

The American Heart Association Institute for Precision Cardiovascular Medicine Data Grants Portfolio Announcement

The American Heart Association (AHA) Institute for Precision Cardiovascular Medicine announces the new AHA Data Grant Portfolio with four new grants for clinical and population researchers, computer engineers and computational biologists. These Data Mining Grants, Methods Validation Grants, Innovative Development Grants, and Fellowship awards will be released over the course of the next 12 months, beginning in July 2016.

The AHA is a non-profit, voluntary health organization funded by private contributions. The mission of the AHA is to build healthier lives, free of cardiovascular diseases and stroke. These diseases remain the No.1 and No.5 killers of Americans, respectively. A leading priority of the AHA is to fund research that increases our understanding of the causes, prevention and treatments of cardiovascular diseases and stroke.

Amazon Web Services (AWS) is providing the computational storage and analysis for these grants on the AWS platform as part of the AHA Data Grant Portfolio. AWS provides a highly reliable, scalable, low-cost infrastructure platform that powers a million organizations and businesses throughout the world. The AWS Cloud is uniquely positioned to provide scalable cost-efficient solutions for the scientific community, while delivering industry-shaping technology and high-performance computing necessary to facilitate the most demanding research projects.

Introduction

The mission of the AHA Institute for Precision Cardiovascular Medicine is to integrate and enable research, education, and implementation in precision medicine for the cardiovascular and stroke communities. The goal is to create products and services enabling research and more precise approaches to cardiovascular and stroke research, prevention, and care. The collaboration with AWS marks a major new initiative for the AHA's Institute for Precision Cardiovascular Medicine.

In this funding announcement and Request for Applications; the AHA Institute for Precision Cardiovascular Medicine is looking to **award 14 grants over the next 12 months** focused in four areas: Data Mining, Methods Validation, Innovative Development and Fellowships.

Background

Driven by advanced methods of aggregating, integrating and analyzing patient data, precision cardiovascular medicine has the potential to improve, preserve and prolong health, as well as ultimately reduce overall healthcare costs.

The AHA Data Grant Portfolio will provide a secure environment for data mining, curation, harmonization and methods validation, as well as the development of unique tools. The portfolio utilizes cloud-based storage and computational tools.

For more information about the AHA's Institute for Precision Cardiovascular Medicine, please visit <http://institute.heart.org>.

For more information about the AWS Cloud please visit <https://aws.amazon.com/products/>.

Award Objectives and Characteristics

Through these grants and fellowships, the AHA and AWS hope to enable the scientific, mathematics and technology community to discover solutions to overcome the current obstacles in accessing and utilizing cardiovascular data.

The AHA will supply the funding for salaries, travel, and supplies. AWS has provided service credits to be used toward computational storage and analysis. AHA will offer four grant mechanisms to investigators:

- Innovative Development Grants (deadline January 31, 2017)**
- Data Mining Grants (deadline January 31, 2017)**
- Methods Validation Grants (deadline June 1, 2017)**
- Fellowships (deadline June 1, 2017)**

The Innovative Development Grants

Innovative Development Grants focus on developing tools that enrich our ability to identify novel approaches to analyze data.

- A **two year grant** focused in the area of **developing of innovative analytical tools and algorithms for “-omic” and phenotypic data related to cardiovascular risk and variables**. These grants are funded at \$50,000/year for a total cash amount of \$100,000 with an additional AWS service credit allocation of up to \$150,000/year for a total value of \$400,000. These grants are open to all scientists. Knowledge of, or collaboration with others in the field of computational biology and/or computer science is helpful. AWS service credit allocation can be applied towards the use of products listed at <https://aws.amazon.com/products>.
- Examples include
 - New tools for harmonization of phenotypic data;
 - New algorithms for defining new information with imaging data;
 - New algorithms for wearable devices;
 - New tools for voice recognition for health data;
 - Online informed consent tools.

Prizes

- A \$5,000 cash prize will be awarded to the investigator or team of investigators with an Innovative Development Grant that makes the most significant and impactful progress and accomplishments each year.

