NSF ITEST Solicitation Webinar

Wednesday September 3rd, 2014

Hosted by:

STEM Learning & Research Center (STELAR)

Education Development Center, Inc.

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EdLab Group

STELAR Overview

- ITEST Learning Resource Center (2003-2012)
- Partners:
  - EDC, Inc.
  - EdLab Group
  - Goodman Research Group, Inc.
- Presenter today – Dr. David Campbell, NSF

STEM Learning and Research Center (STELAR) Goals

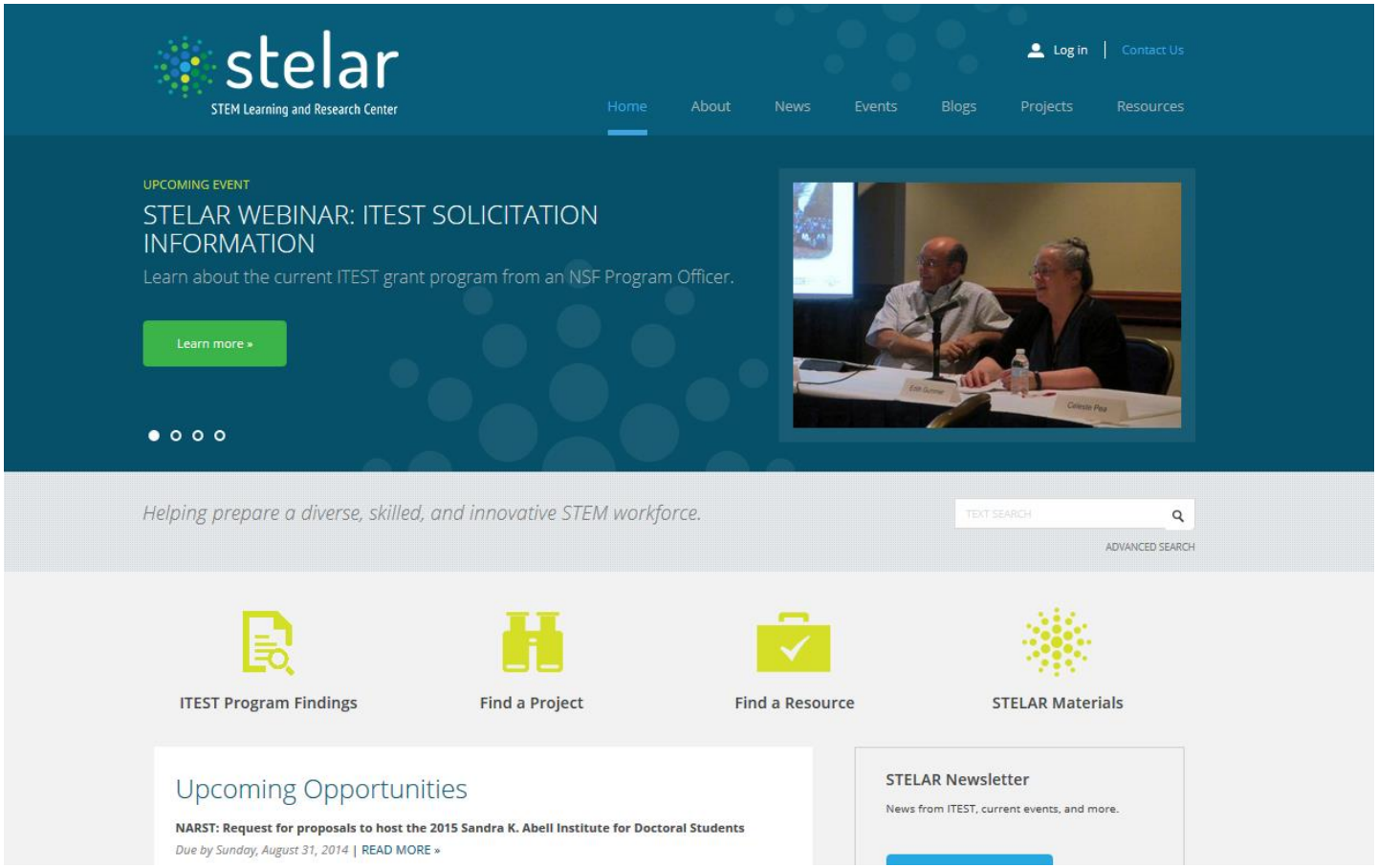
- Facilitate projects' success through **technical support** with a focus on synthesis of findings
- Inform and influence the field of STEM stakeholders by **disseminating** project findings nationally
- Deepen the impact and reach of the ITEST program by **broadening participation** in the ITEST portfolio

