

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

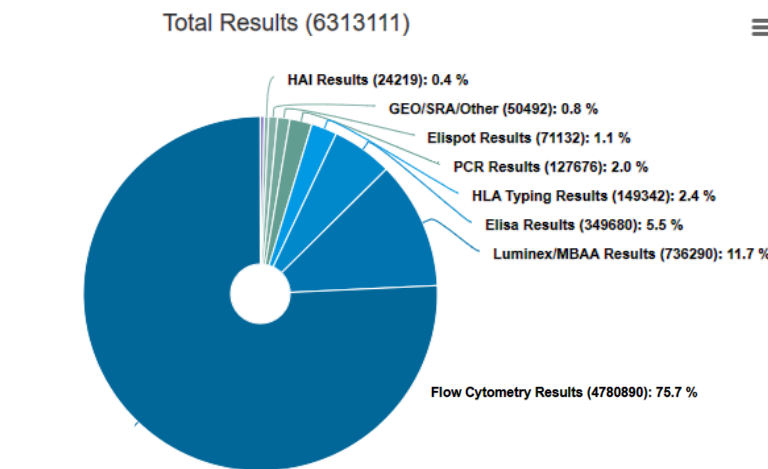


**FAIR-sharing Immunology
Data for over 20 Years**

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Across **148 Diseases & Conditions**
From **550+ NIH Funded Studies** &
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Sponsored by:

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National Institutes of Health (NIH)
Health and Human Services (HHS)



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

Nature Scientific Data's
Recommended Data Repository
Cytometry & Immunology

PLOS ONE
Recommended
Data Repository



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

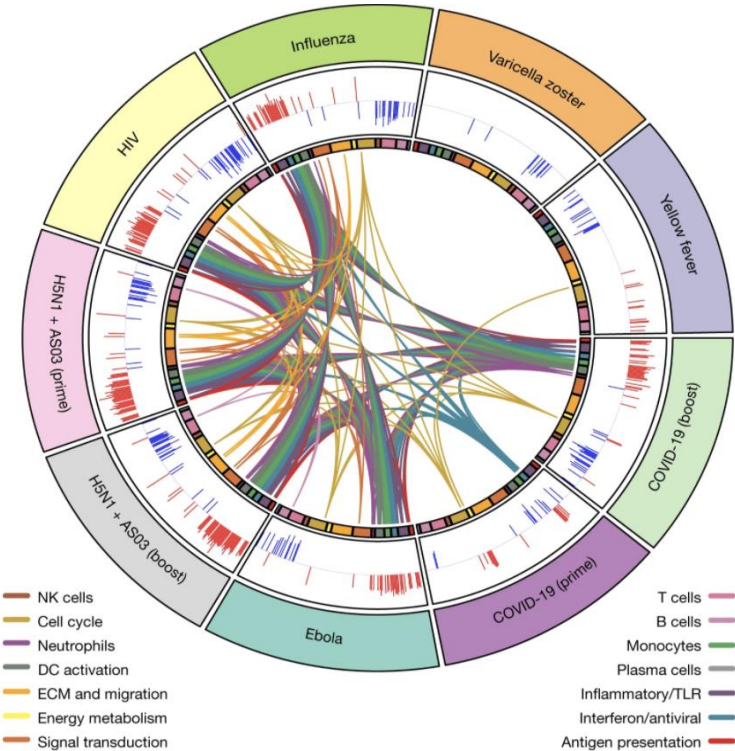
Online attention



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

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

From: Systems vaccinology of the BNT162b2 mRNA vaccine in humans



Extended Data Table 3 Vaccine meta-analysis datasets

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 Influenza	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

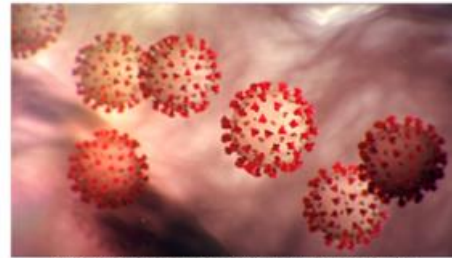


Image CDC Coronavirus Disease 2019 - COVID 19, Alissa Eckert

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 (AACRC)
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)



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

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<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 recompet 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
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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



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

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

The screenshot shows a web browser window with the URL `docs.immport.org/datasubmission/general/`. The page is titled "ImmPort Documentation" and features a navigation bar with links to Home, API Documentation, File Download Tool, Data Submission, Tutorials, and System Documentation. A sidebar on the left lists various resources under "Data Submission" and "Template Documentation". The main content area is titled "Overview" and contains a blue box with a message about updates to the documentation. Below this 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. The page also includes a paragraph about staff assistance and a list of bullet points detailing the upload process and available resources.

Overview - ImmPort Documenta... x +

docs.immport.org/datasubmission/general/

ImmPort Upload Shared Analysis Resources Search www.immp Data About

ImmPort Documentation Search

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

Home API Documentation File Download Tool Data Submission Tutorials System Documentation

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

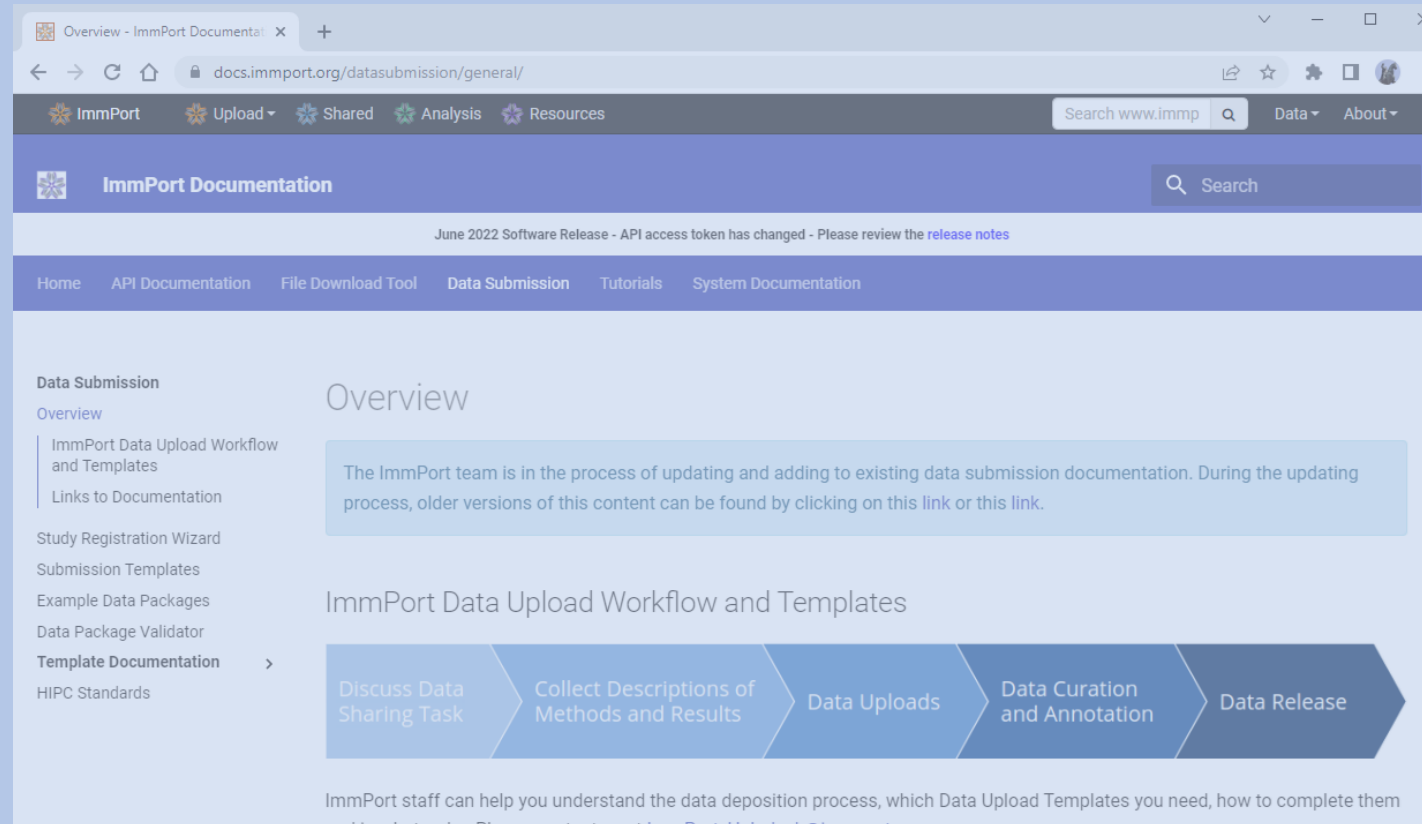
```
graph LR; A[Discuss Data Sharing Task] --> B[Collect Descriptions of Methods and Results]; B --> C[Data Uploads]; C --> D[Data Curation and Annotation]; D --> E[Data Release];
```

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



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.

<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?

