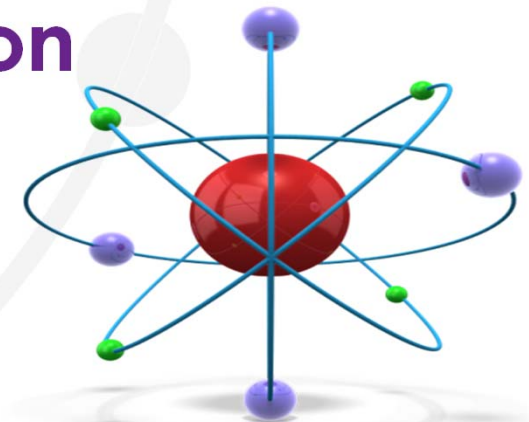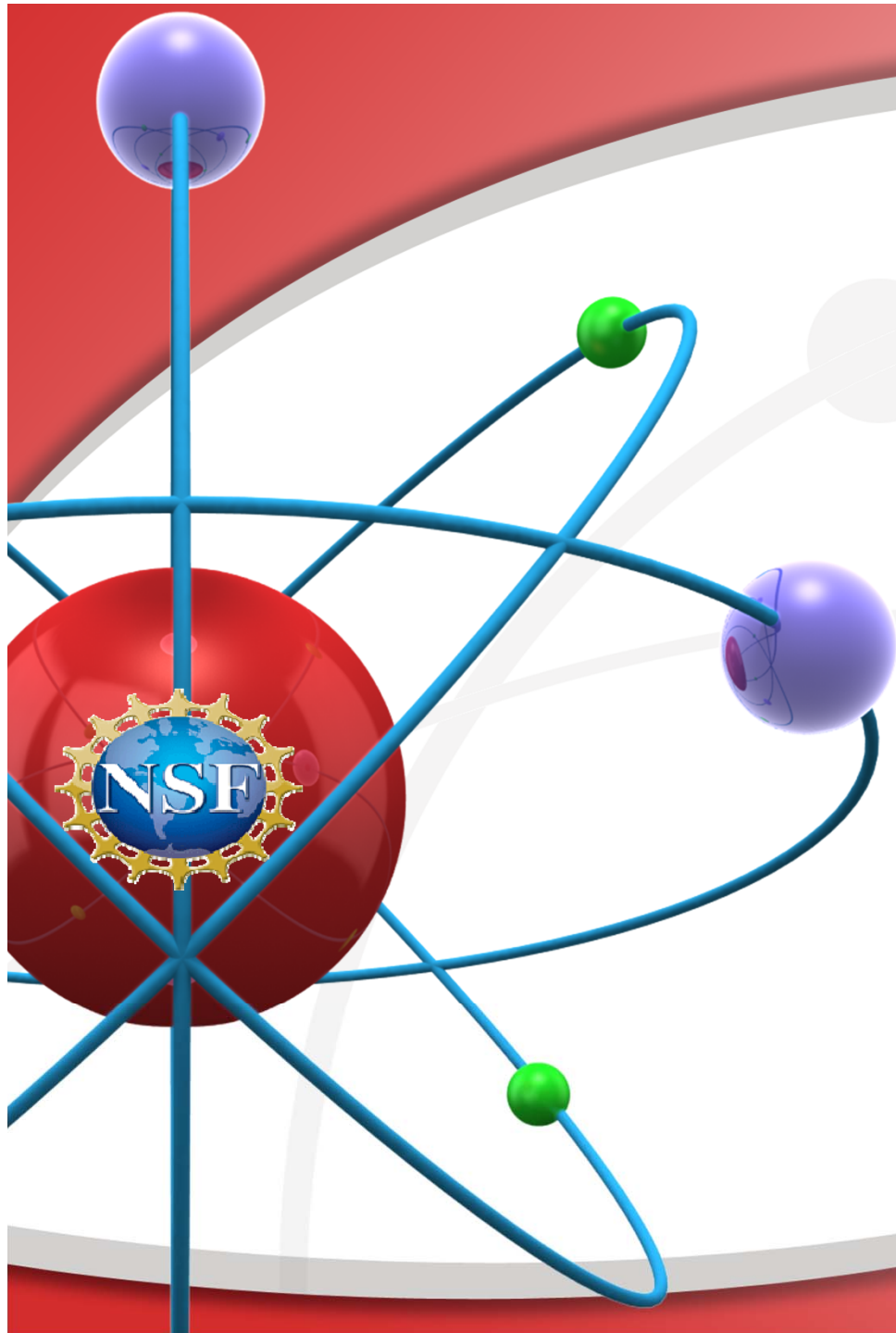# Webinar

Submitting Competitive NSF Proposals

Advancing Informal STEM Learning (AISL)

AISL SOLICITATION (#13-608)

SESSION AGENDA

- ❖ AISL Program Overview & Solicitation
- ❖ Project Types
- ❖ Preparing Competitive Proposals
- ❖ Review Process & Merit Review Criteria
- ❖ Other NSF Programs & Resources (for your review after the webinar)
- ❖ Program Contact Information
- ❖ Questions

AISL Program Overview & Solicitation

AISL Program

❖ **Advancing** – Innovative projects that advance the field through building knowledge via innovative approaches and research.