STELAR: Core Areas of Work

- **Technical Support** – Pre-proposal assistance, website, webinars, F2F meetings, working groups
- **Dissemination** – partnerships, dissemination network designed to share program findings
- **Outreach** – targeted outreach to institutions underrepresented in the ITEST portfolio (e.g., MSIs and community colleges)

http://stelar.edc.org

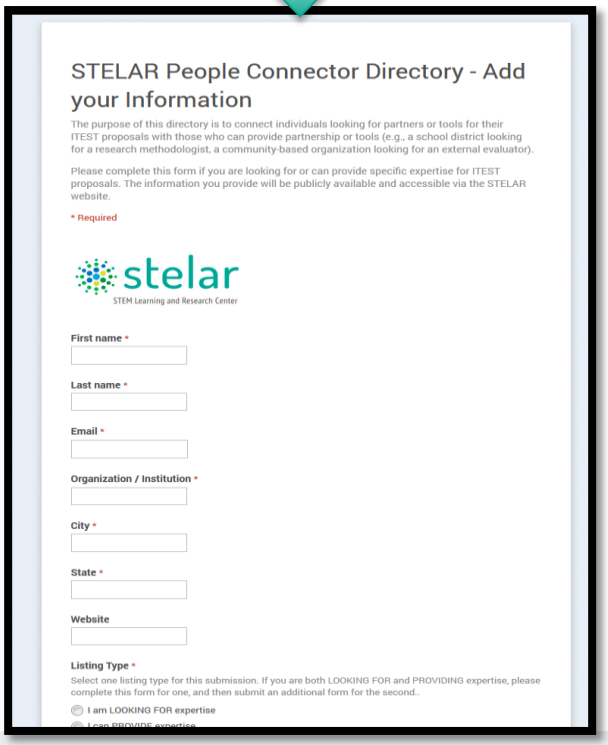
STELAR Website – http://stelar.edc.org



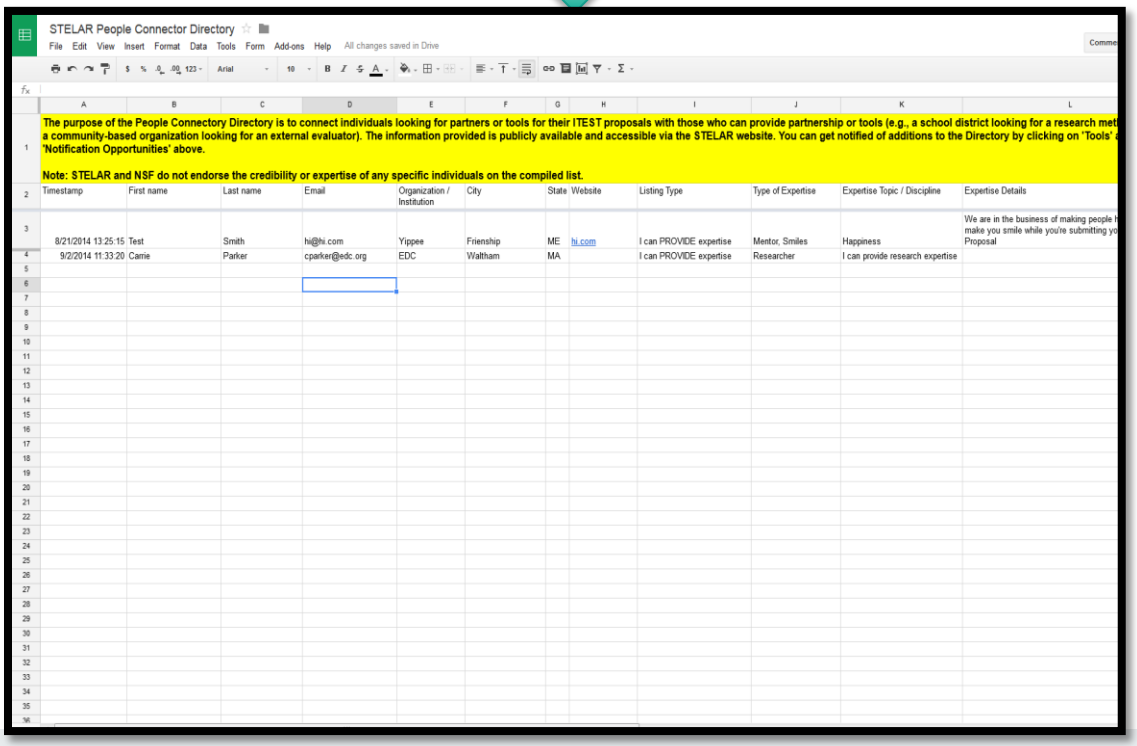
STELAR People Connector

http://stelar.edc.org/opportunities/people-connector-directory

People Connector Form



People Connector Directory