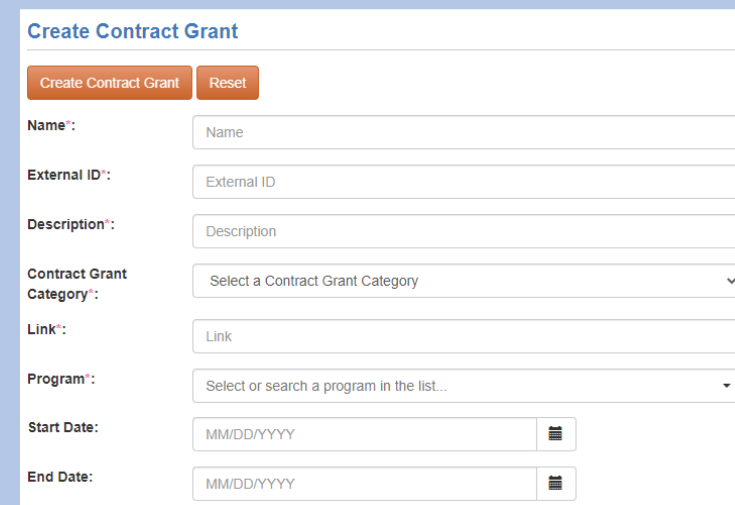
When do you need to share your data?

What grant or contract can we link to your study?



The screenshot shows the NIH RePORTER interface. The top navigation bar includes the NIH logo, 'RePORT' and 'RePORTER' links, and links for 'FAQs', 'API', 'ExPORTER', and a 'Sign In' button. The main header indicates 'Search Results > Project Details' with a 'Share' button. Below this, a 'Back to Search Results' link is present. The project title is 'Systems biological assessment of innate and adaptive immunity to vaccination'. A table below the title lists project details:

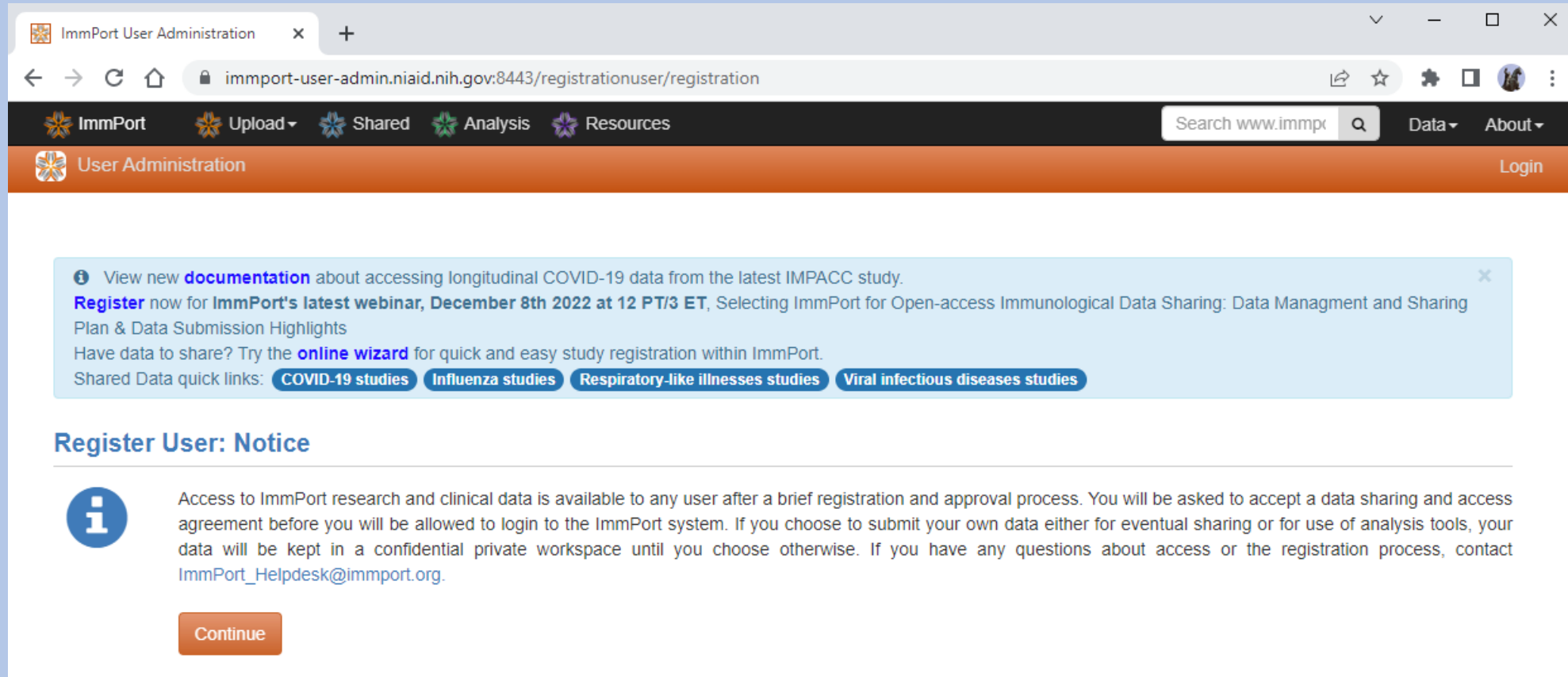
Description	Project Number	Contact PI/Project Leader	Awardee Organization
	1U19AI167903-01	PULENDRAN, BALI	STANFORD UNIVERSITY



The screenshot shows the 'Create Contract Grant' form. It has a title bar '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



The screenshot shows a web browser window with the address bar displaying `import-user-admin.niaid.nih.gov:8443/registrationuser/registration`. The page has a dark navigation bar with links for Upload, Shared, Analysis, and Resources, and a search bar. Below this is an orange header with the ImmPort logo and a 'Login' button. The main content area features a light blue informational box with text about COVID-19 data and a registration notice. The notice includes a blue information icon, text explaining the registration process and data privacy, and a 'Continue' button.

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

ImmPort User Administration

← → ↻ 🏠 🔒 import-user-admin.niaid.nih.gov:8443/registrationuser/registration

ImmPort

Upload

Shared

Analysis

Resources

User Administration

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

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

Register User: Notice

i

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

Continue

ImmPort User Administration

← → ↻ 🏠 🔒 import-user-admin.niaid.nih.gov:8443/registrationuser/registeruser

ImmPort

Upload

Shared

Analysis

Resources

User Administration

Login

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

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.

i

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	t.schaefer@comcast.net
How may ImmPort assist your research efforts?	<div><div></div>I'm required to submit data to ImmPort</div>
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 a composite of three browser windows. The top window is titled 'ImmPort User Administration' and shows the registration process. The middle window is titled 'User Administration' and shows a confirmation message: 'You have successfully registered. the link in the email to activate you'. The bottom window is titled 'Agreement - ImmPort Document' and shows the 'User Agreement for the NIAID Immunology Database and Analysis Portal (ImmPort)'. The agreement text states: '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.' It also includes a section '1.1 You will not attempt to identify individuals from ImmPort data sets' which states: '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.'

ImmPort User Administration

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

ImmPort Upload Shared Analysis Resources

Search www.immp Data About

ImmPort User Administration

ImmPort

Agreement - ImmPort Document

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

ImmPort Upload Shared Analysis Resources

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Other ways ImmPort may assist your research efforts?

How did you learn of ImmPort

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Register User: Notice

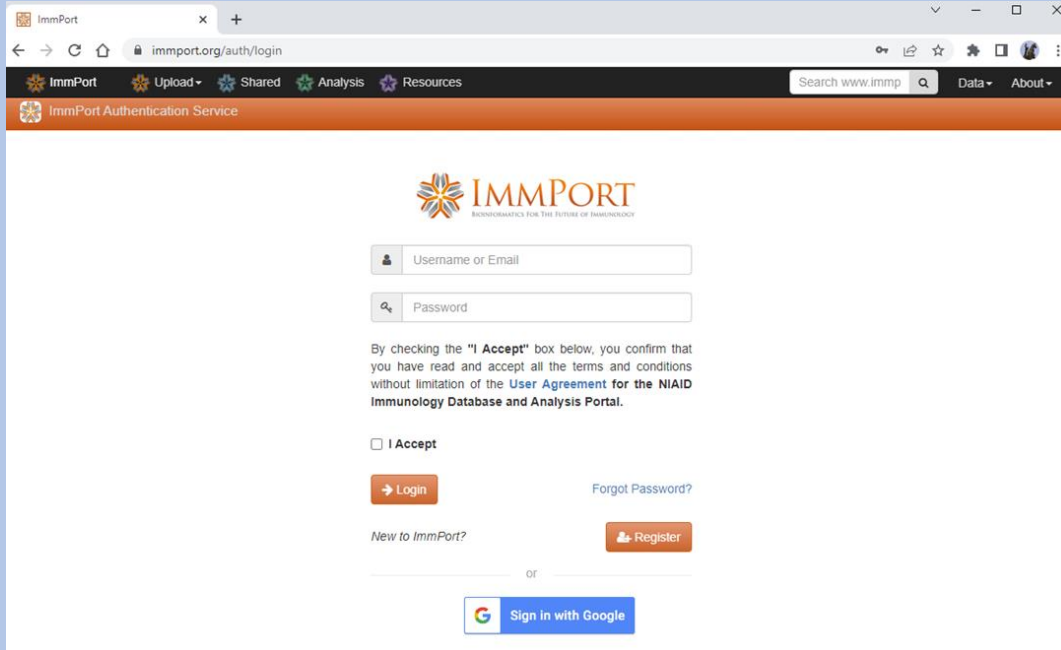
Access to ImmPort agreement before data will be kept ImmPort_Helpde

