2022 Request for Applications

The Stanford Institute for Immunity, Transplantation and Infection (ITI) | Center for Human Systems Immunology (CHSI) with funding support by the Bill and Melinda Gates Foundation is pleased to solicit applications for pilot projects to advance global health.

We are calling for proposals in the following priority categories:

A. Human Systems Immunology
   i. Innovative technologies,
   ii. Innovative analytical tools
   iii. Novel immunology

B. Human Papilloma Virus Therapeutics
   i. Immunological mechanisms/immune signatures associated with successful clearance of high risk HPV
   ii. Novel therapeutic vaccine candidates
   iii. Novel single-intervention therapeutics (antivirals, biologics)

A. Pilot Projects in Human Systems Immunology

Purpose: Our overall aim is to advance the systems immunology tool box to address global health questions using innovative technologies, novel analytical tools and by learning novel basic immunology. Moreover, we want to encourage cross-disciplinary collaboration and special consideration will be given to proposals with partnerships between technologists and clinical collaborators and/or immunologists.

There are three general categories for funding:

1. **Innovative technologies** – including major improvements on existing methods that are, or can be, applied to understanding the immune response to a major infectious disease of global health relevance. This may apply to the direct analysis of subjects with active disease or vaccine candidates, or both, as well as to the development of disease models optimized to most closely mimic natural human infections, to better understand and develop interventions for particular infectious diseases.

2. **Novel analytical tools and algorithms** – to serve as visualization, analytic and data sharing resources for global health studies involving the generation of high dimensional immune and related biological data or the use of already existing data sets. This includes novel approaches designed to increase the power of data mining and predictive modeling that can be readily applied to natural history or vaccine efficacy studies.

3. **Novel Immunology** – Studies of established cohorts that apply technologies and methods to both new and ongoing studies, or to the analysis of banked samples. Proposals should be designed with the intent to expand the network of investigators working on global health problems, and/or enhance the power of current studies and future areas of need. (Funds cannot be used to start or maintain a clinical or cohort study.)

B. Pilot Projects in Human Papilloma Virus Therapeutics

The Bill and Melinda Gates Foundation is investigating Human Papilloma Virus (HPV) therapeutic interventions as a priority area in 2022. In the first 12 months after infection with high risk HPV, about half will clear naturally and the other half persist, which can lead to cervical cancer (Skinner et al, Saraiya et al). Despite the availability of a preventative vaccine for HPV, cervical cancer remains a significant source of morbidity and mortality among women in low and middle income countries (LMICS) (Simms et al). A primary goal of this BMGF priority area is to develop vaccines and other therapeutics that reduce the incidence of cervical cancer by clearing HPV infections and/or regressing dysplastic lesions. Data on therapeutic HPV vaccines for advanced lessons/late infections are
emerging (Bhuyan et al, Morrow et al), though there is far more work to be done, including understanding the immunological mechanisms responsible for successful natural clearance of high risk HPV infection. This RFP aims to advance HPV therapeutics by elucidating the systemic and local immune responses associated with successful natural clearance of high risk HPV infection and exploring novel approaches to therapeutic vaccines and other interventions that can result in clearance of high risk HPV.

Purpose: Advance the discovery and development of HPV therapeutics including vaccines that can reduce the incidence of cervical cancer in LMICs by clearing HPV infections and/or regressing dysplastic lesions. The application of innovative technologies and novel analytical tools will likely be needed to provide a detailed understanding of the mechanisms contributing to successful natural clearance of infection and that knowledge may then be leveraged in the design of therapeutic vaccines and/or drugs. Moreover, we want to encourage cross-disciplinary collaboration and special consideration will be given to proposals with partnerships between technologists and clinical collaborators and/or immunologists.

There are three general categories for this funding:

1. **Immunological mechanisms of successful clearance of high risk HPV** – Improved understanding of the systemic and local immune responses associated with successful natural clearance of high risk HPV infection. Assessment of T cell targets and effector functions. Application of novel tools and innovative technological approaches to interrogate the local tissue microenvironment and elucidate features distinguishing persistent infection vs. successful clearance of high risk HPV infection. Studies may employ the analysis of banked samples from established cohorts and/or may apply technologies and methods to prospective samples from new or ongoing studies. Proposals should be designed with the intent to expand the network of investigators working on global health problems, and/or enhance the power of current studies and future areas of need. (Funds cannot be used to start or maintain a clinical or cohort study; additional sample collection can be considered.)

2. **Novel therapeutic vaccine candidates** – Innovative ideas and approaches for vaccines designed to drive clearance of an established HPV infection.

3. **Novel single-intervention therapeutics (antivirals, biologics)** – Novel approaches to directly target HPV infection and counteract the immunomodulatory mechanisms employed by high risk HPV that result in persistence of infection. Assessment of impact antivirals or immunotherapeutic concepts in tissue/organoid models.

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**Award Details**

**Eligibility:** Stanford faculty with PI eligibility and CE faculty, Instructors, Clinical Instructors, Academic staff-research (for example: senior research associates), postdoctoral fellows and advanced graduate students. If the proposal is submitted by a non-faculty PI, it is required that a PI-eligible faculty mentor is named. This is an internal Stanford funding opportunity so a PI waiver is not needed.

**Amount of funding:** Successful applicants will receive $50 - $100K (total direct) for one year with a possible second year of funding contingent upon scientific progress.

**Timeline and selection process:** 2-page proposal deadline **FRIDAY MARCH 4, 2022**

We expect a rapid review process by a joint Stanford-BMGF committee with announcement of awards by end of March and funding release in April 2022.
Submission Guidelines – Checklist

Please upload the following on our submission portal by FRIDAY MARCH 4, 2022
File name: Last name_ITI_Pilots2022.docx

2-page proposal:
- Header: Institute for Immunity, Transplantation and Infection | Center for Human Systems Immunology Pilot Project Proposal
- Project Title
- PI and Co-PI name, title/rank, department, address, phone number, email address
- Briefly describe the proposal with key question(s) (see above) addressed, hypothesis, rationale and approach.
- If clinical samples are needed for your research, please include how you will obtain them, and which collaborations, biosafety and IRB approvals you already have in place or need to prepare.
- Timeline estimate for your project.
- Format: Arial font size 11, single spaced, 1/2-inch margin; submit in word format (no PDF please).
- One paragraph budget summary at the bottom of your proposal: Please list the total direct amount of funding requested with details on amount for personnel (with % support), supplies and other support. No detailed budget requested for submission. No NIH salary cap applies. Graduate student funding support allowable for salary and tuition, but not for stipends and health care insurance. Indirect rate is 10%. Total direct amount of funding is max. $100,00 ($110,000 with 10% IDC).
- Please include other pertinent funding support and potential leveraging.
- Name and e-mail address of your task/finance manager (to be contacted for further details upon approval of your application).
- Not required: Preliminary data, CV, budget justification.

Institutional representative: not applicable. This RFP is considered an internal Stanford funding opportunity. Therefore, you do not need to submit your proposals through your RPM/RMG or CGO/OSR for institutional approval.

For inquiries, please contact Gerlinde Obermoser, Project Director, Center for Human Systems Immunology. Gerlinde.Obermoser@Stanford.edu.