



 @ImmPortDB

Webinar Series

Dec 8, 2022

Moderator: Sanchita Bhattacharya,
Science Program Lead, ImmPort

Selecting ImmPort for Open-access Immunological Data Sharing: Data Management & Sharing Plan and Data Submission Highlights

ImmPort: Data Management and Sharing Plan Resources

Kate Hypes, ImmPort

Overview of ImmPort Data Submission & Sharing

Henry Schaefer, ImmPort

Q&A



ImmPort: Data Management & Sharing Plan Resources

Kate Hypes, ImmPort



IMMPORT

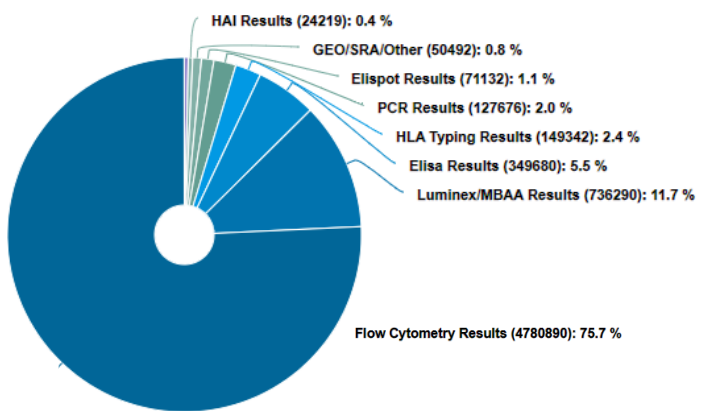
BIOINFORMATICS FOR THE FUTURE OF IMMUNOLOGY



FAIR-sharing Immunology Data for over 20 Years

Over **6 Million** Experimental Results
Across **148 Diseases & Conditions**
From **550+ NIH Funded Studies &**
Over **1,000 Publications**

Total Results (6313111)



Studies	Subjects	Diseases
616	85785	148
Experiments	Total Results	Lab Tests
2335	6313111	1268311



Upload Data

- Online Study Registration
- Upload Templates
- Search Private Data



Shared Data

- Data Model
- Search/Download
- Gene Lists



Data Analysis

- Analysis Workflow
- Automated Clustering
- Tutorials

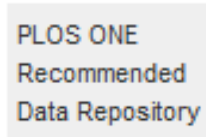
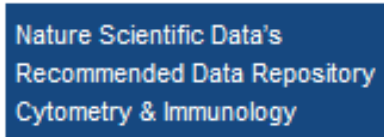


Resources

- Tutorials
- Documentation
- Publications

Sponsored by:

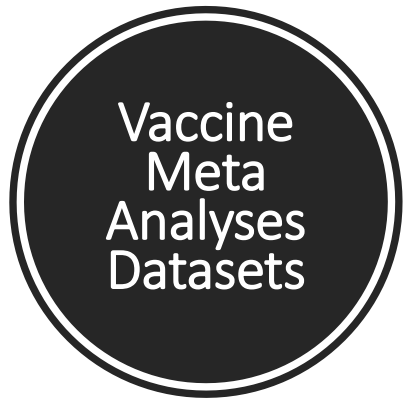
National Institute of Allergy and Infectious Diseases (NIAID)
National Institutes of Health (NIH)
Health and Human Services (HHS)



Core Trustworthy Data Repository

re3data.org
REGISTRY OF RESEARCH DATA REPOSITORIES
<http://doi.org/10.17616/R30J3F>
ImmPort





Article | Published: 12 July 2021

Systems vaccinology of the BNT162b2 mRNA vaccine in humans

Prabhu S. Arunachalam, Madeleine K. D. Scott, [...]Bali Pulendran ✉

Nature 596, 410–416 (2021) | [Cite this article](#)

61k Accesses | 1109 Altmetric | [Metrics](#)

PMID: 34252919 | PMCID: PMC8761119 | DOI: 10.1038/s41586-021-03791-x

Online attention



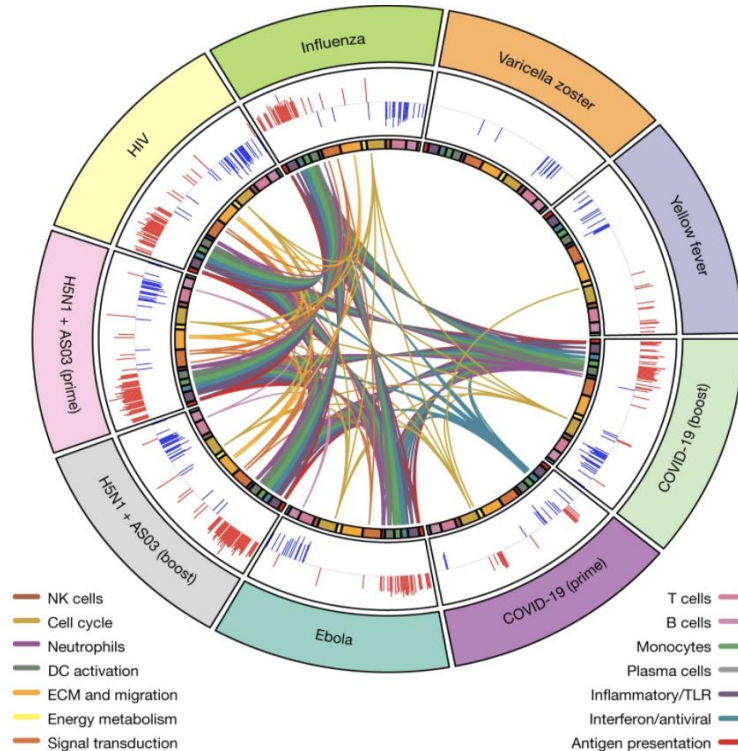
- 2602 tweeters
- 5 blogs
- 2 Facebook pages
- 64 news outlets
- 11 Redditors
- 1 F1000
- 1 Video uploaders
- 295 Mendeley

Extended Data Table 3 Vaccine meta-analysis datasets

From: [Systems vaccinology of the BNT162b2 mRNA vaccine in humans](#)

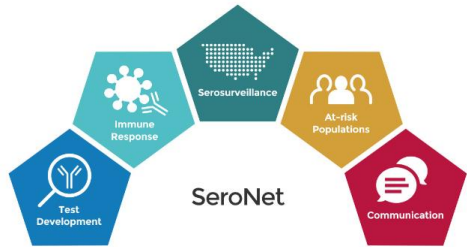
Fig. 5: Comparison of transcriptional responses with other vaccines.

From: [Systems vaccinology of the BNT162b2 mRNA vaccine in humans](#)



Vaccine	Pathogen	Vaccine Type	Adjuvant/ Vector	Timepoints used	N	GEO/ ImmPort
BNT162b2	SARS-CoV-2	mRNA	mRNA-LNP	0,1,7,21,22,28	31	GSE169159
TIV	Seasonal Influenza	Inactivated	None	0,1,7	19	GSE74813/ SDY56
VZV	Varicella zoster	Live attenuated	VZV	0,1,7	31	GSE79396/ SDY984
YF17D	Yellow fever	Live attenuated	YF17D	0,1,7	25	GSE13486/ SDY1264
rVSV-ZEBOV (high dose)	Ebola	Recombinant viral vector	VSV	0,1,7	7	GSE97590/ SDY1373
MRKAd5/HIV	HIV	Recombinant viral vector	Ad5	0,1,7	10	GSE22768/ SDY1291
H5N1+AS03	H5N1	Inactivated	AS03	0,1,7,21,22,28	33	GSE102012
MPSV4	Meningococcus	Polysaccharide	None	0,7	13	GSE52245/ SDY1260
MCV4	Meningococcus	Conjugate	None	0,7	17	GSE52245/ SDY1260

ImmPort Shares Data from Major NIAID-funded Programs and External Organizations



Human Immunology Project Consortium



COVID-19 - ImmPort

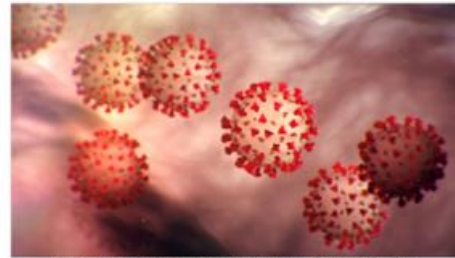


Image CDC Coronavirus Disease 2019 - COVID 19, Alissa Eckert

Coronavirus Disease 19

Powered by ImmPort



BILL & MELINDA GATES foundation
Powered by ImmPort



- Immunophenotyping Assessment in a COVID-19 Cohort (IMPACC)
- Serological Sciences Network (SeroNet)
- Multisystem Inflammatory Syndrome in Children (MIS-C)
- Impact of Initial Influenza Exposure on Immunity in Infants (U01)
- Atopic Dermatitis Research Network (ADRN)
- Population Genetics Analysis Program
- Protective Immunity for Special Populations
- HLA Region Genomics in Immune-mediated Diseases
- Modeling Immunity for Biodefense
- Reagent Development for Innate Immune Receptors
- Adjuvant Development Program
- Immunity in Neonates and Infants
- Asthma and Allergic Diseases Cooperative Research Centers
- HLA and KIR Region Genomics in Immune-Mediated Diseases
- Cooperative Study Group for Autoimmune Disease Prevention
- Immunobiology of Xenotransplantation
- Centers for Medical Countermeasures against Radiation Consortium
- Inner City Asthma Consortium
- Systems Approach to Immunity and Inflammation
- Innate Immune Receptors and Adjuvant Discovery Program
- Maintenance of Macaque Specific Pathogen-Free Breeding Colonies
- Non-human Primate Transplantation Tolerance Cooperative Study Group
- Consortium for Food Allergy Research
- Development of Sample Sparing Assays for Monitoring Immune Responses (U24)
- Asthma and Allergic Diseases Clinical Research Consortium (AADCRC)
- The Clinical Islet Transplantation (CIT) Consortium
- Autoimmunity Centers of Excellence (ACE)
- Accelerating Medicines Partnership (AMP)
- Clinical Trials in Organ Transplantation (CTOC)
- Human Immunology Project Consortium (HIPC)
- Collaborative Influenza Vaccine Innovation Centers (CIVICS)
- Centers for Research in Emerging and Infectious Diseases (CREID)
- Cooperative Centers on Human Immunology
- Impact of Initial Influenza Exposure on Immunity in Infants (U01)
- A Multidisciplinary Approach to Study Vaccine-elicited Immunity and Efficacy Against Malaria (MVIE)



MARCH OF DIMES

LEVERAGING BIG DATA FOR PRETERM BIRTH RESEARCH



ImmPort supports your Immunological Data Sharing Needs for the 2023 NIH Policy for Data Management and Sharing

[NOT-OD-21-013: Final NIH Policy for Data Management and Sharing](#) *Effective Date: January 25, 2023*