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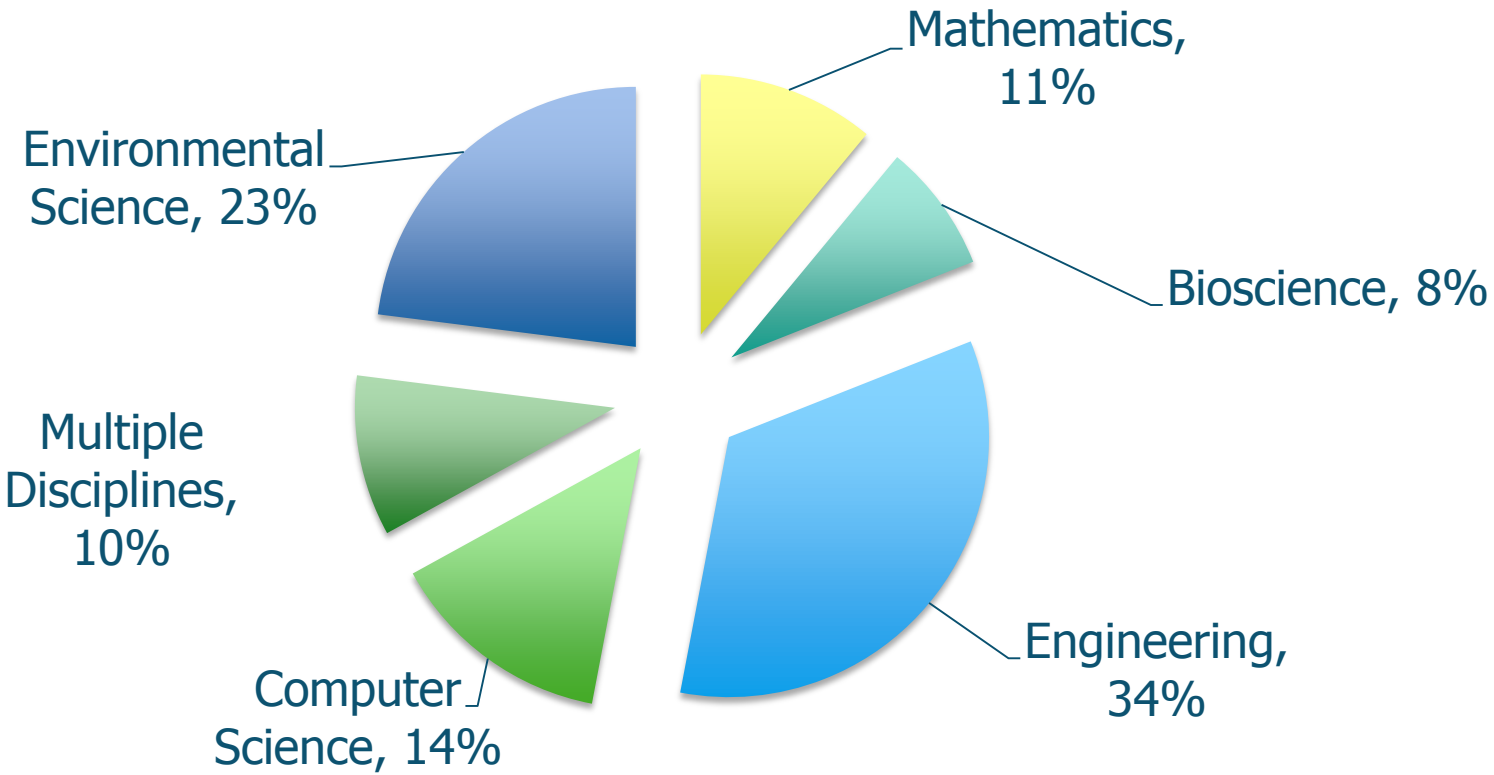
NSF's Innovative Technology Experiences for Students and Teachers (ITEST) Program

- To build understandings of best practices, factors, contexts and processes contributing to K-12 students' motivation and participation in STEM
- Helps students to be aware of STEM careers, and to pursue formal school-based and informal out-of-school educational experiences to prepare for such careers
- Includes **288** current and past projects across **44** states have served **247,700 students**, **9600 educators**, **3000 parents and caregivers**

