

Chan Zuckerberg Initiative

REQUEST FOR APPLICATIONS

Ancestry Networks for the Human Cell Atlas

The Chan Zuckerberg Initiative invites applications for three-year collaborative projects for the generation of healthy, single-cell reference data from ancestrally diverse tissue samples for the [Human Cell Atlas](#) (HCA). Read our [Medium post](#) to learn more.

OPPORTUNITY

Overview

The [Human Cell Atlas \(HCA\)](#) is a global effort to create a reference map of all cell types in the healthy human body in order to generate a fundamental reference for biomedical research and improve our understanding of health and disease. Progress over the past several years has resulted in advancement toward first drafts of many organs systems and tissues. However, gaps have emerged in reference data for tissues from ancestrally diverse donors across all atlas building efforts, including the HCA. This has introduced significant biases and limited utility for finding treatments for large classes of disease for segments of the population.

This Request for Applications (RFA) is intended to bring together teams of experts to 1) ethically and appropriately generate data derived from tissues from people whose ancestral groups are historically understudied and thereby expand the ancestral diversity of single-cell data that is available via the HCA, and 2) utilize best practices and build up systems to enable long-term engagement of potential participants and donors from diverse communities to contribute to the current and future drafts of the HCA. This work will help provide insights into the contribution of genetic ancestry to disease now and in the future, resulting in an atlas that may be [more generalizable and representative of the diversity](#) found in the global human population.

Project Specifications

This funding opportunity supports the continued growth of the HCA, with the aim of filling potential gaps in the first draft of the healthy reference atlas around ancestral groups that have been historically understudied in the biomedical sciences. While there are no specific quotas for this RFA, it is expected that all of the tissue will be from understudied populations. This RFA seeks to attract a new set of grantees primed to answer questions related to commonalities and potential differences in ancestry at the cellular level, as well as grantees with experience in

community engagement and building diverse cohorts, and/or access to ancestrally diverse donors and tissue.

This Ancestry Network should collectively generate new tools, open source analysis methods, and openly available data from ancestrally diverse donors across multiple tissue types that provide valuable contributions to the HCA community. Applications should focus on healthy human tissues that will contribute to the reference atlas. Community resources arising from the teams funded by this RFA must be accessible for rapid and open sharing via repositories such as Protocols.io, Addgene, GitHub, bioRxiv, or other open repositories. Samples must be collected in an ethical, equitable, and respectful manner in keeping with the customs, norms, and expectations of the donor communities. Raw sequencing data should be submitted to an archive that ensures maximum accessibility while being respectful of privacy, ethical, and cultural considerations of donors, particularly of marginalized populations.

The overarching scientific goals of this RFA are:

- Generate and share data that will contribute to healthy references for organs and tissues and will clarify potential differences across ancestry at the cellular level and with the potential for utility to understand differences in disease across ancestries;
- Increase diverse ancestral representation in datasets to generate references that will promote understanding of disease in populations and communities with increased incidence and disparities;
- Build international collaborations that promote coordinated and cohesive progress and contribute to the Human Cell Atlas;
- Identify and address shared methodological, computational, or infrastructural challenges to data generation, analysis, and incorporation into a global reference atlas;
- Collect and share biospecimens, in particular promoting solutions for challenges associated with ensuring ancestral diversity, engagement with understudied communities, and tissue storage for subsequent single-cell analysis; and
- Promote collaboration with other funded tissue networks and projects that are actively involved in the HCA as well as other CZI efforts, such as [Rare As One](#), [Inflammation](#), the [Neurodegeneration Challenge Network](#), [Essential Open Source Software](#), and others.

Specific project examples may include, but are not limited to:

- Focused data generation on single organs, tissues, or multiple organs from single donors from multiple or a single ancestral group/s;
- Opportunities to develop and share tissue resources that will support standards, protocols, and tissue access to researchers;
- Extending and improving ancestry ontologies standards;
- Developing experimental methods to efficiently capture genetic ancestry at the single-cell level;
- Benchmarking studies, systematic power analysis, or developing statistical methods and standards for confidently measuring and interpreting ancestral differences at the cellular level; and

- Scaling, dissemination, or expansion of community engagement or donor recruitment programs/models.

Definition of Understudied Population

Underrepresentation in clinical research can vary regionally and is greatly affected by local demographics. However, there are clear historical trends in [biomedical research and genomics studies](#) in particular that can be used to inform researchers as to which ancestries are not well represented in the corpus of biomedical literature and data. Applicants should provide a justification for why the particular ancestral group(s) they have selected falls into the category of understudied or is of particular interest. Which ancestral groups and organ/tissue to focus on should be driven by the scientific questions and a clear rationale for the importance and relevance to the HCA in filling in basic knowledge gaps in our understanding of the healthy human body. This RFA will not fund the acquisition and analysis of diseased tissue; however, priority will be given to applications in which the generation of healthy single-cell data has the potential to also inform our understanding of diseases that are neglected, understudied, underfunded, or have high prevalence or disparities in understudied populations. Access to a particular cohort or tissue source is an important factor but should not be the exclusive justification.

Community Engagement

There are many challenges around patient/donor recruitment, and in particular, of racial/ethnic groups that are a minority of the population in some localities. Patient and community engagement is critical for building trust and sustainable diverse donor pools. A community engagement plan is required. Applicants are strongly encouraged to develop and incorporate institutional-, departmental-, or laboratory-level patient/community engagement strategies to increase engagement of patients/donors from understudied racial, ethnic, and/or ancestral groups. The proposed strategies should be based on current best practices and include a plan for long-term sustainability after the grant period.

Applicants are encouraged to engage with their institutional core(s)/office(s) of community/patient engagement or outreach, if such offices exist, and obtain letters of support, if applicable. Partnering with non-institutional community-based organizations that interface with understudied communities is also allowed and encouraged. We also strongly encourage the inclusion of Co-PIs with expertise in community engagement and community-based participatory research. There is the expectation that appropriate levels of funding will be allocated to partners involved in the community engagement aspects of the work, demonstrating a commitment to true partnership.

