# Cancer Screening Research Network (CSRN)

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## Notice of Intent to Publish Funding Opportunity Announcements

## Cancer Screening Research Network

- ACCrual, Enrollment & Screening Sites (ACCESS) Hub (UG1)
- Coordinating & Communication Center (UG1)
- Statistics & Data Management Center (UG1)

**For more information:**

**https://prevention.cancer.gov/CSRN**

# Website for CSRN

**Short cut link:** https://prevention.cancer.gov/CSRN

https://prevention.cancer.gov/major-programs/cancer-screening-research

**Notice of Intent to Publish the Funding Opportunities for CSRN**

https://grants.nih.gov/grants/guide/notice-files/NOT-CA-22-129.html
https://grants.nih.gov/grants/guide/notice-files/NOT-CA-22-130.html
https://grants.nih.gov/grants/guide/notice-files/NOT-CA-22-131.html

# Purpose and Rationale

**The purpose of the CSRN is to address questions related to the cancer screening continuum of care:**

- Efficacy, effectiveness, best practices, adoption, adaption, implementation, etc. for each step in this continuum

**Cancer screening trials require a variety of health care providers:**

- Screening is much more than the test itself. Cancer screening is a process involving multiple steps and non-oncology medical specialists.
- Need sites and clinical investigators (e.g., gynecologists, primary care, gastroenterologists, etc.) who routinely conduct cancer screening and the diagnostic testing after a positive screen result.

# Objectives

**Establish the infrastructure to implement screening RCTs and other screening and management studies for prevention/interception:**

- Start with the Vanguard study

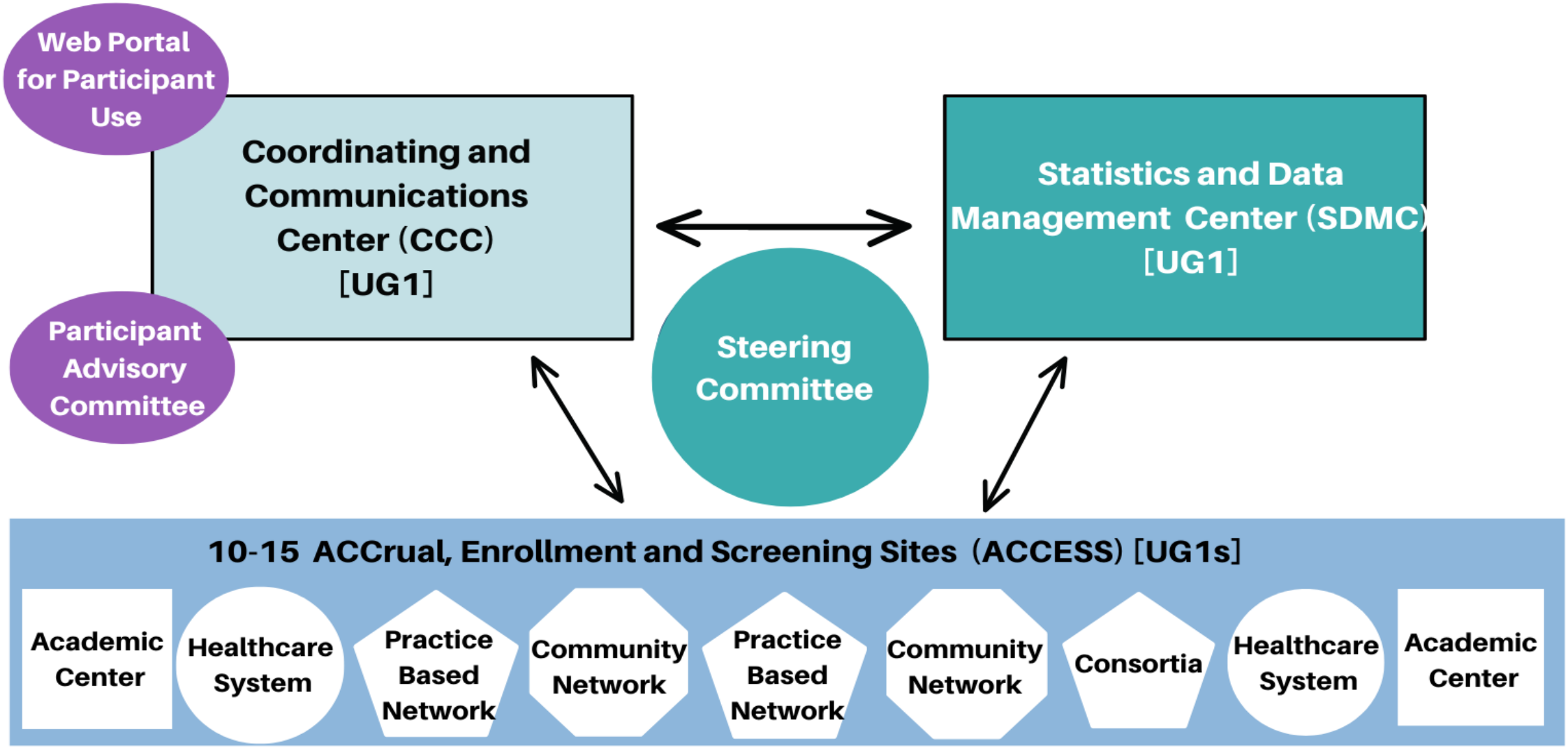
**Conduct cancer screening trials to evaluate emerging technologies for cancer screening:**