ImmPort is a NIH supported Open Domain-Specific Data Sharing Repository

Institute or Center	Repository Name	Repository Description	Open Data Submission	Data Submission Policy	Open Time Frame for Data Deposit
All		immunology			
NIAID	The Immunology Database and Analysis Portal (ImmPort)	ImmPort is a public data sharing repository funded by DAIT. The data sources are primarily DAIT-funded clinical trials, associated mechanistic studies, and other basic and applied immunology research programs.	Yes	How to submit data to ImmPort	Yes

**Source: Trans-NIH BioMedical Informatics Coordinating Committee (BMIC), [Data Sharing Resources](#)*

NIH Resources:

[Selecting a Data Repository | Data Sharing \(nih.gov\)](#)

[BMIC Home \(nih.gov\)](#)

[Open Domain-Specific Data Sharing Repositories \(nih.gov\)](#)

Resources for Data Management & Sharing Plan Creation



IMMPORT
Resources
Your site for documentation,
training, and reference materials



Publications



Documentation



Tutorials

Contact the ImmPort Team ImmPort_Helpdesk@immport.org

Coming soon...ImmPort DMSP Page



IMMPORT
BIOINFORMATICS FOR THE FUTURE OF IMMUNOLOGY

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LinkedIn

<https://www.linkedin.com/company/immport/>



Overview:

ImmPort Data Submission and Sharing

Henry Schaefer, ImmPort

ImmPort hosts data from NIAID-funded and non-NIAID-funded immunology research

2. Request for Proposal (RFP) Number: RFP-DAIT-75N93021R0002	3. Issue Date: July 8, 2021
5. : The Immunology Database and Analysis Portal (ImmPort)	

In the effort to continue to address the bioinformatics and data science needs across the NIAID-supported immunology research community and other relevant communities, NIAID plans to recomplete the ImmPort program, which will support the maintenance and improvement of the ImmPort data repository that hosts data primarily generated from NIAID immunology research studies and shares the hosted data with the research community, and transform the shared data into a more user-friendly resource to enable reuse of the data to gain new insights and findings to advance immunology research.

ImmPort is tasked with making shared data more useful

2. Request for Proposal (RFP) Number: RFP-DAIT-75N93021R0002	3. Issue Date: July 8, 2021
5. : The Immunology Database and Analysis Portal (ImmPort)	

In the effort to continue to address the bioinformatics and data science needs across the NIAID-supported immunology research community and other relevant communities, NIAID plans to recomplete the ImmPort program, which will support the maintenance and improvement of the ImmPort data repository that hosts data primarily generated from NIAID immunology research studies and shares the hosted data with the research community, and transform the shared data into a more user-friendly resource to enable reuse of the data to gain new insights and findings to advance immunology research.

Steps for sharing data in ImmPort

- 1) Determine if your data is appropriate for sharing through ImmPort
- 2) Create an ImmPort account
- 3) Email helpdesk to request a private workspace
- 4) Create a study using Study Registration Wizard or upload templates
- 5) Upload subject demographics and study data
- 6) Email helpdesk to give permission to share study in next data release

The ImmPort data upload and shared data download both require a free ImmPort account

ImmPort Portal

immport.org/home

ImmPort Upload Shared Analysis Resources

Search www.immpo Data About

View new [documentation](#) about accessing longitudinal COVID-19 data from the latest IMPACC study.

Register now for ImmPort's latest webinar, December 8th 2022 at 12 PT/3 ET. Selecting ImmPort for Open-access Immunological Data Sharing: Data Management and Sharing Plan & Data Submission Highlights

Have data to share? Try the [online wizard](#) for quick and easy study registration within ImmPort.

Shared Data quick links: [COVID-19 studies](#) [Influenza studies](#) [Respiratory-like illnesses studies](#) [Viral infectious diseases studies](#)

IMMPORT
BIOINFORMATICS FOR THE FUTURE OF IMMUNOLOGY

ImmPort is funded by the NIH, NIAID and DAIT in support of the NIH mission to share data with the public. Data shared through ImmPort has been provided by NIH-funded programs, other research organizations and individual scientists ensuring these discoveries will be the foundation of future research.

Data uploading or sharing questions? Please contact ImmPort_Helpdesk@immport.org.

Upload Data
Online Study Registration (New)
Upload Templates
Search Private Data

Shared Data
Data Model
Search/Download
Gene Lists

Data Analysis
Analysis Workflow
Automated Clustering
Tutorials

Resources
Tutorials
Documentation
Publications

ImmPort @ImmPortDB · 6h
Tomorrow is the day! Learn about Selecting ImmPort for #Openaccess Immunological #DataSharing: Data Management and Sharing Plan during #ImmPortDB's latest #webinar.

Date: 12/08/22
Time: 12:00PM PT/ 3:00PM ET

Register here today! bit.ly/3FXJIZs

#OpenData #FAIRdata

WEBINAR

<https://www.immpo.org/home>

Template files and upload documentation are available via the data submission overview page

The screenshot shows a web browser window displaying the ImmPort Documentation website. The URL in the address bar is docs.immport.org/datasubmission/general/. The page features a dark blue header with the ImmPort logo and navigation links for Upload, Shared, Analysis, and Resources. A search bar is located in the top right corner. Below the header, a navigation menu includes Home, API Documentation, File Download Tool, Data Submission, Tutorials, and System Documentation. The main content area is titled "Overview" and contains a light blue notification box stating: "The ImmPort team is in the process of updating and adding to existing data submission documentation. During the updating process, older versions of this content can be found by clicking on this link or this link." Below this, the section "ImmPort Data Upload Workflow and Templates" features a horizontal flowchart with five steps: Discuss Data Sharing Task, Collect Descriptions of Methods and Results, Data Uploads, Data Curation and Annotation, and Data Release. The "Data Uploads" step is highlighted in a darker blue. To the left of the main content is a sidebar menu with categories: Data Submission (Overview, ImmPort Data Upload Workflow and Templates, Links to Documentation), Study Registration Wizard, Submission Templates, Example Data Packages, Data Package Validator, Template Documentation (HIPC Standards), and HIPC Standards.

Data Submission

- Overview
- ImmPort Data Upload Workflow and Templates
- Links to Documentation

Study Registration Wizard

Submission Templates

Example Data Packages

Data Package Validator

Template Documentation >

- HIPC Standards

Overview

The ImmPort team is in the process of updating and adding to existing data submission documentation. During the updating process, older versions of this content can be found by clicking on this link or this link.

ImmPort Data Upload Workflow and Templates

Discuss Data Sharing Task → Collect Descriptions of Methods and Results → Data Uploads → Data Curation and Annotation → Data Release

ImmPort staff can help you understand the data deposition process, which Data Upload Templates you need, how to complete them and in what order. Please contact us at ImmPort_Helpdesk@immport.org

- A set of [decision tree diagrams](#) is available to explain the order of data uploads and the types of templates to use.
- Data is deposited in private workspaces and access control is specified by the data providers. Please [contact us](#) to set up a private workspace. Data is shared from private workspaces at the discretion of the data providers and their funding agency. [Citing your ImmPort study](#) is straightforward.
- Detailed descriptions of the upload templates are available at [Submission Templates](#)
- The complete set of [ImmPort Upload Templates and the User Guide](#) is available as a zip file.
- The [Data Upload](#) site supports file and folder based uploads when you are ready to deposit your data. ImmPort .txt templates should be included in all uploads.
- Descriptions and specifications of the [ImmPort Upload Templates](#) are available as a pdf file.
- [Example data upload packages](#) are available for review.

<https://docs.immport.org/datasubmission/general/>

To begin uploading data, contact ImmPort at ImmPort_Helpdesk@import.org to request a workspace

The screenshot shows a web browser window displaying the ImmPort Documentation website. The URL in the address bar is docs.import.org/datasubmission/general/. The page features a navigation menu with links for Home, API Documentation, File Download Tool, Data Submission, Tutorials, and System Documentation. The main content area is titled "Overview" and contains a blue box with the following text: "The ImmPort team is in the process of updating and adding to existing data submission documentation. During the updating process, older versions of this content can be found by clicking on this link or this link." Below this, there is a section titled "ImmPort Data Upload Workflow and Templates" which includes a horizontal flowchart with five steps: Discuss Data Sharing Task, Collect Descriptions of Methods and Results, Data Uploads, Data Curation and Annotation, and Data Release. A sidebar on the left lists various resources such as "ImmPort Data Upload Workflow and Templates", "Study Registration Wizard", and "Template Documentation".

Data is deposited in private workspaces and access control is specified by the data providers. Please [contact us](#) to set up a private workspace. Data is shared from private workspaces at the discretion of the data providers and their funding agency.

- The complete set of ImmPort Upload Templates and the User Guide is available as a zip file.
- The [Data Upload](#) site supports file and folder based uploads when you are ready to deposit your data. ImmPort .txt templates should be included in all uploads.
- Descriptions and specifications of the [ImmPort Upload Templates](#) are available as a pdf file.
- [Example data upload packages](#) are available for review.

<https://docs.import.org/datasubmission/general/>

ImmPort will ask about your study when you request a workspace

What kind of data and how much?

Are you part of an existing data submission consortium?

Does your study share subjects with other ImmPort studies?

When do you need to generate a study accession?

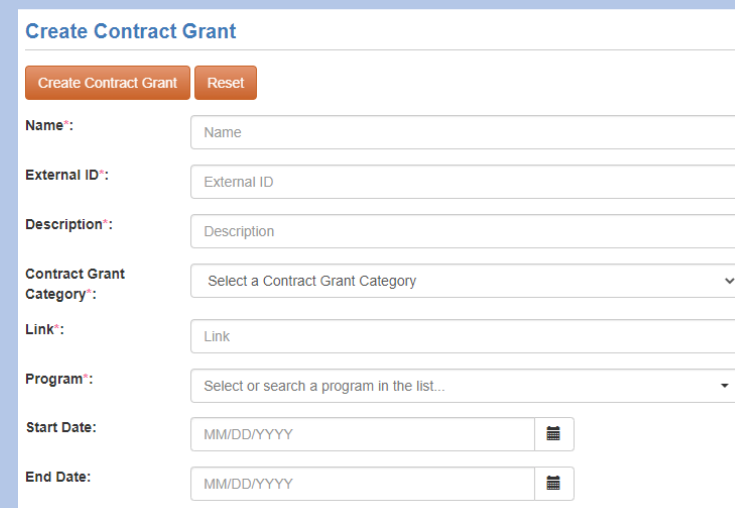
When do you need to share your data?

What grant or contract can we link to your study?