Continue

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

Multi-factor Authentication will be implemented for login in 2023

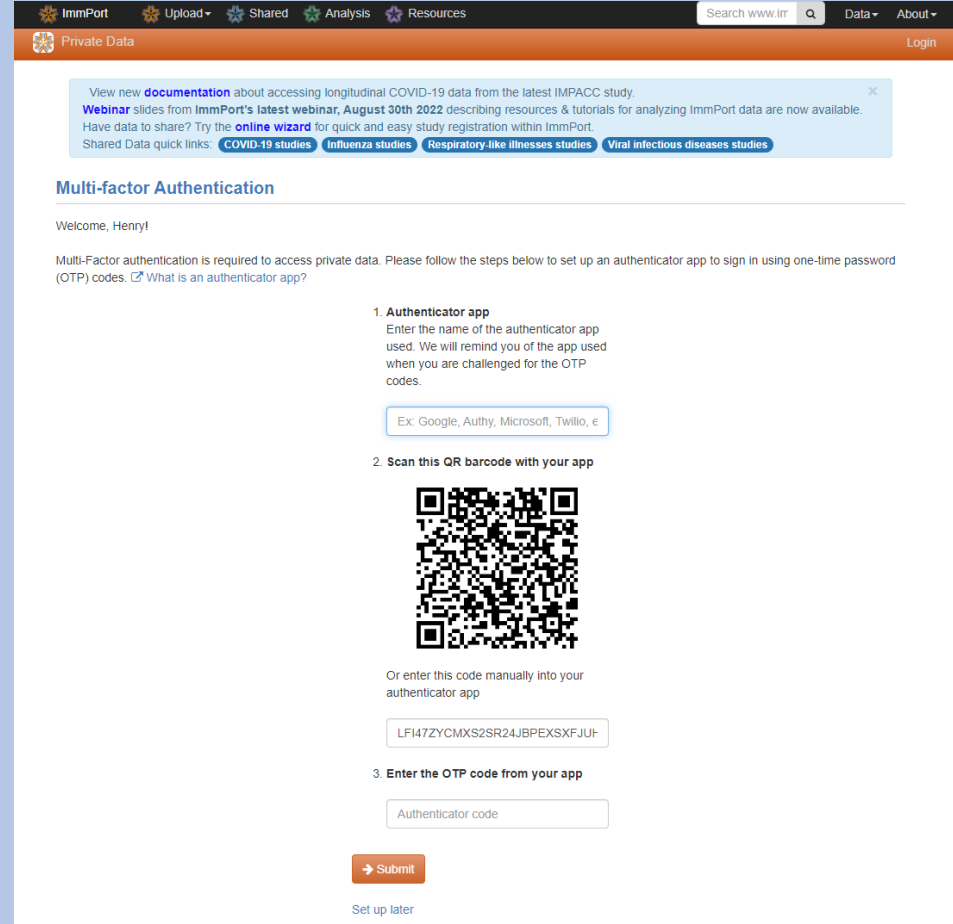
Current login



The screenshot shows the current login page for ImmPort. The browser address bar displays `import.org/auth/login`. The page features the ImmPort logo and a navigation bar with links for Upload, Shared, Analysis, and Resources. The login form includes fields for "Username or Email" and "Password", a checkbox for "I Accept" terms, a "Login" button, a "Forgot Password?" link, a "Register" button, and a "Sign in with Google" button.