Team Composition

This RFA aims to support collaborative teams of researchers that:

- Have access to established resources and protocols that are ready to be extended and scaled.
- Established team and new collaborations that will benefit from the experience of existing teams while bringing complementary and differentiated perspectives and resources.

- Will make contributions to the larger community via regular engagement and sharing of learnings, data, samples, and other resources.

Teams should consist of at least three principal investigators (PIs), including at least one computational biologist or data scientist and at least one single-cell biology expert. We strongly encourage that teams include community-engaged/community-based participatory researchers from any relevant discipline as Co-PI(s) to ensure that the research is sensitive to the needs of and connected with the participating donor communities. The engagement researchers are incorporated into this opportunity to help provide, promote, and build culturally competent connections with the research participants and members of their community in such a manner that they are empowered to participate in the Ancestry Networks research and also benefit from potential findings. As such, we strongly encourage the engagement researcher to act in the role of the Coordinating PI.

Because there are many different individual [HCA projects](#) and consortia supported by various funders, the HCA has organized into biological networks that coordinate organ/tissue specific projects. Teams are encouraged to [reach out to the HCA biological network\(s\)](#) that have relevance to their proposed project to learn about existing projects and potential collaborations. Applicants are also encouraged to [register their interest in contributing to the HCA](#).

One of the most direct ways to ensure that tissue donors are from diverse backgrounds is to support research groups that have team members located in ancestrally diverse geographies that have established tissue resources and cohorts of the local population. For this reason, investigators from the Global South with populations that have historically been underrepresented in biomedical research are encouraged to apply. In particular, international collaborations between investigators in the Global North and South that leverage regional and technological expertise and strengths are encouraged.

Collaboration and Open Science

All projects will be evaluated based on their potential for scientific output (productivity), tool and resource dissemination (reach), inclusion of representative donors and communities, and collaboration among the team. We are looking for investigators and groups who will enthusiastically contribute to and benefit from a collaborative, dynamic, and interdisciplinary approach. For examples of evidence of productivity, reach, and collaboration, please see the [CZI statement of values](#).

- In addition to providing funding, CZI functions as a scientific partner to investigators to help build the HCA. Investigators will have the opportunity to learn from, collaborate with, and interact with the community of investigators and groups across all Networks, as well as with CZI computational biologists and software engineers.
- CZI supports collaboration. All Principal Investigators listed on the application are expected to participate in meetings, reports, and other events. Networks should be genuine collaborative projects with responsibility and participation distributed across participating research groups. Members of funded labs with key roles in the project such

as students, postdocs, and staff, will also participate in scientific meetings, hackathons, and other activities.

- CZI's mission is at the interface of technology and science. Working in collaboration with, and guided by, other grantees in the Network and the wider HCA community, we aim to develop technology-based tools and approaches to support and accelerate the scope and impact of tissue atlases and the HCA community.
- CZI supports open science values and principles. To accelerate scientific discovery and collaboration, CZI supports a consent, sharing, and publication policy for open and rapid dissemination of research results and a policy for software development that maximizes accessibility, reuse, and shared development.

ELIGIBILITY

- Applications may be submitted by domestic and foreign nonprofit organizations, public and private institutions, such as colleges, universities, hospitals, laboratories, units of state and local government, and eligible agencies of the federal government. For-profit organizations are not eligible to apply. All grants will be awarded to institutions, not individuals.
- Organizations may be based in any country.
- There may be more than one application submitted by each organization.
- Each application should designate one Principal Investigator (PI) as the Coordinating Principal Investigator (Coordinating PI). The Coordinating PI will act as the administrative contact between CZI and all PIs on the grant (Co-PIs). The Coordinating PI must submit the application on behalf of all PIs. The Coordinating PI must be affiliated with the institution submitting the application, and grant funds will be awarded to that institution, which will take responsibility for distributing funds to any other institutions. Note that institutions outside the U.S. may not subcontract to U.S. institutions, so please be mindful when selecting the Coordinating PI/institution.
- Each application must have a minimum of three PIs (one Coordinating PI and two Co-PIs), but may designate up to 10 total PIs (one Coordinating PI and up to nine Co-PIs). If your application proposes more than 10 PIs, please contact sciencegrants@chanzuckerberg.com to explain and discuss how to submit the application.
- Principal Investigators may only serve as Coordinating Principal Investigator on one application.
- Principal Investigators may apply to join multiple Ancestry Networks applications, but will only be funded in a single final team. Should teams with overlapping PIs be selected as finalists, the teams will be asked to revise the members of their team such that each PI is only funded as a Coordinating PI or Co-PI on a single project. Collaboration and participation in multiple projects is allowed, but funding will be restricted to one project per PI.
- At least one Principal Investigator of the team must be a computational biologist or data scientist. The team is required to put forward a community engagement plan and is strongly encouraged to include community engagement researchers as PIs to help develop and implement the plan.