The screenshot shows the NIH RePORTER interface. At the top, there are navigation links for 'RePORTER', 'FAQs', 'API', 'EXPORTER', and 'Sign In'. Below this is a search bar and a 'Share' button. The main content area displays the project title 'Systems biological assessment of innate and adaptive immunity to vaccination' and a 'Back to Search Results' button. A table below the title lists project details:

Description	Project Number	Contact PI/Project Leader	Awardee Organization
	1U19AI167903-01	PULENDRAN, BALI	STANFORD UNIVERSITY



The screenshot shows the 'Create Contract Grant' form. It has a title 'Create Contract Grant' and two buttons: 'Create Contract Grant' and 'Reset'. The form contains several fields:

- Name*:** Text input field with placeholder 'Name'.
- External ID*:** Text input field with placeholder 'External ID'.
- Description*:** Text input field with placeholder 'Description'.
- Contract Grant Category*:** Dropdown menu with placeholder 'Select a Contract Grant Category'.
- Link*:** Text input field with placeholder 'Link'.
- Program*:** Dropdown menu with placeholder 'Select or search a program in the list...'.
- Start Date:** Text input field with placeholder 'MM/DD/YYYY' and a calendar icon.
- End Date:** Text input field with placeholder 'MM/DD/YYYY' and a calendar icon.

When users register for an ImmPort account they are informed that any data uploaded to the private workspace will remain private until the user is ready to share the data

ImmPort User Administration x +


import-user-admin.niaid.nih.gov:8443/registrationuser/registration

ImmPort Upload Shared Analysis Resources Search www.immport.org Data About

User Administration Login

View new [documentation](#) about accessing longitudinal COVID-19 data from the latest IMPACC study.
Register now for **ImmPort's latest webinar, December 8th 2022 at 12 PT/3 ET**, Selecting ImmPort for Open-access Immunological Data Sharing: Data Management and Sharing Plan & Data Submission Highlights
Have data to share? Try the [online wizard](#) for quick and easy study registration within ImmPort.
Shared Data quick links: [COVID-19 studies](#) [Influenza studies](#) [Respiratory-like illnesses studies](#) [Viral infectious diseases studies](#)

Register User: Notice

 Access to ImmPort research and clinical data is available to any user after a brief registration and approval process. You will be asked to accept a data sharing and access agreement before you will be allowed to login to the ImmPort system. If you choose to submit your own data either for eventual sharing or for use of analysis tools, your data will be kept in a confidential private workspace until you choose otherwise. If you have any questions about access or the registration process, contact ImmPort_Helpdesk@import.org.

[Continue](#)

<https://import-user-admin.niaid.nih.gov:8443/registrationuser/registration>

Users registering for an import account will receive a confirmation email

Register User: Notice

Access to ImmPort research and clinical data is available to any user agreement before you will be allowed to login to the ImmPort system data will be kept in a confidential private workspace until you c ImmPort_Helpdesk@immport.org.

[Continue](#)

ImmPort Registration

You have successfully registered. A user account is created for you with the following information. A message will be sent to your email account. Please click on the link in the email to activate your user account. Thank you for registering with ImmPort.

Note: If you do not receive an email within 8 hours please contact the help desk at ImmPort_Helpdesk@immport.org

Username	demo_user
First Name	Henry
Middle Initial	
Last Name	Schaefer
User Status	Pending
Organization	ICF
Phone Number	
International Phone Number	
Email	[REDACTED]@comcast.net
How may ImmPort assist your research efforts?	<ul style="list-style-type: none">I'm required to submit data to ImmPort
Other ways ImmPort may assist your research efforts?	
How did you learn of ImmPort	NIH Staff

Users agree to the import user agreement each time they login

The image shows two overlapping browser windows. The top window is titled 'ImmPort User Administration' and shows a registration form. The bottom window is titled 'ImmPort Documentation' and shows the 'User Agreement for the NIAID Immunology Database and Analysis Portal (ImmPort)'. The registration form includes fields for Username, First Name, Middle Initial, Last Name, User Status, Organization, Phone Number, International Phone Number, Email, and research assistance options. The agreement page includes a navigation menu and a section titled '1.1 You will not attempt to identify individuals from ImmPort data sets'.

ImmPort User Administration
immport-user-admin.niaid.nih.gov:8443/registrationuser/registeruser

ImmPort Documentation
docs.dev.immport.org/home/agreement/

ImmPort Registration
June 2022 Software Release - API access token has changed - Please review the [release notes](#)

Register User: Notice
Access to ImmPort agreement before data will be kept. [ImmPort_Helpde](#)
[Continue](#)

User Agreement for the NIAID Immunology Database and Analysis Portal (ImmPort)ⁱ
ImmPort is a data sharing and data analysis portal for immunology research community funded by the National Institute of Allergy and Infectious Diseases (NIAID), Division of Allergy, Immunology, and Transplantation (DAIT). You will be asked to accept the terms and conditions of this agreement without exception when you log in to ImmPort.

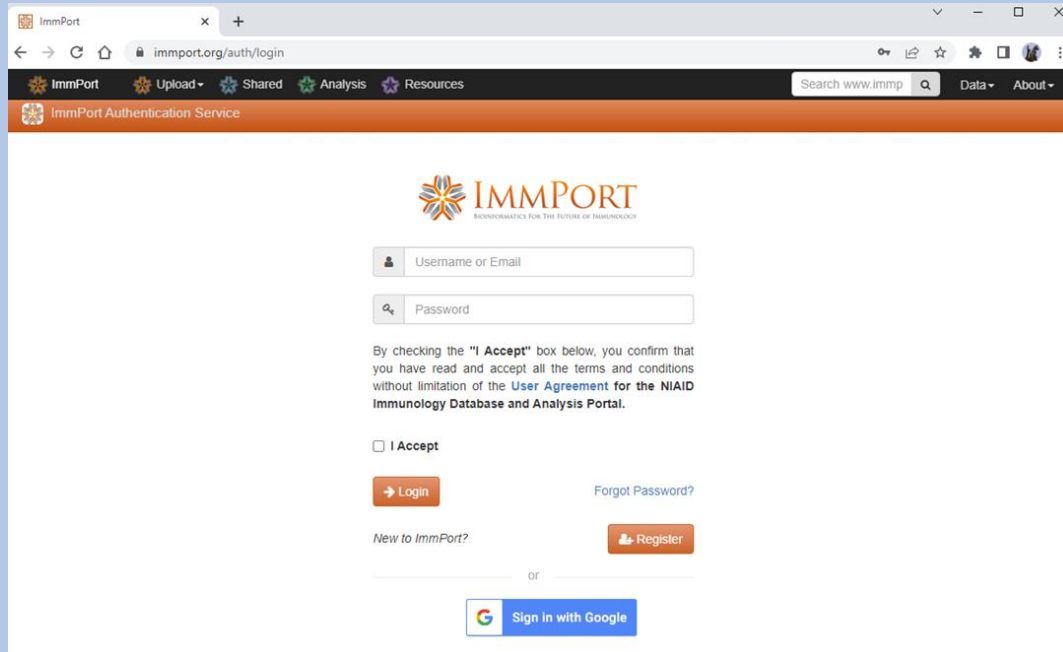
1.1 You will not attempt to identify individuals from ImmPort data sets
As a condition of obtaining access to the ImmPort database you agree to not use the ImmPort data, alone or in combination with other data, to identify any individual or entity or otherwise link information from these data with information in another dataset in a manner that includes the identity of an individual or entity. If you inadvertently discover the identity of any patient, then (a) You agree that you will make no use of this knowledge, (b) that you will notify the NIAID Program Officer (Quan Chen, quan.chen@nih.gov) of the incident, and (c) that you will inform no one else of the discovered identity.

Other ways ImmPort may assist your research efforts?	
How did you learn of ImmPort	NIH Staff

<https://docs.dev.immport.org/home/agreement/>

Multi-factor Authentication will be implemented for login in 2023

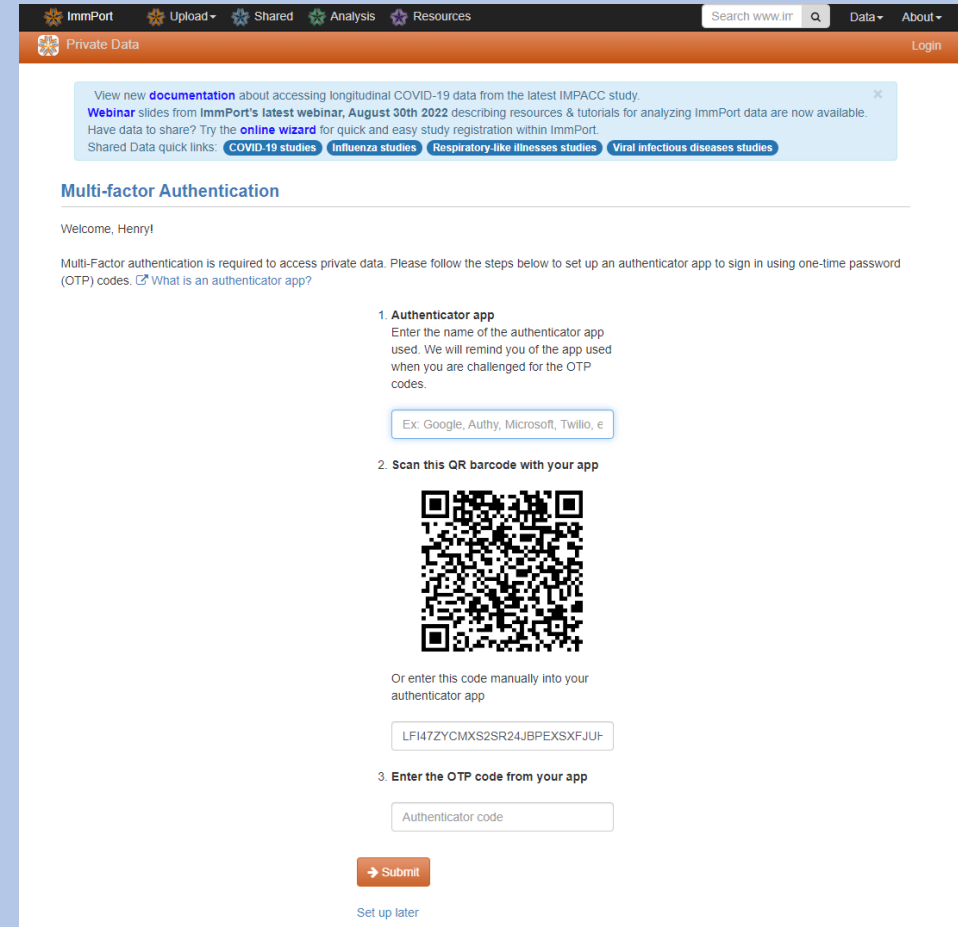
Current login



The screenshot shows the current login page for ImmPort. The browser address bar displays 'import.org/auth/login'. The page features the ImmPort logo at the top center, with the tagline 'BIOSPECIMENICS FOR THE FUTURE OF IMMUNOLOGY'. Below the logo are two input fields: 'Username or Email' and 'Password'. A checkbox labeled 'I Accept' is present, with a note stating: 'By checking the "I Accept" box below, you confirm that you have read and accept all the terms and conditions without limitation of the User Agreement for the NIAID Immunology Database and Analysis Portal.' There are buttons for 'Login', 'Forgot Password?', 'Register', and 'Sign in with Google'.