- Conduct clinical utility trials e.g., biomarkers emerging from EDRN

**Conduct cancer screening studies to evaluate other aspects of cancer screening, including clinical workflow and coordination of care:**

- Adaption and implementation of screening strategies for diverse practice settings
- Risk-informed screening and management
- Pragmatic trials of screening

# Cancer Screening Research Network



# Organizational Structure of CSRN

*Utilizing the NCI Clinical Trials Enterprise System*

**Coordinating and Communication Center (One UG1 grant)**

- Cancer screening leadership
- Communications, recruitment and retention expertise
- Operations and coordination for development/conduct of trials and studies
- Protocol development, monitoring and auditing, and training

**Statistics and Data Management Center (One UG1 grant)**

- Statistical expertise for study design & analysis
- Data management
- Coordination with Biorepository

# Organizational Structure of CSRN (Continued)

**Accrual, Enrollment and Screening Sites (ACCESS) (10-15 UG1 grants)**

- Initially 10-15 UG1-funded CSRN sites; additional sites will be needed for the MCED RCT specifically
- Variety of healthcare settings (academic, community, healthcare systems, consortia and/or practice-based research networks)
- Institution with demonstrated accrual and retention of participants on disease screening clinical trials, especially cancer screening or prevention
- Investigators with expertise in cancer screening and history of recruiting participants onto screening and prevention clinical trials and studies
- Demonstrated history of recruiting underserved population

# Why?

Personal Genome Diagnostics

Foundation Medicine

Burning Rock

Biological Dynamics

20/20 GeneSystems

Precision Epigenomics

EarlyDiagnostics

Epic Sciences

Singlera Genomics

Biocept

QIAGEN

Exact Sciences

Guardant Health

GRAIL

Natera

Bluestar Genomics

Oncocyte

Delfi Diagnostics

Freenome

StageZero

Cardiff Oncology

LungLife AI

Resolution Bioscience

Elypta

Exosome Diagnostics

Adela

Caris Life Sciences

I think I'd like to have an MCD test, Doc, but which one?

# MCD Background

# Background on MCD assays

**Each MCD assay measures different analytes in blood:**

- There are many markers in development (e.g., patterns of DNA methylation, DNA fragmentation, DNA mutations, RNA sequences, proteins, combo, etc.).
- Each MCD assay detects a different set of cancer types.

**A positive test result is a signal for cancer but does not diagnose cancer:**

- Some tests suggest a “tissue of origin.”
- Some tests require extensive imaging after a positive MCD result.

**Each company has a proprietary algorithm for what constitutes a positive assay. Some assay companies continue to refine those algorithms**

