

Alliance for Global Health and Science
2016 Laboratory-Based Molecular Biology Small Grants Program
Request for Applications

I. Introduction

The Alliance for Global Health and Science (the “Alliance”) is a University of California at Berkeley (UCB) initiative focused on establishing partnerships between UCB and academic research institutions in LMICs that promote collaborations and build capacity for scientific research in global health. For the current pilot phase, the Alliance has approached Makerere University in Kampala, Uganda and the University of Zimbabwe in Harare, Zimbabwe (collectively, “the partner institutions”) to build on past bilateral collaborations with UCB in HIV-related research training to new areas. Both universities have indicated an interest and demonstrated a need in scientific capacity building in the field of molecular biology applications in the life sciences, and cellular and molecular immunology applications in health sciences.

II. Program Purpose

The Alliance is soliciting grant proposals for laboratory-based research projects that are led by Principal Investigators (PIs) from the partner institutions and that are in the fields of molecular biology, biochemistry, cell biology, genetics/genomics, immunology, pharmacology, molecular epidemiology and related areas in the biological sciences. The program is open to all disease areas and other aspects of health, as well as life science fields outside of health such as plant, microbial, or basic biology.

Applications must propose studies with specific aims that will produce (a) sufficient preliminary data that may be supportive for applications to future, larger competitive research grant opportunities; or (b) important, high impact research results. Moreover, there should be a strong likelihood that the studies proposed will be completed and the specific aims addressed within the grant period.

The Alliance is particularly interested in applications that plausibly:

- a. seek to build or utilize new techniques or capabilities at the partner institution; and/or
- b. include or are directed towards eventual collaborations between the partner institutions and UCB scientists.

III. Eligibility Criteria

1. Applications for a Base Grant or Supplemental Training Grant must be submitted by a PI who is an academic staff member (lecturer or higher appointment) in the Colleges of Health Science or Department of Biochemistry at one of the partner institutions.
2. Applications for an International Training Grant may be submitted by any researcher affiliated with the partner institution.
3. Projects should be focused on laboratory-based, involving *in vitro* or animal model studies.

IV. Grant Period

Awards are for a one-year (12-month) project. The Grant period is anticipated to begin November 1, 2016 and ends October 31, 2017, unless another date is negotiated and specified in the final project-specific award letter. A one-time, no-cost extension of the Grant Period for up to three months may be granted if the PI is in good standing with all reporting requirements.

V. Grant Types

1. **Base Grant.** A base award provides support for the PI to pursue the proposed studies and specific aims primarily through the application of funding to research consumables, supplies, and services. A maximum of \$25,000 may be requested.
2. **Supplement Training Grant.** A training supplement award provides support for a graduate student (pursuing either a Masters or Doctoral degree) or post-doctoral researcher to work on the same project being pursued under a Base Grant, and under the direct supervision of the PI. Funding is allocated for tuition, fees, and/or stipend for the trainee. A maximum of \$10,500 including \$3,300 in tuition and fees and \$7,200 in stipend costs may be requested. Only a single Supplement Training Grant may be requested per Base Award.
3. **International Training Grant.** An international training award provides support for a graduate student, post-doctoral researcher, or a faculty member to pursue a project as a visiting member of a research group at UC Berkeley or another Bay Area institution or company for up to 12 months. Funding will be provided to cover travel, fees, and living expenses in the U.S. as well as supplemental research funding. Special permission is required from the Alliance before developing a full application for this grant. This permission may be requested through the Expression of Interest form.

VI. Expressions of Interest

Applicants must submit an expression of interest utilizing an online form available at the website noted below. Requested information includes:

1. Applicant name and academic rank
2. Applicant contact information
3. Name and institution of any other planned collaborators
4. Working proposal or project title
5. Brief description of the proposal
6. Whether a Supplement Training Grant is being requested, and, if so, the name of the proposed graduate student or post-doctoral research trainee.
7. Whether permission for an International Training Grant is being requested, and, if so, the name of the trainee, research and training areas interest, and the name of the proposed research group in U.S. sought for hosting the training/collaboration (see Attachment 1).