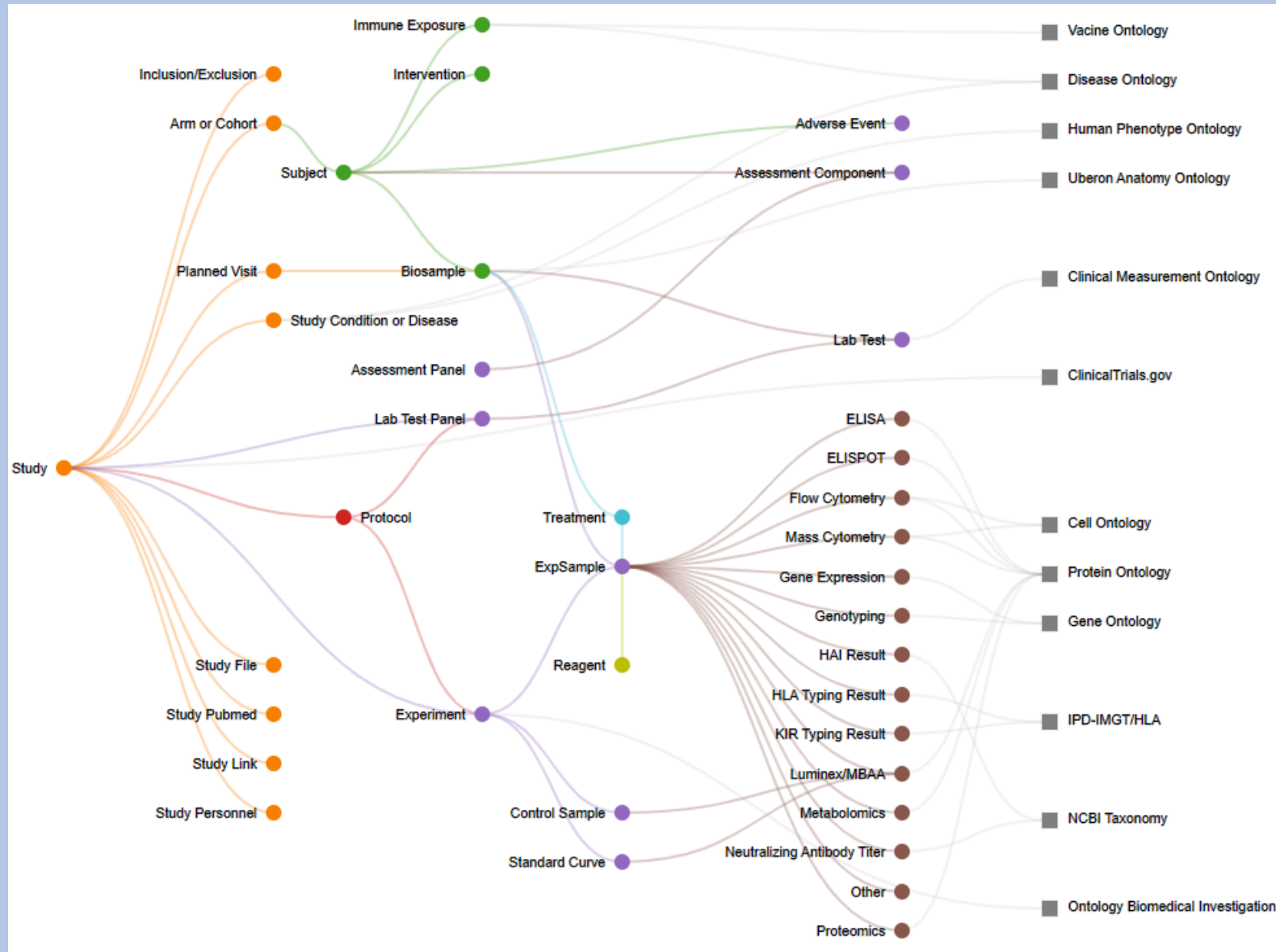
<https://www.import.org/auth/login>

Future MFA login



The screenshot shows the future MFA login page. The browser address bar displays 'import.org/private-data'. The page features the ImmPort logo at the top center, with the tagline 'BIOSPECIMENICS FOR THE FUTURE OF IMMUNOLOGY'. Below the logo are two input fields: 'Username or Email' and 'Password'. A checkbox labeled 'I Accept' is present, with a note stating: 'By checking the "I Accept" box below, you confirm that you have read and accept all the terms and conditions without limitation of the User Agreement for the NIAID Immunology Database and Analysis Portal.' There are buttons for 'Login', 'Forgot Password?', 'Register', and 'Sign in with Google'. A blue banner at the top right contains a message about new documentation and a webinar. The main content area is titled 'Multi-factor Authentication' and includes a welcome message: 'Welcome, Henry!'. Below this, a message states: 'Multi-Factor authentication is required to access private data. Please follow the steps below to set up an authenticator app to sign in using one-time password (OTP) codes. What is an authenticator app?'. The steps are: 1. Authenticator app (with a text input field for the app name, e.g., 'Google, Authy, Microsoft, Twilio, e...'), 2. Scan this QR barcode with your app (with a QR code image), and 3. Enter the OTP code from your app (with a text input field for the code). A 'Submit' button is at the bottom, and a 'Set up later' link is at the bottom right.

Creating a study is the first step of ImmPort data upload



<https://www.immport.org/shared/dataModel>

Data elements required to create a study are documented on the data submission portal

The screenshot shows the 'basic_study_design' template page. It includes a navigation menu with 'Data Submission' selected. The main content area features a table with the following details:

Name	basic_study_design.txt
Type	compound
Schema Version	3.36
Description	The basic study design template defines and annotates key elements of a study including the purpose, subject grouping, schedule of events, personnel, and references (weblinks, publications). Use the study_design_edit template to add additional information for a study after a study is defined in ImmPort. The basic study design template consists of several sections or compound templates. Some compound templates are required: study, arm_or_cohort, inclusion_exclusion, planned_visit, study_2_condition_or_disease, study_2_protocol, study_categorization, study_personnel. Other compound templates are optional: study_file, study_link, and study_pubmed.

Below this is a table titled 'study' with columns 'Template Column', 'Required', and 'Description':

Template Column	Required	Description
User Defined ID	True	The study user defined ID is an identifier chosen by the data provider to refer to a study design. This ID may be referenced by other data records (e.g. arm). The user defined ID is not shared.
Brief Title	True	The brief title will be displayed on ImmPort wherever the study is described.
Official Title	True	The official study title is displayed on the ImmPort study detail page.
Brief Description	True	A brief study description highlights the essential features of a study.
Description	True	The detailed description can be formatted with html tags to improve legibility. Embedded new line characters should be removed.

The screenshot shows the 'protocols' template page. It includes a navigation menu with 'Data Submission' selected. The main content area features a table with the following details:

Name	protocols.txt
Type	single
Schema Version	3.36
Description	The protocol template defines and annotates protocol documents that are to be linked to study, subjects, biological samples or experiments.

Below this is a table with columns 'Template Column', 'Required', and 'Description':

Template Column	Required	Description
User Defined ID	True	The protocol user defined ID is an identifier chosen by the data provider to refer to a protocol document. This ID may be referenced by other data records (e.g. study). The user defined ID is not shared.

<https://docs.immport.org/datasubmission/templatedocumentation/templates/protocols/>

https://docs.immport.org/datasubmission/templatedocumentation/templates/basic_study_design/

A study can be created either by upload of the basic study design and protocol templates or through the Study Registration Wizard

Submission Templates

Primary Templates

Data Type	Purpose	Template	Required Data
Basic Study	Describes a study in terms of title, goals, endpoints, criteria for study participation, subject grouping (arms or cohorts), personnel, planned visits or encounters and protocols using a single worksheet. A study design and protocol should be uploaded first.	basic_study_design.xlsx basic_study_design.txt	<ul style="list-style-type: none"> Study User Defined ID Title Description Endpoints Actual Start Date Inclusion and Exclusion Criteria Arms or Cohorts Personnel Planned Visit Protocol
	Lists the protocols associated with the study. Protocols may be PDF files, Word documents, Excel or other file types.	protocols.xlsx protocols.txt	<ul style="list-style-type: none"> Protocol User Defined ID Protocol File Name

<https://docs.immport.org/datasubmission/general/submissiontemplates/>

<https://downloads.immport.org/data/upload/templates/ImmPortTemplates.zip>

basic_study_design Schema Version 3.36

Please do not delete or edit this column

Column Name

study

User Defined ID	Brief Title	Official Title	Brief Description	Description	Intervention Agent	Endpoints	Sponsoring Organization	Age Unit	Actual Start Date	Hypothesis	Objectives	Target Enrollment	Minimum Age	Maximum Age