❖ **Informal** – Out-of-School learning that makes learning lifelong, life wide, & life deep.

❖ **STEM** – Not just focused on science, but all of NSF-funded STEM.

❖ **Learning** – Learning outcomes include: interest, engagement, motivation, behavior, identity, persistence, understanding, awareness, knowledge, and use of STEM content and practices, and 21st century skills.
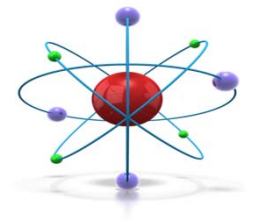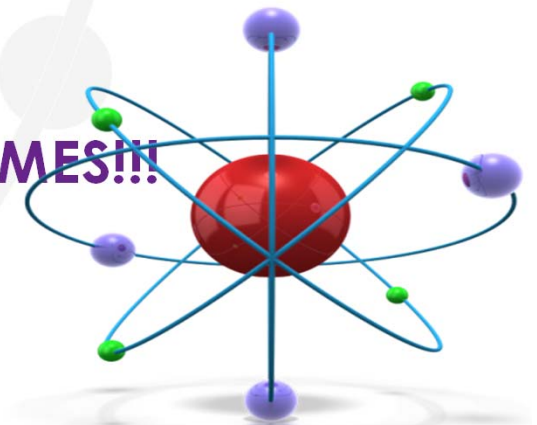
AISL SOLICITATION (#13-608)

IMPORTANT DATES

Proposal deadlines:
**January 14, 2014 (FY 2014)**
November 14, 2014 (FY 2015)

❖ No January 2015 deadline

❖ **READ THE SOLICITATION MULTIPLE TIMES!!!**

AISL SOLICITATION REVISIONS

❖ No preliminary proposal or letter of intent

❖ Research & Full-Scale Development project types replaced

❖ New project types: Research in Service to Practice & Innovations in Development

❖ Projects collect evidence to build knowledge and advance the field.

❖ Revised requirements for external review & evaluation

❖ Revised description of dissemination
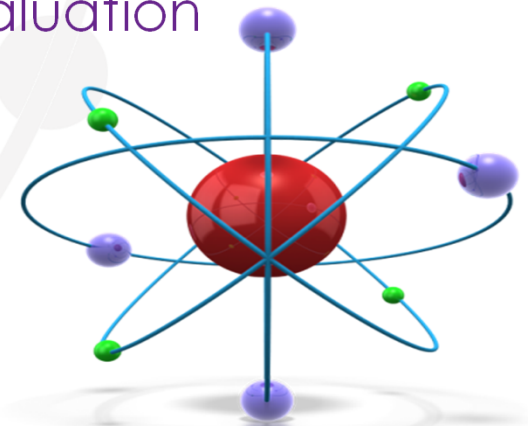
AISL Projects (1)

- ❖ Build on fundamental research and STEM education development literature and practice

- ❖ Focus on diverse audiences, STEM content, and informal learning environments

- ❖ Advance the field through the development of innovative research, assessment, resources, models and tools

- ❖ Have rigorous research and development plans

AISL Projects (2)

❖ Generate knowledge through research, development & evaluation asking "what is happening," "to what extent," "why," "how," "what works for whom," and "under what circumstances"

❖ Identify learning outcomes. (See page 6 for references to recent literature.)