Submissions of these Expressions of Interest are to be made at the following website:

<http://goo.gl/forms/VHG3CowJKUXBQYcG3>

Expressions of interest are due by **midnight GMT, Friday, July 29, 2016.**

These submissions are to be used for planning the review process only and do not commit the PI to a full proposal submission.

VII. Base and Base plus Training Supplement Grant Application Instructions

Applications should be submitted in electronic format, utilizing the forms provided when applicable. A single document should be assembled in pdf format. Arial 11 point font single spacing and margins no smaller than 0.5 inches/1.25 cm.

Applications should include the following:

1. Cover page utilizing the form provided here:
<http://cend.globalhealth.berkeley.edu/files/2016/07/Cover-Page-Form.pdf>
2. Project Summary (Limit 0.5 pages)
3. Research Project Description (Limit 5 pages including figures and legends).
 - a. Background and Significance
 - b. Preliminary Data/Evidence
 - c. Specific aims
 - d. Research plan
 - e. Outcomes/Results expected.
 - f. Project Schedule. Outline a schedule for accomplishing the project.
4. References (no page limit)
5. Research Personnel (Limit 1 page). Describe the individuals who will work on the proposed project, their qualifications, and how they will be organized. Indicate whether this project will be staffed by the PI and/or other personnel currently at the PI's institution or personnel recruited to work on this project (including any trainees who are the subject of a supplemental grant request).
6. PI Biographical Sketch (NIH format Version D). Format and instructions may be found here:
<http://grants.nih.gov/grants/forms/biosketch.htm>
7. Personal Statement by Trainee (if application includes a request for a Supplement Training Grant) utilizing the form provided here:
<http://cend.globalhealth.berkeley.edu/files/2016/07/Trainee-Statement-Form.pdf>
8. Research Resources (Limit 1 page). Describe the research resources, such as equipment or facilities, needed for this specific project, and indicate how they will be accessed during the project.
9. Budget and Budget Justification, utilizing the form provided here:
<http://cend.globalhealth.berkeley.edu/files/2016/07/Budget-Sheet-and-Justification-Form.pdf>
Please note prohibited costs listed in Attachment 2.

Proposal submissions should be submitted via e-mail to cend@berkeley.edu, and are due by **midnight GMT, Wednesday, August 31, 2016**.

VII. International Training Grant Application Instructions

As indicated above, applicant interested in an International Training Grant should submit their request as part of the Expression of Interest process. Applicant will be contacted by the Alliance office for further information, if needed, and information regarding permission. If permission is granted to apply for an international training grant, specific instructions for the entire application will be provided by the Alliance.

VIII. Application Review

Applications will be reviewed by a committee of UC Berkeley faculty both individually and as part of a review committee meeting. Any number of additional individuals outside of the committee may be consulted for input during the review. Applications will be reviewed and scored following the criteria in Attachment 3.

IX. Award Process

PIs for applications selected for award will be notified by the Alliance office and will receive draft project-specific award letter indicating budgetary, timelines, and other components. The Alliance will then work with the PI and the PI's institutions' grants office/official to develop final terms for the award. It is the Alliance's intent that the project-specific award letter be mutually agreed between UCB and the PI's institution and will include or be subject to previously negotiated general award management terms between UCB and the partner institutions.

X. Project Reporting

The Principal Investigator for each funded proposal must complete and submit the following items:

1. Progress Report. A Progress Report should include a summary for progress to date vs. the specific aims of the project (no more than 1 page), and an updated project schedule. This report shall be submitted electronically to cend@berkeley.edu by a date approximately six (6) months after the start of the project (for example, by May 1, 2017 if a project has a start date of November 1, 2016). The specific date will be specified in the project-specific award letter. Principal Investigators who do not submit or submit incomplete Progress Reports will be ineligible to participate in the future Alliance grant competitions.

2. Final Report. The Final Report should contain:

- a. A technical description of the project and the results obtained (no more than 5 pages including figures and tables).
- b. A description of any potential next steps for further research,
- c. A plan for project publication and/or presentation at local or international scientific meeting(s).

