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The NIBIB Point of Care Technologies Research Network Center Themes and Opportunities for Exploratory POC Projects

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Abstract

This article describes the new National Institute of Biomedical Imaging and Bioengineering Point-of-Care (POC) Technologies Research Network and its 4 Centers. The goal is to build expertise in development of integrated systems that address unmet POC testing clinical needs. Centers will work individually and also collectively as part of the national network to coordinate development, clinical evaluation, and reduction to practice of new POC devices.

Keywords

health care delivery; National Institute of Biomedical Imaging and Bioengineering; National Institutes of Health; POCT; U54

In 2006, the National Institute of Biomedical Imaging and Bioengineering (NIBIB) sponsored a workshop[1] that addressed the potential for point-of-care (POC) testing to change the way US health care is delivered. The workshop identified the need for a mechanism that will facilitate the assessment of clinical opportunities in POC testing (POCT) and guide the development of emerging technologies. Additionally, the workshop recommended the formation of infrastructure to create multidisciplinary research collaborations and to facilitate clinical testing early in the development process.

Using the National Institutes of Health cooperative agreement funding mechanism called *U54*,[2] the NIBIB, in September 2007, established and funded 4 Centers, each with an individual research and health care delivery theme (Table 1). The goal of the resulting new

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POC Technologies Research Network is to build expertise in the development of integrated systems that address unmet clinical needs in POCT through the creation of multidisciplinary partnerships. The Centers will work individually to accomplish their own missions and also collectively as part of a national network to coordinate the development, clinical evaluation, and reduction to practice of new POC devices.

Centers' activities gravitate around 5 "core" functions: (1) conducting in-house clinical testing of prototype POC devices; (2) collaborating with physical scientists, biochemical scientists, computational scientists, and bioengineers on exploratory technology development projects; (3) completing clinical needs assessments in areas anticipated to advance the field of POCT and disseminating this information to the technology development community; (4) providing training to technology developers on clinical issues related to the development of POC devices; and (5) providing an adequate administrative structure to ensure that the Centers and National Research Network achieve individual and shared goals.

As the POC Technologies Network and its research products emerge, *Point of Care* will report on the progress of the individual Centers and the coordinated national teamwork, including education programs and opportunities for participation in exploratory projects conducted collaboratively with Center researchers. Readers are encouraged to consider the topics for projects listed in general terms in Table 1 and to contact individual Centers for further details regarding possible research initiatives.

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TABLE 1

The NIBIB Point-of-Care Technologies Research National Network Centers

Principal Investigator	Center Location	Theme
Fred Beyette	University of Cincinnati	Emerging Neurotechnologies
Charlotte Gaydos	Johns Hopkins University	Sexually Transmitted Diseases
Gerald Kost	UC Davis-Lawrence, Livermore National, National Laboratory (LLNL)	Rapid Multipathogen Detection for POCT and National Disaster Readiness
Bernhard Weigl	PATH, Seattle and the University of Washington	POC Diagnostics for Global Health