 2021](#)

**La Jolla
Institute**
FOR IMMUNOLOGY

**Life
Without
Disease.**[®]



submission@cmi-pb.org via lji.org

to me, aazhan ▾

12:13 PM (27 minutes ago)



WELCOME TO THE 2ND CMI-PB PREDICTION CHALLENGE

Dear sorfield@lji.org,

Thank you for submitting your response to the 2nd CMI-PB Prediction challenge. Your response is now successfully recorded.

The submitted file is attached here for your reference. Feel free to access all your past submissions [here](#). If you ever change your mind and want to re-submit, please make sure to enter all your answers in the sheet again as your new submission overrides all previous submissions.

We look forward to reviewing your results! In the meantime, please let us know if you have any questions at our [CMI-PB solutions center](#).

Best wishes,
CMI-PB Team

You will receive an email confirmation once your submission is received.

Agenda for Today's Session

1.
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Submission Evaluation



1. **File Curation:** Collect and organize submission files.
2. **Rank Comparison:** Compare predicted ranks in submissions to actual dataset ranks.
3. **Top Submissions:** Identify and rank top submissions.
 - a. Overall winners: 1 entry
 - b. Task-based winners: One per task

Evaluation

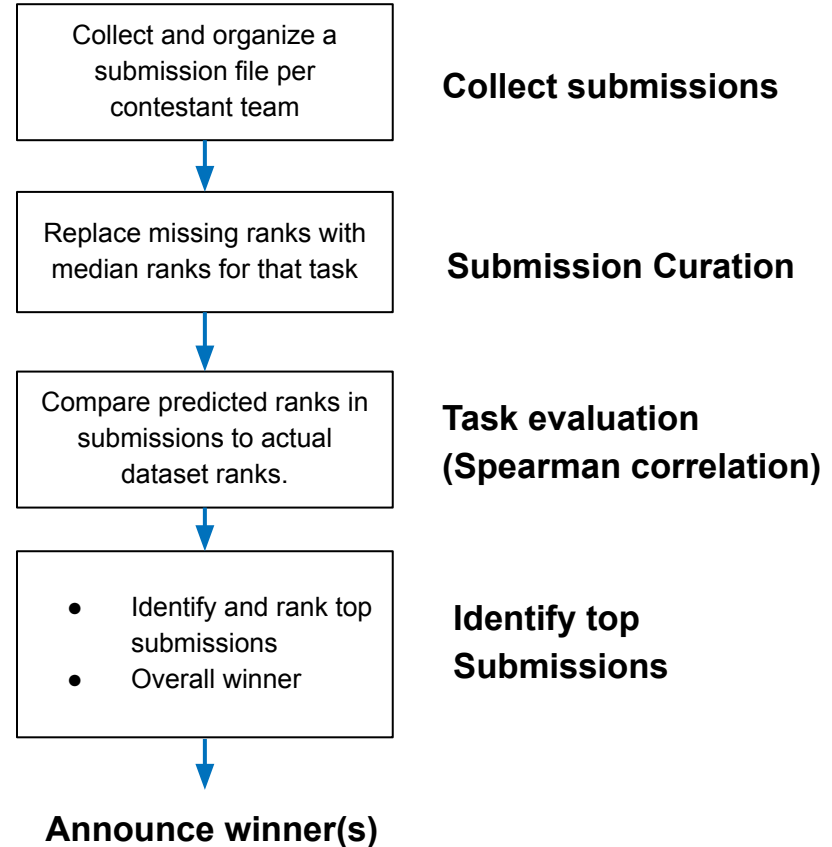
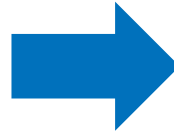
List of submitted files

Note:

- You are allowed 1 final entry, per account, but can re-submit multiple times (Max: 5 submissions) until the deadline. Note that your last submission will be considered your 'final' version (final entry).
- If you have developed multiple modeling approaches and wish to enter multiple entries, please create separate CMI-PB login accounts to manage these entries.
- For those utilizing more than three modeling strategies, please reach out to the CMI-PB team via email at cmi-pb-challenge@lji.org if there are any issues.

