Request for Applications:
Neurodegeneration Challenge Network:

Ben Barres Early Career Acceleration Awards

The RFA is now closed.

The Chan Zuckerberg Initiative invites applications to join the *CZI Neurodegeneration Challenge Network*, an interdisciplinary collaborative initiative to increase understanding of the fundamental biology of neurodegenerative disorders. Applications are being accepted for two funding mechanisms:

(1) **CZI Ben Barres Early Career Acceleration Awards:** investigator awards for early career academic investigators, especially those who are new to the field of neurodegeneration

(2) **CZI Collaborative Science Awards:** awards for small group interdisciplinary collaborations that include a physician with active clinical engagement

OPPORTUNITY

Overview
The CZI Neurodegeneration Challenge Network has three goals: (1) to make fundamental advances toward understanding neurodegeneration; (2) to bring new ideas and talent to the field of neurodegeneration; and (3) to encourage a new type of interdisciplinary collaborative research involving scientists, clinicians and engineers.

We invite applications to join the Neurodegeneration Challenge Network through two RFA mechanisms:

(1) **CZI Ben Barres Early Career Acceleration Awards:** five-year investigator grants for early career academic investigators, with an emphasis on those who are new to the field of neurodegeneration. We seek to empower early career investigators to pursue bold ideas

and to take risks within a supportive and collaborative environment. Awardees will benefit from mentorship support, as well as professional development, training and networking opportunities, and practical career guidance to help them navigate this early stage of their careers.

It is with great pleasure that we name this Award in memory of Dr. Ben Barres ([more info](#)). Through his research career and his life and humanity, Ben embodied both the spirit and the scientific aims of this Award and the Challenge Network approach.

(2) **CZI Collaborative Science Awards:** three-year grants for small group interdisciplinary collaborations. At least one member of the collaboration should be a physician with active clinical engagement in an area relevant to the proposal.These grants are aimed to support innovative, bold, high risk/high impact projects at the interface of basic and disease biology. The scope of these collaborations should focus on foundational science (as opposed to translation and clinical application), aligned with clinical context.

Goals of the CZI Neurodegeneration Challenge Network

While there has been significant investment in neurodegenerative disease research, our understanding of the underlying cellular mechanisms and basic biology of most of these disorders is limited. Even for historically well-studied diseases such as Alzheimer's and Parkinson's, there remain significant gaps in our knowledge about the underlying pathological processes, and clinical efforts have focused on a relatively narrow set of ideas. In recent years, new advances, especially in genetics and genomics, have expanded the view of contributing mechanisms, implicating the immune system, glia, vascular systems, and metabolism in many of these diseases. There is also greater appreciation that these diseases may share common genes, pathways and cellular mechanisms, suggesting value in more disease cross-cutting approaches to understanding neurodegenerative disorders broadly. These recent advances present opportunities to approach the challenge of understanding neurodegenerative disorders in a different way.

The goal of the Neurodegeneration Challenge Network is to bring together outstanding, innovative, forward-thinking scientists from different disciplines, into a collaborative network to work together on questions related to the basic cell biological mechanisms of neurodegeneration in the context of human disease biology.

To encourage new ideas, we strongly encourage applications from researchers who are working in relevant fields outside of neurodegeneration and neuroscience (such as cell biology, immunology, metabolism, physiology, and computational biology). Previous work in neurodegeneration is not a prerequisite, as long as the proposal is able to make a strong case for potential relevance to neurodegeneration.

Scientific Scope

This is explicitly not a translational or clinical development RFA and rather is aimed at foundational and mechanistic studies. Nonetheless, successful projects should be grounded in human biology and disease pathology, and the goal is that these efforts will ultimately provide new avenues and rigorous foundations for other translational and clinical development work.

We encourage applications both from investigators who are tackling underexplored topics, as well as those addressing more well-developed mechanisms where there remain significant gaps in understanding.

Examples of potential areas within the scope of the Neurodegeneration Challenge Network include, but are not limited to:

- Understanding common disease mechanisms that cut across disease and that may point to common avenues for intervention.
- Probing disease mechanisms in human cells, tissues, and models; foundational studies that rigorously bridge between model systems approaches and human biology and disease pathology.
- Defining the contribution of non-neuronal influences on neurodegeneration, including potential influences of the innate and adaptive immune systems, vasculature, and the gut and microbiome.
- Developing improved animal models that more closely mimic human disease progression and physiology.
- Explaining the relative susceptibility of different cell populations in different neurodegenerative diseases.
- Testing causal hypotheses for how core cellular mechanisms such as metabolic regulation, proteostasis, RNA processing, and protein trafficking contribute to neurodegenerative diseases.
- Building a foundational understanding of disease progression, risk, and the influence of aging over the lifespan, including mechanistic approaches as well as longitudinal descriptive studies.

