

# *The Nuclear Science User Facilities (NSUF)*

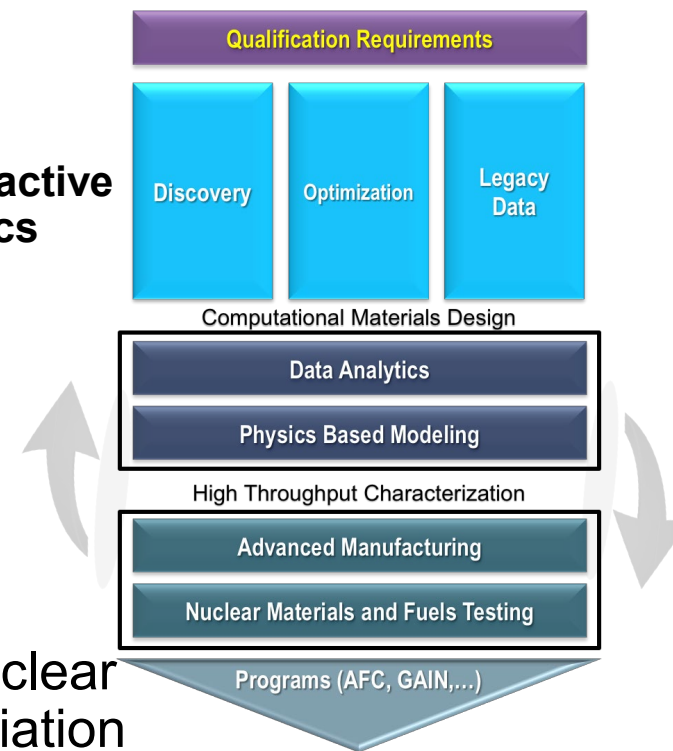
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# NSUF-1.3 Nuclear Materials Discovery and Qualification Initiative

➤ **Goal:** Accelerate discovery and qualification of new materials to satisfy the needs of the nuclear industry. Faster to market at lower cost.

- Initiative based on materials design concept (ck. Materials Genome Initiative) applying the Combinatorial and High-Throughput (CHT) methodology that integrates:

- Combinatorial materials fabrication methods
- High-throughput characterization techniques
  - **High-throughput property testing on radioactive materials including automation and robotics**
  - **Technique development**
  - **Bulk to nano- and micro-scale property correlations**
- Materials modeling
- Data analytics
  - **Machine learning**
  - **Artificial intelligence**



➤ Proposals welcome from all areas of CHT for nuclear fuels and materials from fabrication through irradiation and PIE

- **Materials for core, cladding, and structural applications, metallic and ceramic advanced fuels, sensor materials, coatings, corrosion, etc.**

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