The Data Mining Grants

The Data Mining Grants focus on two topic areas:

- A **two year grant** focused in the area of **establishing practical standards for future connections, integration and interoperability with electronic healthcare record systems** funded at \$100,000/year for a total cash amount of \$200,000 with an additional AWS service credit for computational storage, user interface and analysis up to \$15,000/year, for a total value of \$230,000. AWS service credit

allocation can be applied towards the use of products listed at <https://aws.amazon.com/products>. A successful grant would provide standards as well as methods that can be translated across multiple cohorts / datasets for creating greater synergy, indexing and power between datasets and researcher collaboration.

- A **two year grant** focused in the area of **development of new methods for data curation/ harmonization** funded at \$100,000/year for a total cash amount of \$200,000 with an additional AWS service credit for computational storage and analysis up to \$150,000/year, for a total value of \$500,000. AWS service credit allocation can be applied towards the use of products listed at <https://aws.amazon.com/products>. A successful grant would provide new methodology to harmonize different types of data across cohorts. The goal is to critically test hypotheses with larger and larger datasets. Thus, the methodology and record keeping for harmonizing of data is exceedingly important. Detailed information around which data will be curated/harmonized and from which studies/cohorts, and how this data will be accessed will need to be included. Examples might be, “Metabolic phenotyping data including LDL, HDL and blood glucose from large cohort studies.

Prizes

- A \$10,000 cash prize will be awarded to the investigator or team of investigators who received a two year Data Mining Grant with the most significant and impactful progress and accomplishments each year.

The Data Mining Pilot Grants

- A **one year pilot grant** focused in the area of **innovation or proof of concept** funded at the cash amount \$50,000 with additional AWS service credit for computational storage and analysis up to \$75,000 for a total value of \$125,000. AWS service credit allocation can be applied towards the use of products listed at <https://aws.amazon.com/products>.

The goal of these grants is to focus on an area of data mining to identify associations, biomarkers, and/or risk factors in the realm of cardiovascular health and disease. Innovative grants may focus on novel associations, biomarkers and /or risk factors. Proof of concept grants may focus on replication or validation cohorts to further test an already identified association, biomarker, or risk factor. Applicants are asked to include data showing the population demographics, size, and potential limitations around the dataset as well as detailed information regarding the studies/cohorts proposed, and how this data will be accessed. Included in the application would also be sound methodology, statistics and descriptive detail about the cohorts. Examples of cohorts used might be federally funded cohorts as well as non-federally funded cohorts. The rationale of why this association/biomarker/risk factor is important should also be included.

Prizes

- A \$5,000 cash prize will be awarded to the investigator or team of investigators who received a one year Data Mining Pilot Grant with the most significant and impactful progress and accomplishments each year.

The Methods Validation Grants

The Methods Validation Grants which will focus on validating pre-existing methods including algorithms and analytic tools used to maximize the use of data in predicting outcomes.

- A **two year grant** focused in the area of **validating pre-existing models for analyzing multiple data sets to move precision medicine into clinical practice** and are funded at \$100,000/year for a total cash amount of \$200,000 with additional AWS service credit for computational storage and analysis up to \$150,000/year for a total value of \$500,000. AWS service credit allocation can be applied towards the use of products listed at <https://aws.amazon.com/products>. Detailed information around which data will be used and accessed will need to be included. Examples might include: using software suites, packages and open sourced algorithms or models to find new correlations among datasets.

Prizes

- A \$10,000 cash prize will be awarded to the investigator or team of investigators with a Methods Validation Grant that makes the most significant and impactful progress and accomplishments each year.

The Data Fellowships Award

Fellowship awards will cross-train scientists interested in learning computational biology or more information about specific cohorts.

- A **two year Award for fellows to be immersed within cohort studies or computational biology programs**. These fellowships will be funded at \$75,000/yr for a total cash amount of \$150,000 with an additional AWS service credit for computational storage and analysis up to \$50,000/yr for a grand total value of \$250,000. AWS service credit allocation can be applied towards the use of products listed at <https://aws.amazon.com/products>.

Objectives of Request for Applications

Approaches to conduct these inquiries could include but are not limited to the following:

Collaboration: The AHA Guiding Principles for research strongly supports enhancing the collaboration of investigators across disciplines (basic, clinical, translational, and population). If appropriate to the research questions being investigated in this application, AHA encourages the formation of multidisciplinary teams.