File	Uploaded
1. Submission file 1	an hour ago
2. Submission file 2	1 month, 3 weeks ago
3. Submission file 3	1 month, 3 weeks ago
4. Submission file 4	1 month, 3 weeks ago
5. Submission file 5	3 months ago

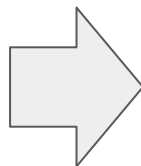
The CMI-PB team will select your last submitted file for evaluation



Submission file curation:

Original submission file

61	32	Female	wP	NA	NA	NA	NA
62	25	Female	wP	NA	NA	NA	NA
63	23	Female	wP	16	16	dianasbur	16
64	25	Male	wP	11	11	11	11
65	28	Male	wP	12	12	12	12
66	42	Female	wP	26	26	26	26
67	47	Female	wP	27		27	27
68	47	Male	wP	21	21	21	21
69	29	Female	wP	25	25	25	25
70	21	Male	aP	NA	NA	NA	NA
71	21	Female	aP	1	1	1	1
72	28	Female	wP	23	23	23	23
73	24	Female	wP	19	19	19	19
74	24	Female	wP	24	24	24	24
75	21	Female	aP	NA	NA	NA	NA
76	21	Female	aP	22	22	22	22
77	31	Male	wP	13	13	13	13
78	26	Female	wP	29		29	29
79	32	Male	wP	17	17	17	17
80	27	Female	wP	2	2	2	2
81	26	Male	wP	14	14	14	14
82	21	Female	aP	NA	NA	NA	NA
83	20	Female	aP	15	15	15	15
84	22	Female	aP	18	18	18	18
85	19	Female	aP	20	20	20	20
86	21	Female	aP	6	6	6	6
87	19	Male	aP	NA	NA	NA	NA
88	19	Male	aP	NA	NA	NA	NA
89	22	Female	aP	10	10	10	10
90	20	Female	aP	4	4	4	4
91	21	Male	aP	28		28	28
92	19	Female	aP	9	9	9	9
93	23	Female	aP	7	7	7	7
94	20	Male	aP	5	5	5	5
95	21	Female	aP	3	3	3	3
96	19	Male	aP	8	8	8	8



[perform qc.py](#)
Replacing missing
ranks

Curated submission file

61	32	Female	wP	15.0	13.5	14.5	15.0
62	25	Female	wP	15.0	13.5	14.5	15.0
63	23	Female	wP	16.0	16.0	14.5	16.0
64	25	Male	wP	11.0	11.0	11.0	11.0
65	28	Male	wP	12.0	12.0	12.0	12.0
66	42	Female	wP	26.0	26.0	26.0	26.0
67	47	Female	wP	27.0	13.5	27.0	27.0
68	47	Male	wP	21.0	21.0	21.0	21.0
69	29	Female	wP	25.0	25.0	25.0	25.0
70	21	Male	aP	15.0	13.5	14.5	15.0
71	21	Female	aP	1.0	1.0	1.0	1.0
72	28	Female	wP	23.0	23.0	23.0	23.0
73	24	Female	wP	19.0	19.0	19.0	19.0
74	24	Female	wP	24.0	24.0	24.0	24.0
75	21	Female	aP	15.0	13.5	14.5	15.0
76	21	Female	aP	22.0	22.0	22.0	22.0
77	31	Male	wP	13.0	13.0	13.0	13.0
78	26	Female	wP	29.0	13.5	29.0	29.0
79	32	Male	wP	17.0	17.0	17.0	17.0
80	27	Female	wP	2.0	2.0	2.0	2.0
81	26	Male	wP	14.0	14.0	14.0	14.0
82	21	Female	aP	NA	NA	NA	NA
83	20	Female	aP	15.0	15.0	15.0	15.0
84	22	Female	aP	18.0	18.0	18.0	18.0
85	19	Female	aP	20.0	20.0	20.0	20.0
86	21	Female	aP	6.0	6.0	6.0	6.0
87	19	Male	aP	NA	NA	NA	NA
88	19	Male	aP	NA	NA	NA	NA
89	22	Female	aP	10.0	10.0	10.0	10.0
90	20	Female	aP	4.0	4.0	4.0	4.0
91	21	Male	aP	28.0	13.5	28.0	28.0
92	19	Female	aP	9.0	9.0	9.0	9.0
93	23	Female	aP	7.0	7.0	7.0	7.0
94	20	Male	aP	5.0	5.0	5.0	5.0
95	21	Female	aP	3.0	3.0	3.0	3.0
96	19	Male	aP	8.0	8.0	8.0	8.0