❖ Are closely linked with theories of practice and designed based to inform and support practice
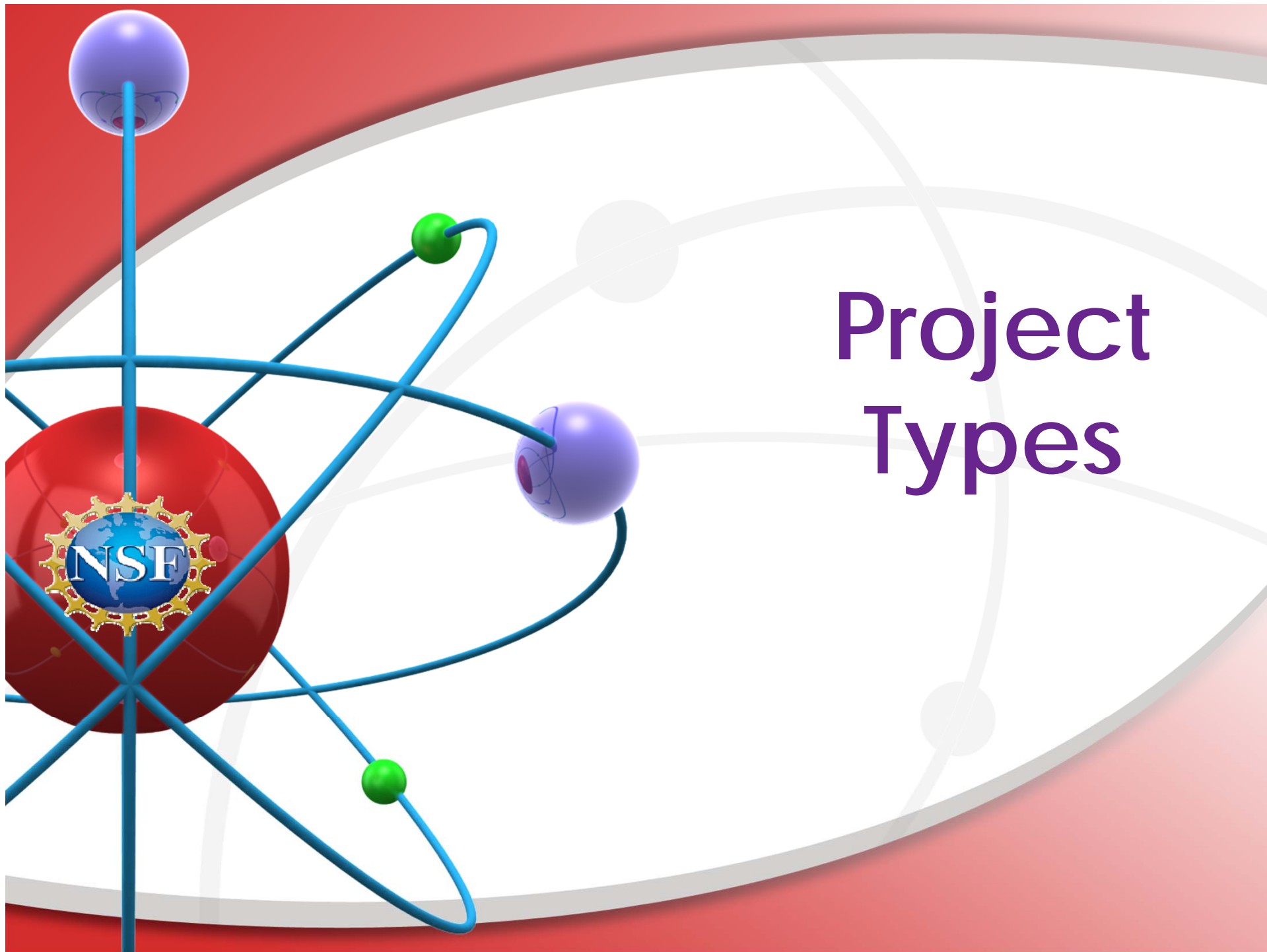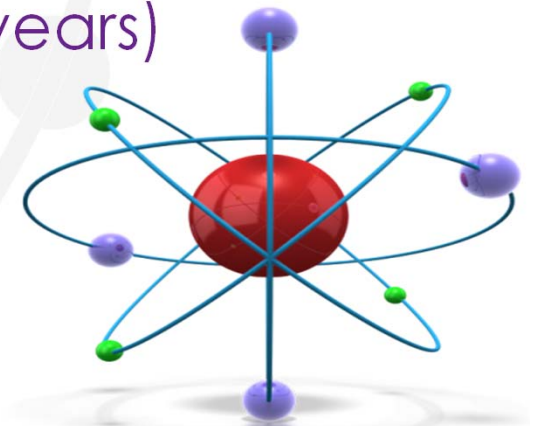
Project
Types

Pathways

❖Exploratory development work or feasibility studies

❖Should lead to field-advancing proposals of other project types

❖ Should produce evidence, findings and/or deliverables that form basis for further work

❖Should state how project informs future work & advances field

❖Funding up to $300,000 (duration up to 2 years)

Research in Service to Practice

❖Advances knowledge & <u>provides evidence base for practice</u>

❖Primary focus on research questions

❖Qualitative or quantitative data (evidence) and involve range of techniques

❖Can also be syntheses or meta-analyses

❖Includes literature review & detailed research plan

❖Researchers and practitioners are close collaborators

❖Funding from $300K to $2 million for 2-5 years
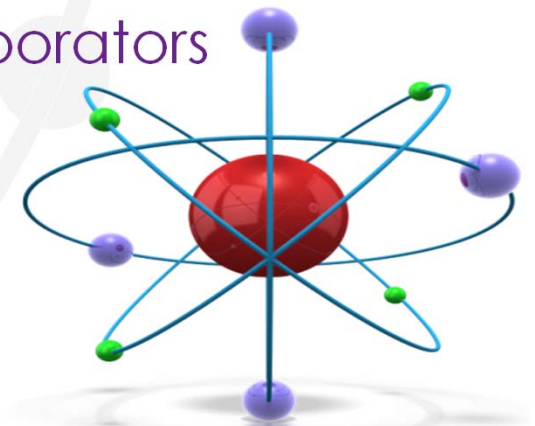
Innovations in Development