| Company | Assay | Technology | Targeted Cancers | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Lung | CRC | Breast | Pancreas | Liver | Esophagus | Stomach | Ovary | Prostate | Bladder | Kidney | Uterine | Head & Neck | Lymphoma | Leukemia | Plasma Cell | Brain |
| Adela Bio | adela™ | cfMeDIP-seq; cfDNA fragmentomics | ■ | ■ | ■ | ■ | | | | | | ■ | ■ | | | | ■ | | |
| Biological Dynamics | **Tr(ACE)** | EV proteins; AI | | | | ■ | | | | ■ | | ■ | | | | | | | |
| Bluestar Genomics | **BluestarMCED** | cfDNA 5hmC-seq; fragmentomics | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | |
| Burning Rock | **OverC™** | ELSA-seq | ■ | ■ | | ■ | ■ | ■ | | ■ | | | | | | | | | |
| Caris Life Sci | MI GPSai™ | cfDNA/cfRNA NGS; AI | ■ | ■ | ■ | | | | ■ | | | | ■ | ■ | | | | | |
| Delfi Dignostics | DELFI | cfDNA fragmentomics | ■ | ■ | | ■ | | | ■ | ■ | | | | | | | | | |
| Early Diagnostics | **cfMethyl-Seq** | cfDNA mC-NGS | ■ | ■ | | | ■ | | ■ | | | | | | | | | | |
| Elypta | **MIRAM** | UHPLC-MS GAGs/SKY | | | ■ | | | | ■ | | ■ | ■ | ■ | | ■ | ■ | ■ | | ■ |
| Exact Sciences | **CancerSEEK** | cfDNA NGS; protein markers | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | |
| Freenome | **FMBT** | Multi-Omics/AI | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Grail | Galleri™ | CpG-cfDNA NGS | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | | ■ | | | ■ | ■ | | ■ | |
| LungLifeAI | **LungLB** | CTC FISH; Imaging AI | ■ | | ■ | | ■ | | | | | | ■ | | | | | | |
| Natera | Signatera™ | cfDNA NGS; protein markers | ■ | ■ | ■ | ■ | ■ | | | ■ | | ■ | | ■ | | | | | |
| Precision Epigenomics | **Sentinel-10™** | CpG-cfDNA qPCR | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | | |
| 20/20 Gene Systems | **OneTest** | circul. Cancer Ag's; AI | ■ | ■ | ■ | ■ | ■ | | | ■ | ■ | | | | | | | | |
| Jefferson U/Intermountain | **VPAC receptor-TP4303** | NIR Optical Microscopy | ■ | | ■ | | | | | | ■ | | | ■ | ■ | | | | |
| MD Anderson CC | **Acetylated polyamines** | LC-MS/MS | ■ | ■ | ■ | ■ | | | | ■ | | | | | | | | | |
| Ryerson U/St Michael's Hosp | **Quantum Sensor/OncoProfiler** | CTC SERS/ML | ■ | ■ | ■ | | | | | ■ | | | | | | | | | ■ |

# Many Unknowns about Screening for Cancer with MCD Assays

**Unknown if screening a population of asymptomatic people for cancer with MCD assays will result in a mortality reduction from cancer.**

**Harms from using MCD assays to screen for cancer are unknown:**

- What kind/how many diagnostic tests are needed to diagnose cancer?
- What happens if you do not find a cancer after a positive MCD test?
- How many people will receive unnecessary invasive procedures and suffer complications?
- Will people stop standard of care screening after a negative MCD test?
- Will a blood test make screening more accessible or exacerbate disparities?
- Will these assays lead to overdiagnosis of indolent cancers?

# Clinical Trials Network Specific to Cancer Screening

**Tsunami of potential tests with many unanswered questions which requires a new network uniquely designed to design and conduct the trials**

**Investigators involved in cancer screening**

- Need sites and clinical investigators (e.g., gynecologists, primary care, gastroenterologists, etc.) who routinely do cancer screening and the diagnostic workup for a positive screen

**Evaluate approaches for precision screening**

**Funding specific to cancer screening**

- Recruitment/retention and communications expertise

# Pilot or Feasibility Study
## The Vanguard Study

# The Vanguard Study

**Randomization**

Control Arm

MCD 1 Arm

MCD 2 Arm

All Arms Offered Standard of Care Cancer Screenings

**Interventions**

\+ No Additional Tests Control Arm

\+ MCD 1 Tests for Cancers A, B and C

\+ MCD 2 Tests for Cancers C, D and E

## Objectives of Vanguard Study

- Assess participant willingness for randomization
- Determine adherence to testing and diagnostic follow-up
- Evaluate feasibility of protocol-defined diagnostic workflows
- Determine reliability and timeliness of blood specimen testing and return by MCD companies
- Identify facilitators and barriers to recruitment/retention/compliance of diverse participant groups

Estimated sample size for the Vanguard is 8,000 persons per arm

# Collaboration Between Networks

**CSRN will use NCI Clinical Trials Infrastructure:**

- CTSU, OPEN, Medidata Rave, CIRB
- Future opportunities for cross network collaboration

**Potential to identify participants for cancer prevention and control and treatment clinical trials:**

- Identification of patients with pre-cancer and early cancer

**Establish CSRN and then consider ways in which to collaborate in the development of complementary studies and trials.**

# Questions?

# Thank you!


www.cancer.gov

www.cancer.gov/espanol