**Median of available of
ranks:**

15 13.5 14.5 15

Selection of Overall Winner

- To determine an overall winner for this challenge, we will be using a point system to score each submission.
 - Completion of a task = **1 point**
 - Completing the task means that you attempted a task and included ranks in the submission file.
 - Winner of a task = **3 points**
 - The model that demonstrates the highest Spearman correlation coefficient in a given task will be designated as the 'task winner'.

Agenda for Today's Session

1.
Datasets & Data
Access

2.
Submission
Process

3.
Evaluation

4.
**Announcements
& Reminders**

5.
Q & A

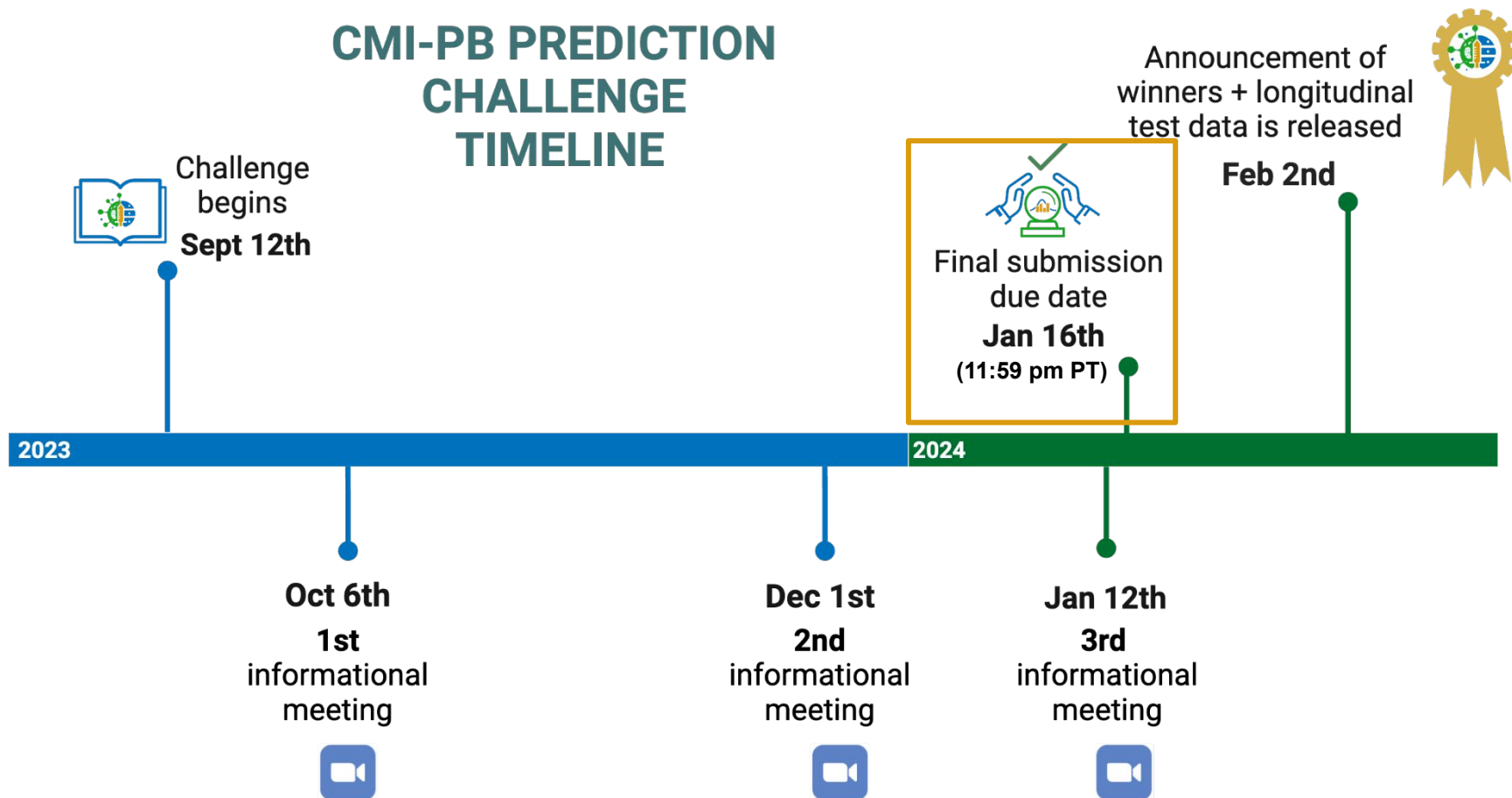


Submission Prize

Each team that submits a meaningful* submission will receive a **\$100 gift card** and will be co-authors on a future publication. The team who submits the overall best performing model will receive a **\$1,000 prize**.

**Please note that to receive the submission prizes, you will need to submit your code on the [CMI-PB GitHub](#) by January 23, 2024. In the event of a tie, the overall prize money (\$1,000) will be split amongst winners. The total prize money will be capped at \$5,000 and additional prize money will be given at the discretion of CMI-PB Team.*

CMI-PB PREDICTION CHALLENGE TIMELINE



Other resources on the site

Sign in to CMI-PB

Antibody levels Search



CMI-PB
COMPUTATIONAL MODELS OF IMMUNITY
— PERTUSSIS BOOST —

2nd CMI-PB Prediction Challenge

Revolutionizing computational modelling approach for immune response prediction

Learn more: [Training data](#), [Prediction tasks](#), [1st challenge](#), [Participation](#), [Our data processing approach](#)

Click [here](#) to find the challenge data

Click [here](#) to find the prediction tasks

The mission of CMI-PB is to provide the scientific community with a comprehensive, high-quality and freely accessible resource of Pertussis booster vaccination.

Click [here](#) to learn more about pertussis

LEARN ABOUT CMI-PB



[The NIH funded CMI network](#)
[A community prediction challenge](#)
[Pertussis \(Whooping Cough\)](#)
[Pertussis vaccination](#)
[Annual prediction challenges](#)