study_categorization

Research Focus

study_2_condition_or_disease

Condition Reported

arm_or_cohort

User Defined ID	Name	Description	Type Reported

study_personnel

basic_study_design.xlsx

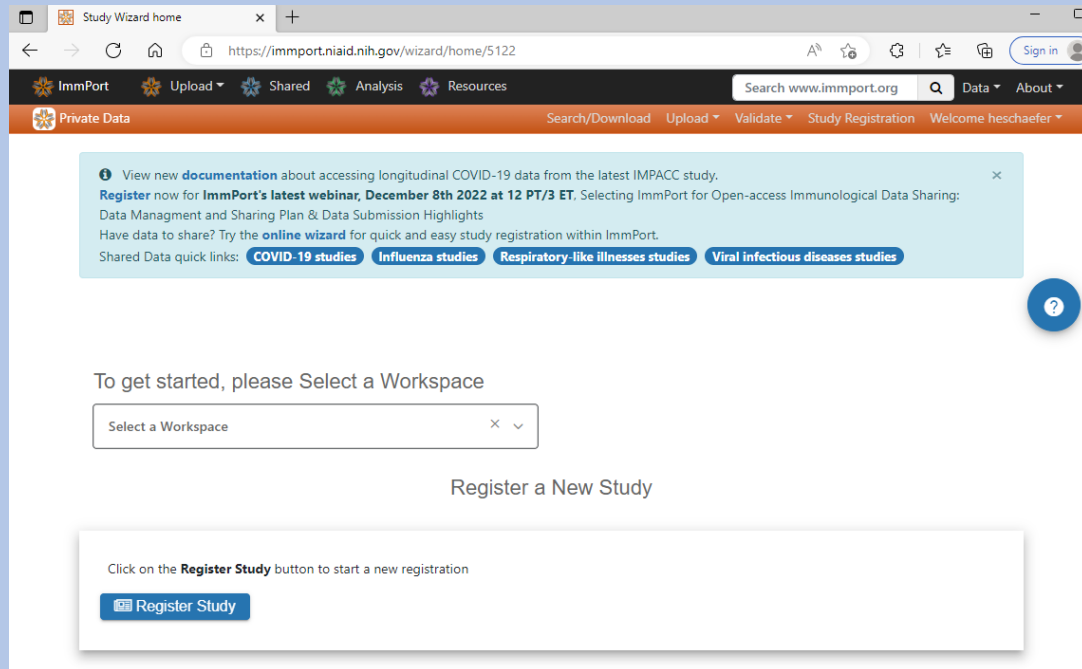
protocols Schema Version 3.36

Please do not delete or edit this column

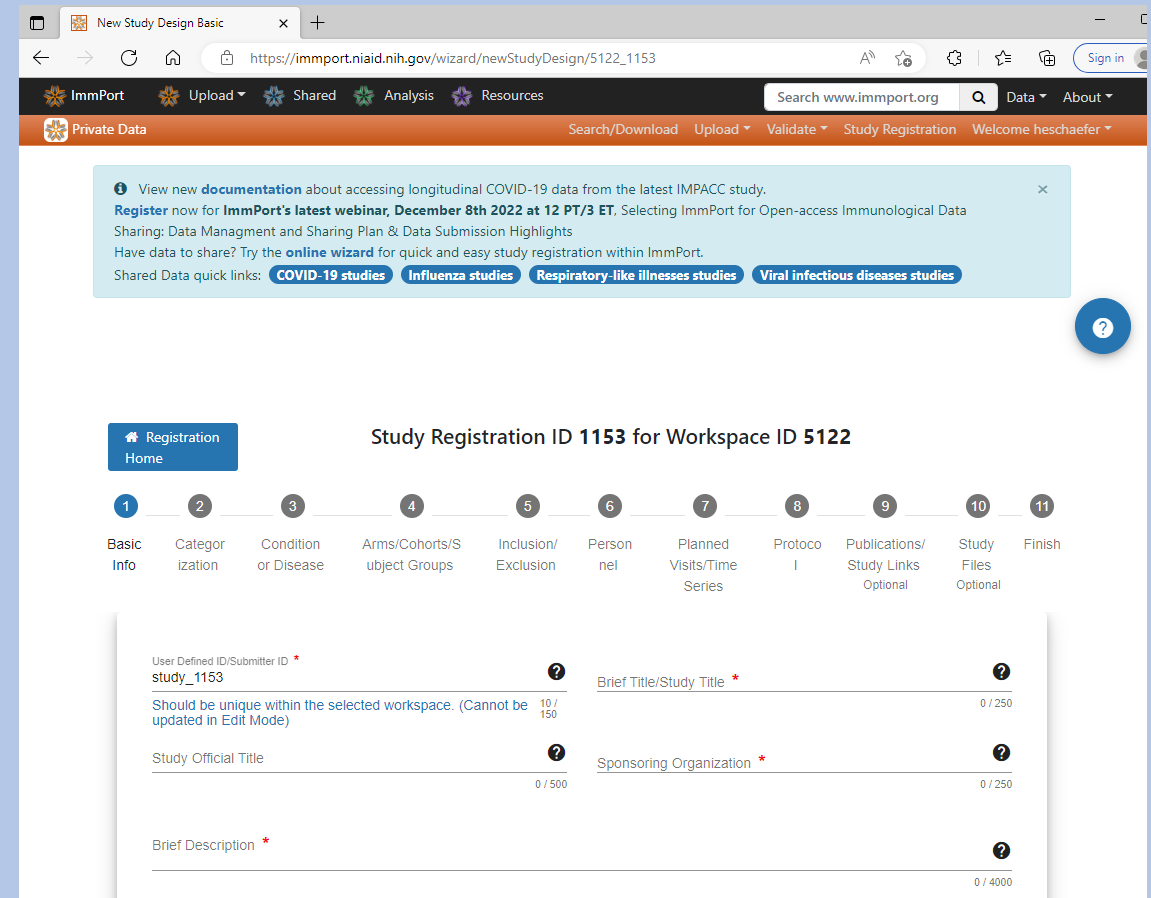
Column Name	User Defined ID	File Name	Name	Description	Type

protocols.xlsx

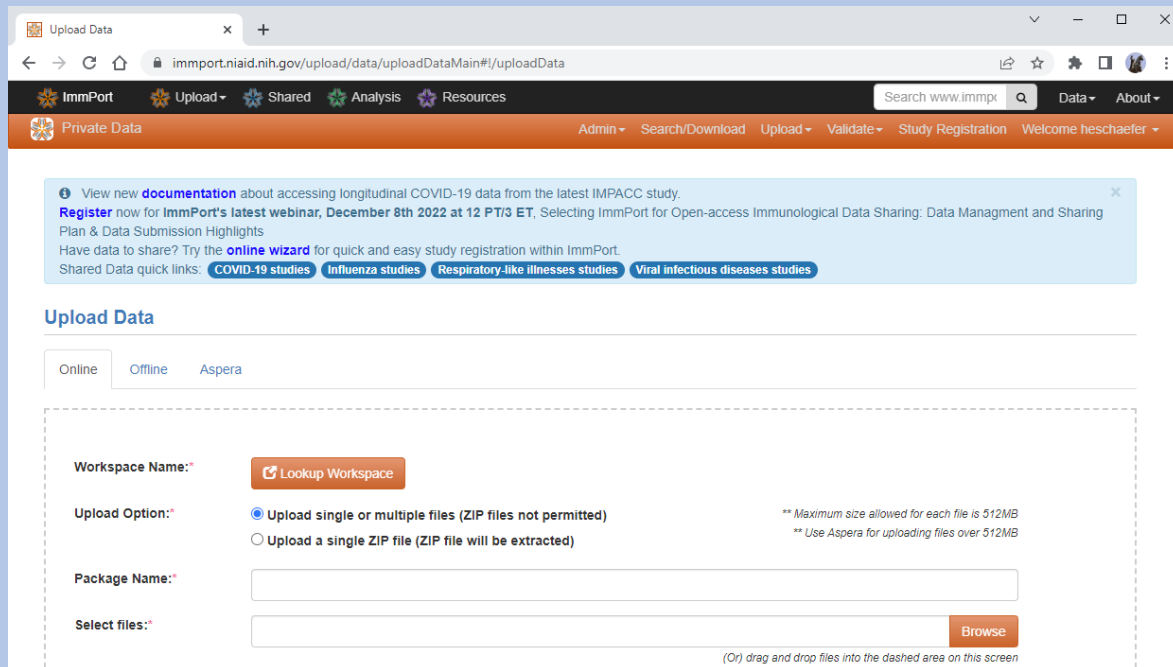
The Study Registration Wizard guides the user through study creation with a user-friendly web-based form



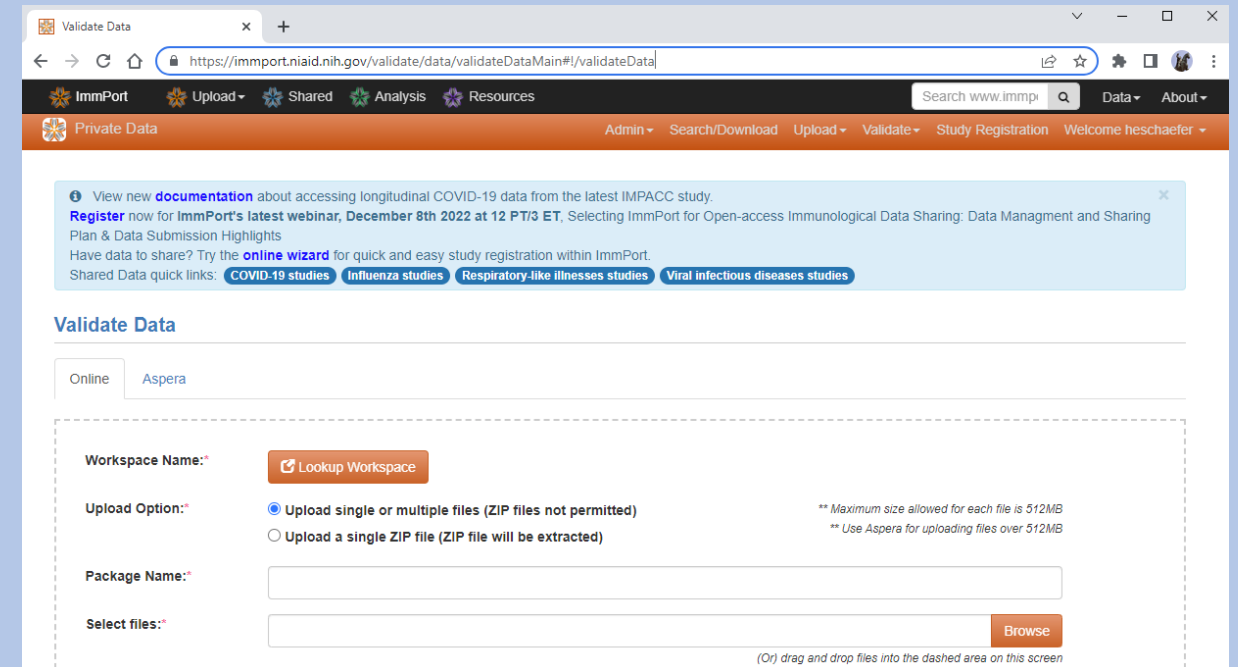
<https://import.niaid.nih.gov/wizard/home>



The upload page is used to upload templates saved as .txt files, the validator is used to test upload templates before upload to troubleshoot errors



The screenshot shows the 'Upload Data' page in a web browser. The URL is <https://import.niaid.nih.gov/upload/data/uploadDataMain#!/uploadData>. The page features a navigation bar with 'ImmPort', 'Upload', 'Shared', 'Analysis', and 'Resources'. Below the navigation bar, there is a search bar and a 'Data' dropdown menu. The main content area has a header 'Upload Data' and three tabs: 'Online', 'Offline', and 'Aspera'. The 'Online' tab is selected. The form includes a 'Workspace Name' field with a 'Lookup Workspace' button, an 'Upload Option' section with two radio buttons: 'Upload single or multiple files (ZIP files not permitted)' (selected) and 'Upload a single ZIP file (ZIP file will be extracted)', and a 'Package Name' text input field. At the bottom, there is a 'Select files' field with a 'Browse' button. A dashed box indicates where files can be dragged and dropped. A footer note says '(Or) drag and drop files into the dashed area on this screen'.