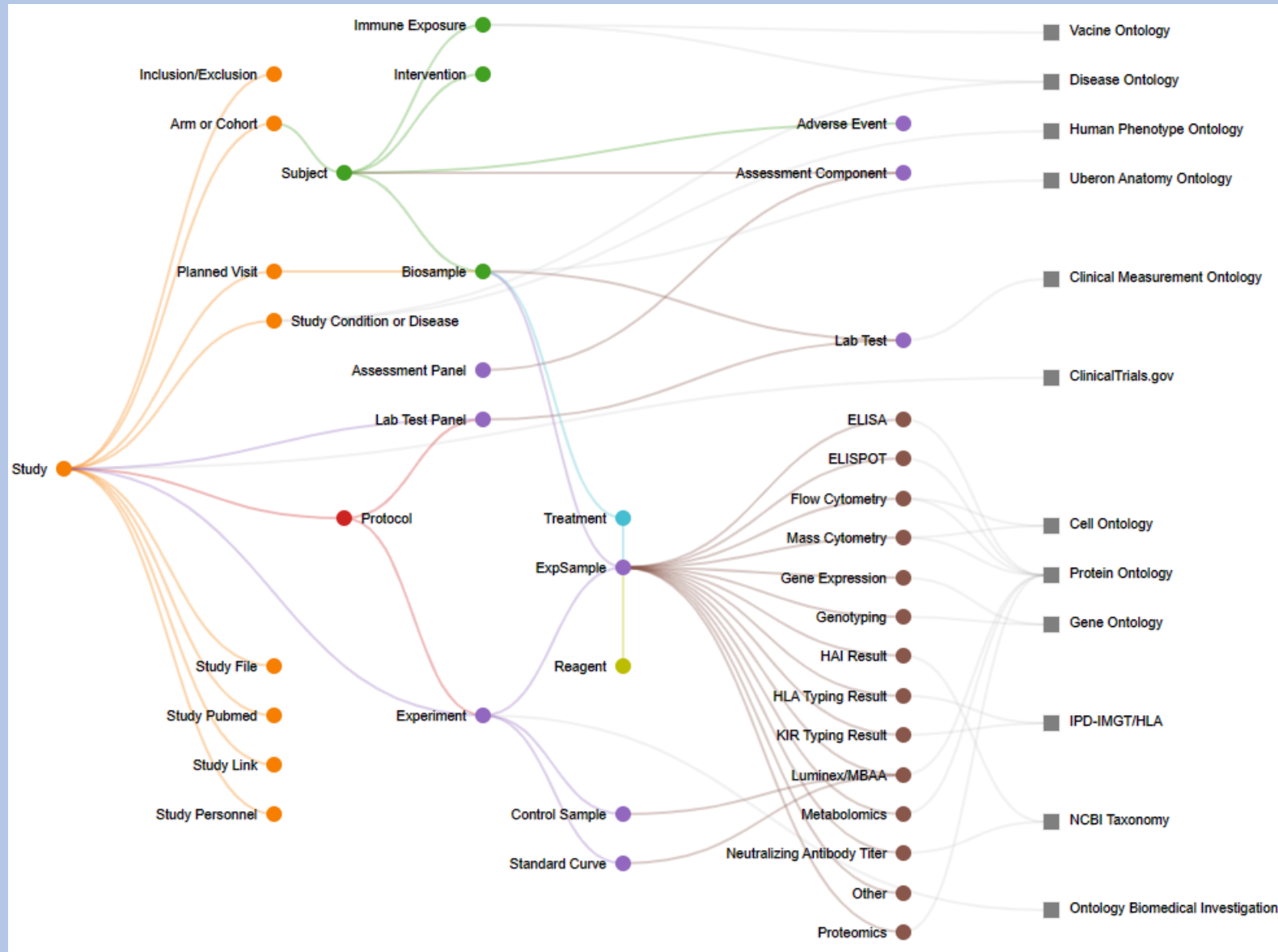
<https://www.import.org/auth/login>

Future MFA login



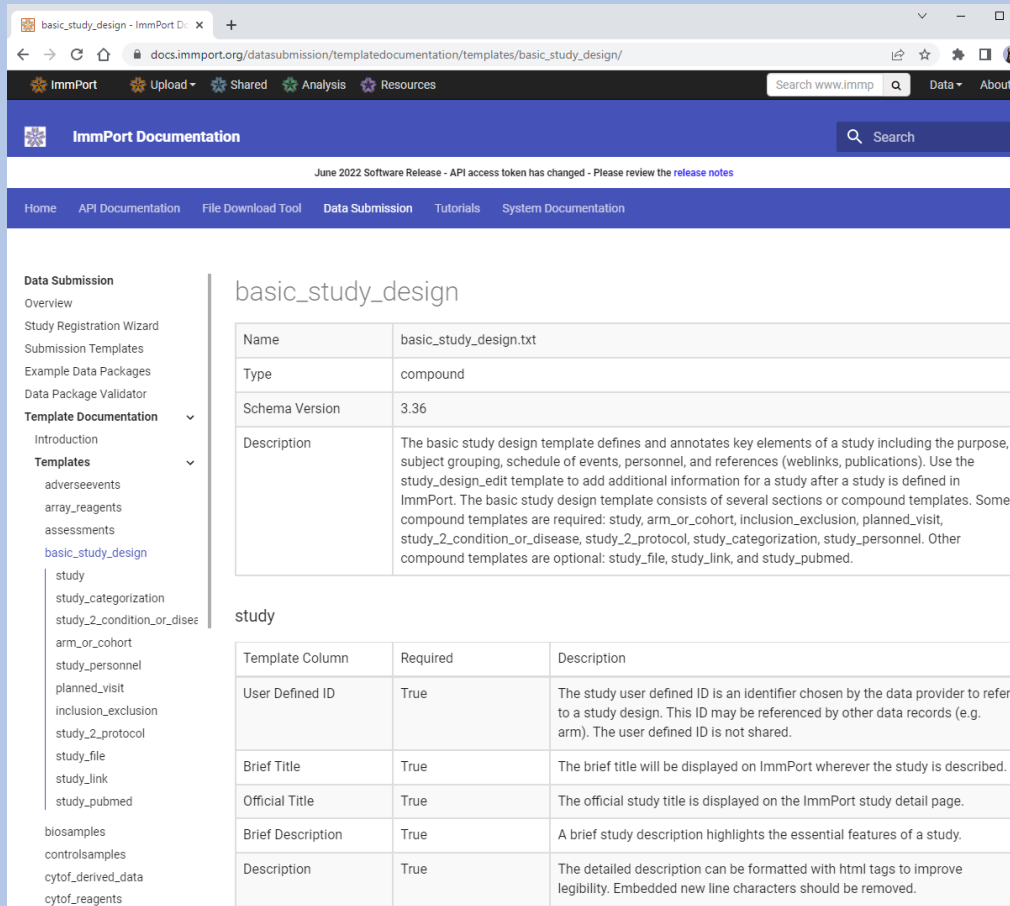
The screenshot shows the future MFA login page. The browser address bar displays `import.org`. The page features the ImmPort logo and a navigation bar with links for Upload, Shared, Analysis, and Resources. The login form includes fields for "Username or Email" and "Password", a checkbox for "I Accept" terms, a "Login" button, a "Forgot Password?" link, a "Register" button, and a "Sign in with Google" button. Below the login form, there is a section titled "Multi-factor Authentication" with a welcome message and instructions for setting up an authenticator app. The instructions include a QR code and a field for entering the OTP code.

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

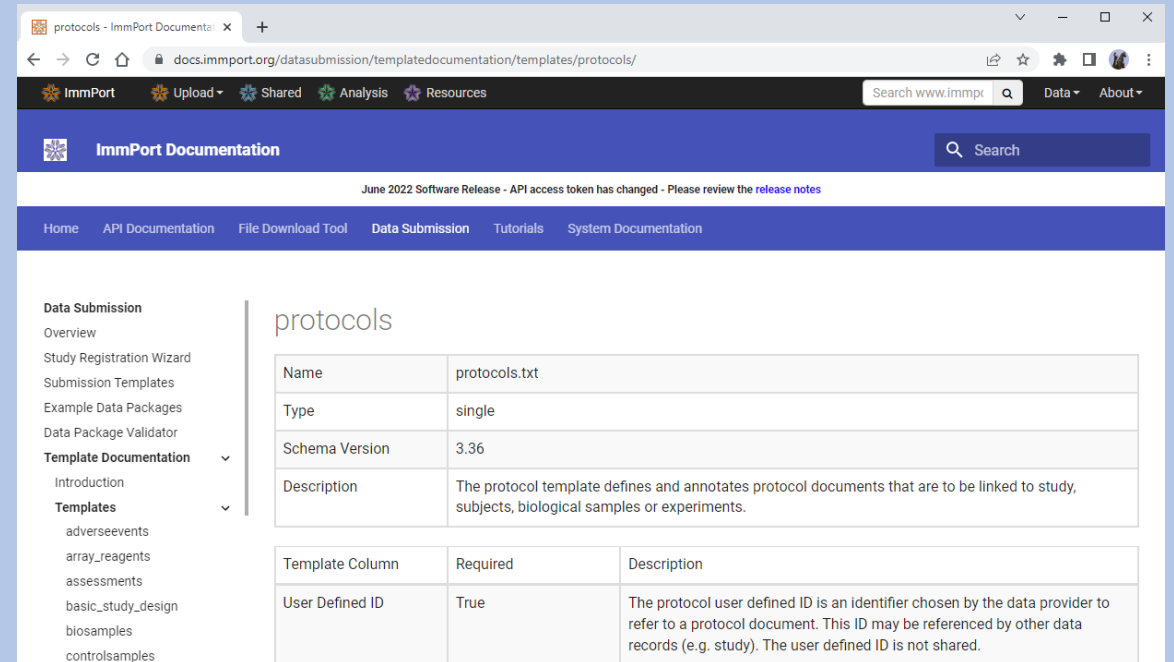


The screenshot shows the ImmPort Documentation page for the `basic_study_design` template. The page has a dark blue header with the ImmPort logo and navigation links. A sidebar on the left lists various data submission templates, with `basic_study_design` selected. The main content area displays the template details for `basic_study_design`.

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 <code>study_design_edit</code> 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: <code>study</code> , <code>arm_or_cohort</code> , <code>inclusion_exclusion</code> , <code>planned_visit</code> , <code>study_2_condition_or_disease</code> , <code>study_2_protocol</code> , <code>study_categorization</code> , <code>study_personnel</code> . Other compound templates are optional: <code>study_file</code> , <code>study_link</code> , and <code>study_pubmed</code> .

Below the template details, there is a section for the `study` template, which is a table with 3 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 ImmPort Documentation page for the `protocols` template. The page has a dark blue header with the ImmPort logo and navigation links. A sidebar on the left lists various data submission templates, with `protocols` selected. The main content area displays the template details for `protocols`.

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 the template details, there is a table with 3 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 - ImmPort

docs.immport.org/datasubmission/general/submissiontemplates/

ImmPort Upload Shared Analysis Resources

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Data About

ImmPort Documentation

Search

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Data Submission

Overview

Study Registration Wizard

Submission Templates

Primary Templates

Standalone Templates

Example Data Packages

Data Package Validator

Template Documentation

HIPC Standards

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.	basic_study_design.xlsx	<ul style="list-style-type: none">Study User Defined IDTitleDescriptionEndpointsActual Start DateInclusion and Exclusion CriteriaArms or CohortsPersonnelPlanned VisitProtocol
		basic_study_design.txt	
	A study design and protocol should be uploaded first.		
	Lists the protocols associated with the study. Protocols may be PDF files, Word documents, Excel or other file types.	protocols.xlsx	<ul style="list-style-type: none">Protocol User Defined IDProtocol File Name
		protocols.txt	

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

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

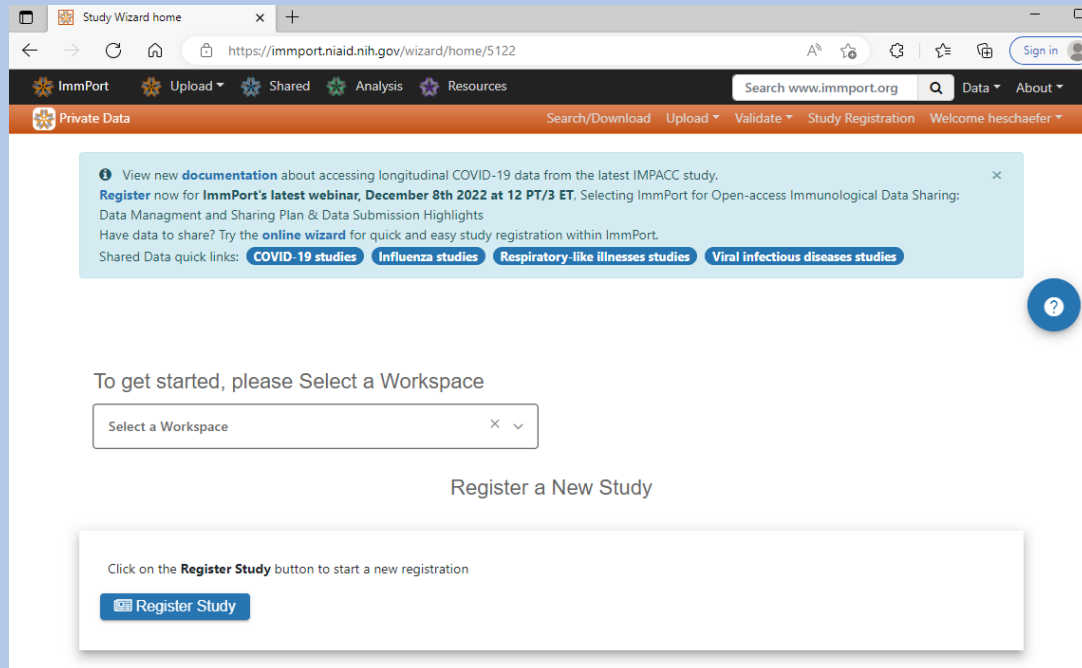
A1	basic_study_design
1	basic_study_design
2	Schema Version 3.36
3	The basic study design template defines and annotates key elements of a study including the purpose, subject grouping, schedule of events, personnel, and references (weblinks, publications). Use the study_design_edit template to add additional 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.
4	Please do not delete or edit this column
5	Column Name
6	study
7	User Defined ID
8	Brief Title
9	Official Title
10	Brief Description
11	Description
12	Intervention Agent
13	Endpoints
14	Sponsoring Organization
15	Age Unit
16	Actual Start Date
17	Hypothesis
18	Objectives
19	Target Enrollment
20	Minimum Age
21	Maximum Age
22	study_categorization
23	Research Focus
24	study_2_condition_or_disease
25	Condition Reported
26	
27	
28	arm_or_cohort
29	User Defined ID
30	Name
31	Description
32	Type Reported
33	
34	study_personnel

