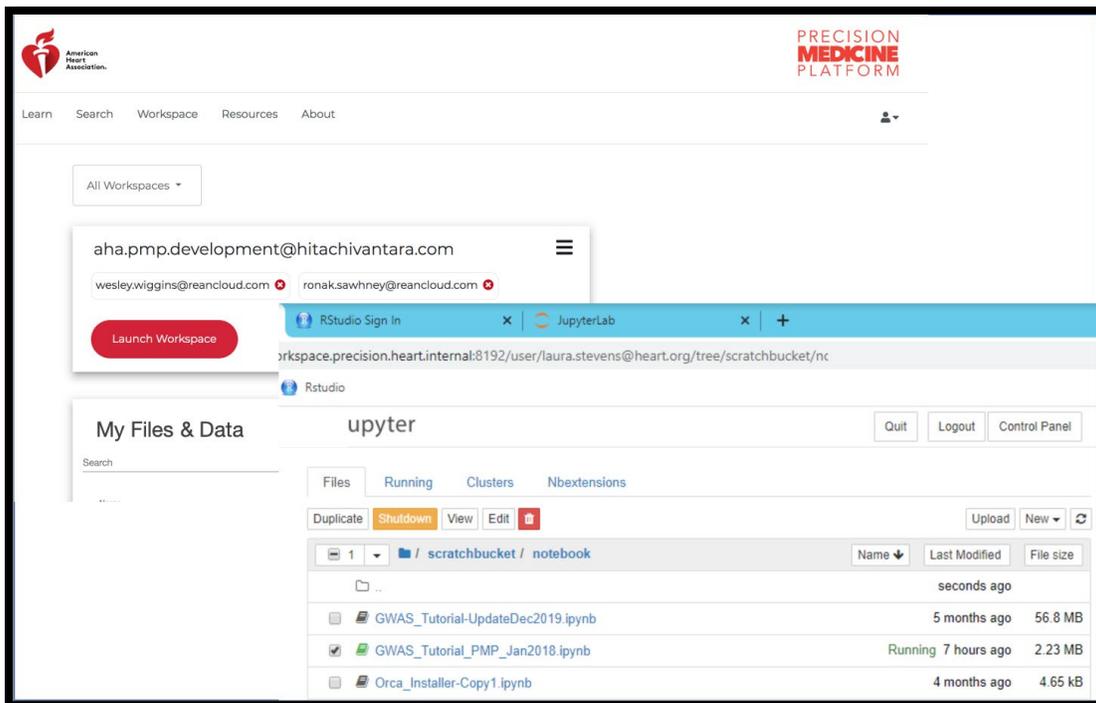# Precision Medicine Platform

Frequently Asked Questions

The research environment is changing at a rapid pace with a push for open data, following the FAIR guiding principles for scientific data management and stewardship – Findable, Accessible, Interoperable and Reusable. The American Heart Association (AHA) is deeply committed to providing a FAIR and *secure* resource that is in alignment with the data use and privacy policies that accompany data. We recognize that not all researchers, clinicians, hospitals, or universities have the resources to establish long-term studies or registries nor do they have the computing infrastructure and data analysis tools equipped with machine learning, deep learning or Artificial Intelligence capabilities. The AHA is stepping up to meet the challenges by providing grantees access to the AHA Precision Medicine Platform.

Q. What is the AHA Precision Medicine Platform (PMP)?

A. The AHA Precision Medicine Platform is a cloud-based data marketplace with secure, private workspaces equipped with data analysis tools. The Precision Medicine Platform uses a combination of security measures that meet or exceed FISMA low, FedRAMP low and HIPAA requirements, providing users with a comprehensive security, quality, and privacy framework.

- Learn more about the Precision Medicine Platform here
- Explore the capabilities of Precision Medicine Platform workspaces here

Q. What exactly is the cloud?

A. The cloud is a network of remote servers hosted on the internet and used to store, manage, and process data in place of local servers and personal computers. This technology provides increased scalability and accessibility to facilitate work on large, complex datasets in a much faster time span than was previously possible with conventional computing.