Click [here](#) to learn more about the prediction challenge

PREDICTION CHALLENGE



[Data and resources](#)
[Prediction challenge tasks](#)
[Examples of models](#)
[Submission instructions](#)
[Submit preliminary predictions](#)

Click [here](#) to find example models

UNDERSTAND THE DATA



[Study outline](#)
[Sample and data collection](#)
[Data standardization](#)
[Database schema](#)
[Terminology](#)

ACCESS THE DATA



[Data composition](#)
[Use the API in your programs](#)
[Download all data \(SFTP\)](#)

TEACHING MATERIALS



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[Educational Resources](#)
[Contact](#)

Click [here](#) to access the Solutions Center

SOLUTIONS CENTER



[Access tasks for 2nd challenge](#)
[Data preprocessing questions](#)
[FAQ, 2nd challenge](#)

The CMI-PB team members



Bjoern Peters



Steven Kleinstein



Ferhat Ay



Barry Grant



Shane Crotty



Alessandro Sette



Pramod Shinde



Shelby Orfield



Lisa Willemsen



Leying Guan



Joaquin Reyna



Mari Kojima



Ferran Soldevila



Rasteh Nili



Jason Greenbaum



Brendan Ha



Jiyeun Lee



Ricardo De Silva Antunes



Jeremy Gygi



Anna Konstorum

The CMI-PB team



Kleinstejn Lab (Yale)



- Expertise: A combination of "big data" analysis and immunology domain.
- Collaborating on data and models being released to the community to support reproducibility and the prediction contest, and also participate in the prediction challenge.

Steven Kleinstejn
Jeremy Gygi
Leying Guan
Anna Konstorum

Grant Lab (UCSD)



- Expertise: the use of computational approaches, based on both biophysics and bioinformatics, to study the structure, function and evolution of key biological macromolecules.
- Dr. Grant will engage and advise over 40 biology graduate students in the CMI-PB Prediction Challenge.

Barry Grant

Ay Lab (LJI)



- Expertise: Development of bioinformatics tools that utilize high-dimensional and high-throughput datasets to deduce insights into chromatin conformation, genetic variation, and the regulation of gene expression.
- The Ay lab is focused on developing predictive machine learning models, which will serve as examples and baselines for participants in the CMI-PB challenge.