ITEST Portfolio: Active Projects 2014

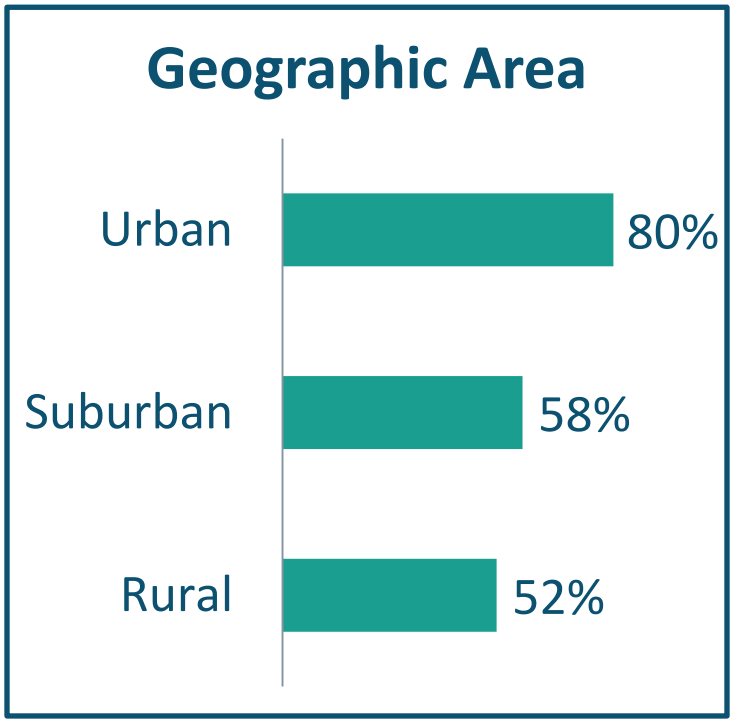


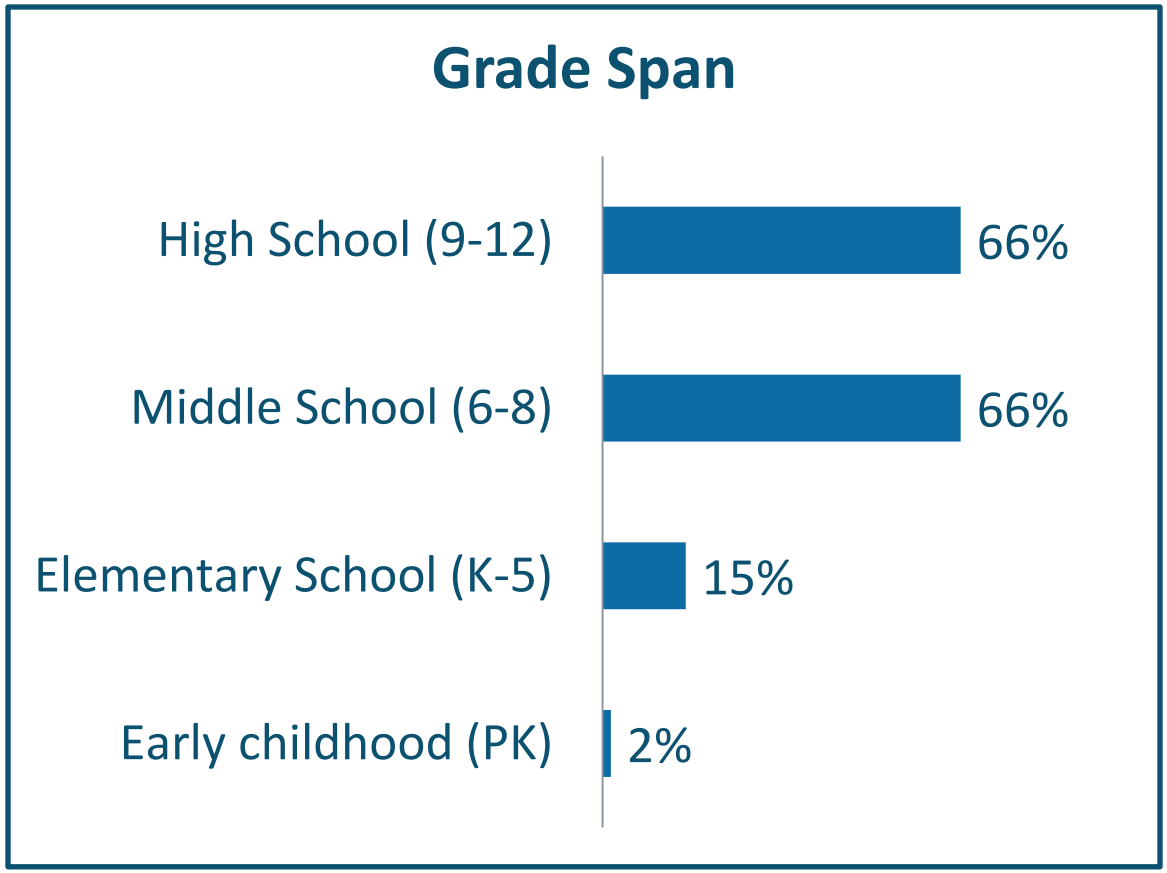
* Based on Spring 2014 MIS data

ITEST Portfolio

- **Computer Science** gaming & simulations, general programming, web development, multimedia – audio, video and animation, computer hardware.
- **Bioscience** bioinformatics, biotechnology, DNA analysis/sequencing, neuroscience and biomedicine
- **Environmental Science** GIS/GPS, remote sensing technology, climate modeling, ecological research/analysis
- **Engineering** aerospace, astronomy, design, robotics and nanotechnology