❖ Builds knowledge through the development of innovative products

❖ Builds on evidence from prior practice & research

❖ Describes an explicit theory & logic model/theory of action

❖ Includes plan & process for design, development & implementation

❖ Includes plan for knowledge building through research and/or evaluation

❖ Funding: $500K to $3 million for 2-5 years

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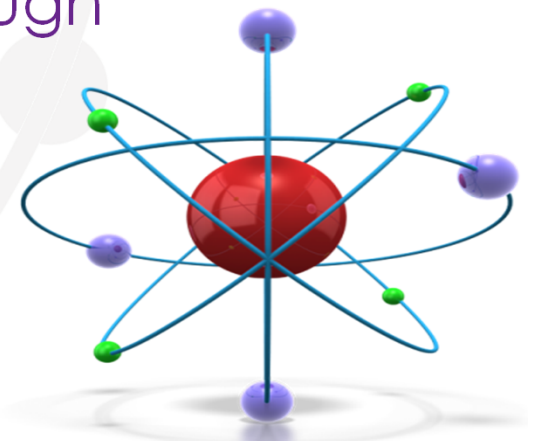
Broad Implementation

❖ Expands models, programs, technologies, assessment or other advances that have documented record of success

❖ Expands reach: age, gender, geography, etc.

❖ Includes plan & process for design, development, & implementation

❖ Builds knowledge through research and/or evaluation

❖ Funding $500K to $3 million for 2-5 years
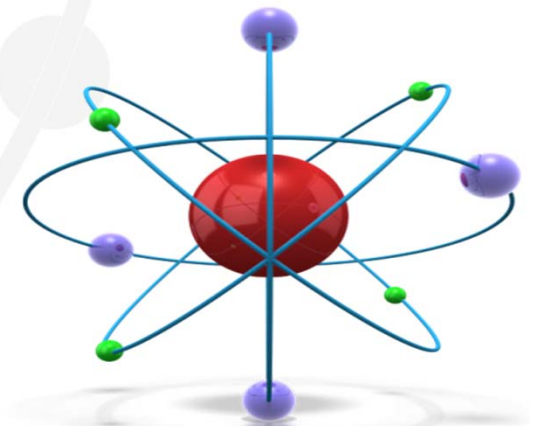
Conferences, Symposia & Workshops

❖ Relate to AISL program goals

❖ Focus on development of communities of practice, field-advancing practice, assessments, & research agendas

❖ Proposals request >$50,000, due on deadline

❖ Proposals up to $50,000 may be submitted at any time
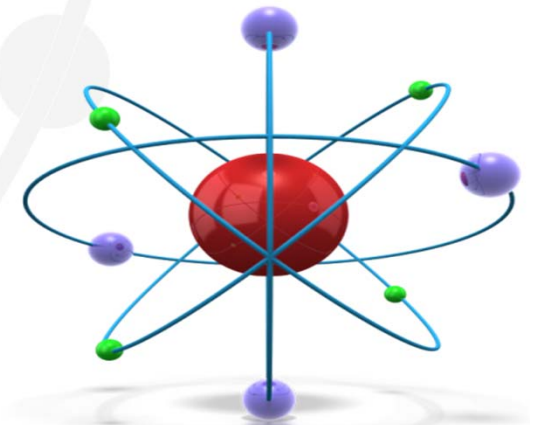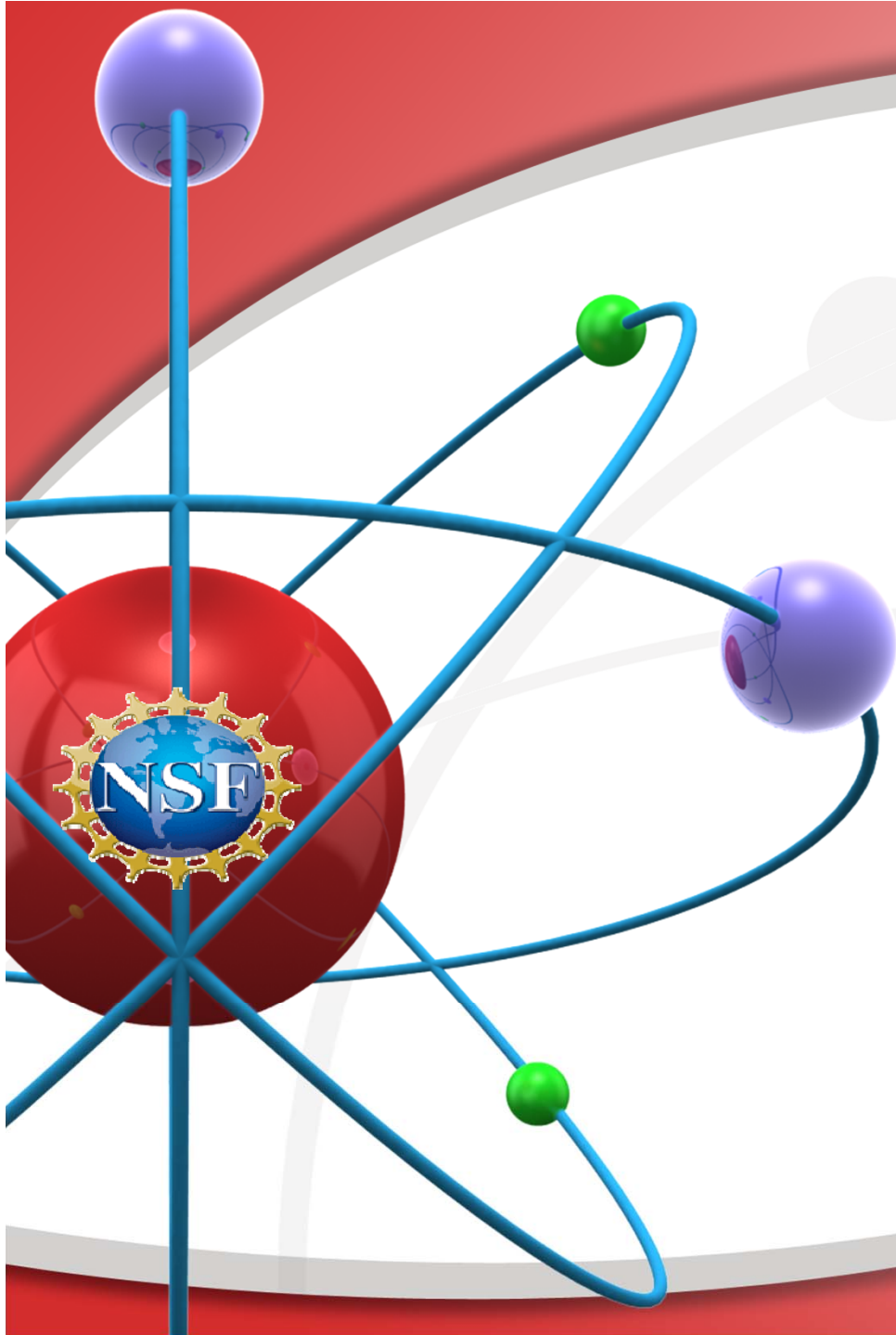
Preparing & Submitting Competitive Proposals