- PIs/Co-PIs on one application may be employed at the same or at different institutions.
- This funding opportunity aims to bring together collaborative teams with diverse expertise. The goal of understanding potential cellular-level differences and commonalities in tissue derived from donors from many different ancestries will benefit from diverse technical, social, and clinical expertise. Key areas of expertise are likely to come from individuals with deep knowledge and experiences that are not typically reflected in research proposals. We encourage this engagement and do not require a track record of funding or output in traditional academic research to be eligible.
 - PIs and Co-PIs must each be permitted to receive grant support by their institution. This criteria may be defined differently in different types of organizations. Examples of eligible positions are:
 - Tenure track faculty;
 - Non-tenure track faculty or staff scientists who lead a lab or are engaged in academic activities and are permitted to apply for grants by their institution;
 - Clinical teaching faculty, nurses, or researchers with expertise in community-based participatory research that are affiliated with or supported by an institution and permitted to apply for grants;
 - Researchers, advocates, and clinicians that hold roles at non-academic institutions who are permitted to apply for grants by their institution; and
 - Postdoctoral fellows who are permitted to apply for grants by their institution and apply through the institution at which they will conduct the research.
- Each investigator may apply as part of a team for both this RFA and the [CZI Pediatric Networks for the Human Cell Atlas RFA](#) (application period open from 1/19/21 to 3/30/21), provided that proposed scope of work for both applications are non-overlapping. Overlapping proposals or aims will not be eligible for both funding opportunities.
- Community-engaged researchers are encouraged to serve as Coordinating PIs for these networks.
- Early-career investigators are strongly encouraged to apply, as Coordinating PIs as well as Co-PIs.
- Women and individuals from underrepresented racial or ethnic groups are strongly encouraged to apply.
- Researchers from the Global South and low-to-middle income countries are strongly encouraged to apply and to be included as members of international collaborative networks.
- All grants will be made in compliance with the US Treasury Department's Office of Foreign Asset Control (OFAC) program. For additional information regarding OFAC sanctions, please refer to the [US Treasury Department's resources](#).
- Facebook employees, including employees of any subsidiary Facebook entities, are not permitted to apply for this grant.
- CZI reserves the sole right to decide if an applicant and applicant organization meet the eligibility requirements.

- CZI reserves the right to request budget changes prior to award.

CZI suggests that you consult your home institution to determine eligibility to apply for this grant and your institutional policy on indirect costs. For questions about eligibility for this award or the application process, please contact us in advance of the proposal deadline at sciencegrants@chanzuckerberg.com. Deadline extensions will not be granted.

APPLICATION REQUIREMENTS

Key Dates:

March 9, 2021:	Application portal opens
May 25, 2021:	Applications due by 5 p.m. Pacific Time
September 14 - 24, 2021:	Video call interviews of finalists
October 2021:	Earliest notification of decisions (subject to change)
December 1, 2021:	Earliest start date of award period (subject to change)

Award period and start date: Proposed projects should be three years in duration with a projected start date no earlier than December 1, 2021. Actual start date may vary.

Budget limits: Because varying projects require different resourcing levels, a budget limit has not been set on a per project basis. Proposed budgets should reflect the project scope. Indirect costs cannot exceed 15% of direct costs.

All applications must be completed and submitted through CZI's online grants management portal at <https://apply.chanzuckerberg.com>. It is recommended that applicants familiarize themselves with this portal well in advance of the application deadline. Detailed application instructions are available on the [Chan Zuckerberg Initiative website](#), as well as in the [grants management portal](#).

SELECTION PROCESS

The Chan Zuckerberg Initiative's [core values](#) center around people, technology, collaboration, and open science. We adhere to those values in both proposal selection and evaluation of progress.

CZI will evaluate all applications for scientific merit and will seek independent expert review. Finalists from the review process will be invited for a video interview with CZI staff and/or scientific advisors. As the dates for interviews are firm, we request that all applicants, including Co-PIs, maintain availability for September 14-17 and September 20-24, 2021 for these calls. Final decisions will be made by CZI staff in consultation with our scientific advisors. There is no expectation of any specific number of awards, as this will depend on team size and project budgets, and the Chan Zuckerberg Initiative reserves the sole right to not recommend the funding of any applications. CZI does not provide feedback on decisions for unfunded proposals.

Reporting & Progress: Annual reports will be required to ensure that the CZI Ancestry Networks for the HCA are progressing toward project deliverables. Measures of progress will include project deliverables and engagement with the community consistent with the selection criteria for proposals. These include:

- Depositing data to the HCA Data Coordination Platform ([DCP](#)) or an appropriate repository for raw data;
- Open sharing of processed data, such as count matrices, using tools such as [cellxgene](#) that make it possible for the scientific community to explore the data;
- Depositing software code to an open repository such as GitHub;
- Submitting or modifying protocols on protocols.io;
- Publishing results along with submission to open-access preprint servers (e.g. bioRxiv, medRxiv, aRxiv etc.); and
- Interacting with other Ancestry Network teams and efforts to develop generalizable tools and a common ancestry ontology and metadata schema. All investigators will meet annually. Computational groups will have dedicated hackathon-style meetings to identify common bottlenecks and work toward solutions that cut across all Network teams.

POLICIES

- Funds from this award are intended to support research activities. Grants are made to organizations to support the work of the named Principal Investigator, and reasonable flexibility on how these funds are utilized is allowed, provided that funds are used to support research activities related to the project. A detailed budget is required at the time of application.
- For awarded projects, financial statements and progress reports will be due at the conclusion of each grant year, and occasionally more frequently. Specific deliverable requirements will be outlined in the award notification. Grantees of funded projects will be required to participate in regular meetings, including annual scientist meetings (which may be in person or virtual). Travel support for these meetings will be provided by CZI separately from the requested grant funds.
- Grantees may obtain funds for their research from other funding sources, provided that there is no conflict with meeting the terms of the CZI award.
- Unused research funds may be carried over to the following year, and requests for no-cost extensions will be considered at the end of the overall project period and upon receipt of an annual report.
- Indirect costs cannot exceed 15% of direct costs. Indirect costs may not be assessed on capital equipment or subcontracts, but subcontractors may include up to 15% indirect costs of their direct costs.
- International grantees must use all grant funds exclusively for activities conducted outside the United States of America. Travel expenses to the United States must not be covered from the requested grant funds.
- **Ethical conduct:** CZI advocates the highest standards for the ethical conduct of research. In addition to requirements of their own countries, grantees must adopt procedures for the use of animals in research and for the ethical treatment of human subjects and tissue donors, including obtaining their or their appropriate proxy's written

informed consent. CZI regards the policies of the National Institutes of Health as a strong model for such procedures.