Training/Career Development: Training and development of early career investigators is one of AHA's major goals. To that end, applications for these funds should indicate how early career investigators will be included. Also required is an indication of departmental support to protect the investigator's time, goals for abstract presentations/manuscripts, and how trainees will utilize data from the project as preliminary data for future applications.

Study Data and Infrastructure: Data collected by investigators receiving funding will be required to be deposited into an AHA approved biorepository in compliance with our Open Science Policy.

Grant Qualifications

Faculty/ staff members conducting independent research at time of application. At application, principal investigator (PI) must hold an M.D., Ph.D., D.O. or equivalent terminal doctoral degree and must meet institutional requirements for grant submission. There are no field of study restrictions so long as the applicant demonstrates ability to complete the project proposal with the allotted time and money made available by the grant.

Other than the requirement that the principal Investigator be independent, eligibility for the AHA Data Grants are in no way restricted upon experience level or seniority. While no minimum percent effort is specified, the principal investigator must demonstrate that adequate time will be devoted to ensure successful completion of the proposed project. If the principal investigator is going to name collaborating investigators, their respective percentage effort must be documented.

Association research awards are limited to non-profit or public institutions, such as: medical, osteopathic and dental schools, veterinary schools, schools of public health, pharmacy schools, nursing schools, universities and colleges, public and voluntary hospitals and other non-profit institutions that can demonstrate the ability to conduct the proposed research. For Institute awards only, applications will be accepted from federal employees and Veterans Administration employees.

At the time of application, the principal investigator must have one of the following designations:

- U.S. citizen
- Permanent resident
- Pending permanent resident. Applicants must have applied for permanent residency and have filed form I-485 with the U.S. Citizenship and Immigration Services and have received authorization to legally remain in the United States (having filed an Application for Employment Form I-765).
- E-3 Visa - specialty occupation worker
- H1-B Visa - temporary worker in a specialty occupation
- J-1 Visa - exchange visitor
- O-1 Visa - temporary worker with extraordinary abilities in the sciences
- TN Visa - NAFTA Professional
- G-4 Visa - family member of employee of international organizations and NATO
- Hold a faculty position at a foreign University which meets foreign equivalency determinants for a non-profit in the United States.

Awardee must meet American Heart Association citizenship criteria and research status if at a foreign university throughout the duration of the award. Applicants are not required to reside in the U.S. for any period of time before applying for American Heart Association funding.

Fellowship Qualifications

Fellows included in the Institute Data Grants must hold a Ph.D., M.D., and D.O., D.V.M. or equivalent doctoral degree and commit at least 75% effort to research training. A fellow may not hold another fellowship award, although the institution may provide supplemental funding. Fellows may not hold a faculty or staff appointment, with the exception of M.D.s or M.D./Ph.Ds.' with clinical responsibilities. These fellows may hold a title of instructor or similar due to their patient care responsibilities, but must devote at least 75% effort to research training.

Fellows must have one of the following designations:

- U.S. citizen
- Permanent Resident
- Pending Permanent Resident (must have applied for permanent residency and have filed Form I-485 with the U.S. Citizenship and Immigration Services and have received authorization to legally remain in the U.S., having filed an Application for Employment Form I-765)
- E-3 Visa – specialty occupation worker

- H1-B Visa – temporary worker in a specialty occupation
- O-1 Visa – temporary worker with extraordinary abilities in the sciences
- TN Visa – NAFTA professional
- J-1 Visa – exchange visitor
- F-1 Visa – student
- G-4 Visa - family member of employee of international organizations and NATO All awardees must meet the citizenship criteria throughout the duration of the award.

Awardee must meet American Heart Association citizenship criteria throughout the duration of the Award. Applicants are not required to reside in the U.S. for any period of time before applying for American Heart Association funding.

Relevant Policies

Applicants must gain approvals from the appropriate governing body of the dataset owner. There are no restrictions on datasets that can be used other than being related to cardiovascular health. If the applicant intends to apply using **NHLBI funded data**, they may do so in accordance with NIH and NHLBI data access and data sharing policies.

