

ESSENCE OF A CENTER OF EXCELLENCE IN GENOMIC SCIENCE (CEGS)

(to be read in conjunction with [PAR-16-436](#))

A successful CEGS must include ALL of the following:

A CEGS is highly innovative, being designed to develop new concepts, methods, technologies, or ways to produce or analyze comprehensive data sets, or on a particular genome-scale biomedical problem, or on other ways to develop and use genomic approaches for understanding biological systems and/or significantly furthering the application of genomic knowledge, data and methods towards clinical applications.

A CEGS proposes a very substantial advance to addressing a critical issue in genomic science or genomic medicine. Achieving a substantial advance entails risk; this is balanced by the potential for very high payoff and requires an outstanding scientific plan and effective management strategy.

A CEGS is a tightly focused project implemented by a multi-investigator, interdisciplinary team working in a highly integrated fashion. Components of the program must be interdependent, not simply related. Synergy and integration are key.

A CEGS will lay out a specific and substantive “product” that can be identified as having been the outcome of CEGS funding.

A CEGS will take on challenging aspects of a problem, including ones that have slowed progress in the chosen area of research.

A CEGS will increase the pool of professional scientists and engineers able to work in or use genomics, by offering innovative, substantive education and outreach opportunities across appropriate disciplines. It will integrate the training of new and broaden the training of established investigators. Graduate students and postdoctoral fellows, at a minimum, should participate in the research; however, that participation alone is insufficient as an education and outreach effort.

Additional characteristics of a CEGS:

A CEGS project may include an ELSI component if it is integrated with and closely related to the main focus or theme of the project.

Establishing a CEGS at an institution must add value beyond ongoing activities in genomics at that institution.

A CEGS project may propose very substantial improvement in current technology, to increase throughput and decrease cost.

A CEGS may choose a cell, organism, tissue, pathway, or disease as a model system in which to develop the concepts or methods, but those concepts or methods must be broadly applicable well beyond the chosen example.

A CEGS is NOT:

- ...an additional implementation of ideas already being pursued by the team or by others;
- ...the obvious next step in a project or field, which could be accomplished by assembling state-of-the-art components and innovating at the level of a typical R01;
- ...a program project;
- ...infrastructure for an existing program or department;
- ...primarily for the collection of a dataset in the absence of a novel concept or methodological approach;
- ...”only” outstanding science that fails to meet the criteria required of a CEGS.