Q. How is the AHA Precision Medicine Platform different from what my university/institution provides me for my computational requirements?

A. The Precision Medicine Platform does not rely on local servers managed by a university or institution. The Precision Medicine Platform uses Amazon Web Services to provide its users an on-demand, secure cloud services platform – a virtual cluster of computers – offering computing power, database storage, data access, content delivery, and other functionality. This helps institutions scale and grow their research exponentially faster than they might on their own, while improving research accessibility to institutions with limited computing infrastructure. Users access this large-scale computing capacity quickly and inexpensively without the need to schedule or coordinate access as one might at an institution. Users can also share a workspace to collaborate on the same data sets and analyses in real time.

A major advantage of using a workspace on the AHA Precision Medicine Platform is the ability to use consistent computing environments, tools, and code developed and shared by others to analyze data. AHA data scientists can provide shared code to be used with many datasets to streamline data preparation and analyses. This code is shared via github as well as in the form of tutorials that are directly available in workspaces for users to simply hit "run."

Q. Is the workspace secure?

A. Yes. The AHA places critical importance on security as well as privacy. The Precision Medicine Platform uses an "envelope" approach to encrypt data at rest and in motion, which provides multiple layers of 256-bit encryption within a manageable framework. Key usage logs are monitored to meet all auditing, regulatory, and compliance needs. The platform is HIPAA and FISMA Low compliant and FedRAMP Low certified.
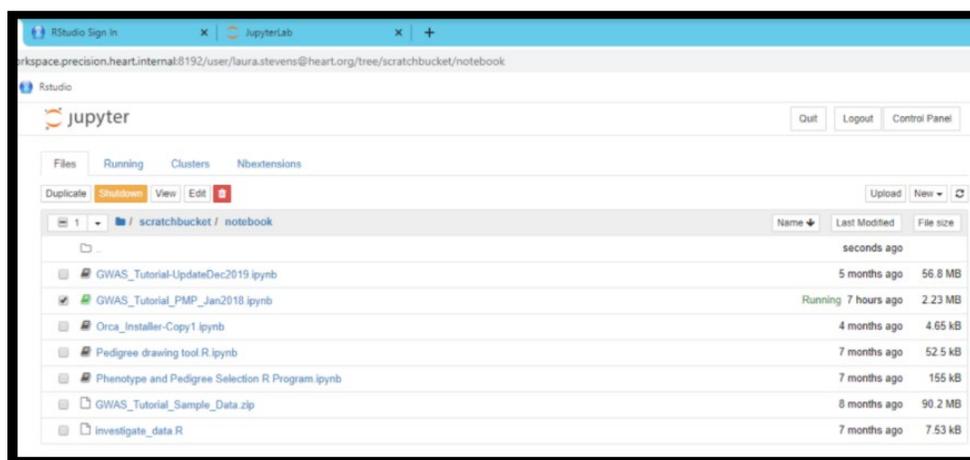
Q. What analysis tools are available?

A. A variety of analysis software is available on the Precision Medicine Platform including SAS, Python, R, and MATLAB. There are a plethora of machine learning and AI tools, as well as visualization and other tools available. Go here for a detailed list. The workspace is meant to provide flexibility.

Q. Is there a cost?

A. Yes, see Table 1 below. Awardees will receive up to $50,000 complimentary Amazon Web Services credits per year with access to a workspace on the Precision Medicine Platform during the term of the grant. The complimentary computational cloud credits are eligible for renewal each year of the grant. Grantees will be invoiced directly for the PMP annual license fee at the applicable and current rate in Table 1. Grantees may pay this license fee for maintaining the workspace using funds from the award.