Final reports shall be submitted electronically to cend@berkeley.edu and are approximately 13 months after the start of the project (for example, by December 1, 2017 if a project has a start date of November 1, 2016). The specific date will be specified in the project-specific award letter.

XI. Program Contact

Please direct any questions regarding this program or the application process to cend@berkeley.edu.

Attachment 1

Participating Labs for International Training Grants

Applicants may propose to perform an international training project within any single research group within a public or private research institute or not-for-profit within the San Francisco Bay Area, as well as Davis, Sacramento, or Santa Cruz, California. As part of the Expression of Interest, applicants are asked to name the research group and (briefly) why this group was selected.

The following labs have indicated an interest in participation in international training grants for use in pursuing the goals of a proposed project. For the latest version of this list, please visit:

<http://cend.globalhealth.berkeley.edu/2016/06/16/attachment-1-online-version-participating-labs-international-training-grants/>

Projects to be proposed under International Training Grants must be in the Area of Interest for the lab and apply one or more techniques utilized by the lab.

University of California, Berkeley (www.berkeley.edu)

- 1. Coscoy Lab** (<http://mcb.berkeley.edu/labs/coscoy/>)
PI: Laurent Coscoy
Research Area: Herpesvirus immune evasion by antigen processing interference, epigenetic manipulation by herpesviruses, herpesvirus tropism and entry virology.
Techniques: BAC mutagenesis, tissue culture infection models (classical and coculture), tissue culture reactivation model, TCID₅₀/plaque assays, flow cytometry, Cas9 plasmid/RNP-mediated knockouts and screening, dCas9 gene interference.
- 2. Cox Lab** (<http://www.coxlab.berkeley.edu/>)
PI: Jeffery Cox
Research area: *M. tuberculosis* host-pathogen interaction and innate immune response.
Techniques: *M. tuberculosis* genetics, *ex vivo* macrophage infection models, *in vivo* mouse infection models, mass-spectrometry, confocal microscopy, RNA seq.
- 3. Harris Lab** (<http://sph.berkeley.edu/eva-harris>)
PI: Eva Harris
Research Area: Molecular virology, Dengue virus pathogenesis, mechanisms of vascular leak in severe Dengue disease, human immunology, epidemiology
Techniques: Viral diagnostics, mouse model of dengue vascular leak syndrome (*in vivo*), *in vivo* and *in vitro* models of endothelial permeability, confocal microscopy, flow cytometry, Quad-color FluoroSpot assays to assess antibody cross reactivity.
- 4. Portnoy Lab** (https://mcb.berkeley.edu/labs/portnoy/Portnoy_Lab/Welcome.html)
PI: Daniel Portnoy
Research Area: Microbial pathogenesis of the model facultative intracellular pathogen, *Listeria monocytogenes*. Research ranges from basic aspect of bacterial physiology to cell biology of infection to innate and adaptive immunity and vaccines.
Techniques: Bacterial genetics, tissue culture and *in vivo* infection models, *Listeria*-based vaccines, and microscopy focused host cell biology during infection.

5. **Riley Lab** (<http://www.ucbrileylab.com/>)

PI: Lee Riley

Research Area: Pathogenesis of mycobacteria and gram-negative bacteria, molecular epidemiology

Techniques: Genotyping techniques for Gram-negative bacteria (GNB) to study molecular epidemiology of GNB infections in healthcare as well as community settings, bioinformatics to analyze whole genome sequences of GNBs, biomarker assays to diagnose TB and latent TB infection

6. **Shastri Lab** (<http://mcb.berkeley.edu/labs/shastri/>)

PI: Nilabh Shastri

Research Area: Immune-surveillance and response to cancer and pathogens, MHC peptide processing and presentation

Techniques: Mouse model, mouse chimeras, flow cytometry, *in vivo* cytotoxicity assays, T cell response assays, MHC peptide extraction and analysis

7. **Stanley Lab** (<http://thestanleylab.org/>)

PI: Sarah Stanley

Research Area: *Mycobacterium tuberculosis* pathogenesis and immune subversion, innate immune responses to *Mtb* infection, host-targeted therapeutics, vaccine studies and immunological analysis