basic_study_design.xlsx

A1	protocols
1	protocols
2	Schema Version 3.36
3	Please do not delete or edit this column
4	Column Name
5	User Defined ID
6	File Name
7	Name
8	Description
9	Type

protocols.xlsx

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



The screenshot shows the 'Study Wizard home' page in a web browser. The URL is <https://import.niaid.nih.gov/wizard/home/5122>. The page features a navigation bar with 'ImmPort', 'Upload', 'Shared', 'Analysis', and 'Resources' tabs. A search bar is present with the text 'Search www.import.org'. Below the navigation bar, there is a 'Private Data' section with a 'Search/Download' button. A large blue box contains a message about COVID-19 data and a 'Register now' button. Below this, there is a 'To get started, please Select a Workspace' section with a dropdown menu. A 'Register a New Study' button is also visible.

Study Wizard home

<https://import.niaid.nih.gov/wizard/home/5122>

ImmPort Upload Shared Analysis Resources

Search www.import.org

Private Data Search/Download Upload Validate Study Registration Welcome heschaefer

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](#)

To get started, please Select a Workspace

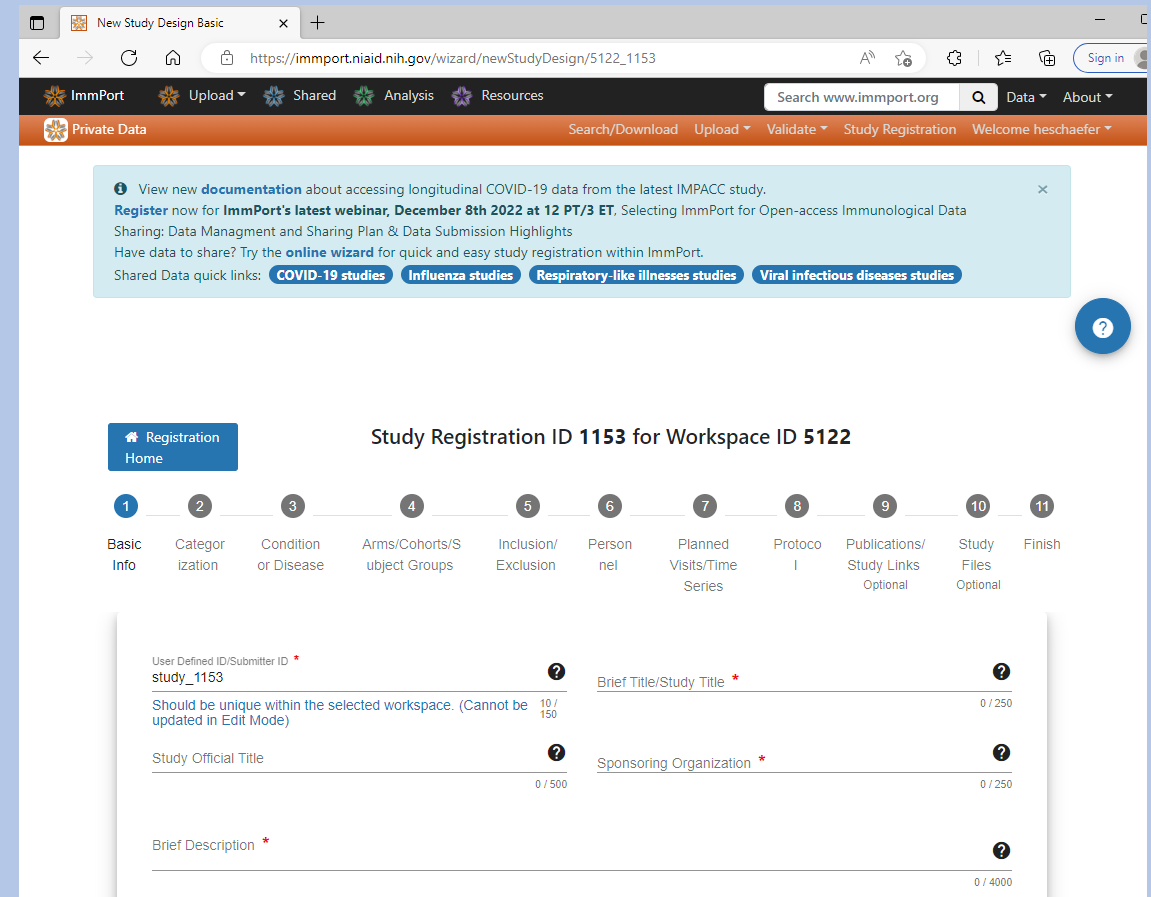
Select a Workspace

Register a New Study

Click on the **Register Study** button to start a new registration

[Register Study](#)

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



The screenshot shows the 'Study Registration ID 1153 for Workspace ID 5122' page. The URL is https://import.niaid.nih.gov/wizard/newStudyDesign/5122_1153. The page features a navigation bar with 'ImmPort', 'Upload', 'Shared', 'Analysis', and 'Resources' tabs. A search bar is present with the text 'Search www.import.org'. Below the navigation bar, there is a 'Private Data' section with a 'Search/Download' button. A large blue box contains a message about COVID-19 data and a 'Register now' button. Below this, there is a 'Study Registration ID 1153 for Workspace ID 5122' section with a progress bar showing steps 1 through 11. The first step, 'Basic Info', is selected. The form fields include 'User Defined ID/Submitter ID', 'Brief Title/Study Title', 'Study Official Title', 'Sponsoring Organization', and 'Brief Description'.

New Study Design Basic

https://import.niaid.nih.gov/wizard/newStudyDesign/5122_1153

ImmPort Upload Shared Analysis Resources

Search www.import.org

Private Data Search/Download Upload Validate Study Registration Welcome heschaefer

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](#)

Registration Home

Study Registration ID 1153 for Workspace ID 5122

1 2 3 4 5 6 7 8 9 10 11

Basic Info Categorization Condition or Disease Arms/Cohorts/Subject Groups Inclusion/Exclusion Personnel Planned Visits/Time Series Protocol Publications/Study Links Optional Study Files Optional Finish

User Defined ID/Submitter ID * [?](#)
study_1153 [?](#)
Should be unique within the selected workspace. (Cannot be updated in Edit Mode) 10 / 150

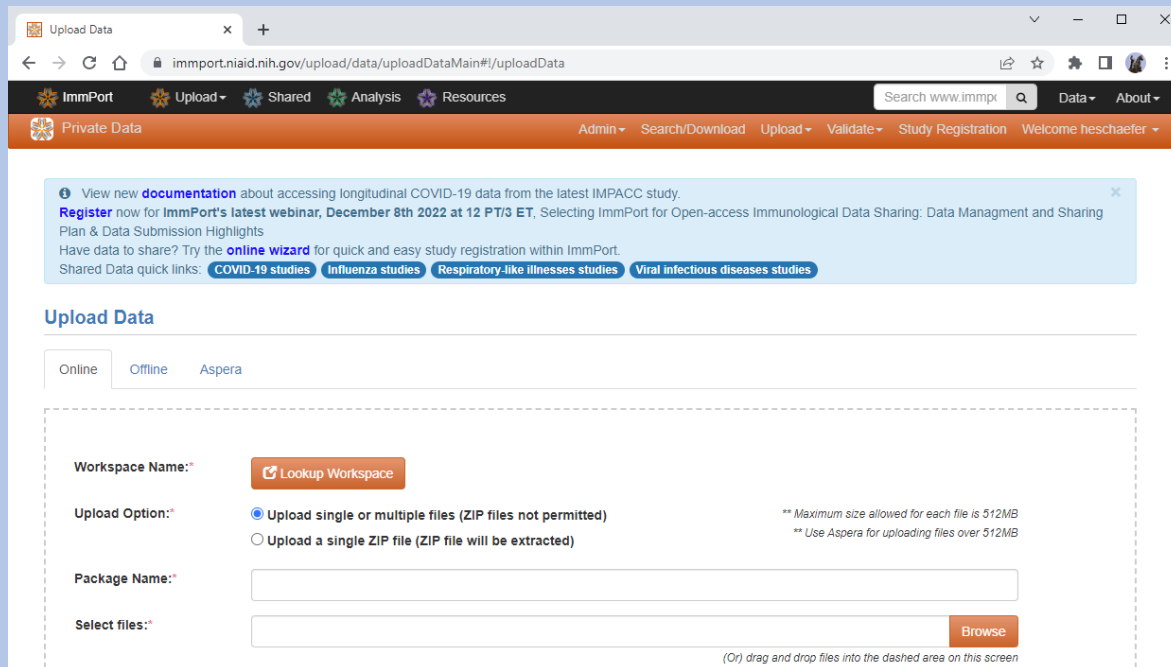
Brief Title/Study Title * [?](#)
0 / 250

