Information Sheet (Spring 2019)

WHAT: Precision medicine provides a path for discovery of human disease mechanisms and detection methods. ICTR programs in this area include our NIH-sponsored *All of Us* precision medicine research program. In addition to complimenting genome-based precision medicine via the UW Center for Human Genomics and Precision Medicine, with this new initiative we are joining with the SMPH Human Proteomics Program (HPP) to link next generation proteomics and metabolomics technology with clinical and translational research programs.

WHY: The application of unbiased analysis of proteins, metabolites and genes -- the so-called "multi-omics" approach – affords unique and unprecedented insights into disease heterogeneity and its detection.

HOW: ICTR is seeking collaborations with established clinical and translational research programs whose work would be substantially advanced by multi-omics profiling. The goal of these Strategic Partnerships projects is to provide unique insights into pathophysiology of human disease, treatments and outcomes. We are seeking projects where the applications of multi-omics analyses will expedite expansion of clinical research programs into the diagnosis or management of human disease. ***Specifically***, we are seeking ongoing or planned research projects that involve the recruitment of extensively phenotyped clinical populations where proteomics or metabolomics analyses will advance the understanding of human disease, leading to improved diagnostics or disease management.

WHAT APPLICANTS CAN EXPECT FROM ICTR:

- **Advancing translational team science** by fostering innovative partnerships and collaborations with a diverse array of stakeholders. Working with Principal Investigators, we can collaboratively assess individual and team growth potential, create team development plans, provide mentor training, and define vision/roles/responsibilities, all of which can lead to new capabilities and innovation by the project team;
- **Providing multi-omics support** by subsidizing analyses of biological samples to provide new mechanistic insights into disease with the goal of developing clinical assays for detection and management of disease;
- **Navigating access to innovative proteomics approaches**, including top-down analysis of protein post-translational modifications, ability to interrogate the proteome of the extracellular matrix, and access to new methods for analysis of membrane complexes using photo-cleavable surfactants; and
- **Assistance with data interpretation**, including development of machine learning classifiers, and development of quantitative methods for discriminating analytes using reaction monitoring (as appropriate).

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POTENTIAL POINTS OF COLLABORATION VIA A STRATEGIC ALLIANCE:

- **Supporting ongoing project development** including trial design (ICTR Clinical Trials Accelerator), strategic subject recruitment, and protocol development; and
- **Developing plans for dissemination and entrepreneurship** including assistance with stakeholder engagement to facilitate health system implementation, biomarker commercialization, and/or consultation on FDA Investigational New Drug or Investigational Device Exemption regulatory requirements;
- **Integrating samples from special populations** to facilitate a comprehensive, accurate data interpretation and clinical relevance; and
- **Project management services** via our Office of Drug Discovery and Development for studies anticipating commercialization of assays or biomarkers.

WHAT ICTR EXPECTS FROM SUCCESSFUL APPLICANTS:

- **A commitment to undertake a tailored team development program** established in collaboration with ICTR Team Science experts;
- **Inclusion of our Strategic Alliance Team** in the proposed project, including attendance at project meetings, and consideration of publication authorship role; and
- **Partial support of profiling experiments**, i.e., costs of consumables and instrument time.

WHEN: We anticipate selecting two or three projects for advancement in 2019. Please see our attached Pre-Proposal and Full Application instructions.

Projects will be reviewed by the HPP Internal Advisory Committee. Selection criteria will be based on the significance of the study, availability of human samples, anticipated impact of omics profiling on disease management, investigator qualifications, likelihood of extramural funding, and commitment of the lead principal investigator to the Strategic Alliance partnership and collaboration.

Departmental or institute matching support is welcomed and encouraged.

Our ultimate partnered goal will be a successful extramural collaborative grant application involving human subjects or clinical samples.

Please address inquiries to strategicalliance@ictr.wisc.edu