- **Data, publication, and dissemination policies:** To accelerate scientific discovery and collaboration, CZI supports a consent, sharing, and publication policy for open and rapid dissemination of proposal results, including methods, data, and reagents, and a policy for software development that maximizes accessibility, reuse, and shared development. Under rare circumstances, exceptions to the above may be considered where there are specific situations that make meeting these goals impossible or counterproductive to the project.
 - **Software code:** CZI requires sharing of software code developed by its grantees generally to be made publicly available on GitHub (or a similar public service). All new code must be released under a permissive open source license (MIT, BSD 2-Clause, BSD 3-Clause, or Apache v2.0). All pre-existing and derivative code must be licensed under the most permissive license possible, given the licensing terms of the pre-existing code. All analysis packages must be released through the appropriate language-specific package manager (e.g., PyPi for Python, Bioconductor and CRAN for R) with documentation, example data, and interactive demos (e.g., Jupyter notebooks), and the use of Docker or similar container technologies to ensure portability and reproducibility. Software code supported by CZI should be archived for [long-term digital preservation](#) and [citability](#), when applicable.
 - **Content and data sharing:** CZI is committed to developing and using platforms that disseminate data openly and freely. Any datasets either curated or generated through the proposal must be made as publicly available and easily accessible through an appropriate [data repository](#) as legally permissible, when applicable, under an [Open Definition conformant license](#). Ideally data sets would not include personally identifiable information, but if they do, consent to sharing the data must be obtained. Metadata, documentation, and intended use cases, as appropriate, must be made available under an Open Definition conformant license, preferably CC0 or CC BY/CC BY SA for content that requires explicit attribution.
 - **Publications:** To encourage rapid dissemination of results, any publications related to this funded work must be submitted to a preprint server (such as bioRxiv, medRxiv, arXiv, or any appropriate preprint repository), at or before the first submission to a journal. Experimental protocols must be made publicly available through a protocol sharing service, such as protocols.io. Scientific publications, preprints, and presentations that result from this award should acknowledge support from this funding.
 - **Reagent sharing:** Resources and reagents developed with this funding support must be available for rapid dissemination to the community, where possible in an accessible community repository, such as Addgene (for plasmids/DNA reagents/viruses) and Jackson Labs (for model systems lines), etc. This requirement applies to cell lines, transgenic organisms, plasmids/clones, antibodies, and other reagents.

- **Consent:** All human tissues must be adequately and fully consented to permit full sharing of the resulting data and any resulting tools, in accordance with laws and regulatory, or requirements. Any desired exceptions to this policy must be identified at the time of application, and such requests may affect the application's chance of success. We are aware that there may be circumstances where broad consent may be challenging, and in some cases consent may be subject to revocation; we encourage investigators to discuss these cases with CZI scientific staff. As a resource for researchers in the HCA community, the HCA has [provided ethics guidelines and developed an ethics toolkit](#) with template consent forms.
- **Intellectual property rights:** CZI does not require assignment of ownership to any data, published results, or any other intellectual property that results from the work funded by these grants but will have the same rights generally granted to others. CZI supports and promotes policies that enable results and technologies to have the broadest reach and impact. To this end, all newly developed software must be made available through permissive open source licenses as described more fully above. Other technology and intellectual property rights (such as patents) must be made freely available for all academic and non-commercial use, and where intellectual property rights are commercialized, they must generally be subject to non-exclusive commercial licenses that enable broad availability and dissemination.
- Applications selected through this process will either be funded by the Chan Zuckerberg Initiative Foundation (CZIF) or recommended for funding through the Chan Zuckerberg Initiative Donor-Advised Fund (CZI DAF) at the Silicon Valley Community Foundation (SVCF).

CONFIDENTIALITY

All submitted applications will be kept confidential, except (1) as necessary for our evaluation or to comply with any applicable laws; and (2) to the extent that the application is made public or available to others without a duty of confidentiality through no fault of CZI. Notwithstanding, successfully funded proposals may be made publicly available and/or shared with other grantees or collaborators. Unfunded proposals will remain confidential as provided herein; however, information, including brief summaries of the proposed projects, project metrics, and the types of organizations that have applied for funding, may be made publicly available in aggregate form. Application materials will not be returned to applicants.

RFA CONTACT

For administrative and programmatic inquiries, or other questions pertaining to this RFA, please contact sciencegrants@chanzuckerberg.com.

IMPORTANT DOCUMENTS

[Application Instructions](#)

[Institutional Approval Form](#)

Chan Zuckerberg Initiative

APPLICATION INSTRUCTIONS

Ancestry Networks for the Human Cell Atlas

Some helpful information as you get started:

- This document contains:
 - [General guidance on using the portal](#)
 - [How to submit an application](#)
 - [Application details specific to this Ancestry Networks RFA](#)
- Please review the [Request for Applications](#).
- The Chan Zuckerberg Initiative uses SurveyMonkey Apply (SMAppl) as its grants management portal. All applications must be submitted through this portal (<https://apply.chanzuckerberg.com>). SMAppl is configured to work best using the Google Chrome browser. It is recommended that you familiarize yourself with this portal well in advance of any deadlines. Deadline extensions will not be granted.
- **Key dates:**

March 9, 2021:	Application portal opens
May 25, 2021:	Applications due by 5 p.m. Pacific Time
September 14 - 24, 2021:	Video call interviews of finalists
October 2021:	Earliest notification of decisions (subject to change)
December 1, 2021:	Earliest start date of award period (subject to change)
- **Application specifics:**
 - **Eligibility:** Please refer to the [RFA announcement](#).
 - **Award Period:** Proposals should be three years in duration with a project start date of no earlier than December 1, 2021. Actual start date may vary.
 - **Budget:** Because varying projects require different resourcing levels, a budget limit has not been set on a per project basis. Proposed budgets should reflect the project scope and will be evaluated for appropriateness relative to the scope of work proposed. CZI will work closely with successful applicants to arrive at a mutually acceptable budget after review and incorporating reviewer feedback. Indirect costs cannot exceed 15% of direct costs.