Study Official Title [?](#)
0 / 500

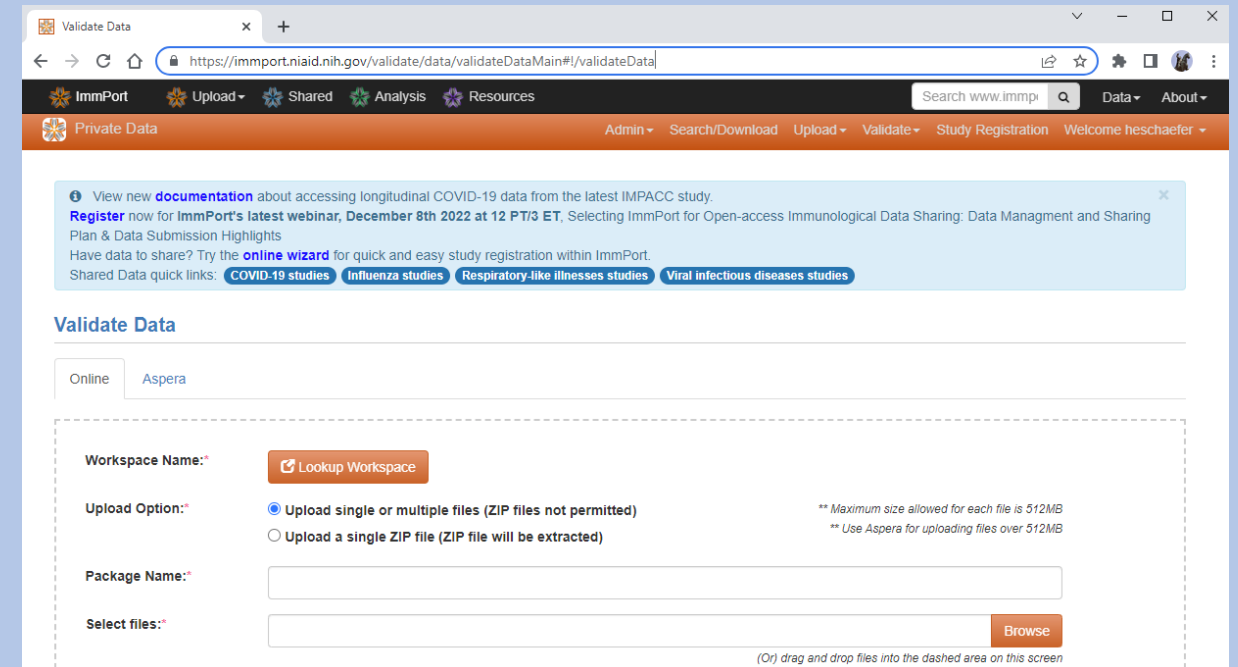
Sponsoring Organization * [?](#)
0 / 250

Brief Description * [?](#)
0 / 4000

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 of the ImmPort website. The browser address bar displays 'import.niaid.nih.gov/upload/data/uploadDataMain#!/uploadData'. The navigation bar includes links for ImmPort, Upload, Shared, Analysis, Resources, and a search bar. Below the navigation bar, there's a section for 'Private Data' with links for Admin, Search/Download, Upload, Validate, Study Registration, and Welcome heschaefer. A blue banner at the top contains information about COVID-19 data and a webinar. The main content area is titled 'Upload Data' and features tabs for 'Online', 'Offline', and 'Aspera'. The 'Online' tab is selected. Below the tabs, there's a dashed box containing the upload form. The form includes fields for 'Workspace Name' (with a 'Lookup Workspace' button), 'Upload Option' (with radio buttons for 'Upload single or multiple files (ZIP files not permitted)' and 'Upload a single ZIP file (ZIP file will be extracted)'), 'Package Name' (a text input field), and 'Select files' (a file selection area with a 'Browse' button). A note at the bottom of the dashed box says '(Or) drag and drop files into the dashed area on this screen'.



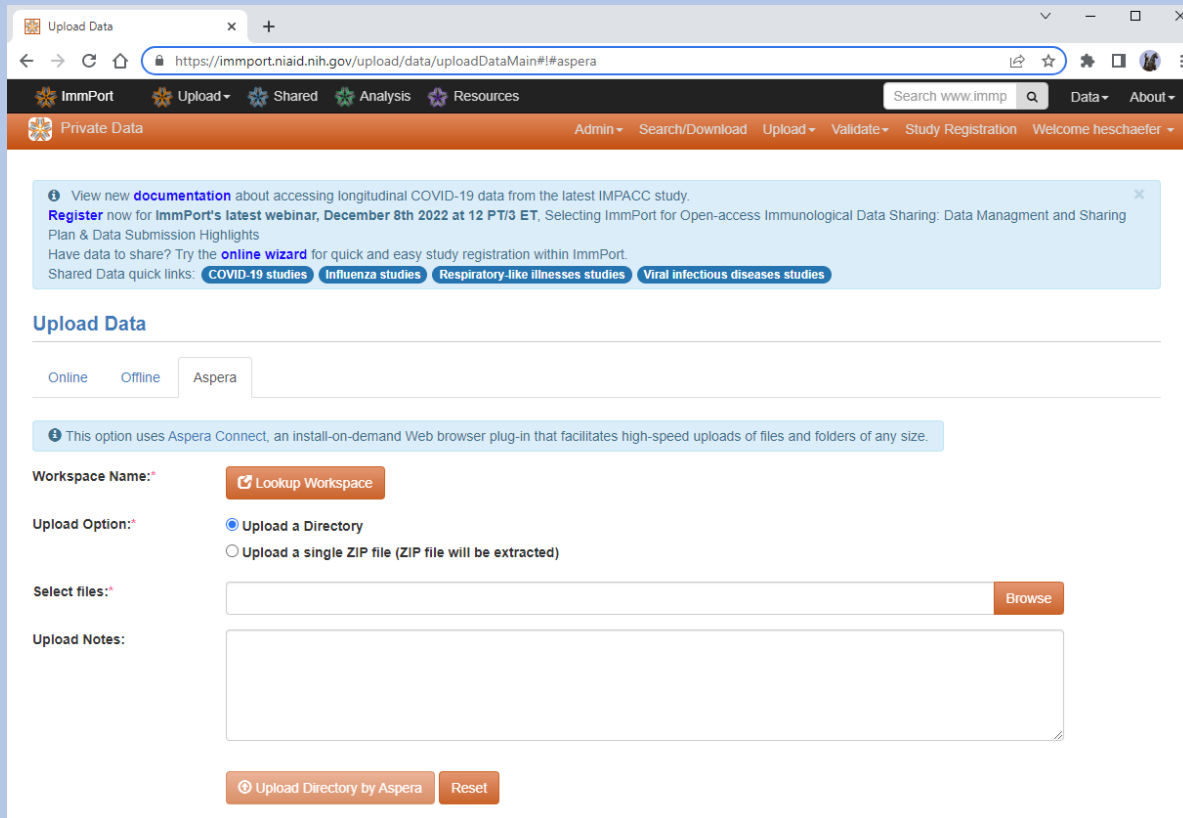
The screenshot shows the 'Validate Data' page of the ImmPort website. The browser address bar displays 'https://import.niaid.nih.gov/validate/data/validateDataMain#!/validateData'. The navigation bar and 'Private Data' section are identical to the 'Upload Data' page. The main content area is titled 'Validate Data' and features tabs for 'Online' and 'Aspera'. The 'Online' tab is selected. Below the tabs, there's a dashed box containing the validation form. The form includes fields for 'Workspace Name' (with a 'Lookup Workspace' button), 'Upload Option' (with radio buttons for 'Upload single or multiple files (ZIP files not permitted)' and 'Upload a single ZIP file (ZIP file will be extracted)'), 'Package Name' (a text input field), and 'Select files' (a file selection area with a 'Browse' button). A note at the bottom of the dashed box 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



The screenshot shows the ImmPort website's upload interface. At the top, there's a navigation bar with 'ImmPort', 'Upload', 'Shared', 'Analysis', and 'Resources'. Below this is a search bar and a 'Data' dropdown. The main content area has a blue banner with information about COVID-19 data and a 'Register' button. Below the banner, there's a section titled 'Upload Data' with tabs for 'Online', 'Offline', and 'Aspera'. The 'Aspera' tab is selected. A message states: 'This option uses Aspera Connect, an install-on-demand Web browser plug-in that facilitates high-speed uploads of files and folders of any size.' Below this, there's a 'Workspace Name' field with a 'Lookup Workspace' button. The 'Upload Option' section has two radio buttons: 'Upload a Directory' (selected) and 'Upload a single ZIP file (ZIP file will be extracted)'. There's a 'Select files' field with a 'Browse' button. At the bottom, there's an 'Upload Notes' text area and two buttons: 'Upload Directory by Aspera' and 'Reset'.