**Grant Proposal Guide
http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg**

Number of Awards (2014)

Anticipated funds: $20-$27 million for FY 2014 for <u>new</u> awards (FY 2015 expected to be similar)

Anticipated number of awards for FY 2014:

➢ 6-10 Pathways

➢ 7-10 Research in Service to Practice

➢ 10-13 Innovations in Development

➢ 3-6 Broad Implementation

➢ 5-7 Conferences, Symposia & Workshops

➢ EAGERS, RAPIDS & CAREER awards also made from these funds

Preparing to Submit a Proposal

❖ *www.fastlane.nsf.gov;* 1-800-673-6188

 ❖ (7 AM to 9 PM Eastern Time • M-F)

❖Submit early

❖Required sections

❖IRB

❖Check your proposal for compliance—
  just hit the button in Fastlane

Project Summary

First Sentence

❖Type of Proposal: Pathways, etc.

Overview

❖Describe type of activity that will result, objectives & methods

Intellectual Merit and Broader Impacts

❖Must include separate statements on each of these two NSB criteria

Project Description (Narrative)

❖Identify project type in first sentence

❖Cover the following in the project description:

➢Project Rationale

➢Project Design

➢Dissemination Plan

➢Evaluation & External Review

➢Management Plan

Project Rationale

❖Describe primary goals, hypotheses, models, products or research questions

❖Explain how the project builds on prior research and practice

❖Explain how the project is innovative and builds knowledge for the field

❖Describe STEM content

❖Discuss results of prior NSF support and how (where relevant) it informs the design of the proposed project

Project Design

- ❖ Describe project deliverables
- ❖ Describe measure of learning outcomes for target audiences and how they were selected
- ❖ Identify public and/or professional target audiences & how they will be reached
- ❖ Describe (if relevant) how the project will broaden participation for underrepresented groups
- ❖ Describe how the project will generate knowledge, including questions, methods, instruments & analysis
- ❖ Describe project impact on informal STEM

Dissemination Plan

❖Describe the key elements of a creative communications plan to disseminate project products and/or findings to the general public, researchers, policy makers, and practitioners

❖Required to share design, findings, and products with the CAISE: informalscience.org website.

Evaluation & External Review

Evaluation & External Review processes are to:

1. Ensure that projects get appropriate, rigorous input throughout the life of the project so that the research and development components of the project are actively improved as a result.

2. Ensure there is accountability: The federal govt is funding you to enact as specific project—Did the project achieve its goals? What was the quality of your work?

3. all projects must build knowledge—advance the field through research, evaluation, or a hybrid. There are as many permutations as there are proposals.