Building Tools to Support the Neurodegeneration Research Community

As part of the collective work of the Challenge Network, CZI will ask investigators to contribute to the development, validation and dissemination of robust, reliable, and scalable experimental and analytical tools for the broader neurodegeneration community. CZI will provide infrastructure support for such community tool development and dissemination efforts.

Examples of the types of tools and resources that the Challenge Network might develop and disseminate include, but are not limited to:

- Well-validated and reliable platforms for human cell biology, which might be based on tissue samples, iPSCs, organoids, or other advanced tissue biology systems.
- Scalable tools for cellular analysis, including genomic, proteomic, and imaging methods, optimized for human cells and relevance to neurodegeneration (for instance, targeted probes and label-free methods for cellular imaging of neurons and non-neuronal cells; robust affinity reagents for proteomics; genome editing and single cell genomic approaches).
- Well-validated, robust, shared animal models that more accurately model human disease biology.
- Unique human tissue resources and associated protocols for their handling and best use.
- Rigorous benchmark datasets for the field, for instance, well-validated longitudinal studies of disease progression that will inform more mechanistic approaches.
- Development and application of computational and machine learning approaches and tools to address neurodegeneration biology, which might include genomics, proteomics, metabolomics, systems biology, imaging, and/or integration of data across experimental models and scales.

Collaboration and Open Science

The CZI Neurodegeneration Challenge Network is an approach to address the scientific challenges of neurodegenerative diseases and an experiment in collaborative science. As part of the selection process, we will be looking for investigators and groups who will enthusiastically contribute to and benefit from a highly collaborative, dynamic and interdisciplinary approach.

- Investigators in the Challenge Network will have the opportunity to learn from, collaborate with, and interact with the community of investigators and groups within the Network, as well as with the Chan Zuckerberg Initiative scientists and software engineers.
- Investigators and members of their labs will participate in regular investigator meetings, meetings for students, postdocs and staff, as well as mentorship and training opportunities.
- CZI's mission is at the interface of technology and science. Working in collaboration with, and guided by, Challenge Network investigators, we aim to develop technology-based tools and approaches to support and accelerate the broader field of neurodegeneration.
- Clinical partners in these collaborative projects will play important roles as mentors to help the collective work of the Challenge Network stay closely aligned to the clinical contexts of these disorders and to the needs of patients.
- CZI supports open science values and principles. To accelerate scientific discovery and collaboration and rapid dissemination, 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.

RFA DETAILS, ELIGIBILITY, POLICIES, AND APPLICATION PROCESS

Details of the Application and Review process are provided below. Please also refer to the separate Application Instructions document for more detailed information.

Please read instructions for each RFA carefully, as there are different eligibility requirements, application procedures, and deadlines for the two RFAs. Candidates may only apply to one RFA.

NOTE: The information below pertains only to the *CZI Ben Barres Early Career Acceleration Awards*. If you are looking for information for the *CZI Collaborative Science Awards*, see information here.

RFA DETAILS
ELIGIBILITY
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APPLICATION PROCESS

RFA DETAILS

Budget
$500K total costs per year for five years, for a total of $2.5M (including up to 15% indirect costs).

Application and Review Process
The review process for the CZI Ben Barres Early Career Acceleration Award is a two step process, including written application followed by a in-person interview of finalists.

Key Dates

February 20, 2018:	Application portal is open to receive applications
April 17, 2018:	Applications due by 5 pm PT
August 2018:	Notification of invitation to interview
Sept 10-13, 2018:	Interviews in the Bay Area (applicants must be available to attend in-person)
October 2018:	Earliest notification of decisions (subject to change)
December 2018:	Earliest start date of award period (subject to change)

Finalists who are invited for an interview will be notified in early August, but as the interview dates are firm, we request that all applicants hold **September 10-13, 2018** for the interview period. If travel to the Bay Area is not feasible, please contact sciencegrants@chanzuckerberg.com to discuss.