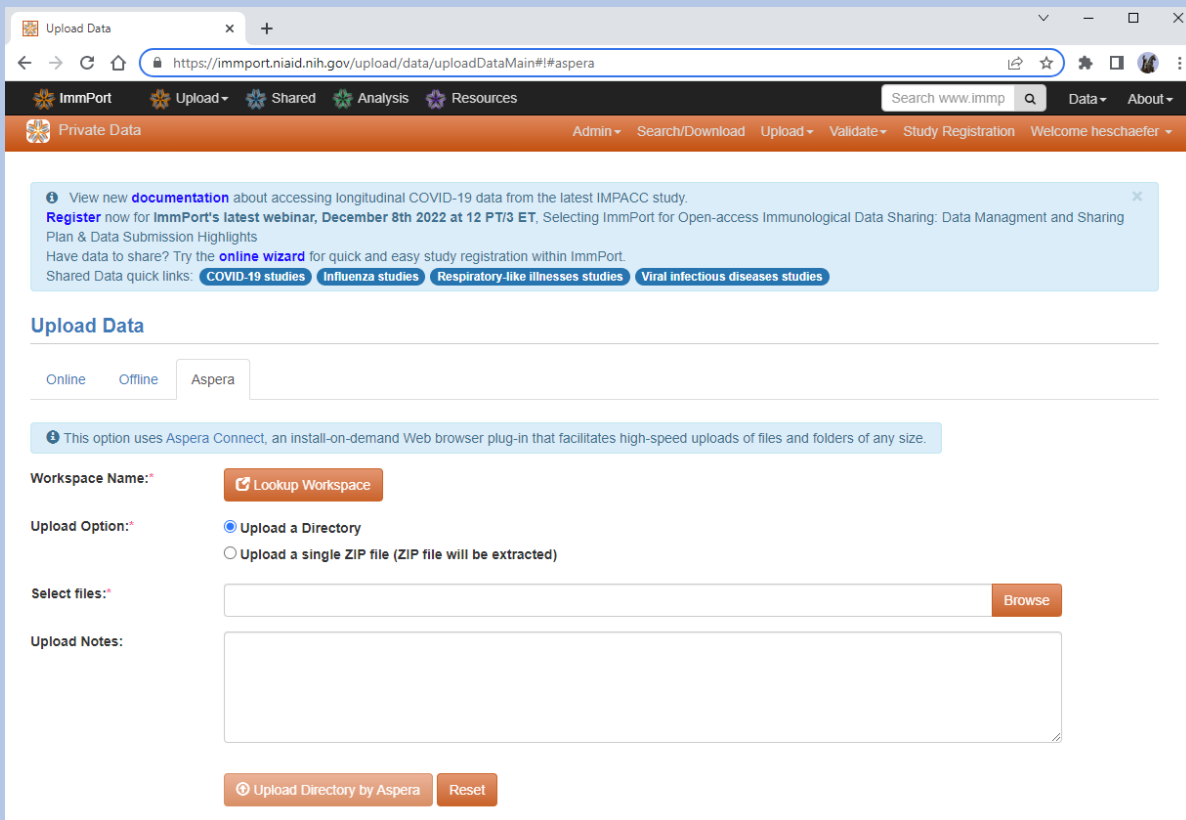
The screenshot shows the 'Validate Data' page in a web browser. The URL is <https://import.niaid.nih.gov/validate/data/validateDataMain#!/validateData>. The page features a navigation bar with 'ImmPort', 'Upload', 'Shared', 'Analysis', and 'Resources'. Below the navigation bar, there is a search bar and a 'Data' dropdown menu. The main content area has a header 'Validate Data' and two tabs: 'Online' and 'Aspera'. The 'Online' tab is selected. The form includes a 'Workspace Name' field with a 'Lookup Workspace' button, an 'Upload Option' section with two radio buttons: 'Upload single or multiple files (ZIP files not permitted)' (selected) and 'Upload a single ZIP file (ZIP file will be extracted)', and a 'Package Name' text input field. At the bottom, there is a 'Select files' field with a 'Browse' button. A dashed box indicates where files can be dragged and dropped. A footer note says '(Or) drag and drop files into the dashed area on this screen'.

Uploads with files no larger than 512MB use the standard uploader
The Aspera uploader is used for uploading files over 512MB

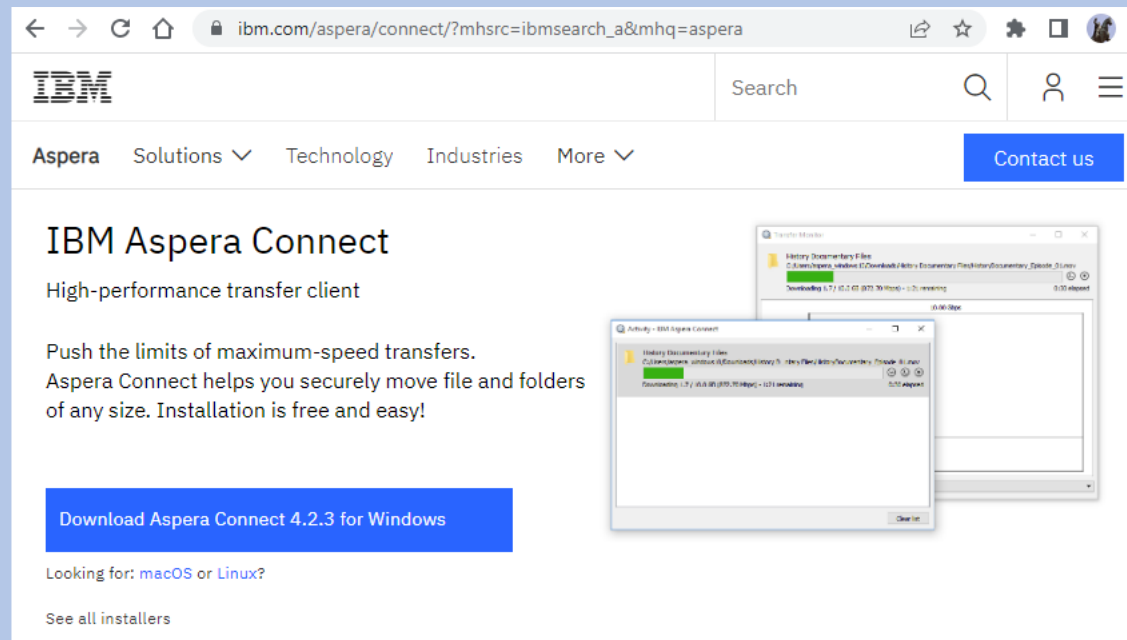
<https://import.niaid.nih.gov/upload/data/uploadDataMain#!/uploadData>

<https://import.niaid.nih.gov/validate/data/validateDataMain#!/validateData>

The Aspera uploader is used for uploading files over 512MB



<https://import.niaid.nih.gov/upload/data/uploadDataMain#!#aspera>



<https://www.ibm.com/aspera/connect/>

ImmPort upload processes are designed to preserve subject privacy

User-Defined IDs for subjects, biosamples, and experiment samples are not shared publicly

Dates are not allowed in ImmPort uploads for subject demographics or biosample annotation

Subject location data more granular than a U.S. state is not permitted

Subject ages greater than 89 are not shared publicly

ImmPort does not share User Defined IDs with the public, only the database-generated accessions

Upload Templates

subjecthumans	Schema Version 3.36		
Please do not delete or edit this column			
Column Name	Subject ID	Arm Or Cohort ID	Gender
	FACTOR_808379		
	FACTOR_841311		

subjectHumans.xlsx

Private Workspace

Subjects in Study SDY546

[View Demographics](#)

Click on a row in the table to view sub

Accession	User Defined ID
SUB147329	FACTOR_808379
SUB147330	FACTOR_841311

Shared Public Data

SUBJECT_ACCESSION	ETHNICITY	GEN
SUB147329	Not Hispanic or Latino	Male
SUB147330	Hispanic or Latino	Fem

gene_expression_array	Schema Version 3.36		
Please do not delete or edit this column			
Column Name	Expsample ID	Biosample ID	Exper
	FACTOR_439639_GEO_ES		
	FACTOR_700990_GEO_ES		

experimentSamples.Gene_Expression_Array.xlsx

Detail for Experiment EXP14702

Click on row in table to view experiment sa

Experiment Sample Protocol Control

[Experiment Samples Metadata Detail Report](#)

Experiment Sample Accession	User Defined ID	Treatme
ES103377	FACTOR_439639_GEO_ES	1
ES1033738	FACTOR_700990_GEO_ES	1

EXPSAMPLE_ACCESSION	EXPERIMENT_ACCESSION	RESULT_SCHE
ES1033737	EXP14702	PUBLIC REPO:
ES1033738	EXP14702	PUBLIC REPO:

ImmPort does not share User Defined IDs with the public, only the database-generated accessions

Upload Templates

subjecthumans	Schema Version 3.36		
Please do not delete or edit this column			
Column Name	Subject ID	Arm Or Cohort ID	Gender
	FACTOR_808379		
	FACTOR_841311		

Private Workspace

Subjects in Study SDY546

[View Demographics](#)

Click on a row in the table to view subject details

Accession	User Defined ID
SUB147329	FACTOR_808379
SUB147330	FACTOR_841311

Shared Public Data

SUBJECT_ACCESSION	ETHNICITY	GEN
SUB147329	Not Hispanic or Latino	Male
SUB147330	Hispanic or Latino	Fem

gene_expression_array	Schema Version 3.36		
Please do not delete or edit this column			
Column Name	Expsample ID	Biosample ID	Exper
	FACTOR_439639_GEO_ES		
	FACTOR_700990_GEO_ES		

Detail for Experiment EXP14702

Click on row in table to view experiment sample details

Experiment Sample Protocol Control

[Experiment Samples Metadata Detail Report](#)

Experiment Sample Accession	User Defined ID	Treatme
ES1033737	FACTOR_439639_GEO_ES	1
ES1033738	FACTOR_700990_GEO_ES	1

EXPSAMPLE_ACCESSION	EXPERIMENT_ACCESSION	RESULT_SCHE
ES1033737	EXP14702	PUBLIC REPO:
ES1033738	EXP14702	PUBLIC REPO:

No dates are collected for subject demographics or biosample annotations

Subject ID	Arm Or Cohort ID	Gender	Min Subject Age	Max Subject Age	Age Unit	Age Event	Age Event Specify	Subject Phenotype	Subject Location	Ethnicity	Race	Race Specify	Description

subjectHumans.xlsx

<https://docs.immport.org/datasubmission/templatedocumentation/templates/subjecthumans/>

Biosample ID	Subject ID	Planned Visit ID	Type	Subtype	Biosample Name	Biosample Description	Study Time Collected	Study Time Collected Unit	Study Time T0 Event	Study Time T0 Event Specify

experimentSamples.Gene_Expression_Array.xlsx

https://docs.immport.org/datasubmission/templatedocumentation/templates/gene_expression_array/

ImmPort links to data in other public repositories whenever possible

rna_sequencing	Schema Version 3.36									
Please do not delete or edit this column										
Column Name	Expsample ID	Biosample ID	Experiment ID	Reagent ID(s)	Treatment ID(s)	ImmPort Template?	Result File Name	Repository Name	Repository Accession	

experimentSamples.RNA_Sequencing.xlsx



The screenshot shows the Gene Expression Omnibus (GEO) website homepage. The browser address bar displays ncbi.nlm.nih.gov/geo/. The page features the NCBI logo, navigation menus for 'Resources' and 'How To', and a 'Sign in to NCBI' link. The main heading is 'Gene Expression Omnibus' with the GEO logo. Below the heading, a descriptive paragraph states: 'GEO is a public functional genomics data repository supporting MIAME-compliant data submissions. Array- and sequence-based data are accepted. Tools are provided to help users query and download experiments and curated gene expression profiles.' A search bar with the placeholder text 'Keyword or GEO Accession' and a 'Search' button is located on the right side.