Upload Data

Online Offline Aspera

This option uses Aspera Connect, an install-on-demand Web browser plug-in that facilitates high-speed uploads of files and folders of any size.

Workspace Name: [Lookup Workspace](#)

Upload Option:

☒ Upload a Directory

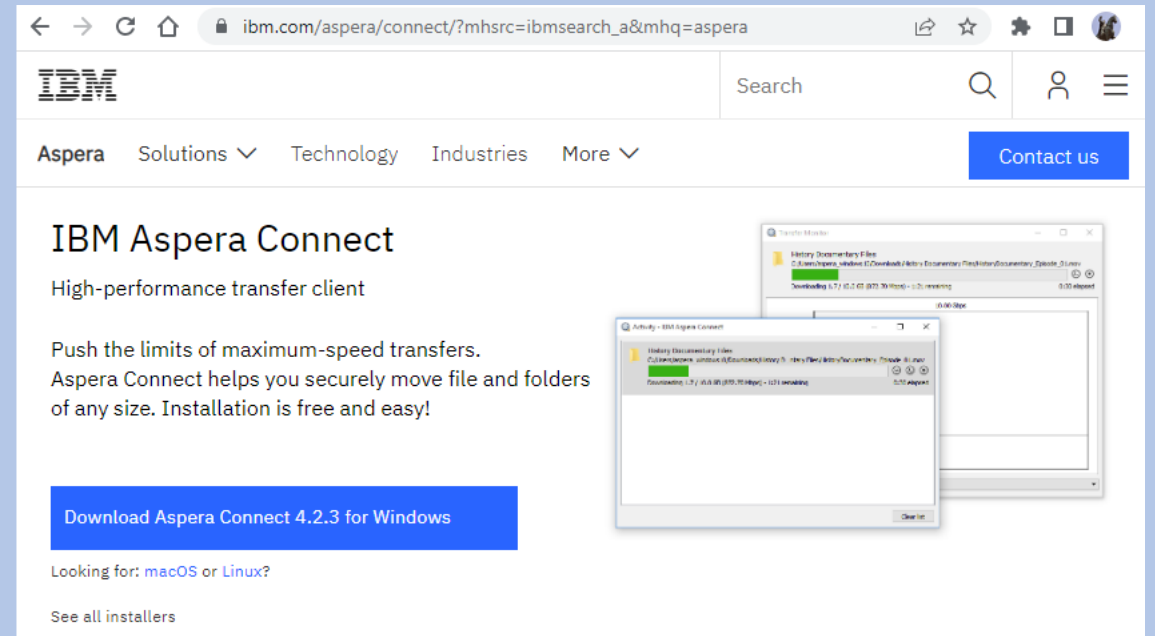
☐ Upload a single ZIP file (ZIP file will be extracted)

Select files: [Browse](#)

Upload Notes:

[Upload Directory by Aspera](#) [Reset](#)

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



The screenshot shows the IBM Aspera Connect website. The header includes the IBM logo, a search bar, and navigation links for 'Aspera', 'Solutions', 'Technology', 'Industries', and 'More'. A 'Contact us' button is in the top right. The main content area features the title 'IBM Aspera Connect' and the subtitle 'High-performance transfer client'. Below this, a paragraph states: 'Push the limits of maximum-speed transfers. Aspera Connect helps you securely move file and folders of any size. Installation is free and easy!'. A large blue button says 'Download Aspera Connect 4.2.3 for Windows'. Below the button, it says 'Looking for: macOS or Linux?' and 'See all installers'. On the right side, there are two overlapping window screenshots showing file transfer progress.

IBM

Search

Aspera Solutions Technology Industries More

Contact us

IBM Aspera Connect

High-performance transfer client

Push the limits of maximum-speed transfers. Aspera Connect helps you securely move file and folders of any size. Installation is free and easy!

[Download Aspera Connect 4.2.3 for Windows](#)

Looking for: macOS or Linux?

[See all installers](#)

<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
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

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		

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

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

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	Treatment
ES1033737	FACTOR_439639_GEO_ES	1
ES1033738	FACTOR_700990_GEO_ES	1

Shared Public Data

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

EXPSAMPLE_ACCESSION	EXPERIMENT_ACCESSION	RESULT_SCHEMA
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 image shows two screenshots of NCBI websites. The top screenshot is the Gene Expression Omnibus (GEO) homepage (ncbi.nlm.nih.gov/geo/). It features the NCBI logo, navigation links (GEO Home, Documentation, Query & Browse, Email GEO), and a search bar. The bottom screenshot is the National Library of Medicine (NLM) Sequence Read Archive (SRA) homepage (ncbi.nlm.nih.gov/sra). It features the NIH logo, a search bar, and a banner for SRA data available on the cloud. Two black arrows originate from the spreadsheet: one points from the 'Experiment ID' column to the GEO homepage, and the other points from the 'Reagent ID(s)' column to the SRA homepage.

ncbi.nlm.nih.gov/geo/

NCBI Resources How To Sign in to NCBI

GEO Home Documentation Query & Browse Email GEO

Gene Expression Omnibus

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.

Keyword or GEO Accession Search

ncbi.nlm.nih.gov/sra

An official website of the United States government: Here's how you know

NIH National Library of Medicine National Center for Biotechnology Information Log in

SRA SRA Advanced Search Help

SRA - Now available on the cloud

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	Humoral

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 ; hANXA5 ;			
									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, MADELINE 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_singles_P42.fcs	190BCKG 140Ce_Beads Center hCD80/161Dy 162Dy hNCAM1/163Dy 164Dy_Ikba hFCGR3A/166Er hCD38/167Er hCD8A/168Er hCD3E/170Er hIL3RA/151Eu hs	190BCKG 140Ce_Beads Center 161Dy_CD80 162Dy 163Dy_CD56 164Dy_Ikba 166Er_CD16 167Er_CD38 168Er_CD8 170Er_CD3 151Eu_CD123_ 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

ImmPort Search

immport.org/shared/search?text=kidney%20transplantation&

ImmPort Upload Shared Analysis Resources

Search www.immport.org Data About

Shared Data Data Catalogs Data Model Help

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](#)

FILTERS

Study Facets

- Research Focus
- Condition or Disease
- Biosample Type
- Assay Methods
- Program Name
- Study Accession

Subject Demographics

- Age (Years)
- Ethnicity
- Gender
- Race
- Species

Miscellaneous

- Is Clinical Trial
- Has Lab Tests
- Has Assessments Tests

kidney transplantation

Studies(72) Subjects (18831)

Facet Charts

Research Focus

Oncology
Infection
Response
Vaccine
Response
Immune
Response
Autoimmune
Transplantation