Awards will be five years in length with project start date of no earlier than December 2018. Actual start date may vary.

ELIGIBILITY

- Applicants must hold a PhD, MD, or equivalent degree.
- Applicants must have an academic appointment and be in their first independent faculty position or equivalent at an accredited college, university, medical school, or other research facility.
- Applicants should be in their faculty role for at least two years but not more than six years at the time of application, i.e. have started a first independent position between April 2012 and April 2016. Independence is typically demonstrated by a full-time faculty appointment, a tenure-track position, allocated space, a start-up package, and institutional commitment as defined or verified in a letter from a department chair or equivalent. CZI will make exceptions to these criteria in cases of institutionally approved career breaks, e.g. family or medical leave, etc. (if this applies to you, please contact sciencegrants@chanzuckerberg.com).
- Applications may be submitted by domestic and foreign non-profit organizations; public and private institutions, such as colleges, universities, hospitals, laboratories, units of state and local government; and eligible agencies of the federal government.
- Applications are strongly encouraged from Investigators new to the field of neurodegeneration, and, in particular, applications from researchers with relevant interdisciplinary training and experience in disciplines outside of biomedicine who bring new technology, resources, or frameworks to the field.
- Applicants for the CZI Ben Barres Early Career Acceleration Award may not apply for the Collaborative Science Award.
- Applications are strongly encouraged from women and underrepresented minorities.
- Proposals including any activities in [Office of Foreign Asset Control (OFAC) sanctioned countries](#) are not eligible to apply.
- Facebook employees, including employees of any subsidiary Facebook entities, are not eligible to apply.
- CZI reserves the sole right to decide if an applicant and applicant organization meet the eligibility requirements.

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.

POLICIES

- Funds from this award are intended to support research activities. Grants are made to institutions on behalf of the named award recipients and reasonable flexibility on how these funds are utilized is allowed, provided that the funds are used to support research activities related to the project. **A budget is not required at the time of application**. Funded investigators will be asked to provide summary budgets at the time of award and during annual reporting.

- For awarded projects, financial statements and progress reports will be due at the conclusion of each grant year. Specific deliverable requirements will be outlined in the award notification. Investigators of funded projects will be required to participate in regular investigator meetings, including annual investigator meetings in the Bay Area. Costs of this travel and other Network related travel should be allocated from the Award 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.
- **Transfer of funds:** Should the grantee leave their position for a non-academic research role, unused funds must be returned. CZI/SVCF will consider requests to transfer the award in situations where a grantee moves to another eligible position at a different organization. However, funds are not transferable to other principal investigators or labs.
- **Ethical Conduct:** CZI advocates the highest standards for the ethical conduct of research. In addition to requirements of their own countries, grantees should adopt procedures for the use of animals in research, for the ethical treatment of human subjects and tissue donors, and for obtaining their written informed consent. CZI regards the policies of the National Institute 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 research results, including methods, data and reagents, and a policy for software development that maximizes accessibility, reuse, and shared development. Exceptions will be considered where there are situations that make this impossible or counterproductive.
    - **Data Sharing:** CZI is committed to developing and using platforms that disseminate data openly and freely. That said, CZI understands the need for subsets of data to be protected or provided with controlled access. All datasets either curated or generated through the project should be made publicly available and easily accessible online, when feasible. This includes metadata, documentation, and intended computational use cases, as appropriate. CZI will be working with Challenge Network researchers to identify appropriate routes and best practices for data sharing from the Network.
    - **Publications:** To encourage rapid dissemination of results, any publications related to this funded work must be submitted to a preprint server, such as bioRxiv, before the first submission to a journal. Experimental protocols should be made publicly available through a protocol sharing service, such as https://protocols.io. CZI requests that scientific publications, preprints, and presentations that result from this award be acknowledged as being supported by this funding.
    - **Reagent sharing**: Resources and reagents developed with this funding support should be available for rapid dissemination to the community, where possible in an accessible community repository, such as Addgene (for plasmids/DNA reagents/viruses), 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 should be fully consented to permit full sharing of the resulting data, and any resulting tools, in accordance with laws and regulatory 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 these cases, encourage investigators to discuss with CZI scientific staff.
- CZI does not retain any rights, other than a use right, to data, published results, and intellectual property that result from the research. CZI supports and promotes policies that enable research results and technologies to have the broadest reach and impact. To this end, all software should be made available through maximally permissive open source licenses. In some cases, commercialization of intellectual property rights in the form of patents provides for the best route for broadest availability and dissemination. In these cases, this intellectual property should be made freely available for all academic and non-commercial use and should generally be subject to non-exclusive commercial licensing.
- Indirect costs are limited to up to 15% of direct costs, and are included within the $500,000 annual budget.
- Applications selected through this process will be recommended for funding through the Chan Zuckerberg Initiative Donor-Advised Fund (DAF) at the Silicon Valley Community Foundation (SVCF).