- **Number of Principal Investigators:** Each application must have a minimum of three PIs (one Coordinating Principal Investigator and two Co-Principal Investigators (Co-PIs)), but may designate up to 10 total PIs (one Coordinating Principal Investigator and up to nine Co-PIs) in the application portal. If your application proposes more than 10 PIs, please contact sciencegrants@chanzuckerberg.com to explain and discuss how to submit the application.
- Institutional sign-off is required at the time of submission.

GETTING STARTED

Account setup: The applicant (Coordinating PI) must first set up an account in the CZI online grants portal at <https://apply.chanzuckerberg.com/>. Only the Coordinating PI needs to set up an account.

To set up an account:

1. Go to <https://apply.chanzuckerberg.com/>.
2. Click the green Register button in the upper right corner.
3. Complete the requested fields and then click the green Create Account button.
4. Click the green Continue button to proceed to the site.

Please note you will need to verify your account through the auto-email that you receive after registering. You will not be able to submit an application until your account is verified.

Personal data: Where we ask for personal data of individuals in grant applications, please only submit personal data that you have a right to provide. We will use and store any personal data collected through the application process for grant-related purposes (e.g., administering the grant, analyzing and improving our grant practices). The Chan Zuckerberg Initiative Foundation and Chan Zuckerberg, LLC (collectively "CZI") will be the "data controllers" for any such personal information, and the data may be stored on servers outside of your home country, including within the United States. If you have any questions or concerns regarding our privacy practices or collection or use of personal data, you can contact us at privacy@chanzuckerberg.com.

Navigating the portal: Once you have set up an account, you can log in to the grants portal at <https://apply.chanzuckerberg.com/>. Using the links in the upper right corner, you can access available programs (which includes RFAs for all CZI areas, not just Science) and any applications you have in preparation or previously submitted. Use the information ("i") link to get help with the portal. To access your account information, click on your name in the upper right. Your application will pre-populate with the name and email listed in your account information so if you need to edit it, click on your name in the upper right corner to make any necessary changes.

Forgotten username or password: If you have forgotten your username or password, please navigate to the grants portal at <https://apply.chanzuckerberg.com/> and click on the Log In link located in the upper right corner. Click the Forgot your password link and then enter the email address associated with your SMAApply account. You will then receive an email with information to reset your

password. Please note that your username is your email address.

Other questions: If you have other questions about using the portal, please use the information (“i”) link in the upper right corner of the window. If you have specific questions about the RFA, please contact us at sciencegrants@chanzuckerberg.com.

SUBMITTING AN APPLICATION

To submit an application:

1. Go to <https://apply.chanzuckerberg.com>.
2. Log in.
3. Click the green View Programs button that is displayed or click on the Programs link in the upper right corner. This will bring you to a listing of all programs/RFAs that CZI is hosting in SMAApply. To **find the program/RFA** you are looking for, you may need to scroll down.
4. Find the program/RFA you are interested in and click the green More button.
5. Click the green Apply button in the upper right and complete all sections (details below).
 - a. You will first be prompted to **enter the title** of your application, after which you will have access to the application tasks to complete. Project title is limited to 75 characters, including spaces. If you need to **edit your project title**, click on the My Applications link in upper right and click the green Continue button on the application you wish to edit. Once the application page opens, click on the three dots to the right of the application title (next to the Preview link) and select Rename from the dropdown menu.
 - b. The application is made up of several sections called tasks that are listed in a menu on the left side of the page. To **open a task**, click on the one you would like to work on. You can edit and complete tasks in any order. You may need to scroll down to see the remaining tasks.
 - c. Once you **complete a task**, click the green Mark as Complete button within the task. All tasks must be marked as complete before submitting. To **edit a task** after marking it as complete, click the three dots in the upper right of the task and select edit, which will re-open the task.
 - d. Your application will autosave every few seconds, but you can also click the Save & Continue Editing on each task as you go along to **save your application**.
 - e. In the tasks that require a PDF upload: If you need to **delete and replace a PDF** after you have uploaded it, click on the three dots to the right of the file under the Attach File section within the task and select Remove from the dropdown menu.
 - f. To **download your application**, click on the three dots in the upper right corner of the application page and select download. If you are within a task, first click on the Back to application link in the upper left. Please **be aware of any pop-up blockers** in your browser that may prevent downloading your application.
 - g. To **access an application that you have previously saved**, click on the My Applications link in upper right and click the green Continue button on the application you wish to edit.

6. Once all tasks are completed, click the green Submit button **to submit your application**.
 - a. If the button is grayed out, it means your application is not yet complete; please be sure all required fields and uploads are complete within each task and that you have clicked the Mark as Complete button within each task.
 - b. To **download your application**, click on the download link in the upper right corner. Please be mindful of **any pop-up blockers** that may be active in your browser that prevent/hide downloads.
 - c. Review your application in the window (or in the PDF that you have downloaded). If you want to make changes, navigate back to your application and reopen/edit any tasks that need editing. **It is strongly recommended that you download your application as a PDF (instructions above in b.) to review your application before clicking submit.**
 - d. Once you are **ready to submit**, click the green Submit Your Application button on the left side of the window. You will need to confirm your submission by clicking the green Submit button in the pop up window. **Once your application has been submitted, it cannot be edited. Please be sure that your application is complete BEFORE submitting.** If you inadvertently submit your application and it is before the deadline, please contact sciencegrants@chanzuckerberg.com.
7. Once your application is submitted, you will **receive an auto-email** confirming submission within a few minutes. If you do not receive a confirmation email within a few minutes, please check your spam folder. If you still did not receive your confirmation email, please email sciencegrants@chanzuckerberg.com.
8. If you would like to view your application after you have submitted it, it can be accessed through the My Applications link in the upper right corner.