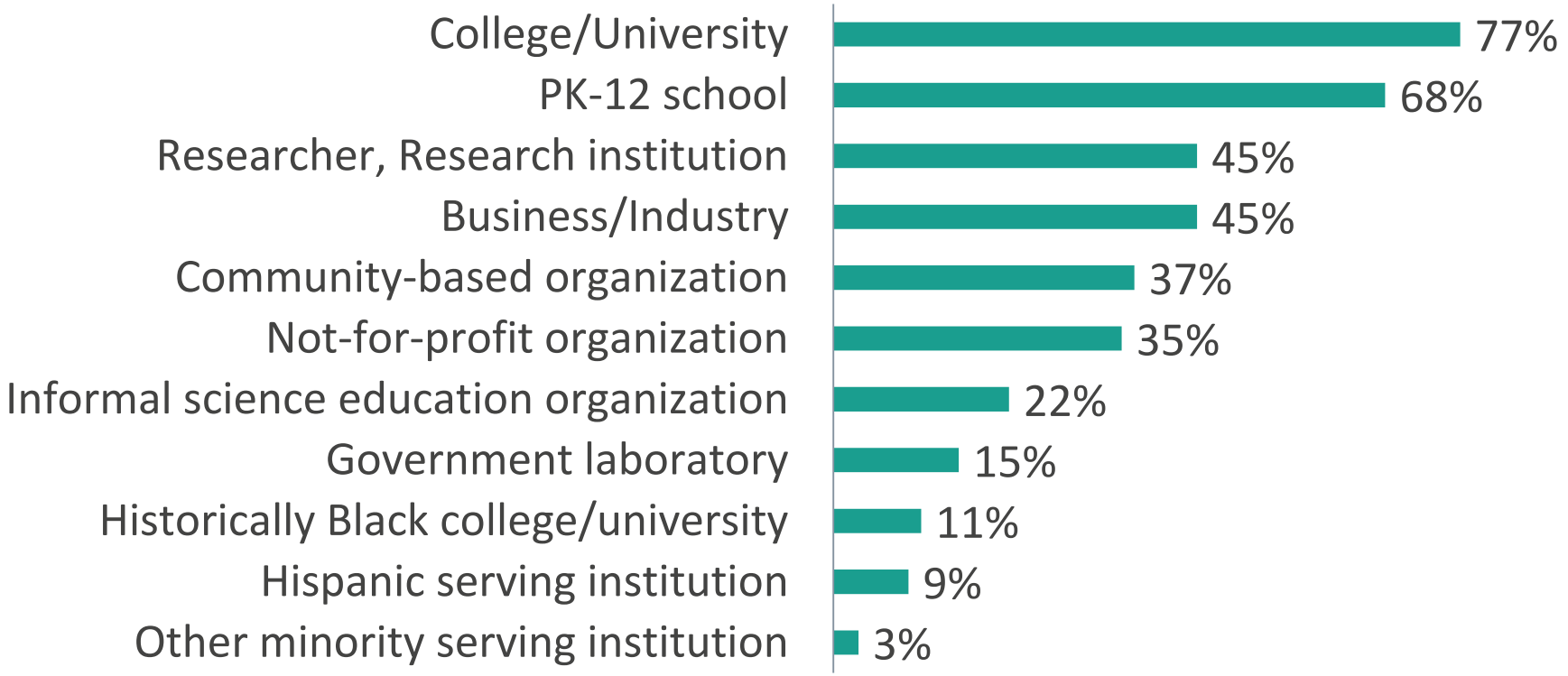
Project Design (n=65)