Table 1. *Precision Medicine Platform Fees and Credits*

Grantee	PMP Annual License Fee for 2022	PMP Annual License Fee for 2023	Complimentary Computational Cloud Credits (Annual)
Early Career*	$875	$1,250	$50,000
Established	$3,500	$5,000	$50,000

*See footnote at end of document

Thanks to every single donor that contributes each year to the AHA, we are able to fund important research and accelerate scientific discovery. We are also building technology with strategic partners like Amazon Web Services that help keep costs low, while keeping you and your lab up to date and relevant with the tools being used by leaders in the marketplace today. These tools allow researchers to be prepared and competitive for the most recent grant applications.

Q. If I need training, what resources do you offer?

A. We offer office hours by request, tutorials, bimonthly PMP Forum seminars, and other self-learning programs to help you get started.

Q. Does the AHA offer data analytical services, statistical analysis, and/or artificial intelligence/machine learning assistance to support my grant application?

A. Yes. The AHA has an in-house data analysis team of experts available to collaborate on analyses for each user. The AHA Data Analysis Team will work with users to assess and understand the specific needs of each project and create a Statistical Analysis Plan that details the planned analysis, project deliverables, and estimated costs and timeline. These services are priced based on an hourly rate and grant applications must specify the percent effort in the budget and provide a budget justification. Our team is ready and willing to work with you to help provide preliminary analyses and a budget.

Q. Can I upload my own data?

A. Publicly available data can be accessed in a variety of ways on the Precision Medicine Platform, including downloading data directly and pulling/cloning data from repositories. Users may also bring their own de-identified datasets to the Precision Medicine Platform.
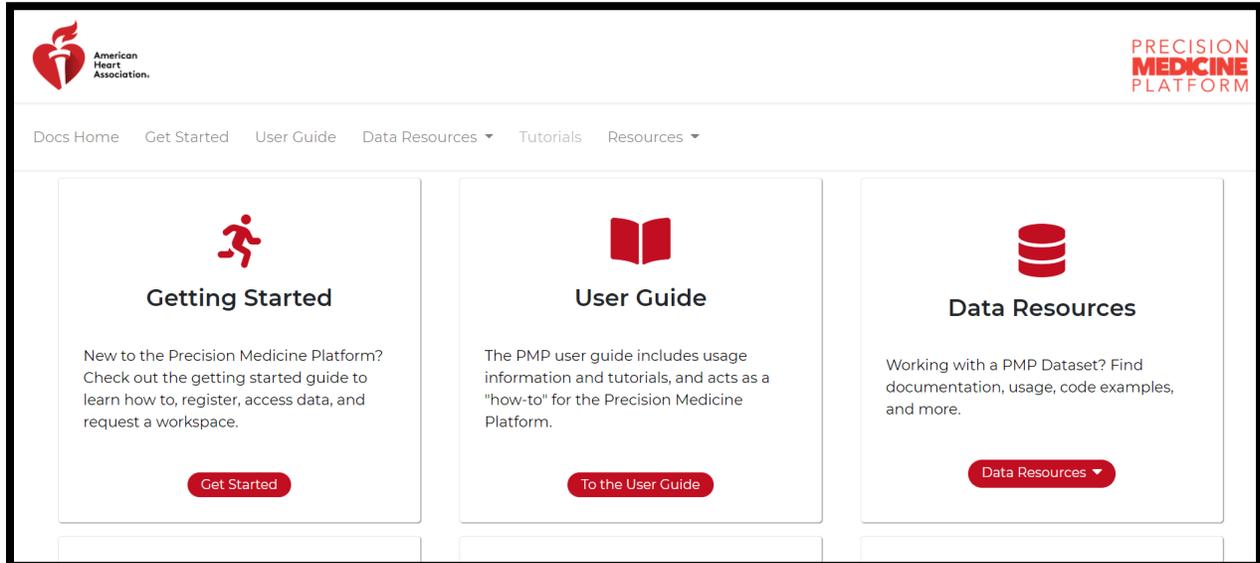
Q. What types of data are allowed on the Precision Medicine Platform?

A. Any type of data can be loaded onto the Precision Medicine Platform however, any patient, human subject, or other personal data must be de-identified. No PHI or PII data is to be loaded on to the Precision Medicine Platform.