The application consists of the following sections (called tasks in the grants portal):

Coordinating PI Details, Equal Opportunity & Diversity, Organization Details for Coordinating PI, Project Details, Project Proposal, Budget Description, Biosketches for Coordinating PI and Co-PIs, and Letters of Commitment.

- **Coordinating PI Details:** Complete all fields in this task; **all fields are required**. The information entered should be for the Coordinating Principal Investigator (Coordinating PI), who will be the person submitting the application on behalf of the team. The Coordinating PI will take responsibility for managing the group collaboration and be the administrative point of contact for CZI and any partners. Note that institutions outside the U.S. may not subcontract to U.S. institutions, so please be mindful when selecting the Coordinating PI/institution. Information about the Co-Principal Investigator(s) on the proposal should be entered where requested in the Project Details part of the application.
 - Name and email (auto-filled): To edit your name or email, please do so in your account information by clicking your name in the upper right corner and clicking My Account in the dropdown menu.
 - Degree(s).
 - Organization, Title/Position, Department or equivalent.

- Career status: Select early-career (0 to 6 years), mid-career (6+ to 10 years), or neither. **Note: Early- or mid- career status is not required to be eligible for this RFA, although we encourage participation and leadership from early-career researchers.**
 - Early-Career Definition: In the context of this RFA, an early-career investigator is someone who has been in an independent position for zero to six years at the time of application, i.e. have started their first independent position between May 25, 2015 and May 25, 2021.
 - Mid-Career Definition: In the context of this RFA, a mid-career investigator is someone who has been in an independent position for more than six to 10 years at the time of application, i.e. have started their first independent position between May 25, 2011 and May 25, 2015.
 - Short narrative biography of the Coordinating PI (maximum of 100 words).
 - Role on Project: Check all that apply: Single-Cell Expert, Computational Biologist, Community-Engaged Researcher.
 - ORCID iD: Enter in format XXXX-XXXX-XXXX-XXXX. ORCID iDs are unique, digital identifiers that distinguish individual scientists and unambiguously connect their contributions to science over time and across changes of name, location, and institutional affiliation. ORCID iDs will be used to streamline reporting in our applications and grant reports to reduce the burden on grantees. For more information, please visit <https://orcid.org/register>. (Please contact us at sciencegrants@chanzuckerberg.com if you wish to opt out).
- **Equal Opportunity & Diversity:** CZI Science supports the science and technology that will make it possible to cure, prevent, or manage all diseases by the end of this century. Everyone is affected by disease, yet different communities are affected by or experience disease in different ways. Moreover, due to systemic barriers, the scientific enterprise itself is not a place where all voices and talents thrive. We believe the strongest scientific teams — encompassing ourselves, our grantees, and our partners — incorporate a wide range of backgrounds, lived experiences, and perspectives that guide them to the most important unsolved problems. To enable our work, we incorporate diverse perspectives into our strategy and processes, and we also seek to empower community partners to engage in science.

We track demographic information associated with applications submitted to CZI in response to our open calls. This information helps us learn from the RFA process, as well as improve our strategies to help ensure members of underrepresented or marginalized groups in science are aware of and able to apply to CZI opportunities. **Please note that answering all questions below is voluntary, and demographic information will not be used to make final grant funding decisions.** All responses will be shared only with limited personnel, who will use that information only for the purposes described in this paragraph.

If you have any additional questions about why we ask this, what we do with the data, or to share suggestions for improvement, please reach out to sciencegrants@chanzuckerberg.com.

The information below may be entered for the Coordinating PI, who will be submitting the application on behalf of the team. **Please note that completing the below is voluntary, and demographic information will not be used to make final grant funding decisions.**

- What is your race/ethnicity? (optional)
- What is the year of your last academic degree? (optional)
- What is your gender? (optional)
- Are you transgender? (optional)
- Are you a member of the LGBTQ community? (optional)

The information below may be entered for the Co-Principal Investigators listed in the Project Details section. **Please note that completing the below is voluntary, and demographic information will not be used to make final grant funding decisions.** Please also let your Co-Principal Investigators know if you choose to enter the below in case they object to your providing that information to CZI.

- Do any of the Co-Principal Investigators self-identify as one of the following? Woman, Man, Non-binary/Third gender, Prefer not to state, Prefer to describe (optional)
 - If yes, how many of the listed Co-Principal Investigators self-identify as one of the above gender identities? **Please do not include requested information on a per person basis; we are looking for aggregated information (optional)**
- Do any of the Co-Principal Investigators self-identify as one of the following? Two or More Races, Black and/or African American, Asian, White, Hispanic or Latinx, Middle Eastern or North African, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, Prefer not to state, Prefer to describe (optional)
 - If yes, how many of the listed Co-Principal Investigators self-identify as one of the above race/ethnicities? **Please do not include requested information on a per person basis; we are looking for aggregated information (optional)**

- **Organization Details for Coordinating PI:** Complete all fields in this task; **all fields are required.** The information entered should be for the organization of the Coordinating Principal Investigator (Coordinating PI), who will be the person submitting the application on behalf of the team. The Coordinating PI must be affiliated with the organization listed, and grant funds will be awarded to this organization, which will take responsibility for distributing funds to the institutions of the other team members.
 - Organization name/Street address/City/State/Country/Website.
 - Type of Organization (Academic, Other Non-profit, Government, Other).
 - Tax ID: Enter your organization's Employer Identification Number (EIN), as assigned by the Internal Revenue Service in the 9-digit format (XX-XXXXXXX; 10 characters total). Foreign organizations or others who do not have an EIN should enter 44-4444444.
 - Organizational/Administrative Contact: List the name and contact information for the administrative contact to discuss additional information needed, if selected for award.
 - First name, Last name, Title/Position, Email.
 - Signing Official: List the name and contact information for the person authorized to sign on behalf of your organization.
 - First name, Last name, Title/Position, Email.

