**PURPOSE**

The goal of this communication is to solicit abstracts for research projects focused broadly on point of care technologies that could be applied to heart, lung, blood, or sleep disorders. Abstracts will be considered for inclusion in a UMMS/UMass Lowell center grant application being submitted to the NIH. Selected abstracts would be funded as pilot projects if UMass is awarded the grant.

**INTRODUCTION**

UMass, in collaboration with other state government and academic institutions, will be applying for a National Institutes of Health (NIH) program project grant in response to the PAR-17-453 funding opportunity announcement (FOA; https://grants.nih.gov/grants/guide/pa-files/PAR-17-453.html). The NIH FOA is titled ‘Point-of-Care Technologies Research Network Centers (POCTRN)’.

Lead by the UMass multidisciplinary and multi-principal investigator team of Margaret Koziel (UMMS Department of Medicine), Steve McCarthy (UML Departments of Biomedical and Plastic Engineering), Steve Tello (UML School of Management), Nate Hafer (Program in Molecular Medicine, and Mary Ann Picard (Massachusetts Medical Device Development Center), our Center for Advancing Point of Care Technologies (CAPCaT) in Heart, Lung and Blood Diseases would focus on accelerating the development and clinical testing of point of care technologies for heart, lung, blood, and sleep disorders.

This funding mechanism will support an administrative core, a technology development core, a clinical translation and validation core, and a technology training and dissemination core. A majority of the funding is designated for pilot projects in the $50,000 for 6 months or $100,000 for 1 year range. The first round of pilot awards will be made in year one of the grant, and must be described in the grant application. It is assumed that successful projects will attract additional funding from extramural sources.

**ALLOWABLE USE OF FUNDS**

Abstracts are being sought for individual pilot project awards, dependent on a successful UMass award through the NIH POCTRN funding mechanism. Selection will be made on a competitive basis for pilot projects to facilitate clinical validation and adoption studies in clinical and other settings where the point-of-care testing will be deployed. The Center will not support early stage development of prototypes, but will support refinement of prototypes based on clinical validation results and user feedback. Functional prototypes that have been validated in animal models, when applicable, will be candidates for clinical validation studies within the Center. Technologies that have preliminary safety data in humans and appropriate FDA clearance for human testing (such as Investigational Device Exemption), when applicable, will be matched to ongoing or future clinical studies to test clinical utility and impact, which could include, but are not limited to, the following examples:
• ECG, cholesterol, Hemostasis, and HbA1C monitoring at home or primary care facility to supplement standard monitoring in central laboratory
• Detection of arrhythmia risk and monitoring of heart failure progression at home or primary care facility
• Sensors to continuously monitor drug levels such as antibiotics, TB drugs, anti-retroviral drugs, coumadin, corticosteroids, and chemotherapeutics
• Integrated sensor that can monitor multiple parameters, such as heart rate, respiratory rate, temperature and blood pressure
• Mobile applications in conjunction with POC monitoring devices to alert and monitor asthma condition or sleep quality
• Mobile applications in conjunction with POC monitoring devices to improve patient enrollment, drug adherence and patient follow-up in clinical trials
• Diagnosis of sickle cell disease in low-resource settings
• Diagnostic tools for use in an Emergency Department, such as to rule-out myocardial infarction

Funding could support a full array of resources, including investigator support.

Institutional or departmental matching is not required but would be considered favorably.

The CAPCaT clinical training core will provide support for statistical analyses and clinician feedback on all proposals.

ELIGIBILITY
The Principal Investigator can be faculty from a U.S. college or university or an officer of a small business. Applications from inside and outside the UMass system are welcome.

Special consideration will be given to investigators who are not independent in their pursuits as mentored experiences are welcomed.

If awarded, participation in CAPCaT-related meetings on the UMass Worcester campus will be required up to two times per year. Awardees are also expected to participate in training activities offered by the center, including one 2-day program plus attendance at an annual retreat.

OVERSIGHT and AWARD CRITERION
The CAPCaT grant application and subsequent award will be overseen by the Program Directors listed above. This multi-PI team will make decisions regarding inclusion of abstracts in the center application based upon the scientific merits, potential impact of the proposal(s), and appropriate fit for the overall Center focus. The evaluation criteria used to review abstracts include the following:

• Significance: How does the project address an unmet medical need?
• Collaboration: Does the project articulate the transdisciplinary expertise needed in order to move the project forward?
• Stage: Is the project at the appropriate stage of development (defined above under “allowable use of funds”)?
• Alignment with center areas of disease interest: Is the project designed to accelerate the development and clinical testing of point of care technologies for heart, lung, blood, and sleep disorders?

APPLICATION AND REVIEW PROCESS

Describe in one page or less the background, objective(s), methods, and potential impact of the proposed pilot study. References and detailed budgetary information are not required at this stage.

Please include the following in your application:

• Project title
• PI (with rank, affiliation, location)
• PI contact information
• Other key project personnel (with rank, affiliation, location)
• Significance: Describe the medical need being addressed
• Brief description of the project:
• Stage of prototype development: This funding opportunity will not support the initial development of prototypes but will support prototype refinement, user validation and clinical testing. Please describe the stage of the project.
• Description of project resources needed. Awards will be approximately $50,000 for 6 months or $100,000 for 12 months, with renewals possible based on achievement of project defined milestones
• Project timelines: Please give a brief description of the next milestone based on a 6 or 12 month time frame
• PI biosketch (5 page NIH format)

Abstracts will be reviewed by the Center PI team to determine which projects are significantly linked to the criteria listed above. Based on this review, the most promising projects will be selected to have their abstract included in the Center application to the NIH. If UMass is successful in obtaining this award, abstracts included will receive the pilot funds.

Please email your application (one page or less, Word document) with associated requested information, and NIH biosketch (Word format) as an attachment to: nathaniel.hafer@umassmed.edu on or before September 26th, 2017. Abstracts chosen to be included in the Center application will be notified on or around October 2nd, 2017. The full application will be submitted to the NIH no later than October 27, 2017.