Q. Are there limits to the amount of data I can upload onto the workspace?

A. No, the only limitations will be with your internet connection when uploading your data.

Q. I see datasets on the Search page. How do I determine if the datasets have what I need?

A. The Search page acts as a data marketplace and is designed to aid researchers in finding the datasets they need to conduct research, perform analyses or build analytic pipelines and tools. The layout consists of ring charts in the center, participant characteristic filters on the left, and the corresponding available datasets at the bottom of the page. The ring charts represent the total number of participants, by characteristic, that are searchable in the datasets listed at the bottom of the screen. The Notebook link next to each dataset can be used to understand the science behind the data, associated publications, information about the data contributor, how to access extra documentation, how each variable is harmonized, and the distribution and summary statistics of all the variables available in the dataset.

Q. Do I need a workspace to access the data found on the Search page?

A. Yes, the AHA serves as a trusted third party to ensure data security and privacy by facilitating the exchange between the data user and the data contributor on the Precision Medicine Platform. The process is streamlined through the Data Use Oversight System (DUOS), a system designed to manage user requests. DUOS is a semi-automated management service for compliant secondary use of human health data. The system ensures that researchers using

health data honor these restrictions. DUOS interfaces with the various data access committees (DAC) to evaluate data access requests requiring manual review.
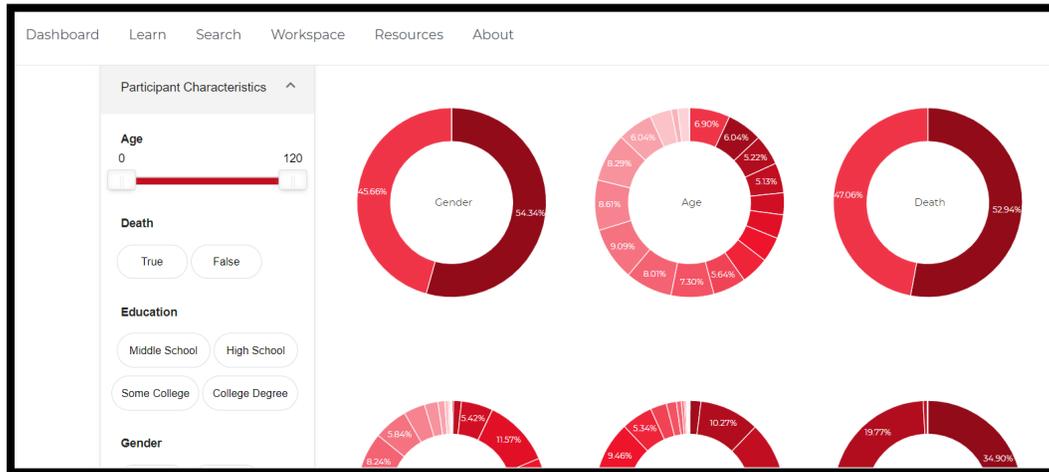
Q. Why isn't the Precision Medicine Platform on the list of approved repositories for the AHA Open Science Policy?

A. Not only do you need to register as a user of the Precision Medicine Platform to gain access to data and pay a fee for access, some of the Precision Medicine Platform datasets require approval for use/access, hence, the Precision Medicine Platform does not meet the guidelines of an 'Open Data' repository where everyone has free access to the data.

Table 1 Footnote:

Early Career Investigator includes the following:
- Predoctoral fellows pursuing a post-baccalaureate doctoral degree including PhD, MD, DNP, or equivalent clinical health science doctoral degree program
- Postdoctoral fellows including trainees with post-baccalaureate PhD, MD, DNP, or equivalent clinical health science doctoral degree program. This includes MDs who are current residents, fellows in training or have completed training within the last 5 years.
- Research or Clinical faculty/staff up to and including the rank of assistant professor (or equivalent) for which no more than five years have elapsed since the first faculty/staff appointment.

Please Contact Us if you have other questions.