- Press Contact / Public Relations Official: List the name and contact information for the person to discuss press releases and media.
 - First name, Last name, Title/Position, Email.
- Institutional Approval Form: Upload as a single PDF. This [form](#) should be reviewed and signed by a person authorized to sign on behalf of your organization agreeing to the stated institutional and investigator requirements and commitments on data, resource sharing, and publication policies, as well as endorsing/verifying your application materials and confirming their ability to receive funding for the proposal. In the event of an award, all funds will be awarded to the Coordinating PI institution as the prime institution, and the Coordinating PI institution will be responsible for ensuring compliance of all of the terms, including compliance of all partners/subcontract institutions. **These policies are non-negotiable so this form should only be signed if the organization is able to comply with the terms as stated.** While CZI does not require sign-off by all of your partner institutions, please refer to what your institution requires. **Note: digital signatures are permitted as long as the document is not encrypted or password-protected.**
- **Project Details**: Complete all fields in this task; all fields are required.
 - Project Title: Auto filled; limited to 75 characters, including spaces. If you need to edit your project title, navigate to your application summary page, click on the three dots to the right of the application title (next to the Preview link) and select Rename from the dropdown menu.
 - Project Purpose: (maximum of 255 characters including spaces) Summarize your research project; limited to one sentence. Please use a third-person voice.
 - Example: *To develop a comprehensive, validated atlas of the healthy human kidney of African and South Asian ancestries at single-cell resolution open to the entire scientific and clinical community.*
 - Abstract/Project Summary: (maximum of 250 words) Describe your project. Please use a third-person voice ([example](#)).
 - Milestones: (maximum of 250 words, list format) Summarize the annual milestones for your project, including yearly deliverables that demonstrate progress and iteratively contribute to resources available to the community. Please use a third-person voice.
 - Disease Relevance: (maximum of 250 words) Describe the relevance and utility that your project will provide to future work on disease. This may include considerations that have been accounted for in the selection of tissue, organs, regional sampling of specific or multiple organs, and/or the relevance to understanding of susceptibility, prevalence, progression, or disparities of disease(s) within or across particular racial, ethnic, or ancestral groups.
 - Diversity, Equity, and Inclusion (DEI) Plan: (maximum of 500 words) Advancing diversity, equity, inclusion, and representation is a core value for CZI, and we are requesting information on your efforts that will clarify how your project and/or team will incorporate similar values into the proposed project. Because the proposed scope of work will utilize tissues from donors of understudied ancestries, a clear articulation of plans, with letters of support where relevant, to obtain samples from these groups is

required. This section should outline how samples will be ethically obtained while maintaining cultural and historical sensitivity where applicable, especially with regards to marginalized groups. Describe how your proposal and team seek to promote diversity, equity, and representation in this project.

- *Donor representation:* Inclusion of [underrepresented and ancestrally diverse communities](#) will help ensure that reference data can clarify cellular mechanisms for diseases that impact as wide a cross-section of the global population as possible, and not a small subset. All samples should be from donors of [underrepresented/understudied ancestries](#) in biomedical research. Proposing samples from donors from historically overrepresented populations as “controls” is not within scope for this funding opportunity. Reviewers will be asked to identify exceptional proposals that maximize data generation and scientific benefit focused on underrepresented populations. A strong justification must be made for applications proposing to collect samples from overrepresented populations with funds from this grant. Indicate if the focus on a specific underrepresented community is due to factors such as geographic proximity to the research team, existing relationships, or the intention to clarify disease with disproportionate burden (i.e., the reference data generated will provide a platform to clarify diseases that are prevalent or overrepresented among underserved global populations). Please be explicit in describing your goals for the inclusion and representation of participants who come from a diversity of ancestral backgrounds. We encourage applicants to include a table at the end of the Project Proposal in the Project Proposal section/task of the application as an efficient way to clearly outline your plans and annual goals for your analysis. This table will not count against the overall word count. All projects should identify ancestry with genotyping and self-reported race/ethnicity.
- *Team diversity and equity:* Construction of a diverse, representative, and equitable reference resource will be accelerated by contributions from teams that have diverse backgrounds, experiences, and expertise. This includes participation of labs and researchers from underrepresented regions and institutions. Particularly relevant to this RFA, teams or collaborations with groups located in ancestrally diverse geographies that have established local cohorts and tissue resources are more likely to be able to obtain tissue from donors from diverse backgrounds. This RFA is meant to support both existing and new teams of researchers, including international teams. We support international collaboration and want to provide opportunities for new teams to form, receive support, generate data, and participate in the broader HCA community.
- Community Engagement Plan: (maximum of 500 words) Community engagement is important for interacting with and generating support from patients, underrepresented communities, and other stakeholders that will ensure the success of projects. We strongly encourage community-engaged researchers to be active PIs or Co-PIs on all teams that propose to work with donors, patients, or external communities. A plan for

engaging specific communities is important to establish from the outset. The expectation for partnerships with institutional engagement centers/cores or non-academic community-based organizations is that they are genuine equitable relationships with intellectual contributions from all parties that should also be reflected in appropriate budget allocations.