APPLICATION PROCESS

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

The application consists of the following sections (more details here):
- **Eligibility**: As a first step in the online application, an eligibility questionnaire must be completed to determine if you are eligible for the RFA. As this is a required step to proceed with the full application, it is strongly recommend that you complete the eligibility questionnaire well in advance of the submission deadline, so that any unexpected issues can be resolved prior to the deadline. No extensions will be granted.
- **Applicant Details** (Part 1 and Part 2): General contact, biographical, and demographic information about the applicant.
- **Organization Details:** Information about the applicant's institutional administrative contact and signing official. Please coordinate submission of the proposal with appropriate officials at your institution, in accordance with your institutional policies. Proposals that do not have administrative sign-off at the time of submission will not be reviewed.

- **Project Details:**
    - **Project Title**
    - **Full citations (with PubMed links where applicable) for up to five papers** relevant to the proposal. Preprints are acceptable and should include link to the preprint.
    - **Project Purpose** (one sentence).
    - **Abstract/Project Summary** (250 words maximum).
- **Professional References**: Provide names and contact information for three professional references. References will not need to provide letters at the time of submission. References will be contacted by CZI directly for applicants who proceed to the second round of evaluation.
- **Project Proposal**: Upload project proposal as a single PDF. Please include:
    - **Abstract** (250 words maximum): Succinctly describing your research program.
    - **Research Proposal Body** (2000 words maximum): Should include two parts:
        I. **Scientific goals of your work**: Define the scientific goals of your research, relevance to understanding neurodegenerative disease, as well as the ways in which you will contribute to and benefit from the Challenge Network.
        II. **Tools and resources:** Tools and resources that you will develop for the Challenge Network and tools/resources you would like to see CZI and the Challenge Network develop collaboratively.
    - **Figures** (optional): Limited to one page, inclusive of legends.
    - **References** cited in your proposal (no word/page limit).
- **Biosketch** for applicant (five pages maximum; NIH format or similar).
- **Institutional Approval Form** with signature for institutional and investigator requirements and commitments on data, resource sharing, and publication policies (form).

The formatting and component requirements, including word and page limits, 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.

SELECTION PROCESS:
The Chan Zuckerberg Initiative will evaluate all applications for scientific merit and will seek independent expert review of applications. Candidates are requested to identify three references in support of their application who may be contacted by CZI during the course of the selection process. Finalists from the review process will be invited for an interview with CZI staff and scientific advisors. As the dates for interviews are firm, we request that all applicants hold **September 10-13, 2018** for potential travel to the San Francisco Bay Area. Finalists for interviews will be notified in **early August.** Final decisions will be made by CZI staff in consultation with our scientific advisors.

There is no expectation of any specific number of awards, and the Chan Zuckerberg Initiative reserves the right to not recommend the funding of any applications. CZI does not provide feedback on decisions for unfunded proposals.

Selection of awardees will be based on:
- The quality and rigor of the candidate's training and previous work.
- Interest and importance of the biological question being addressed by the candidate, in particular for understanding mechanisms of neurodegenerative disease. While the work should address fundamental mechanisms rather than translational or clinical strategies, it should have a clear clinical context.
- Degree to which the proposed work brings new ideas to the field and opens up new lines of investigation.
- Potential of the candidate to contribute to and benefit from a highly collaborative interdisciplinary Network.

CONFIDENTIALITY

All submitted applications will be kept confidential to the greatest extent possible, except as necessary for evaluation. After the grant award, funded proposals will be shared across the Challenge Network, but unfunded proposals will remain confidential. 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 TO READ BEFORE SUBMITTING

CZI Ben Barres Early Career Acceleration Awards:
Full RFA Announcement
Application Instructions
Institutional Approval Form

CZI Collaborative Science Awards:
Full RFA Announcement
Application Instructions
Institutional Approval Form