RFA-13-015
Cancer Detection, Diagnostic and Treatment Technologies for Global Health (UH2/UH3)

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**Technologies for Global Health**

Projects to adapt, apply, and validate *existing or emerging* technologies into user-friendly, low-cost devices or assays for imaging, in vitro detection/diagnosis, or treatment of cancers in humans living in LMICs.

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<th>Discovery</th>
<th>Prototype</th>
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<tr>
<td>Academia/Small business</td>
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<td>IMAT</td>
<td>SBIR</td>
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<th>Multi-Site Validation</th>
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<td>Pharma</td>
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<th>Global Health Deployment</th>
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<td>NGOs/Health Providers</td>
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Applied research NOT basic or discovery research
Relevant Technologies

*In vitro* Cancer detection, screening or diagnostic technologies:

Point-of-Care analytical tools (e.g., lab-on-a-chip and biosensors) that allow the performance of relevant chemical and/or biological assays.
Relevant Technologies

Imaging technologies for cancer detection or diagnosis:

e.g., portable optical imaging, spectroscopy, or ultrasound.
Relevant Technologies

Treatment-related technologies:

- portable minimally invasive treatment methods
- technologies/devices that may aid/facilitate standard treatment modalities.
- surgical devices
- technologies related to drugs, vaccines, chemotherapy, and/or immunotherapy
- tools for cryotherapy, laser therapy, radiofrequency ablation, low-power-density sonication, high-intensity focused ultrasound, or photodynamic therapy.
Investigators Team

**Engineering/assay/treatment development:** Expertise relevant to the development of technologies, assays or devices to ensure their *suitability for use in an LMIC*

**Oncology:** Expertise in cancer detection/diagnosis and/or treatment is required to ensure the assay/device/treatment will show *clinical effectiveness* for screening, early detection or diagnosis, and treatment of cancers that can be *locally managed or treated* in LMIC settings.

**Global healthcare delivery:** Expertise in global health care delivery is required to establish collaborations with health care workers in the *local sites* for:
- validation and utilization of the assay or device
- assure cultural appropriateness
- health care worker training
- deployment and acceptance of the assay/device/treatment.

*Examples of suitable collaborations:* hospitals, medical schools, charities, local governments, community groups, Non-Governmental Organizations (NGOs), and governmental entities with expertise in the local setting.

**Business Development:** An industrial partner is required to provide expertise in fabrication, governmental regulatory approvals, and prepare, disseminate, and *sustain* the technology.
RFA Management

**NCI Center for Global Health (CGH)**
http://www.cancer.gov/aboutnci/globalhealth

*Area of interest:* addressing the challenges of cancer and reducing cancer mortality worldwide.

*Contact PDs:*
Paul Pearlman, paul.pearlman@nih.gov

**NCI Division of Cancer Treatment and Diagnosis (DCTD)**
http://dctd.cancer.gov/

*Area of interest:* Development of targeted cancer therapies, biosensors, lab-on-chip, Circulating Tumor Cells and Point of Care (POC) cancer diagnostics technologies.

*Contact PD:*
Esmail Tabibi, tabibie@mail.nih.gov

*Contact PD:*
Avraham Rasooly, rasoolya@mail.nih.gov
RFA Management

**NCI Division of Cancer Prevention (DCP)**
http://prevention.cancer.gov/

*Area of interest:* Facilitates a broad spectrum of national and international research activities in cancer biology, particularly for the discovery of biomarkers for risk prediction and early detection of cancer.

**Contact PD:** Jacob Kagan, kaganj@mail.nih.gov

**NCI Division of Cancer Control and Population Sciences (DCCPS)**
http://cancercontrol.cancer.gov/

*Area of interest:* methods to address epidemiologic data collection, study design and analysis, and application and validation of emerging technologies developed in other research endeavors for cancer risk assessment

**Contact PD:** Rao Divi, divir@dc37a.nci.nih.gov

**NCI SBIR Development Center**
http://sbir.cancer.gov/

*Area of interest:* Research by small businesses to develop and commercialize technologies and products to prevent, diagnose, and treat cancer

**Contact PD:** Ming Zhao, zhaoming3@mail.nih.gov
RFA Management

**NCI Division of Cancer Biology (DCB)**
https://dcb.nci.nih.gov/Pages/Home.aspx

*Area of interest:* Cancer biology research and related technologies  
*Contact PD:* John Knowlton, knowltoj@mail.nih.gov

**NCI Office of HIV and AIDS Malignancy (OHAM)**
https://dcb.nci.nih.gov/Pages/Home.aspx

*Area of interest:* Coordination of AIDS clinical projects in the NCI  
*Contact PD:* John Knowlton, knowltoj@mail.nih.gov

**National Institute of Biomedical Imaging and Bioengineering (NIBIB)**
http://www.nibib.nih.gov/

*Area of interest:* Simplification/addition/modification of medical devices to enable device use outside the lab or in low-resource setting  
*Contact PD:* Tiffani Lash, tiffani.lash@nih.gov
RFA Critical Points

- To stimulate technology development and adaptation for low-cost use to detect, evaluate, diagnose and treat cancer in low resource settings
- UH2/UH3 phased-innovation collaborative funding mechanism
- Collaboration across disciplines
  - Engineers/developers
  - Cancer care professionals
  - Experts in global health delivery
  - Business
- For the transition from UH2 to UH3 must meet project milestones
- The target cancer must be treatable in the proposed LMIC setting
- Sustainable technologies
CGH Contact Information

Website: www.cancer.gov/globalhealth

Telephone number: +1-240-276-5810

New office street address: 9609 Medical Center Drive, Rockville, MD (near Shady Grove Adventist Hospital)

Email: NCIGlobalHealth@mail.nih.gov

Twitter Handle: @NCIGlobalHealth