The screenshot shows the Sequence Read Archive (SRA) website homepage. The browser address bar displays ncbi.nlm.nih.gov/sra. The page features the NIH logo and the text 'National Library of Medicine National Center for Biotechnology Information'. A 'Log in' button is in the top right. Below the header, there is a search bar with 'SRA' selected in a dropdown menu and a 'Search' button. A banner at the bottom reads 'SRA - Now available on the cloud' and includes a paragraph: 'Sequence Read Archive (SRA) data, available through multiple cloud providers and NCBI servers, is the largest publicly available repository of high throughput sequencing data. The archive accepts data from all branches of life as well as metagenomic and environmental surveys. SRA stores raw sequencing data and alignment information to enhance reproducibility and facilitate new discoveries through data analysis.'

ImmPort uses reported and preferred values to improve data at upload and harmonize using established ontologies

study	
User Defined ID	
Brief Title	
Official Title	
Brief Description	
Description	
Intervention Agent	
Endpoints	
Sponsoring Organization	
Age Unit	
Actual Start Date	
Hypothesis	
Objectives	
Target Enrollment	
Minimum Age	
Maximum Age	
study_categorization	
Research Focus	
study_2_condition_or_disease	
Condition Reported	
arm_or_cohort	acquired immunodeficiency syndrome
User Defined ID	acute disseminated encephalomyelitis
	Addison's disease
	Aging
	alcohol dependence
	alcohol use disorder
study_personnel	allergic hypersensitivity disease
User Defined ID	Humorific

basic_study_design.xlsx

cytof_reagents	Schema Version 3.36												
Please do not delete or edit this column													
Column Name	User Defined ID	Name	Description	Manufacturer	Catalog Number	Lot Number	Weblink	Contact	Analyte Reported	Antibody Registry ID	Clone Name	Reporter Name	
									hHLA-A*2 : ANA...				
									AA4 ; hCD93 ; ANA...				
									ACKR3 ; hACKR3 ; A...				
									Ackr3 ; mACKR3 ; A...				
									AFP ; AFP ; ANA704				
									Annexin ; hANX45 ;				
									B7 ; hCD80 ; ANA86				
									B7-2 ; hCD86 ; ANA...				

reagents.CyTOF.xlsx

ImmPort data requirements allow shared data to be harmonized

<https://import.org/shared/study/SDY1669>

Systems biological assessment of immunity to mild versus severe COVID-19 infection in humans

PRABHU S. ARUNACHALAM, FLORIAN WIMMERS, CHRIS KA PUN MOK, RANAWAKA A. P. M. PERERA, MADELEINE SCOTT, THOMAS HAGAN, NATALIA SIGAL, YUPENG FENG, LAUREL BRISTOW, [...] AND BALI PULENDRAN +21 authors [Authors Info & Affiliations](#)

SCIENCE • 11 Aug 2020 • Vol 369, Issue 6508 • pp. 1210-1220 • DOI: 10.1126/science.abc6261

FCS_HEADER_ID	EXPSAMPLE_ACCESSION	FCS_FILE_NAME	PANEL_PREFERRED	PANEL_REPORTED
328635	ES1606725	c09_Batch7_01_0_singl es_P42.fcs	190BCKG 140Ce_Beads Center hCD80/161Dy 162Dy hNCAM1/163D y 164Dy_Ikba hFCGR3 A/166Er hCD38/167Er hCD8A/168Er hCD3E/1 70Er hIL3RA/151Eu hs	190BCKG 140Ce_Beads Center 161Dy_CD80 162Dy 163Dy_CD56 16 y 164Dy_Ikba 166Er_CD16 4Dy_Ikba 167Er_CD38 168Er_CD 8 170Er_CD3 151Eu_CD 123_ 153Eu_pSTAT1 E

fcs_header.txt

FCS_HEADER_ID	PARAMETER_NUMBER	PNN_PREFERRED	PNN_REPORTED	PNS_PREFERRED	PNS_REPORTED
328635	4		Dy161Di	hCD80, 161Dy	161Dy_CD80
328635	7		Dy164Di		164Dy_Ikba
328635	22		Ir193Di		193Ir_DNA1
328635	39		Pt195Di		195Pt
328635	48		Yb171Di		171Yb_pERK
328635	51		Yb174Di	hHLA-DRA, 174Yb	174Yb_HLA-DR

fcs_header_marker.txt

REAGENT_ACCESSION	ANALYTE_ACCESSION	ANALYTE_PREFERRED	ANALYTE_REPORTED	ANTIBODY_REGISTRY_ID	CATALOG_NUMBER	CLONE_NAME
ESR29594	ANA866	B7	CD80		3161023B	2D10.4
ESR29595	ANA815	CD56	CD56		3163007B	NCAM16.2

reagent.txt

ANALYTE_ACCESSION	GENE_SYMBOL	GENE_ALIASES	GENE_ID	GENETIC_NOMENCLATURE_ID	IMMUNOLOGY_SYMBOL	LINK	OFFICIAL_GENE_NAME
ANA866	CD80	B7; BB1; B7-1; B7.1; LAB7; CD28LG; CD28LG1	941	HGNC:1700	B7	https://www.ncbi.nlm.nih.gov/gene/941	CD80 molecule
ANA867	TLR6	CD286	10333	HGNC:16711	TLR6	https://www.ncbi.nlm.nih.gov/gene/10333	toll like receptor 6

lk_analyte.txt

ImmPort shared data can help identify how similar data types and study designs were curated and loaded into ImmPort

The screenshot displays the ImmPort search interface. At the top, the search bar contains the text "kidney transplantation". Below the search bar, the results are categorized into "Studies(72)" and "Subjects (18831)".

On the left side, there are two filter panels:

- Study Facets:** Includes Research Focus, Condition or Disease, Biosample Type, Assay Methods, Program Name, and Study Accession.
- Subject Demographics:** Includes Age (Years), Ethnicity, Gender, Race, and Species.
- Miscellaneous:** Includes Is Clinical Trial, Has Lab Tests, and Has Assessments Tests.

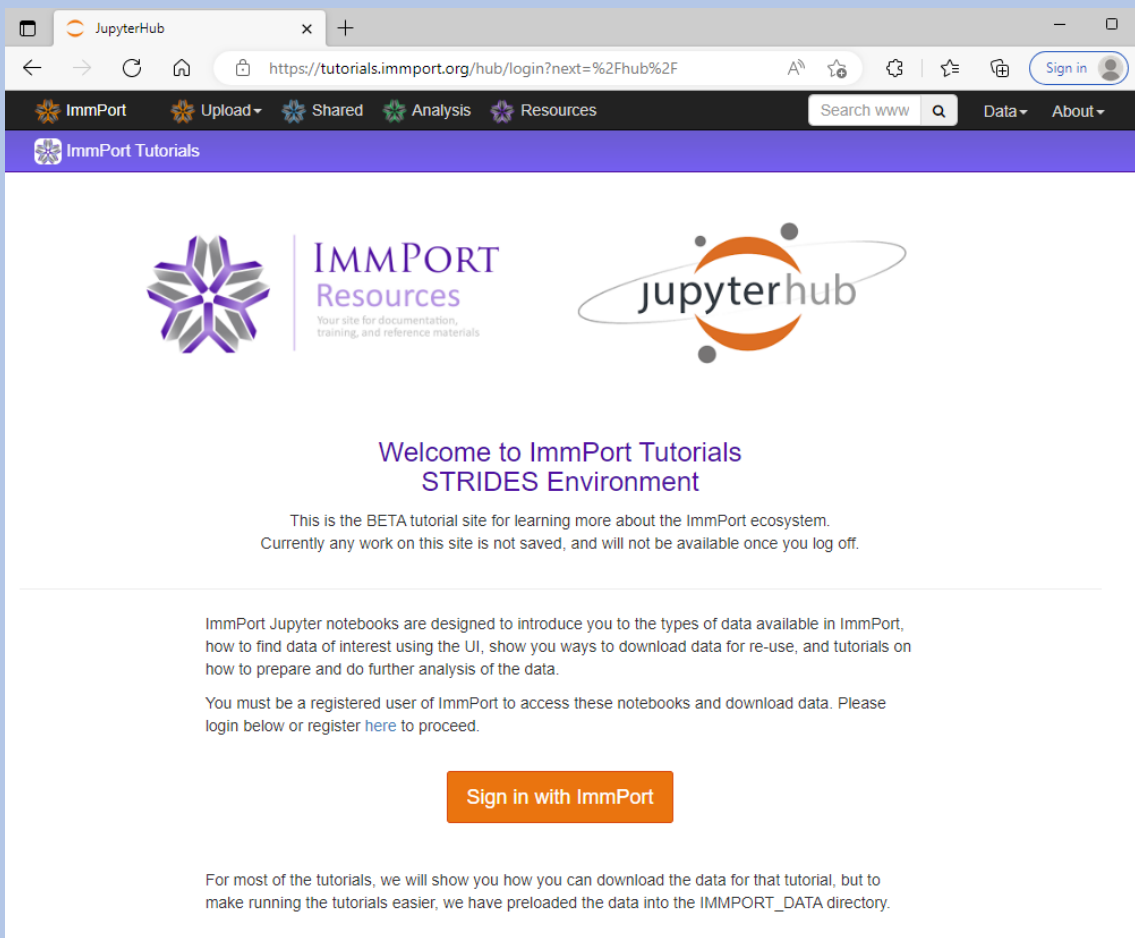
The main content area features three facet charts:

- Research Focus:** A bar chart showing the distribution of studies across various research focuses. "Transplantation" is the most prominent category.
- Condition or Disease:** A pie chart showing the distribution of studies across different conditions or diseases. "Kidney transplantation" is a significant category.
- Assay Methods:** A pie chart showing the distribution of studies across various assay methods. "Flow Cytometry" and "PCR" are notable methods.