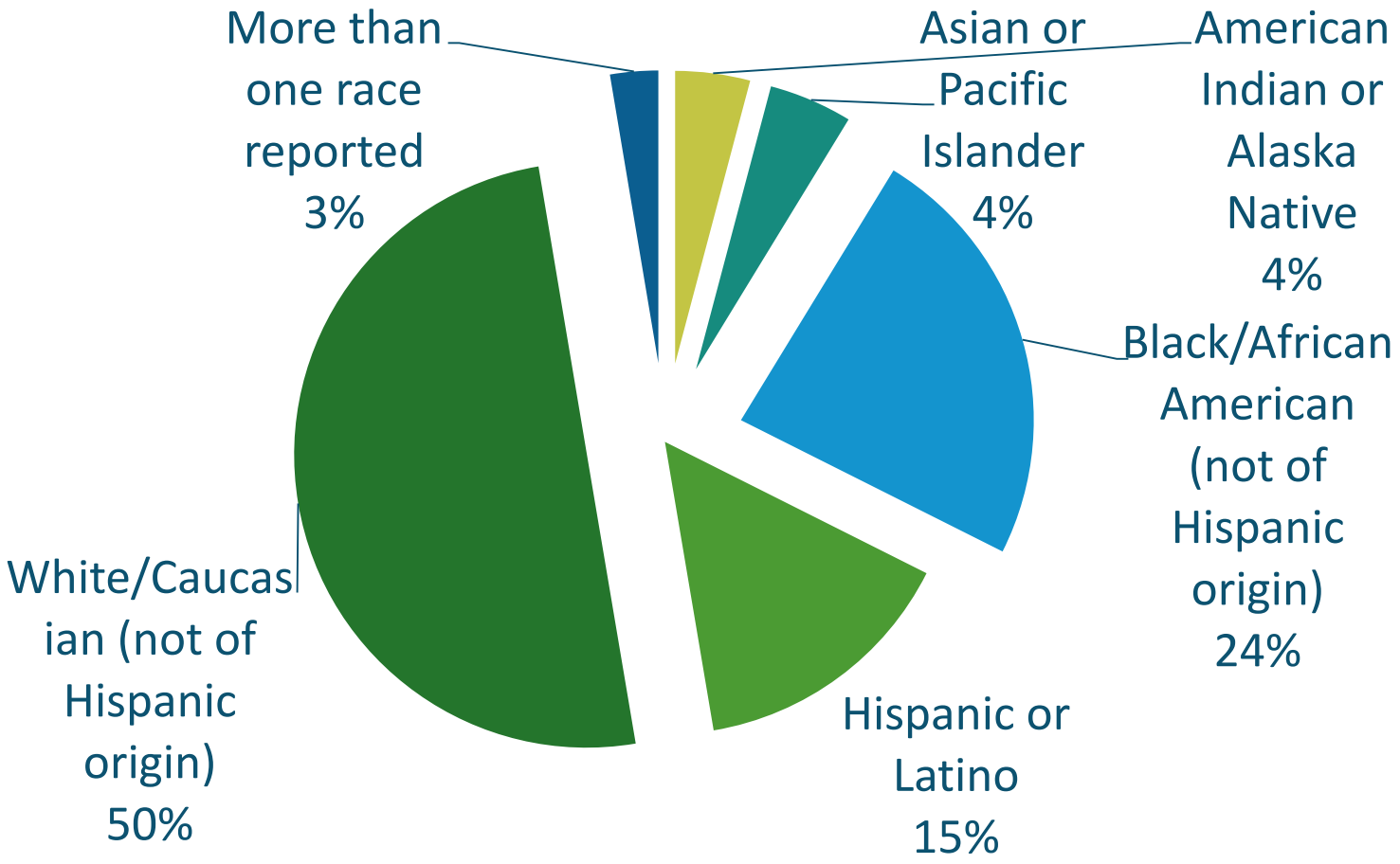


Project Design: Partnerships (n=65)

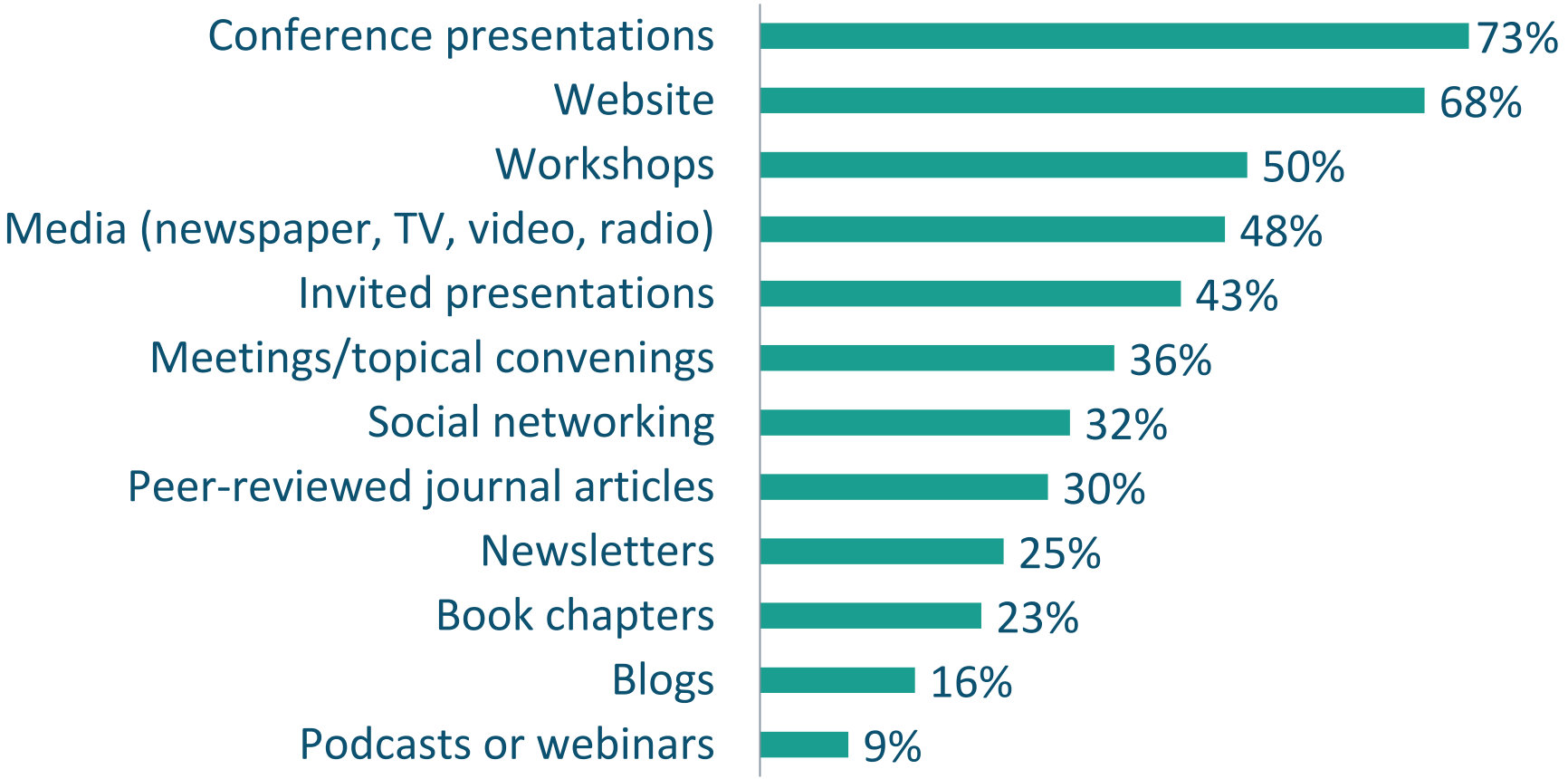
97% of projects work with at least one partner institution



