NSF will take a leadership role in providing software as enabling infrastructure for science and engineering research and education, and in promoting software as a principal component of its comprehensive CIF21 vision...

Reducing the complexity of software will be a unifying theme across the CIF21 vision, advancing both the use and development of new software and promoting the ubiquitous integration of scientific software across all disciplines, in education, and in industry

- A Vision and Strategy for Software for Science, Engineering, and Education – NSF 12-113

- How does SI² fit with other NSF programs that support software cyberinfrastructure?
Create and maintain a CI ecosystem providing new capabilities that advance and accelerate scientific inquiry at unprecedented complexity and scale.

Support the foundational research necessary to continue to efficiently advance CI.

Enable transformative, interdisciplinary, collaborative, science and engineering research and education through the use of CI.

Transform practice through new policies for CI addressing challenges of academic culture, open dissemination and use, reproducibility and trust, curation, sustainability, governance, citation, stewardship, and attribution of CI authorship.

Develop a next generation diverse workforce of scientists and engineers equipped with essential skills to use and develop CI, with CI used in both the research and education process.
Software Cluster Programs/Solicitations

- **Exploiting Parallelism and Scalability (XPS)**
  - New CISE & OCI program for foundational groundbreaking research leading to a new era of parallel (and distributed) computing
  - Issued in Oct., proposals due in Feb.

- **Computational and Data-Enabled Science & Engineering (CDS&E)**
  - Virtual program (ENG, MPS, OCI) for science-specific proofing of algorithms and codes
  - Identify and capitalize on opportunities for major scientific and engineering breakthroughs through new computational and data analysis approaches

- **Software Infrastructure for Sustained Innovation (SI²)**
  - Transform innovations in research and education into sustained software resources that are an integral part of the cyberinfrastructure
  - Develop and maintain sustainable software infrastructure that can enhance productivity and accelerate innovation in science and engineering
SI² Software Activities

- **SSE & SSI**
    - About 27 SSE and 20 SSI projects (19 SSE & 13 SSI in FY12)
    - Will fund about 4-6 awards from 18 proposals
  - Planning additional annual general solicitations

- **S²I²**
  - Solicitation for conceptualization awards, NSF 11-589 (2012)
    - 13 projects (co-funded with BIO, CISE, ENG, MPS)
  - Solicitation out for 3-5 more S²I²s (NSF 13-511)
  - Full institute solicitation in late FY14

- **US/China DCL (with CISE/CNS, loosely with NSFC)**
  - NSF 12-096: will make decisions soon on small set of initial projects
  - Will fold into future SSE&SSI solicitation