Techniques: *Mtb* genetics, mouse model of infection (*in vivo* and *in vitro*), human primary cell infection, microscopy, transposon-sequencing screens, Cas9 mediated knockouts in primary cells and cell lines, identification of novel drug targets, drug resistance analysis

Attachment 2

Prohibited Costs

The following costs may not be included in the budget:

- PI or other researcher salary or benefit costs, except as part of a Supplemental Training Grant.
- Indirect costs
- Any single piece of equipment costing above \$5,000
- Publication
- Patient care costs
- Travel costs not directly associated with completing the project (e.g., attendance to scientific meetings)

Attachment 3

Base and Base plus Training Supplement Grant Application Review Process and Criteria

Review Panels

The Alliance will assign all applications to one or more panels of reviewers. Each panel will include a panel chair and at least two other individual reviewers. The panel chair will assign an application to at least two reviewers on the panel. The panel chair will also field any requests from review panelists for outside consultation.

Each individual reviewer will review and score the applications separately, and then share their assessment during a final review meeting.

Individual Reviewers

After the panel chair assigns a set of proposals to each reviewer for evaluation, reviewers will have until the panel review the applications assigned to them.

The individual reviewer will consider the four weighted review criteria. Reviewers decide on scores for each of the four categories, from which will be calculated a cumulative, preliminary score.

Significance and Novelty (30 percent)

- Does the proposed research address an important problem?
- Is it within the boundaries of laboratory-based research outlined above?
- Does the rationale for the proposed project clearly explain how the outcome(s) will directly contribute to advancing the field of its area of interest?
- If the specific aims of the project are achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved?
- Is the proposed research novel, original, or innovative in any way?

Research Plan and Budget (30 percent)

- Is there a clear scientific rationale for the project?
- Are the overall strategy, methodology, and analyses well-reasoned and appropriate to accomplish the specific aims of the project?
- Is the proposed schedule appropriate and feasible?
- Is the proposed budget appropriate and feasible?

Likelihood of Success (20 percent)

- Is there sufficient preliminary evidence to demonstrate a good likelihood of success to achieve the specific aims?
- If highly exploratory, will the approach demonstrate proof-of-concept or feasibility, or provide sufficient evidence to rule out the proposed strategy?
- Are particularly risky aspects of the project identified? How will they be managed?

Team and Capabilities (20 percent)

- Is the Principal Investigator as well as any collaborators well suited to the project and capable of conducting research in the proposed area?
- Are additional qualified support personnel listed?
- If the project is collaborative, do the investigators have complementary and integrated expertise?
- *For Supplement Training Grants:* Does the proposed trainee have a sufficiently prominent/key role in the project
- Is there clear institutional support for the proposed project?
- Is the needed equipment in place at the institution and does the PI and research personnel have adequate access?

Review Panel Meeting

Every member of the reviewer will take part in a discussion of each of the assigned proposals during a review panel meeting. Each proposal will be presented by its two reviewers, who share equal responsibility for presenting his/her evaluation. The panel, by consensus, may revise the individual reviewer scores with a panel score; may suggest revisions to the evaluation and comments; or may provide a separate comment based on the panel consensus.

The panel will assign one of three funding category to each proposal.

- Fund – Priority 1
- Fund – Priority 2
- Do Not Fund

The number of proposals that receive each rating should be driven by the quality of the proposals submitted and not by the amount of funds available for awards.

The panel will select from among its members a “reporter.” For each individual proposal, the scribe will record, using the ranking tool, the proposal’s fund category, rank as result of panel consensus, and any comments from the panel made regarding the proposal during the deliberations.

After reviewer presentation and panel deliberation, and after determination of fund categories, the panel will make a consensus decision with regard to the numerical rank of each Priority 1 and Priority 2 proposal.

Selection

The Alliance office will make the final selection of proposals to be funded. Selections will be based on the category and ranking provided by the committee, and the amount of funding available. Only proposals from the Priority 1 and Priority 2 categories may be funded.