1. Request controlled access to data through dbGaP/BioLINCC with approval from the study's Executive Committee or the study's described vetting process.
2. Store and access the approved specified dataset within a secure cloud framework - using AWS – following [NIH Guidance](#)
3. Develop the tools, algorithms and other work products outlined within the Data Grant type for which the applicant is applying.
4. Access to any BioLINCC or dbGaP - derived data must follow the respective BioLINCC or dbGaP data use agreements, including the outlined prohibition that states that the data cannot be deposited in another resource or transferred to unapproved third parties.
5. Controlled access and data use policies of the NHLBI are different from the open data policy below. Upon conclusion of the project, the data will not remain on the secure cloud framework. According to the NHLBI-funded studies' data access and data sharing policies as well as terms of the NHLBI-funded studies' data use agreement, the source data will either be destroyed or returned to its source.
6. AHA, AWS and grant awardees will not retain any rights to the source data.
7. Any new data, such as harmonized data, resulting during these awards from developing or applying the tools and algorithms may not be deposited in open access repositories; rather, NIH, NHLBI and NHLBI-funded studies policies must be followed.

Any further access to data used from these NHLBI-funded studies would need to be continuously regulated through BioLINCC and dbGaP. Controlled access and Data Use policies and practices must be adhered to and maintained throughout the duration of the project, including the standard provisions of data destruction and disposition terms consistent with those policies.

Awards are not intended to supplement or duplicate currently funded work. Rather, it is expected that submitted applications will describe projects that are clearly distinct from ongoing research activities in the

applicant's laboratory. Minor variations from existing research projects are not sufficient to constitute independent and distinct projects.

Awards are transferable to other institutions. The grantees will maintain fiscal responsibility for the entire award. The appropriate Institutional Officer should sign off on the proposal in AHA's online grants management system, Grants@Heart.

Other Relevant Policies

Open Science Policy:

Public Access: The AHA requires that all journal articles resulting from AHA funding be made freely available in PubMed Central within 12 months of publication. It will be the responsibility of the author to ensure this occurs.

Open Data: Any research data that is needed for independent verification of research results must be made freely and publicly available in an AHA approved repository within 12 months of the end of the funding period (and any no-cost extension). The programs that are currently exempt include Undergraduate Fellowships, Medical Student Research Fellowships, Pre-doctoral Fellowships, Postdoctoral Fellowships, Mentor/AHA Mentee Awards and Mentored Clinical and Population Research Awards. Please see AHA's Open Science Policy: http://professional.heart.org/professional/ResearchPrograms/AwardsPolicies/UCM_461225_Open-Science-Policy-Statements-for-AHA-Funded-Research.jsp

The projects described can have no scientific or budgetary overlap with other funded work. Any inventions, intellectual property, and patents resulting from this funding are governed by the AHA Patent, Intellectual Property and Technology Transfer Policy. The applicant/awardee and institution are responsible for compliance with all American Heart Association research award policies and guidelines for the duration of any awards they may receive. Go to Policies Governing All Research Awards to review AHA policies at http://professional.heart.org/professional/ResearchPrograms/AwardsPolicies/UCM_320256_Policies-Governing-All-Research-Awards.jsp

Application Submission Process

Only one application may be submitted per investigator for each grant mechanism. Multiple applications may be submitted from one institution.

Application instructions for the Institute's funding opportunities including Grants are at the American Heart Association's website:

http://professional.heart.org/professional/ResearchPrograms/ApplicationInformation/UCM_316909_Application-Information.jsp

Peer Review Criteria

Review of the applications will be conducted by the American Heart Association.

For the Data Grant Portfolio:

The following major factors will be considered in the evaluation of each Data Grant. These factors are

intended to assist applicants in determining the appropriateness of candidacy. All of these factors will be entered into the deliberations of the peer review committee.

Potential impact of the project on cardiovascular disease research including –omic research; strengths of applicant investigators (qualifications, expertise and productivity); potential for collaboration or synergy of projects; scientific content; background; preliminary studies; detailed specific aims; approach detail; analytical plan including sample size; data management; significance; innovation and overall scientific merit; Projects will be rated on the following areas:

- **Approach:** Are the conceptual framework, design, methods, and analyses adequately developed, well integrated, well-reasoned and feasible (as determined by preliminary data) and appropriate to the aims of the project? Does the applicant acknowledge potential problem areas and consider alternative tactics?
- **Innovation:** Is the project original and innovative? For example: Does the project challenge existing paradigms and address an innovative hypothesis or critical barrier to progress in the field? Does the project develop or employ novel concepts, approaches, methodologies, tools or technologies for this area?
- **Investigator:** Is the investigator appropriately trained and well suited to carry out this work? Is the work proposed appropriate to the experience level of the principal investigator and other researchers? Does the investigative team bring complementary and integrated expertise to the project (if applicable)?
- **Significance:** Does this study address an important problem broadly related to cardiovascular disease or stroke? If the aims of the application are achieved, how will scientific knowledge or clinical practice be advanced? What will be the effect of these studies on the concepts, methods and technologies that drive this field?
- **Environment:** Does the scientific environment in which the work will be done contribute to the probability of success? Do the proposed studies benefit from unique features of the scientific - environment, or subject populations, or employ useful collaborative arrangements? Is there evidence of institutional support?
- **Impact:** How does this project relate to and support the mission of the American Heart Association to **building healthier lives, free of cardiovascular diseases and stroke.**

For the Fellowships:

- **Training Plan/Approach:** Are the conceptual framework, design, methods and analyses adequately developed, well integrated, well-reasoned and feasibly appropriate to address the defined question? Does the applicant acknowledge potential problem areas and consider alternative tactics?
- **Sponsoring Cohort/Environment:** Is the sponsoring established cohort providing adequate support to the trainee and willing to support a cross-collaborative cohort effort to harmonize and curate data in a cloud-based computing environment?
- **BioSketch of Applicant:** We follow the NIH approved BioSketch format. You will have up to 5 pages to complete the BioSketch. Things you should consider will include the following questions: What level of experience does the trainee have in working with the established large cohorts? What level of experience does the trainee have in cloud computing/data analytics/data harmonization/data curation?

Human Subjects and Ethical Considerations

All applications are expected to adhere to American Heart Association research program policies and standards including those regarding the ethical treatment of human subjects, as well as the policy addressing inclusiveness of study populations relative to gender, race, age and socioeconomic status. Institutional review board approval will be handled on a “just in time” basis and will be required by the date of the first quarterly payment made to the institution. Funding is contingent upon institutional review board approval initially and for the duration of the award. Any ethical concerns identified via the review process shall be forwarded to the AHA Research Committee for consideration.

http://my.americanheart.org/professional/Research/FundingOpportunities/ForScientists/Policies-Governing-All-Research-Awards_UCM_320256_Article.jsp

Science Oversight

There are three science groups providing oversight to the Institute science activities: The Institute Executive Committee, the AHA Executive Committee and the AHA Board of Directors.

Program Evaluation

Preliminary measures of the success of the initiative have been identified. Each awardee will be required to provide an annual interim report, as well as a final written scientific report of progress. Progress made and plans for the coming year shall be addressed in these annual reports. Funded investigators will be asked to report on the following measures:

- Productivity of awardee - track publications and citations; document outcomes of research projects; document other funding resulting from the current initiative
- Transfer of intellectual property to the marketplace
- Other metrics as defined by the AHA.

AWS Service Credits

AWS service credits are applied to an individual AWS account and cover the usage of most AWS services. An AWS account may be obtained by signing up at the AWS website, <http://aws.amazon.com>. A credit card is required in order to activate an AWS account. Any use of AWS services and credits is governed by the AWS Customer Agreement at <http://aws.amazon.com/agreement> and the AWS Cloud Credits for Research Terms and Conditions at <http://aws.amazon.com/research-credit/terms/>. AWS credits may be used only for fees and charges incurred on or after the date the applicable credit code is applied to the account and only for the specific Services designated by AWS. A list of covered services can be found at <http://aws.amazon.com/research-credits/faq/>. Credits cannot be used for any fees or charges for Reserved Instances, Amazon Mechanical Turk, AWS Support, AWS Marketplace, Amazon Route 53 domain name registration or transfer, or any upfront fee for any Service.

Budget

Data Mining Grants

The Program will have a total budget of \$200,000. The AWS service credit will be viewed by the awardee as an “in-kind” donation to support the efforts of the principal investigator. AWS service credits are only valid toward AWS services.

Appropriate budget items include: Principal Investigator salary, fringe benefits, and project support are unrestricted in accordance with institutional and AHA policies.