Condition or Disease

Kidney failure
SARS
COVID-19
HIV
Pancreatic
type 1 diabetes

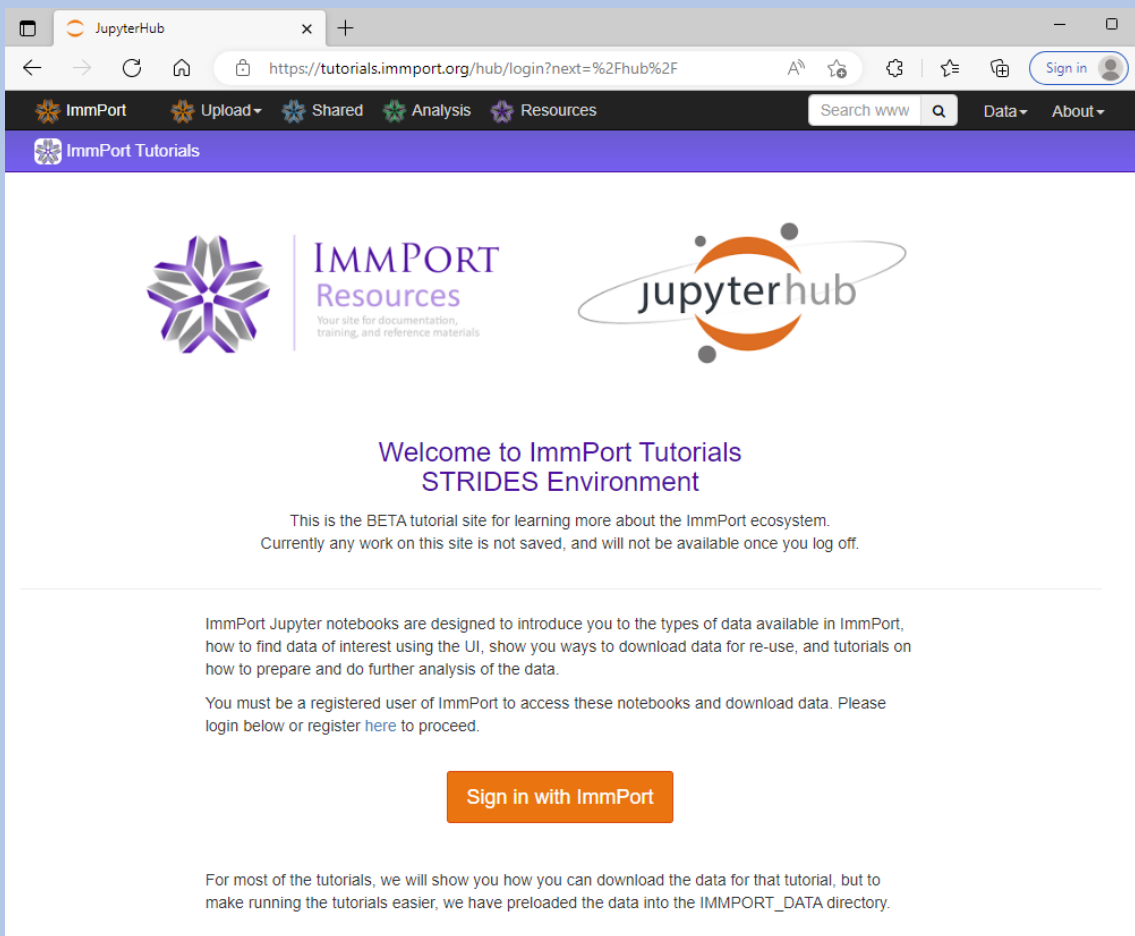
Assay Methods

Protein microarray
PCR
Flow Cytometry
ELISA
Q-PCR

Found 72 studies in 26 ms 7 columns selected Download All Studies Cart Export

	Study	Title	Pubmed Id	Research Focus	Condition/Disease
<input type="checkbox"/>	SDY1425	Optimization of Belatacept Usage As A Means of Avoiding CNI and steroids in Renal Transplantation (CTOT-10)	28556519	Transplantation	Kidney Transplantation
<input type="checkbox"/>	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's a navigation bar with links for ImmPort, Upload, Shared, Analysis, and Resources. Below this, the ImmPort logo and the text "IMMPORT Resources" are displayed. The main heading reads "Welcome to ImmPort Tutorials STRIDES Environment". A message 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." Below this, a paragraph explains 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 a registered user of ImmPort to access these notebooks and download data, with a link to login or register. A prominent orange button labeled "Sign in with ImmPort" is centered. At the bottom, a note states that for most tutorials, data is preloaded into the IMMPORT_DATA directory.

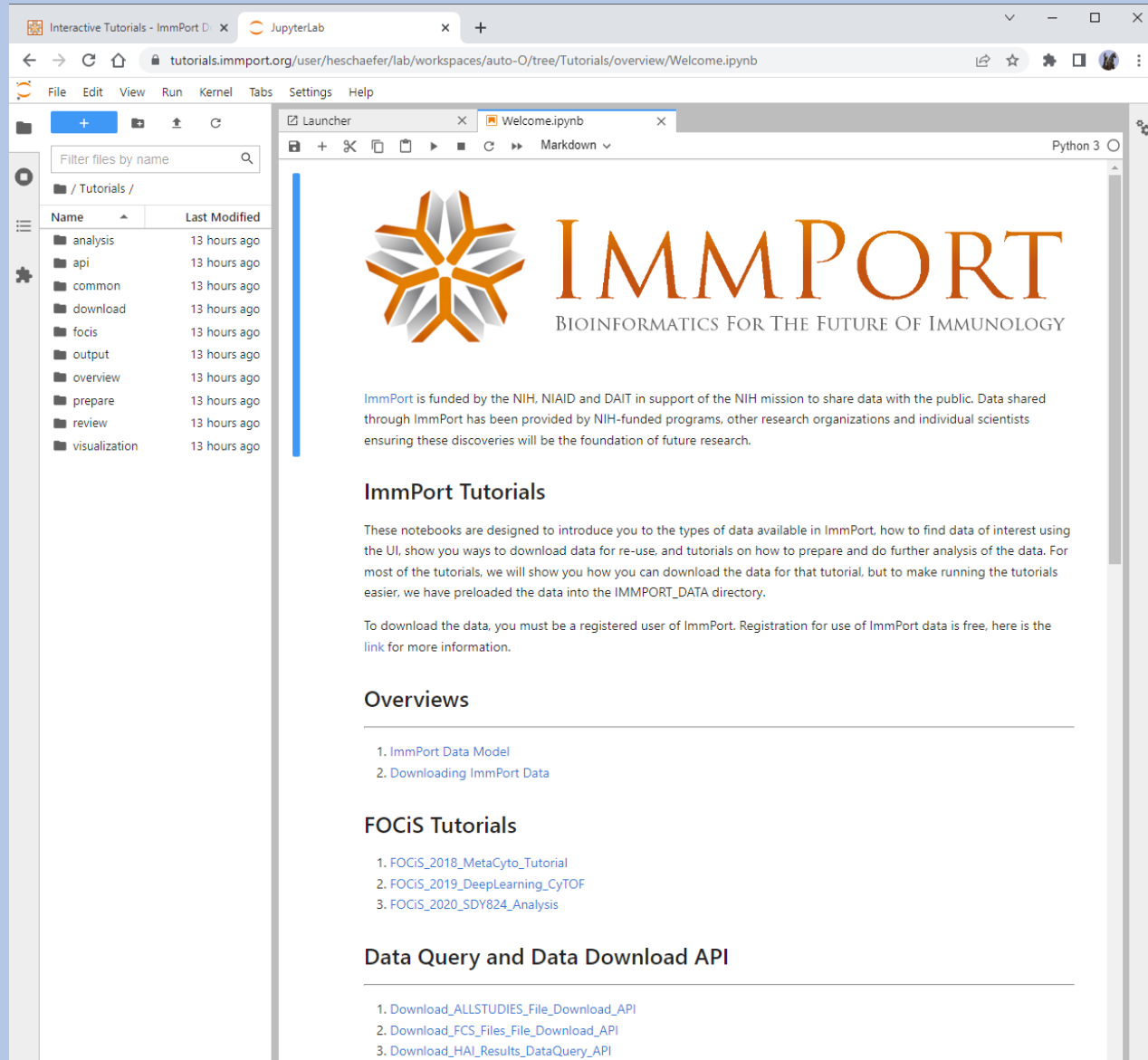
ImmPort Jupyter notebooks are designed to introduce you to the types of data available in ImmPort, how to find data of interest using the UI, show you ways to download data for re-use, and tutorials on how to prepare and do further analysis of the data.

You must be a registered user of ImmPort to access these notebooks and download data. Please login below or register [here](#) to proceed.

[Sign in with ImmPort](#)

For most of the tutorials, we will show you how you can download the data for that tutorial, but to make running the tutorials easier, we have preloaded the data into the IMMPORT_DATA directory.

tutorials.immport.org



The screenshot shows the ImmPort JupyterLab interface. The left sidebar displays a file tree for the "Tutorials" directory, listing files like analysis, api, common, download, focus, output, overview, prepare, review, and visualization, all marked as "13 hours ago". The main content area shows the "Welcome.ipynb" notebook. The notebook content includes the ImmPort logo and the text "IMMPORT BIOINFORMATICS FOR THE FUTURE OF IMMUNOLOGY". A paragraph 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." Below this, the "ImmPort Tutorials" section explains that the 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. It also mentions that data is preloaded into the IMMPORT_DATA directory. A note states that users must be a registered user of ImmPort to access these notebooks and download data, with a link to login or register. The "Overviews" section lists two items: "1. ImmPort Data Model" and "2. Downloading ImmPort Data". The "FOCiS Tutorials" section lists three items: "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 three items: "1. Download_ALLSTUDIES_File_Download_API", "2. Download_FCS_Files_File_Download_API", and "3. Download_HAI_Results_DataQuery_API".

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.

ImmPort Tutorials

These notebooks are designed to introduce you to the types of data available in ImmPort, how to find data of interest using the UI, show you ways to download data for re-use, and tutorials on how to prepare and do further analysis of the data. For most of the tutorials, we will show you how you can download the data for that tutorial, but to make running the tutorials easier, we have preloaded the data into the IMMPORT_DATA directory.

To download the data, you must be a registered user of ImmPort. Registration for use of ImmPort data is free, here is the [link](#) for more information.

Overviews

1. [ImmPort Data Model](#)
2. [Downloading ImmPort Data](#)

FOCiS Tutorials

1. [FOCiS_2018_MetaCyto_Tutorial](#)
2. [FOCiS_2019_DeepLearning_CytoF](#)
3. [FOCiS_2020_SDY824_Analysis](#)

Data Query and Data Download API

1. [Download_ALLSTUDIES_File_Download_API](#)
2. [Download_FCS_Files_File_Download_API](#)
3. [Download_HAI_Results_DataQuery_API](#)

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**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

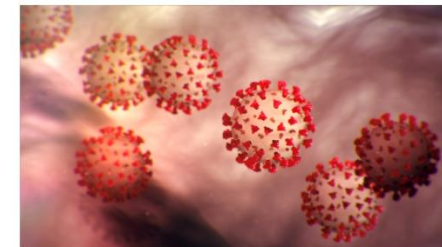


Image CDC Coronavirus Disease 2019 – COVID 19, Alissa Eckert

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/>