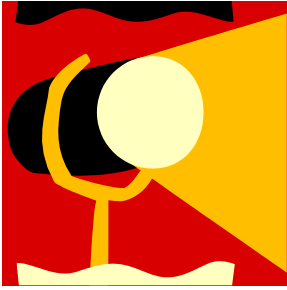


# A Federal Vision for STEM Education: Evidence, Effectiveness and Strategy

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# Spotlight on STEM education

- A top priority for President Obama
- President's goals:
  - Recruit, prepare and retain 100,000 excellent STEM teachers over the next decade
  - Graduate an additional 1 million STEM majors over the next decade
- White House Science Fairs in 2010 and 2012
- Call to action: Encourage the 200,000 Federal scientists and engineers to volunteer in their local communities and engage students in STEM
- Reorganized budget for efficiency and effectiveness in second term
- CoSTEM 5-year Federal Strategic Plan for STEM Education

# Importance of Evidence



- Make the best budget, management and policy decisions
- Find promising practices and effective programs
- Share information across agencies and with the public improve the impact of the Federal STEM education investment

# Implementation

- Evidence will be used to...
  - Determine best practices
    - To improve STEM teaching and learning
    - To increase public/student engagement with STEM
    - To retain undergraduate STEM majors
    - To increase representation amongst minorities, women and other underrepresented groups
    - To build a cohesive strategy for graduate fellowships
  - Create guidelines for grants
  - Program implementation
  - Scale-up productive programs



# Education Department General Administrative Regulations (EDGAR)

- Set guidelines for grant programs
- Improve the quality and effectiveness of grant-making decisions
- Emphasize a ‘strong theory’ and ‘evidence of promise’ in applications
- Grant special consideration for evidence-based programs or the creation of a separate competition for evidence-based programs
  - “Strong” or “moderate” evidence of effectiveness
- Provide higher quality to data to Congress and the public
- Effective September 12, 2013



# Common Evidence Framework

- NSF as co-lead with ED's Institute of Education Sciences (IES)
- Give a common language for research between different agencies
- Expected purposes, justifications and outcomes of various types of research
- Knowledge generation about interventions and strategies for improving learning
- Multi-directional development of knowledge



# Repositories of Information



- What Works Clearinghouse
  - Contains practice guides, publications and reviews
- Compendium of IES Mathematics and Sciences Interventions, Outcomes, and Products
  - Anticipated release date: Spring 2014
- Findings from IES National Center for Education Research: 2002-2011
- Findings from IES National Center for Special Education Research: 2006-2012
- Publications emerging from research funded through the National Center for Education Research as of September 30, 2011

# Moving forward

- Our hope: Evidence based practices will better STEM education and its associated research for students, teachers, researchers, and policymakers
- Achieve President Obama's goal of increasing the number of STEM teachers and professionals





# Questions?

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