Diversity of Youth Served Out of School



Dissemination Activities (n=44)



Products (n=44)

NSF's Innovative Technology Experiences for Students and Teachers (ITEST) Program

Dr. David Campbell
Program Director (DRL)

David Haury
ITEST Program Director

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Innovative Technology Experiences for Students and Teachers (ITEST) Program

Program Solicitation: NSF 14-512

Submission Date: November 6, 2014

Changes For This Solicitation

- Letters of Intent no longer required.
- Scale-up Strand replaced by SPrEaD Strand.
- Research Strand eliminated, but all proposals are to have a research component.
- Revised requirements for project evaluation.

Aim of the ITEST Program

Ensure a high-quality STEM workforce by supporting projects that:

- Increase student awareness of career opportunities in STEM and cognate fields.
- Motivate students to pursue appropriate educational pathways to STEM-related careers.
- Provide technology-rich experiences that develop disciplinary knowledge, practices, and non-cognitive skills needed in STEM fields.

STEM Workforce & Cognate Fields

- Traditional STEM Disciplines
- Information and Communications Technology (ICT)
- Computing, Computer Sciences, Data Analytics, and related fields.
- Professionals at all levels, including technicians, technologists, scientists, engineers, computer scientists, and mathematicians.

ITEST Projects…

- Must involve students.
- Are informed by relevant research.
- Will focus on workforce development for youth or school-to-work transitions.
- Will conduct foundational or design-based research of conditions and contexts that improve student STEM learning pathways and STEM-focused career preparations and mentorships.

ITEST is especially interested in…

- Broadening participation of student groups underrepresented in STEM-related education and career domains.
- Projects that examine the effectiveness of adult volunteers with relevant disciplinary expertise.
- Projects that improve students' critical thinking skills that transfer across disciplines and into career settings.
- Projects that directly involve students with business and industry through partnerships.

"Encouraged" are Projects that…

- Bring together researchers in STEM education, STEM disciplines, career development, psychology, sociology, anthropology, and related fields.
- Engage students in use of cutting-edge technological tools, the computer sciences, or innovative applications of technology for work/problem-based learning.

Two Types of Projects Supported

Strategies projects that address the creation and implementation of innovative technology-related interventions.

- Awards of up to $1,200,000 for projects lasting up to 3 years.
- Approximately 15-20 projects to be supported.

SPrEaD (**S**uccessful **Pr**oject **E**xpansion **a**nd **D**issemination) projects that support the wider and broader dissemination and examination of innovative interventions.

- Awards for up to $2,000,000 for projects lasting 3 to 5 years.
- Approximately 5-10 projects to be supported.

Questions

Strategies Projects must clearly address one or more of the questions listed in the solicitation relating to the following topics:

- Experiences that foster student competency
- Instructional and Curricular Models
- Roles of business and workforce members
- Strategies for parents, mentors, & caregivers
- Strategies for principals, counselors, & other school administrators
- Engaging diverse underrepresented populations

➔ See page 6 of the solicitation for details.

Proposals should…

- Draw on existing theory and evidence to design and develop strategies.
- Describe the questions, instruments, methods, and analyses to be used to study the effects of the strategies.
- Describe how the project will collect and interpret evidence that the strategies were implemented as planned and goals achieved [evaluation].

Strategies projects…

- …should include pilot testing to determine if the new strategies lead to desired outcomes.
- …that expand and extend our notions of learning environments are encouraged.
- …that include partnerships with schools, colleges, informal learning institutions, businesses, government labs, and community-based organizations are encouraged.

Project Expansion and Dissemination (SPrEaD Projects)

- Study innovative strategies across a wider range of contexts and settings.
- SPrEaD projects document factors that may enhance, moderate, or constrain the effects of strategies designed to enhance student knowledge or disposition toward STEM-related education pathways or careers.

SPrEaD proposals must…

- Describe the innovation and the contexts and conditions for broadening and scaling.
- Present evidence on the feasibility of impacts.
- Explain how the proposed project builds on previous implementations.
- Identify anticipated contributions to knowledge.
- Present a study design capable of generating robust evidence of the strategy's potential.
- Include plans to document the implementation.
- Involve a partnership with another type of institution.

Questions

Proposal Preparation

- **ITEST Solicitation: NSF 14-512**

  (Section V. Proposal Preparation and Submission Instructions)
- Proposals must be prepared in accordance with the **NSF Grant Proposal Guide (GPG 13-1)**

Common Guidelines for Education Research and Development

- Potential PIs and grant writers are encouraged to use the information in the *Common Guidelines for Educational Research and Development* and the set of NSF FAQs regarding them to help in the preparation of proposals
- The section on "Foundational, Early Stage or Exploratory, and Design and Development Studies" is most relevant to this solicitation.

What are the *Common Guidelines*?