Ferhat Ay
Joaquin Reyna

Peters Lab (LJI)



- Expertise: Both experimental and computational studies to better understand human immune responses in the context of infectious diseases, allergy, cancer and vaccines.
- The team is responsible for the generation of experimental data, making it accessible in a central and standardized fashion, and coordinating the creation and coordination of the prediction contest.

Bjoern Peters
Jason Greenbaum
James Overton
Brendan Ha

Pramod Shinde
Mari Kojima
Rasteh Haji Kazem Nili

Jiyeun Lee
Lisa Willemssen
Shelby Orfield

And thank you to the Sette Lab, Crotty lab, LJI Clinical Core, LJI Bioinformatics Core

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Questions?


Please email cmi-pb-challenge@lji.org at any time throughout the challenge with any questions.

1. Submission Assessment





- The CMI-PB team will be using the Spearman Rank Correlation Coefficient as our metric for evaluation.
- To find a more comprehensive discussion, access the Solutions Center [here](#).



How would you assess the submission?



■ Invited Participants Challenge

 **Joe** 2d






Could you please provide some info if possible that how would you evaluate the rank metric in our submission?







    Reply



created	last reply	1	12	2	1
 2d	 2d	reply	views	users	link

 **Pramod**  2d

We will employ the Spearman Rank Correlation Coefficient as our metric for evaluation. For each task, the ranks submitted by contestants will be compared with those calculated from actual values using the Spearman Correlation Coefficient. I hope this helps. Also, if you would like to read details about how submission results will be analyzed, feel free to refer to the results summary from 1st (internal) challenge [here](#) ¹.

     Reply

  Share  Bookmark  Flag  Assign  Reply



 Watching  You will receive notifications because you are watching this category.


New & Unread Topics


2. Consistency throughout datasets

- Some participants have noticed inconsistencies amongst the datasets.
- If you come across any issues, please let us know.
- To find a more comprehensive discussion, access the Solutions Center [here](#).


Repetitive of antigen categories of FIM2/3 and Fim2/3





 Invited Participants Challenge  Pramod




 This is the first time Yuchia has posted — let's welcome them to our community!



 Yuchia 14d

As the title! The antigen category "Fim2/3" is on 2022_dataset.






 Assigned topic to [Pramod](#)







    Reply



created	last reply	1	25	2	1	
 Y 14d	 13d	reply	views	users	like	

 Pramod  13d

Thank you, @Yuchia , for pointing out the typo in the 2022 dataset. We have now corrected 'Fim2/3' to 'FIM2/3' to ensure consistency with the training dataset.

 1     Reply

  Share  Bookmark  Flag  Unassign...  Reply


 Watching  You will receive notifications because you are watching this category.


3. Preprocessed Prediction Dataset

- We initially did not provide a preprocessed predictions dataset.
- Following a request, the CMI-PB team updated the repository to include these datasets.
- To find a more comprehensive discussion, access the Solutions Center [here](#).

Processed predictions dataset?

■ Invited Participants Challenge ■ data-organization 👤 Pramod

 It's been a while since we've seen jeremygygi — their last post was 3 years ago.

 **jeremygygi** 28d




Apologies if this was answered elsewhere, but I don't see a preprocessed RDS object with the predictions dataset. Is there any reason for this?





All data are available in raw format (via tsv's), but the [preprocessed datasets link](#) ² only contains the training data. It would be great to have the predictions dataset also with the same preprocessing pipeline performed available for my models so I don't need to reengineer it myself.

👤 Assigned topic to [Pramod](#)

✅ Solved by [Pramod](#) in post #3

Thanks [@jeremygygi](#), for making this suggestion. We did not initially provide a preprocessed RDS object for the prediction dataset. The preprocessing applied to the training dataset was primarily for demonstration purposes. However, recognizing its potential utility, we are now considering providing ...

1 ❤️    Reply

created	last reply	4	52	3	2	1		
 28d	 1d	replies	views	users	likes	link		



Thank you for your participation!

We are looking forward to our next challenge which will be announced
April of 2024.

We will be sending out a feedback survey and we would appreciate your
suggestions for future challenges.