



## KAVLI MICROBIOME IDEAS CHALLENGE SUBMISSION GUIDELINES

**Purpose:** The Kavli Microbiome Ideas Challenge provides support for the development of next generation scientific tools for investigating life on our planet. The Kavli Microbiome Ideas Challenge will be led by the American Society for Microbiology (ASM), and carried out in partnership with the American Chemical Society (ACS) and American Physical Society (APS).

Scientists have learned that the majority of life on our planet is microbial and that it is organized in communities. Bacteria, viruses, and microscopic eukaryotes carpet our bodies, both inside and out, and populate our oceans, soils and built environments. Low-cost, high-throughput DNA sequencing has provided the means to detect and identify trillions of microbes previously unknown, and led to recognition of their ubiquity and central importance.

Still missing, however, besides a catalog of the existing microbes, is a detailed molecular and ecological understanding of how microbes interact with each other in their environments, and the causal roles that particular organisms play in critical ecosystem environments.

This Ideas Challenge recognizes the quintessential need for an interdisciplinary approach to microbiome research and invites the broad scientific community – including microbiologists, ecologists, chemists, physicists, engineers, material scientists, nanoscientists, computational scientists and others – to submit innovative, blue-sky, and aspirational ideas for novel experimental tools and methods aimed at understanding microbial interactions and function from new perspectives.

The Kavli Microbiome Ideas Challenge recognizes that the microbiome research is bigger than traditional microbiology and scientists often speak of microbial sciences (plural). With this in mind, the Kavli Ideas Challenge wants to catalyze a broad community of scientists to come together to develop new tools and methods that will help transition the field of microbiome research from correlative studies – e.g., genomics-driven microbial census-taking efforts – to causal understanding of microbial and community function. Ideas for novel tools and methods will be broadly applicable across the many environments studied in microbiome research – the Earth's soils, ocean and freshwater environments, atmosphere, built environment, as well as animal hosts' gut and skin ecosystems. Ideas should also facilitate collaboration among scientists with expertise in various disciplines that could advance microbiome research.

Importantly, funds provided to the recipients of the Kavli Microbiome Ideas Challenge are intended to launch nascent research efforts, rather than to support ongoing, well-established research programs.

**Award Amount:** The total amount of funds available for awards is \$1,000,000. A total of three (3) to four (4) awards will be supported with a minimum of \$250K and a maximum of \$350K per award.

**Submission Opening:** October 24, 2016

**Submission Deadline:** December 2, 2016 11:59PM CST

**Submission Site:** [Kavli Microbiome Ideas Challenge Submissions](#)

**Eligibility:** To be eligible for this award, the applicant must:

- Hold the skills, knowledge, and resources necessary to carry out the proposed research
- Hold a doctoral-level degree (PhD, MD, DO, MBBS or equivalent);
- Have a faculty appointment at an academic center, research institution, or non-profit (domestic or foreign) at the time of application and for the duration of the award. The host institution must have the ability to administratively and fiscally manage an award of this type;
- Exhibit evidence of research independence and scientific productivity in the relevant field(s)

In addition, the principal investigator must be able to devote an appropriate professional research effort to the administration and performance of this project and justification for the amount of devoted time should be included in the application.

**Review Criteria:** A Scientific Advisory Board (SAB) comprised of experts selected by the three participating scientific societies (ASM, ACS, and APS) will assign projects for review and will make funding decisions considering the following criteria to determine scientific merit and assign the application's overall score. The list of SAB members is included at the end of the guidelines. An application does not need to be strong in all categories to be judged likely to have major scientific impact.

- *Investigator(s)*
  - Preference for inclusion of multiple, interdisciplinary investigators
  - Appropriate experience and training for the principal investigator and any collaborators
  - Appropriate level of accomplishment given the career stage of the principal investigator
  - Ability of PI and any other investigator to foster a collaborative, complementary and interdisciplinary approach with other team members
  - Clearly defined contribution of the principal investigator and any collaborators to the success of this project

- *Relevance*
  - Potential for outcomes to lead to new approaches toward the next generation of scientific tools for investigating microbial life
- *Novelty*
  - Highlight unique concepts, cross-disciplinary approaches or methods
  - Highlight originality and innovation of research plan
  - Highlight ability of investigator(s) to achieve the project's goals
- *Feasibility*
  - While matching support is not required, written commitment from administrative officials regarding any matching institutional support should be provided
  - Availability of adequate financial and human resources to support the project
  - Research scope feasible in relation to the term and funding of the award
- *Methods*
  - Well-designed questions, critical thinking and robust data analysis framework
- *Potential Impact*
  - Challenge existing methods or develop new methods or technologies that will remove fundamental roadblocks in microbiome research
  - Ability for final product to be useful and made available to the larger scientific community
- *Interdisciplinary and Collaborative*
  - Project must include an interdisciplinary and collaborative approach
- *Preliminary Data*
  - Preliminary data are not required
- *Environment*
  - Scientific environment contributes to the probability of success and/or provides unique features such as subject populations, or collaborative arrangements
  - Adequate institutional support, equipment and other physical resources

**Award Terms and Funding:** Awards will be awarded for an eighteen month period and are not renewable.

- *Funding support*
  - Funding will be provided in a single payment once the agreement has been signed
- *Salary Restrictions*
  - Funding for salary should be limited to postdocs and/or graduate students; and research staff
  - Salary support should reflect the research effort committed by each individual to the project
- *Indirect Costs*
  - Funds do not allow for institutional indirect costs.
- *Unexpended Funds*
  - All unexpended funds must be returned at the close of the award term.
- *Duration of the Award*
  - The term of the award will be eighteen months.