Most critically, each PI team figure out what makes the most sense to meet their project's goals and include a clear design and description of an evaluation and external review plan in their proposal.

Evaluation & External Review

Examples:

❖<u>Research studies</u>: External critical review:
1. Improve quality of research process
2. Did project meet goals? Level of quality?
3. The research results = knowledge building component.

❖<u>Development components</u>: Evaluation:
1. Iteratively improves design and implementation (internal or external evaluator)
2. Did project meet goals? Level of quality?
3. If evaluation is the knowledge building component, then summative evaluation needed. If research is the knowledge building component, see above.

Management Plan

- ❖ Describe the project leadership team, other members of the project team & advisory board, and how their combination of expertise is appropriate

- ❖ Describe the management plan for how the team and partners will work collaboratively to achieve project goals

- ❖ Provide a workplan for key project tasks/deliverables

Supplementary Documents

❖ Brief letters of commitment or cooperation

❖ Summaries of formative & summative evaluation findings of prior work (2 page max.)

❖ Additional details of logic model, theory of action and evaluation plans (5 page total max.)

❖ Additional 30 pages (max.) of supporting info, such as media scripts, exhibit sketches, etc.

❖ Data Management Plan

❖ Post Doc Mentoring Plan

Budget

❖ **Should be consistent with level of work** – you do not have to request the maximum!

❖ **Two months salary:** No more than two months of salary for senior personnel on all NSF grants without a justification

❖ **Indirect cost rates:** Set by the institution and auditors and is non-negotiable.

❖ **No cost sharing.**

Avoid Ineligible Expenses

❖ Capital or operating expenses

❖ Major or office equipment

❖ Vehicles

❖ Undergraduate tuition

❖ Paid advertising

❖ Admission fees

❖ Publications and curricula as the primary deliverable
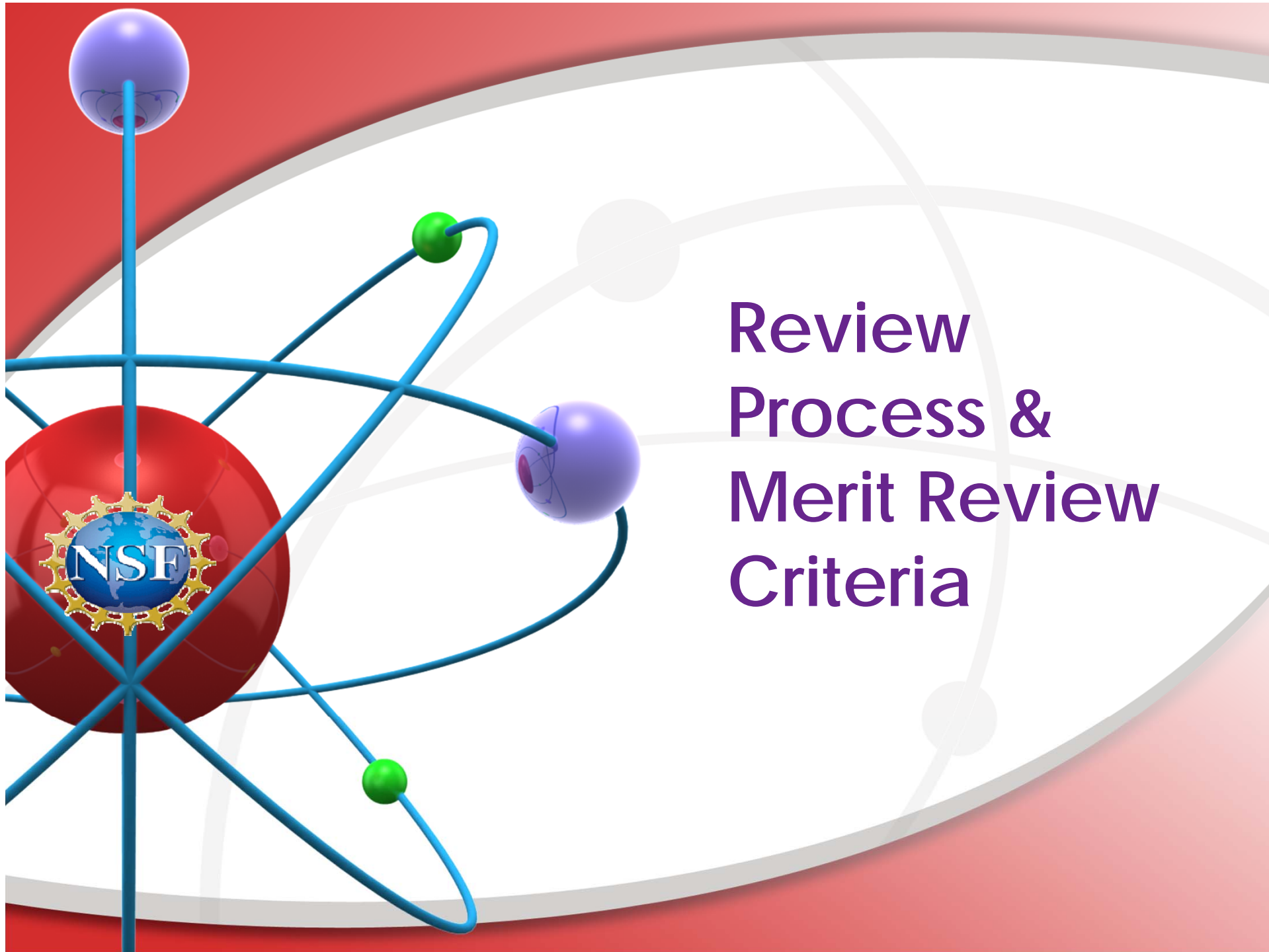
Review Process & Merit Review Criteria