At the bottom, a table lists the search results. The table has columns for Study ID, Title, Pubmed ID, Research Focus, and Condition/Disease. The first two rows are visible:

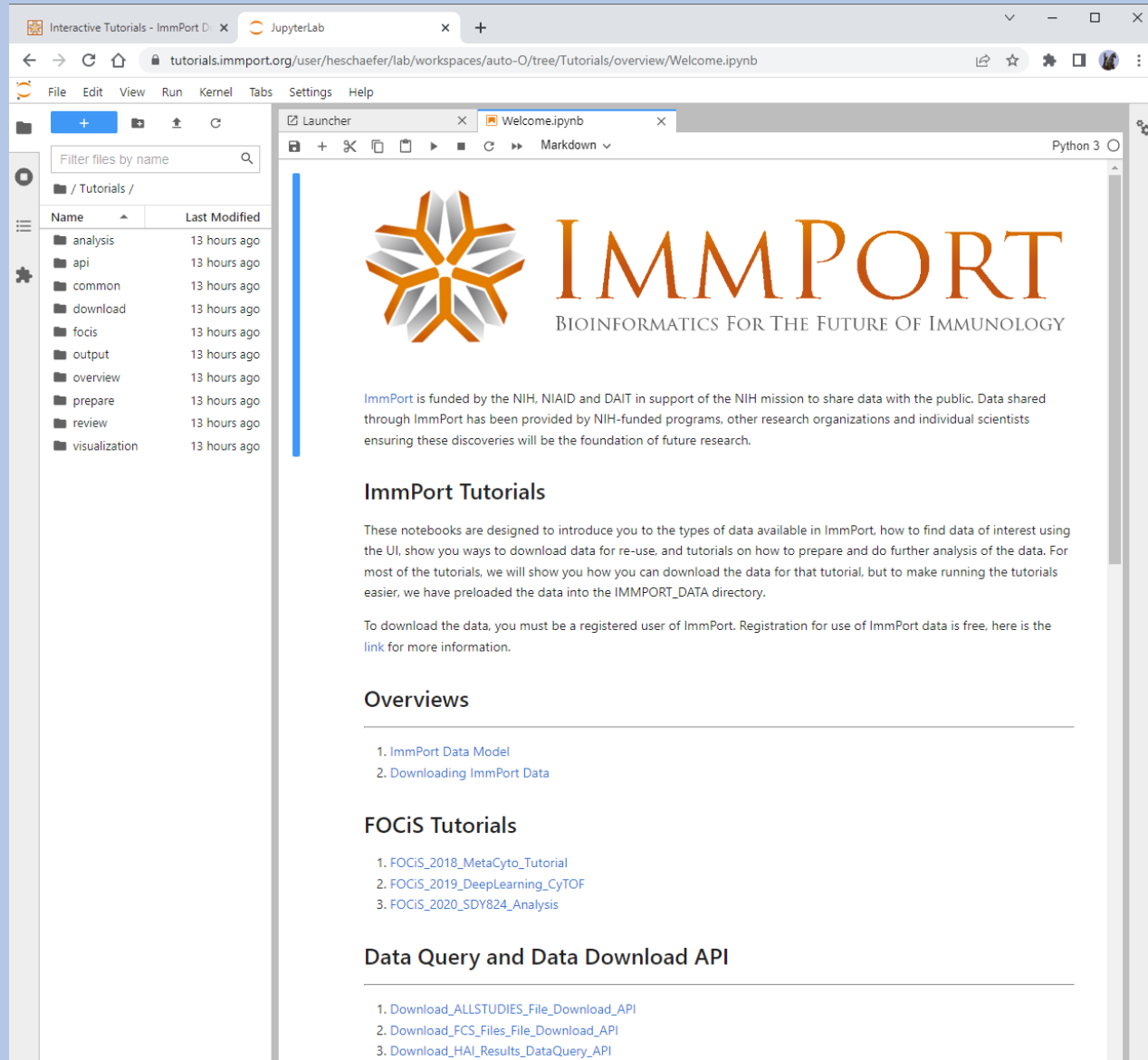
Study	Title	Pubmed Id	Research Focus	Condition/Disease
SDY1425	Optimization of Belatacept Usage As A Means of Avoiding CNI and steroids in Renal Transplantation (CTOT-10)	28556519	Transplantation	Kidney Transplantation
SDY290	Live Kidney Donor Study - Cross-Sectional and Historical Cohort Study (RELIVE-04)	21564530 23137211 24011252 25136843 25293374	Transplantation	Kidney Transplantation

ImmPort JupyterLab tutorials give an introduction to exploring the ImmPort data model



The screenshot shows the ImmPort JupyterHub login page. At the top, there is a navigation bar with 'ImmPort', 'Upload', 'Shared', 'Analysis', and 'Resources' menus. Below this is a purple banner with the ImmPort logo and the text 'IMMPORT Resources Your site for documentation, training, and reference materials'. The main content area features the JupyterHub logo and a welcome message: 'Welcome to ImmPort Tutorials STRIDES Environment'. Below this, it states: 'This is the BETA tutorial site for learning more about the ImmPort ecosystem. Currently any work on this site is not saved, and will not be available once you log off.' There is a paragraph explaining that ImmPort Jupyter notebooks are designed to introduce users to the types of data available in ImmPort, how to find data of interest using the UI, show ways to download data for re-use, and tutorials on how to prepare and do further analysis of the data. A note mentions that users must be registered to access these notebooks and download data, with a link to register. A prominent orange button labeled 'Sign in with ImmPort' is centered on the page. At the bottom, it notes that data is preloaded into the IMMPORT_DATA directory for easier tutorial execution.

tutorials.immport.org



The screenshot shows the ImmPort JupyterLab interface. The browser address bar displays 'tutorials.immport.org/user/heschaefer/lab/workspaces/auto-O/tree/Tutorials/overview/Welcome.ipynb'. The JupyterLab interface includes a file browser on the left showing a directory structure for 'Tutorials' with subdirectories like 'analysis', 'api', 'common', 'download', 'focis', 'output', 'overview', 'prepare', 'review', and 'visualization', all last modified 13 hours ago. The main content area displays the 'Welcome.ipynb' notebook, which features the ImmPort logo and the text 'IMMPORT BIOINFORMATICS FOR THE FUTURE OF IMMUNOLOGY'. Below the logo, it states: 'ImmPort is funded by the NIH, NIAID and DAIT in support of the NIH mission to share data with the public. Data shared through ImmPort has been provided by NIH-funded programs, other research organizations and individual scientists ensuring these discoveries will be the foundation of future research.' The notebook content includes sections for 'ImmPort Tutorials', 'Overviews', and 'FOCiS Tutorials', each with a list of links to specific tutorial notebooks. The 'Overviews' section lists '1. ImmPort Data Model' and '2. Downloading ImmPort Data'. The 'FOCiS Tutorials' section lists '1. FOCiS_2018_MetaCyto_Tutorial', '2. FOCiS_2019_DeepLearning_CyTOF', and '3. FOCiS_2020_SDY824_Analysis'. The 'Data Query and Data Download API' section lists '1. Download_ALLSTUDIES_File_Download_API', '2. Download_FCS_Files_File_Download_API', and '3. Download_HAI_Results_DataQuery_API'.

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Contract #: HHSN316201200036W

**Data
Providers!**

Backup



IMMPORT Resources

Your site for documentation, training, and reference materials

- Publications
- Documentation
- Tutorials
- Team

Human Immunology Project Consortium (HIPC)

Powered by ImmPort

- 104 Studies
- 25 Types of Measurements
- 5,399 Participants
- 80,374 Experimental Samples
- 20,280 Downloads*

*Download counts are from individual studies as well as AllStudies downloads.

The Human Immunology Project Consortium (HIPC) program was established in 2010 by the NIAID Division of Allergy, Immunology, and Transplantation as part of the overall NIAID focus on human immunology. Since its inception, 13 HIPC centers have been awarded, with 9 of these sites currently active. The goal of HIPC is to provide a comprehensive understanding of the human immune system and its regulation by revealing novel associations between components of the immune system and other biological systems, identifying novel immune mediators and pathways, establishing predictors of vaccine safety in different populations, and enabling the rapid evaluation of different vaccine formulations and administration regimens in human populations. Well-characterized human cohorts are studied (in the context of infection, vaccination, and immune-mediated diseases) using a variety of modern analytic tools, including multiplex transcriptional, cytokine, metabolomic, and proteomic assays; multiparameter phenotyping of immune cell subsets; assessment of immune cell functional status; and multiple computational methods.

Through the HIPC program, centralized research resources including access to all of the data generated through the program, the development of Data Standards for human immunology studies, and ImmuneSpace for integrative modeling of human immunology data are available for use by the greater scientific community.

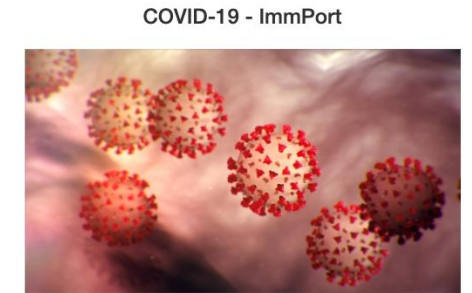


Accelerating Medicines Partnership (AMP)-RA/SLE

Powered by ImmPort

- 3 Studies
- 5 Types of Measurements
- 214 Participants
- 25,031 Experimental Samples
- 8,658 Downloads

- AMP Shared Datasets
- AMP Research Highlights



COVID-19 - ImmPort

Image CDC Coronavirus Disease 2019 - COVID 19, Alissa Eckert

Coronavirus Disease 19

Powered by ImmPort

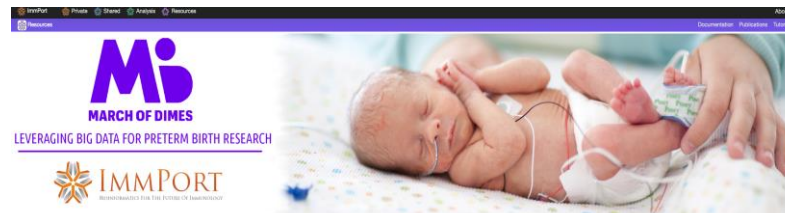
Bill & Melinda Gates Foundation

Powered by ImmPort



- 1 Studies
- 2 Types of Measurements
- 36 Participants
- 252 Experimental Samples
- 1,385 Downloads

- BMGF Research Grants
- BMGF Shared Datasets



- 45 Studies
- 25 Types Of Measurements
- 27061 Participants
- 37794 Experimental samples
- 3419 Downloads

The purpose of the Bill and Melinda Gates Foundation and University of Cape Town tuberculosis collaboration is to identify prospective immune correlates of risk of tuberculosis (TB) disease following natural infection with Mycobacterium tuberculosis, to discover biomarkers in blood that can be used to identify individuals at risk of developing active TB for priority enrollment into TB vaccine trials, and to identify predictive gene expression signatures of risk of TB disease, following natural infection with Mycobacterium tuberculosis.

ImmPort data portal was developed to collect and share research and clinical trials data from NIAID/DAIT funded researchers



Private Data

Upload Data
Upload Templates
Help



Shared Data

Data Model
Search/Download
Gene Lists



Data Analysis

Analysis Workflow
Automated Clustering
Tutorials



Resources

Tutorials
Documentation
Publications

FAIR Principles

Make your data:

- **F**indable
- **A**ccessible
- **I**nteroperable
- **R**eusable

Findable

- Descriptive metadata
- Persistent

Accessible

- Determining what to share
- Participant consent and risk management
- Access status

Interoperable

- XML standards
- Data Documentation Initiative
- CDISC

Reusable

- Rights and licence models
- Permitted and non-permitted use

<http://datafairport.org/>