- Please describe your community engagement plan, including communities that you intend to engage, your history with those communities, and other institutional, local, or regional partners that you will rely on. Clarify how the Community-Engaged Researcher on your team will interface with both the community and with the research team as a bona fide member of the collaborative research team. A plan for benefits sharing if applicable, and reporting results to donor communities should be developed and included.
- Some teams may choose to conduct their proposed studies entirely on biobank samples. Biobank samples are acceptable for this RFA. However, you will need to address how the biobank resource(s) will be replenished, maintained, and/or expanded via patient/community engagement activities or other community engagement activities.
- Amount Requested: Enter the amount requested per year, as well the total budget requested for all years in U.S. dollars, including indirect costs; these numbers should match those described in the Budget Description. Enter whole numbers only (no dollar signs, commas, or cents).
- Number of Co-Principal Investigators: Indicate the number of Co-Principal Investigators, not including the Coordinating PI. Complete the table with the following information for each Co-PI (maximum of nine). **Do not include the Coordinating PI in this section.** You may need to use the scroll bar at the bottom of the table to scroll right to view and to complete all fields. Alternatively, you can tab to move through and complete the fields. For each Co-PI, please provide:
 - Co-PI name, Title/Position, Degrees, ORCID ID (format: XXXX-XXXX-XXXX-XXXX), Email, Career status
 - In the context of this RFA, an early-career investigator is someone who has been in an independent position for zero to six years at the time of application, i.e. have started their first independent position between May 25, 2015 and May 25, 2021, and mid-career as someone who has been in an independent position for more than six to 10 years at the time of application, i.e. have started their first independent position between May 25, 2011 and May 25, 2015.
 - Role on Project: Check all that apply: Single-Cell Expert, Computational Biologist, Community-Engaged Researcher
 - Organization Name, Country, Website
 - Type of organization (Academic, Other Non-profit, Government, Other).
 - Tax ID: Enter your organization's Employer Identification Number (EIN), as assigned by the Internal Revenue Service in the 9-digit format (XX-XXXXXXX; total of 10 characters). Foreign organizations or others who do not have an EIN should enter 44-4444444.

- Role Description of Each PI: (maximum of 500 words) Describe the role of each PI on the project.
- Significant Contributions of Team Members: List any of the following sources for **up to five** of the most significant contributions made **by members of the project team** that are relevant to the proposal: publications/preprints (with PubMed, bioRxiv, or medRxiv links), GitHub repository links, Protocols.io submissions, data repositories, and/or similar documentation.
- **Project Proposal**: Upload your project proposal as a single PDF; font must be 11 points or larger and margins must be at least one-half inch (top, bottom, left, and right) for all pages (letter size required). Include the following sections:
 - Proposal Body: (maximum of 2500 words, which includes 250 words for the Abstract)
 - Abstract: Copy your Abstract/Project Summary entered in the Project Details section here.
 - Scientific goals of the project: Define the scientific goals of your research, as well as the contribution to the wider HCA community and how the project will benefit from being a part of the CZI network.
 - Tools and resources: We are interested in the tools, resources and/or specific expertise that your team would like to develop or bring to the collaborative network of projects working on various ancestry reference atlases, and the tools/resources that could be generated by other networks, both within the HCA community and perhaps other CZI programs, that would benefit your work.
 - Tissue resources: Clarify how you intend to obtain the samples necessary for your project. You should clarify whether the project will utilize previously collected samples or will prospectively collect samples throughout the project. Are you able to extend this resource to other interested groups and/or are there biospecimen resources that you would look to acquire from other suitable sources?
 - Figures/Preliminary Data (optional): Limited to two pages, inclusive of legends. Figure legends do not count towards the word count.
 - Table Detailing the Ancestral Diversity Among Tissue Donors and Overall Data Generation: Maximum of one page; does not count toward the word count. This table should detail the number of samples and donors, the ancestry and sex of donors, and any other demographic or tissue information that is relevant to goals of the proposal.
 - References Cited in Your Proposal: No word/page limit; include complete source references.
- **Budget Description (one page maximum per PI)**: Upload in PDF format; budgets can be uploaded in a combined single PDF or one PDF for each Co-PI; one page maximum per PI; font must be 11 points or larger and margins must be at least one-half inch (top, bottom, left, and right) for all pages (letter size required). Provide a detailed description of the costs to be funded by this grant at a high level and in tabular form, outlining costs for personnel (including names, if known), supplies, equipment, travel, meetings/hackathons/sprints, subcontracts, other costs, and up to 15% indirect costs (excluding equipment and subcontracts). If budgets

are provided for individual components, the PI should also generate a summary of no more than one page highlighting the distribution of grant funds across the PIs.

- Indirect costs are limited to up to 15% of direct costs. Indirect costs may not be assessed on capital equipment or subcontracts, but subcontractors may include up to 15% indirect costs of their direct costs.
 - Budget should be requested in U.S. dollars.
 - International grantees must use all grant funds exclusively for activities conducted outside the United States of America. Travel expenses to the United States (including round-trip tickets) should not be covered from the requested grant funds. Any attendance at CZI meetings in the U.S. will be covered by CZI outside of requested grant funds.
 - Application budgets must reflect the actual needs of the proposal. The Chan Zuckerberg Initiative will work closely with successful applicants to arrive at a mutually acceptable budget after review.
- **Biosketches for Coordinating PI and Co-PIs:** Upload the biosketches in PDF format for the Coordinating PI and for each of the Co-PIs. Biosketches can be uploaded in a combined single PDF or one PDF for each Co-PI; maximum of 5 pages per biosketch; [NIH](#) format or similar. Do not include any biosketches for any additional collaborators beyond the Coordinating PI and Co-PIs, as listed.
 - **Letters of Commitment:** Upload a signed letter from each Co-PI briefly describing their role and contribution of the Co-PI to the overall team and project; **do not** include a letter from the Coordinating PI. Please also include relevant letters (up to two maximum) from partners or institutional resources that are central to your community engagement plan. Letters should be in PDF format (letter size) and can be uploaded in a combined single PDF or one PDF for each Co-PI and/or partner. **Note: digital signatures are permitted as long as the document is not encrypted or password-protected.**

The formatting and component requirements, including word and page limits indicated above, will be enforced by the review team. Any submitted materials that exceed the word and page limits or do not follow the requirements will not be considered during the application review process.

QUESTIONS?

For administrative and programmatic inquiries pertaining to this RFA, please contact sciencegrants@chanzuckerberg.com. For technical assistance with SMaply, please contact support@smapply.io or while logged into SMaply, click on the information "i" link in the upper right corner and submit a help request ticket.