- *Extensions*
  - We do not anticipate granting any no-cost extensions, except under exceptional circumstances as approved by the SAB.
- *Termination of Award*
  - Acceptance of this award will be conditioned upon agreement by the awardee institution that in the event the principal investigator is unable for any reason to conduct the research proposed, this award shall be terminated forthwith and the unexpended and unencumbered balance of any funds theretofore advanced shall be returned.

**Award Requirements:** All applicants and award recipients must abide by the following requirements.

- *Compliance*
  - Prior to receiving an award, the applicant must document that they have received institutional approval for any laboratory, agricultural, environmental, animal or human subject analyses.
- *Final Report*
  - At the close of the award term, the recipient must provide a final report describing completion of applicable deliverables, outcomes achieved, pre-prints, publications, abstracts, patents, conference presentations, public outreach initiatives and communications to the lay public, and a statement of what roadblocks the research was able to remove to further microbiome research. In addition, the final report must contain a final financial reconciliation by cost category indicating how funds were allocated and whether any unexpended funds remain. This financial report should be prepared by the recipients' official Financial Office.
- *Publications*
  - Each publication prepared in connection with this award shall include acknowledgement in the following manner, "This project was supported through an award from the Kavli Microbiome Ideas Challenge, a project led by the American Society for Microbiology in partnership with the American Chemical Society and the American Physical Society and supported by The Kavli Foundation."
  - Notification of all accepted publications and the Pub Med link will be shared with ASM. Information for sharing this information will be included in the award letter.
- *Protected Time and Funding*
  - The awardee institution, by acceptance of this award, provides assurance that support normally provided by the institution for research of the faculty member will not be diminished.
- *Intellectual Property*
  - Award recipients will have the right to retain intellectual property on any invention conceived or introduced using these funds, following rules and procedures of the PI's host institution.

**Application Information:** Individuals may serve as PI on only one application and may be included as key personnel on other applications only if clearly justified in the proposal. If the application is funded, information from the application will become public. Each application must be submitted online through the ASM grants management system and will include the following:

- *Project Title*
  - Not to exceed 100 characters, including spaces between words and punctuation.
- *Abstracts (Limited to 250 words each)*
  - Technical: A succinct and accurate description of the proposed work when considered separately from the application. State the broad, long-term objectives and specific aims, making reference to the relevance. Concisely describe the research design and methods for achieving the stated goals.
  - Layman: Describe what roadblocks the proposed project will remove and why it is important, in a way that an educated audience (NPR listener, NYT, WSJ reader) would understand.
- *Award Proposal*
  - See details below
- *Category of Research*
  - To assist the review committee in categorizing applications, applicants are required to list five (5) keywords that are not included in the title of their application.
- *Key Personnel*
  - A list of key personnel including principal investigator, co-investigators and individuals who will contribute to the scientific development or execution of the project in a substantive, measurable way, whether or not salaries are requested. Percent effort should be calculated based on a full-time 12-month calendar year appointment.
- *Biographical Sketches of Key Personnel (maximum 2 pages each)*
  - Biographical sketches for all key personnel should be included; an NIH or NSF biosketch is acceptable.
  - The biosketches should include a list of PhD students and postdocs and a list of collaborators on papers or funded proposals. Both lists should be limited to the last four (4) years; 2013 - 2016.
  - Biosketches should also include a list of any additional current or pending support from other funding sources
- *Institutional Letter of Support*
  - From the Dean, department chair or similar administrative official indicating any direct institutional support of the proposed research, that the PI's time is available for this project, and that they understand the terms of the award

**Award Proposal:** The award proposal should address each of the items listed in the *Review Criteria* section of these guidelines and should provide sufficient information needed for evaluation of the project.

- *Content of Award Proposal [Limited to 1500 words including figures and references]*
  - Specific Aims – include goals and objectives
  - Significance
    - Importance of the research
    - How the technology will be able to advance the scientific knowledge
    - Potential impact
  - Research Design/Framework
    - Procedures and analyses to be used to accomplish the specific aims
    - How data will be collected, analyzed and interpreted
    - Data sharing plan, if applicable
    - New methodology and advantages over existing methodologies
    - Novel concepts, approaches, tools or technologies
    - Potential difficulties and limitations
    - Proposed timetable
    - Benchmarks/Milestones
- *Budget [template provided]*
  - Personnel
    - Names of key personnel supported by the award
    - Percentage of time committed by each key personnel to the project
    - Role of each key personnel supported by the award
  - Consultant/Contract Costs
  - Supplies
  - Equipment
  - Travel
  - Budget Justification (*optional*)
    - Further description of key personnel roles
    - Explanation of contractual agreements and associated costs, if applicable
    - Qualifications of contracted institutions, etc., if applicable
    - Further descriptions of equipment, major supply items, and requested travel funds
    - Explanation of Other Costs

*Note: Funds cannot be used for institutional indirect costs*