Proposal Review Process

❖ Proposals are reviewed in panels with a range of external experts (e.g. educational researchers, content experts, educators, developers)

❖ Each proposal will have 3-4 reviews

❖ Each reviewer rates each proposal as

 Excellent, Very Good, Good, Fair or Poor

❖ This is advisory to NSF with respect to what proposal to fund.

❖ PIs receive reviews, panel summaries, and comments from POs.

Merit Review Criteria

Intellectual Merit and Broader Impact

1. What is the potential for the proposed activity to:

      a. advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and

      b. benefit society or advance desired societal outcomes (Broader Impacts)?

2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?

3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?

4. How well qualified is the individual, team, or institution to conduct the proposed activities?

5. Are there adequate resources available to the PI (either at the home institution or through collaborations) to carry out the proposed activities?

Common Guidelines for Educational Research and Development

NSF 13-126 - Joint effort between NSF and the Institute for Education Sciences at the U.S. Department of Education
http://www.nsf.gov/pubs/2013/nsf13126/nsf13126.pdf?WT.mc_id=USNSF_124
NSF 13-127 - Set of FAQs
http://www.nsf.gov/pubs/2013/nsf13127/nsf13127.pdf

Goals of the *Common Guidelines* Project

- ❖ Improve the quality and pace of findings from education research and development proposals
- ❖ Develop an education infrastructure that supports more rapid and efficient knowledge development
- ❖ Aid NSF and ED in making informed choices about where to invest scarce research and development dollars
- ❖ Provide clarity for the field (and within the two agencies)
- ❖ A good reference for framing research & eval.

CAISE: InformalScience.org

- ❖ InformalScience.org website: redesigned and now compiles a large number of previously independent websites.

- ❖ Resource for potential AISL PIs: http://informalscience.org/nsf-aisl (or just look for NSF AISL in the upper middle on the informalscience.org homepage).

- ❖ Midway down the NSF AISL page is **Resources for Working with National Science Foundation Support**, which includes many evaluation resources as does http://informalscience.org/evaluation/evaluation-resources

- ❖ There are other proposal related resources, including CAISE-produced ones at http://informalscience.org/about/informal-science-education/resources.

NSF Resources for PIs

❖ What has AISL funded?
http://www.nsf.gov/awardsearch/

> ➤ Put in AISL to see the vast range of what has recently been funded or just click on the link from the AISL webpage:
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504793

> ➤ Also try key words related to your proposal topic/area; there are many search options to explore

❖ NSF Grant Proposal Guide (GPG) is very helpful as are FAQs: http://www.nsf.gov/bfa/dias/policy/

> ❖ IRB and other information is also on this page.

Final Suggestions

❖ Submit early

❖ Spell check; Check **grammar & punctuation** (professional editor?)