- 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

- NSF 13-127 - Set of FAQs

http://www.nsf.gov/pubs/2013/nsf13127/nsf13127.jsp

Proposal preparation

Project Description Should Include…

- Project overview
- Project goals and objectives
- Summary of effectiveness and impact of prior support
- Explanation of principles that guided the project design, informed by the literature
- Detailed work plan with a timeline
- Qualifications of key personnel who will be coordinating the project
- Anticipated results
- Research plan (if appropriate)
- External review or evaluation process
- Dissemination plan

Project Summary Suggestions

- **First Sentence**
  - Type of Proposal – Strategies or SPrEaD
- **Second Sentence**
  - STEM or STEM Cognate areas of emphasis
  - Grade or Age level (s) addressed
- **The strategy to be designed, implemented, and evaluated.**
- **Intellectual Merit and Broader Impacts**
  - Must include separate statements on each of these two NSB criteria.

Note: The Project Summary is used to group proposals.

Goals and Objectives

- Why is this project important?
- How will the project attract students or prepare them for the STEM workforce?
- How will it advance knowledge?
- What are the anticipated outcomes and/or products of this project?
- How might these products or findings be useful on a broader scale?

What Have You and Others Done?

- Describe the theoretical and research basis on which the proposal is based.
- Discuss how the proposal is innovative and different from similar research and development projects.
- If you have been funded by NSF, provide evidence about the **effectiveness** and **impact** of that work.

How Are You Going To Do It?

- State clear research questions or hypotheses that the project will test.
- Describe the plan for developing, adapting or implementing the proposed innovative strategy.
- Describe the research methods, including data analysis plans, sampling plan, and assessments.
- **Briefly** describe the work plan and timeline.

Who Will do The Work?

- Briefly describe the expertise of the persons included on the proposal and why they are needed:
  - Education researchers and evaluators
  - Teachers
  - STEM-related content experts
- Upload two page bios for all senior personnel

External Evaluation

A proposal must describe appropriate project-specific external review and feedback processes.

- The review might include an external review panel or advisory board or a third-party evaluator.
- The review must independent and rigorous
- The proposal must
  - Describe the expertise of the external reviewer(s);
  - Explain how that expertise relates to the goals and objectives of the proposal;
  - specify how the PI will report and use results of the project's external, critical review process.
- There can be different groups providing formative and summative evaluation

How Will Others Learn About The Project?

- Plan and specific strategies for **Dissemination** of products or findings to researchers, policy makers, practitioners, and other relevant constituency groups.
- Requirement to provide project data as requested by the STEM Learning and Research (STELAR) Center.

Supplementary Documents

- Letters of *commitment* from project partners*
- Evaluation results from prior NSF support as appropriate (Max. 2 pages)
- Data Management Plan
- Postdoctoral Mentoring Plan
- NO OTHER DOCUMENTS

*be careful not to include attachments to the letters

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 with **academic** positions on all NSF grants unless justified.
- **Indirect cost rates:** Set by the institution and auditors and is non-negotiable.
- **Direct costs**: Not allowed for secretary or services provided through indirect costs.
- **No cost sharing**
- Limited equipment; no undergraduate tuition

Common reasons for proposals to be rated non-competitive

Importance

- Proposed problem not nationally important
- Weak, vague, or no connection to STEM content
- Relevant literatures not cited

Methods

- Inadequate or inappropriate research design
- Vague or inappropriate data collection & analyses
- Too much data being collected
- Appropriate expertise not represented
- Cost at small scale prohibitive when scaled up

Some Things POs Suggest You Avoid

- Ignoring requirements stated in the solicitation or the Grand Proposal Guide
- The “Trust Me”approach. Provide citations or evidence for critical assertions made.
- The “Oversell” of yourself or your project; take a neutral tone and let the evidence speak.
- Pages of general, vague, or rambling narrative without precision and details.
- Overemphasis of rationale for the project at the expense of methodology and details of what will actually be implemented.

Reasons for Return Without Review

- Violation of formatting rules of the Grant Proposal Guide (e.g. font, page length etc)
- Failure to address specifically intellectual merit **and** broader impacts in the project summary and description
- Unauthorized documents/data in the appendix or supplementary document section.
- No post doc plan if post docs are included on budget
- No data management plan

Where to Submit

- NSF's FastLane:

https://www.fastlane.nsf.gov/index.jsp

- Grants.gov:

http://www.grants.gov

Note:

- Collaborative proposals must be submitted through FastLane.
- Fastlane will check for required sections of proposals.

Review Criteria

All proposals are reviewed under two 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?

For Further Information

- Call **(703) 292-8628**
- Email: **DRLITEST@nsf.gov**
- Contact an ITEST Program Director

Questions?

Other Resources

People Connector Directory:

http://stelar.edc.org/opportunities/people-connector-directory

Past ITEST Solicitation Webinars:

http://stelar.edc.org/events/nsf-itest-solicitation-webinars

Thank you!

Contact Us:

http://stelar.edc.org

stelar@edc.org

Webinar Evaluation:

https://edc.co1.qualtrics.com/SE/?SID=SV_9z8Iz4ouwlE0kJL

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