Appropriate Budget Items: Salary and fringe benefits of the Principal Investigator, collaborating investigator(s), and other participants with faculty appointments. Project-related expenses, such as salaries of technical personnel essential to the conduct of the project, supplies, equipment, travel, publication costs, licensing fees incurred by premium solutions on the AWS Marketplace, and 10% institutional indirect costs. Fees must be justified as related to the project, however, there is no need to budget for the AWS service credits. As these are data heavy, we expect to see percentage effort broken down to equal 100%.

Duration: Two years.

The Awardee will be responsible for overseeing the total budget for his/her grant. If awarded, the Principal Investigator and the institution assume an obligation to expend grant funds for the research purposes set forth in the application and in accordance with all regulations and policies governing the grant programs of the American Heart Association.

Methods Validation Grants

The Methods Validation Program will have a total budget of \$200,000. The AWS service credit will be viewed by the awardee as an “in-kind” donation to support the efforts of the principal investigator. AWS service credits are only valid toward AWS services.

Appropriate budget items include: Principal Investigator salary, fringe benefits, and project support are unrestricted in accordance with institutional and AHA policies.

The Methods Validation Appropriate Budget Items: Salary and fringe benefits of the Principal Investigator, collaborating investigator(s), and other participants with faculty appointments. Project-related expenses, such as salaries of technical personnel essential to the conduct of the project, supplies, equipment, travel, publication costs, licensing fees incurred by premium solutions on the AWS Marketplace, and 10% institutional indirect costs. Fees must be justified as related to the project, however, there is no need to budget for the AWS service credits.

Duration of the Methods Validation Grants: Two years.

The Awardee of the Methods Validation Grants will be responsible for overseeing the total budget for his/her grant. If awarded, the principal investigator and the institution assume an obligation to expend grant funds for the research purposes set forth in the application and in accordance with all regulations and policies governing the grant programs of the American Heart Association.

Innovative Development Grants

The Innovative Development Grants Program will have a total budget of \$200,000. The AWS service

credit will be viewed by the awardee as an “in-kind” donation to support the efforts of the principal investigator. AWS service credits are only valid toward AWS services.

Appropriate budget items for the Innovative Development Grants Program include: Principal Investigator salary, fringe benefits, and project support are unrestricted in accordance with institutional and AHA policies.

Appropriate Budget Items for the Innovative Development Grants Program: Salary and fringe benefits of the Principal Investigator, collaborating investigator(s), and other participants with faculty appointments. Project-related expenses, such as salaries of technical personnel essential to the conduct of the project, supplies, equipment, travel, publication costs, licensing fees incurred by premium solutions on the AWS Marketplace, and 10% institutional indirect costs.

Duration of the Innovative Development Grants Program: Two years.

The Awardee of the Innovative Development Grants Program will be responsible for overseeing the total budget for his/her grant. If awarded, the principal investigator and the institution assume an obligation to expend grant funds for the research purposes set forth in the application and in accordance with all regulations and policies governing the grant programs of the American Heart Association.

Fellowship Awards

The Program will have a total budget of \$150,000. The AWS service credit will be viewed by the awardee as an “in-kind” donation to support the efforts of the principal investigator. AWS service credits are only valid toward AWS services.

Appropriate budget items: Salary and fringe benefits of the trainee, travel, health insurance and licensing fees incurred by premium solutions on the AWS Marketplace.

Duration: Two years.

The awardee will be responsible for overseeing the total budget for his/her grant. If awarded, the Principal Investigator and the institution assume an obligation to expend grant funds for research purposes set forth in the application and in accordance with all regulations and policies governing the grant programs of the American Heart Association.

Application Format Requirements and Submission

- The research project description should be no more than 5 pages in length, including figures, but excluding references;
- The application must include a plan, timeline, and list of milestones in the project description;
- For Fellowship awards: a letter of acknowledgement or support from applicant’s Mentor with the understanding Principal Investigator will take time away from other responsibilities to complete this fellowship;
- The application must include applicant’s BioSketch;
- Applications must be submitted using the AHA’s online submission portal available at Grants@Heart.

For more information regarding supporting documents that will be used to complete the application; visit



The Institute

for Precision Cardiovascular Medicine™

<https://research.americanheart.org/>

Inquiries

Inquiries regarding this RFA may be sent to: E-mail apply@heart.org
Phone 214-360-6107 (select option 1)