❖ Talk early with Program Officers (POs); email

DRLAISL@nsf.gov

❖ **Post Submission**: Take follow-up questions from NSF seriously
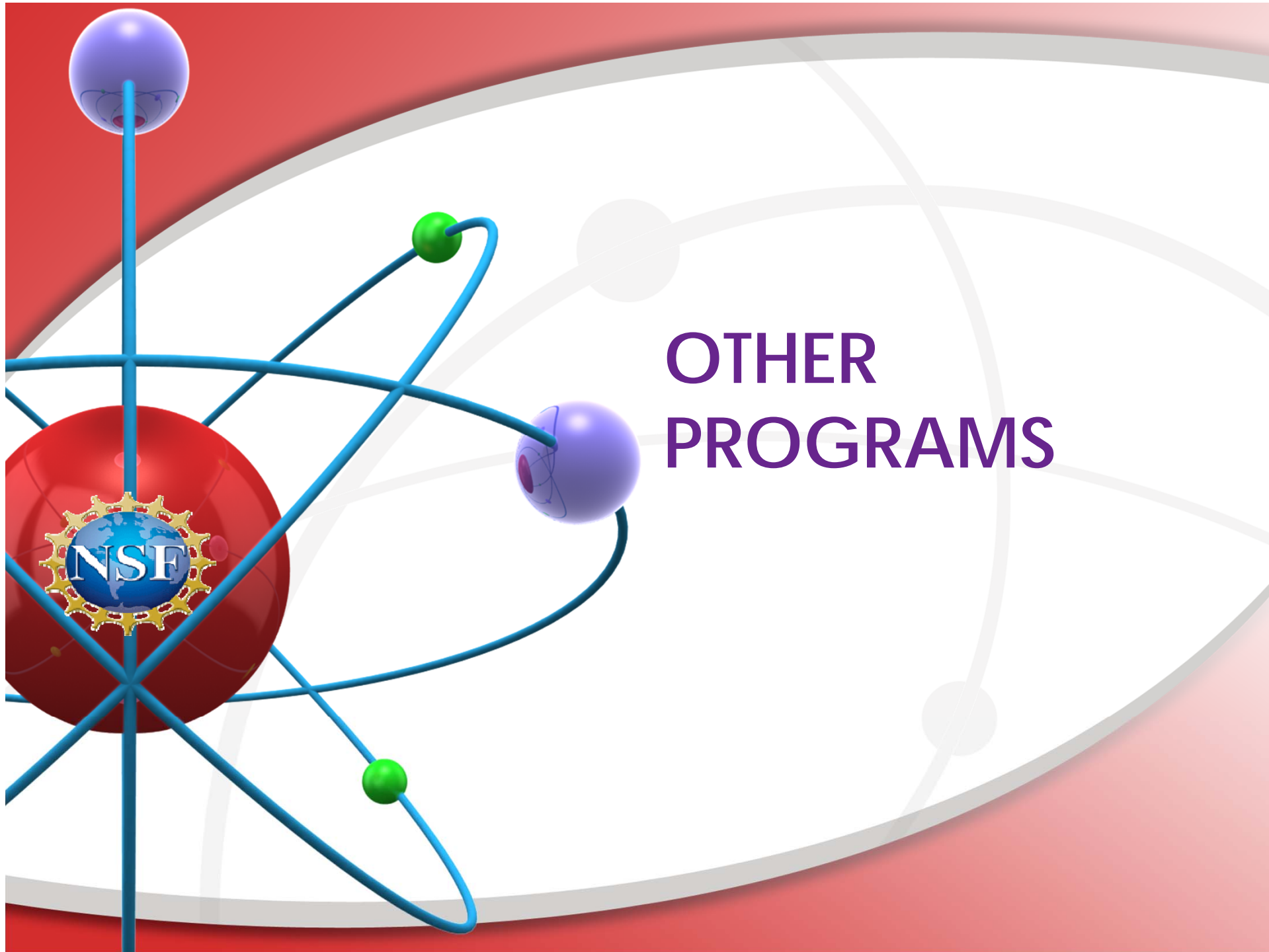
Reviewing for NSF?

Interested in Serving as A Reviewer:

❖*Experience the Proposal Review Process*

❖*Serve as a Content/Field Expert*

❖*Contribute To Funding Decisions & Field Advancement*

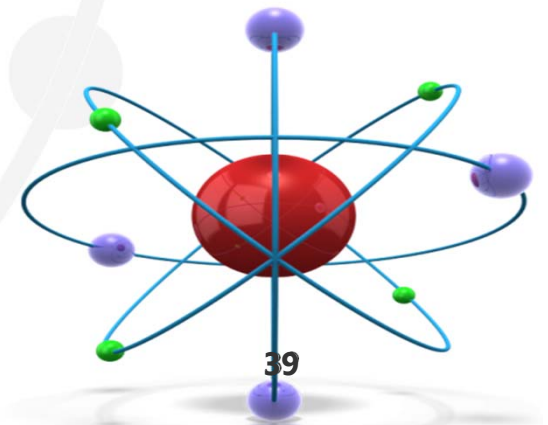Additional questions or interest in in being a reviewer:
DRLAISL@nsf.gov

OTHER PROGRAMS

Other DRL Programs...

❖EHR Core

❖ITEST

❖DRK-12

EHR Core Research

Foundational research:

- STEM Learning
- Learning Environments
- Workforce Dev.
- Broadening Participation

- Core Research proposals: $1.5 million/up to 5 years
- Capacity Building: $300K/up to 3 years
- Deadlines: Feb. 4, 2014

ITEST: Innovative Technology Experiences for Students/Teachers

- R & D of innovative models for K-12 to engage in STEM & ICT

- Must include students & can include teachers

- Resource Center: http://www2.edc.org/itestlrc/default.asp

- New program solicitation soon!

DRK-12

- Project framed around research question

- Innovative resources, models & tools

- Four strands: Assessment, Learning, Teaching & Implementation Research

- Can draw from practice in formal & informal learning

- Can focus on single discipline or be cross-disciplinary

- Three types of projects: Exploratory; Full Design & Development; Conferences & Workshops

- Resource Center: http://cadrek12.org/nsf-dr-k-12

- New Program Announcement (nsf-13601)

Other EHR Programs...

❖ PRIME

❖ REAL

❖ CAREER

❖ ATE