

# National Science Foundation (An Overview)

PASS 2018 Summer Workshop  
Arkansas Tech University  
June 6<sup>th</sup>, 2018

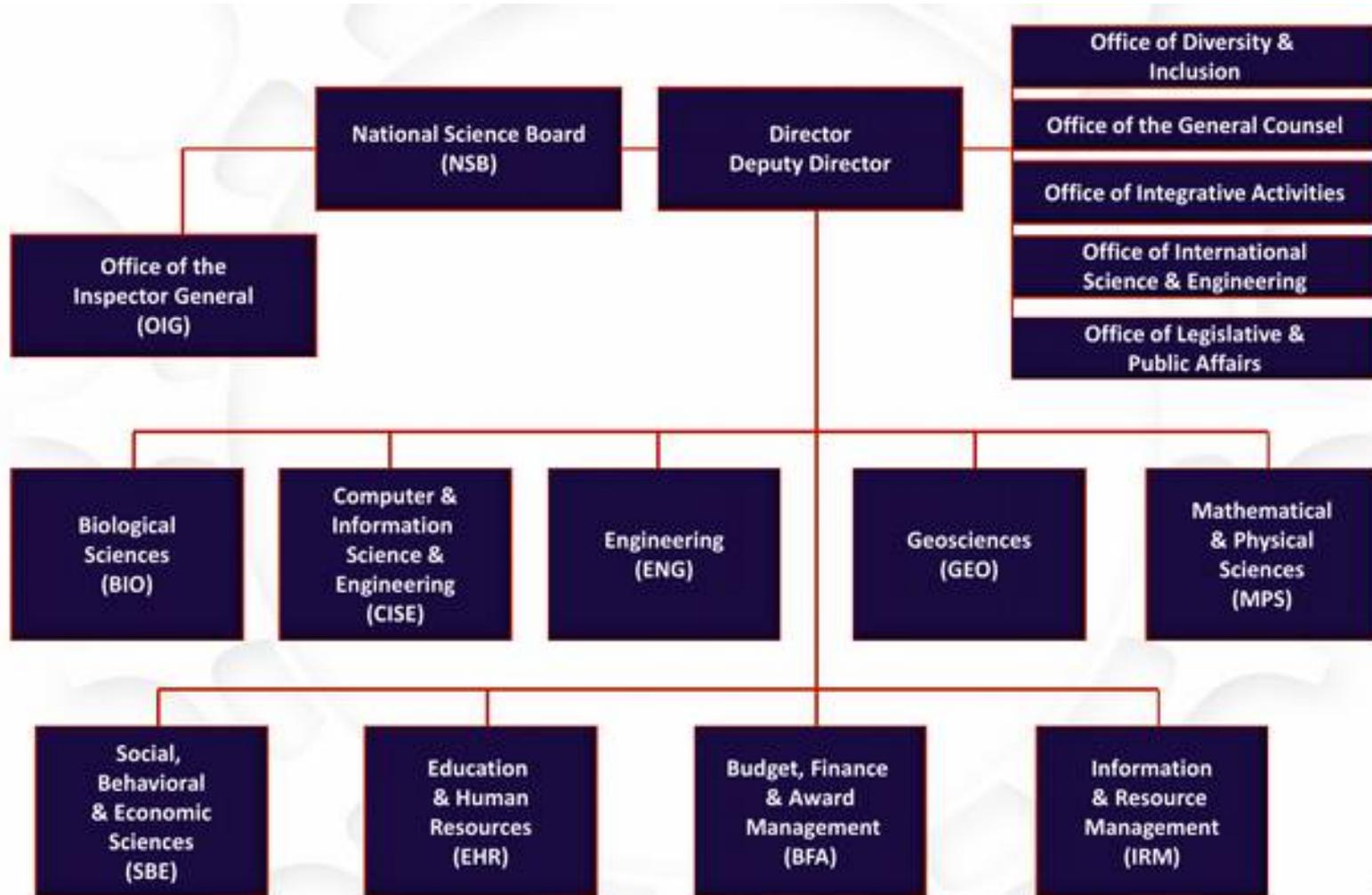


# NSF in a nutshell

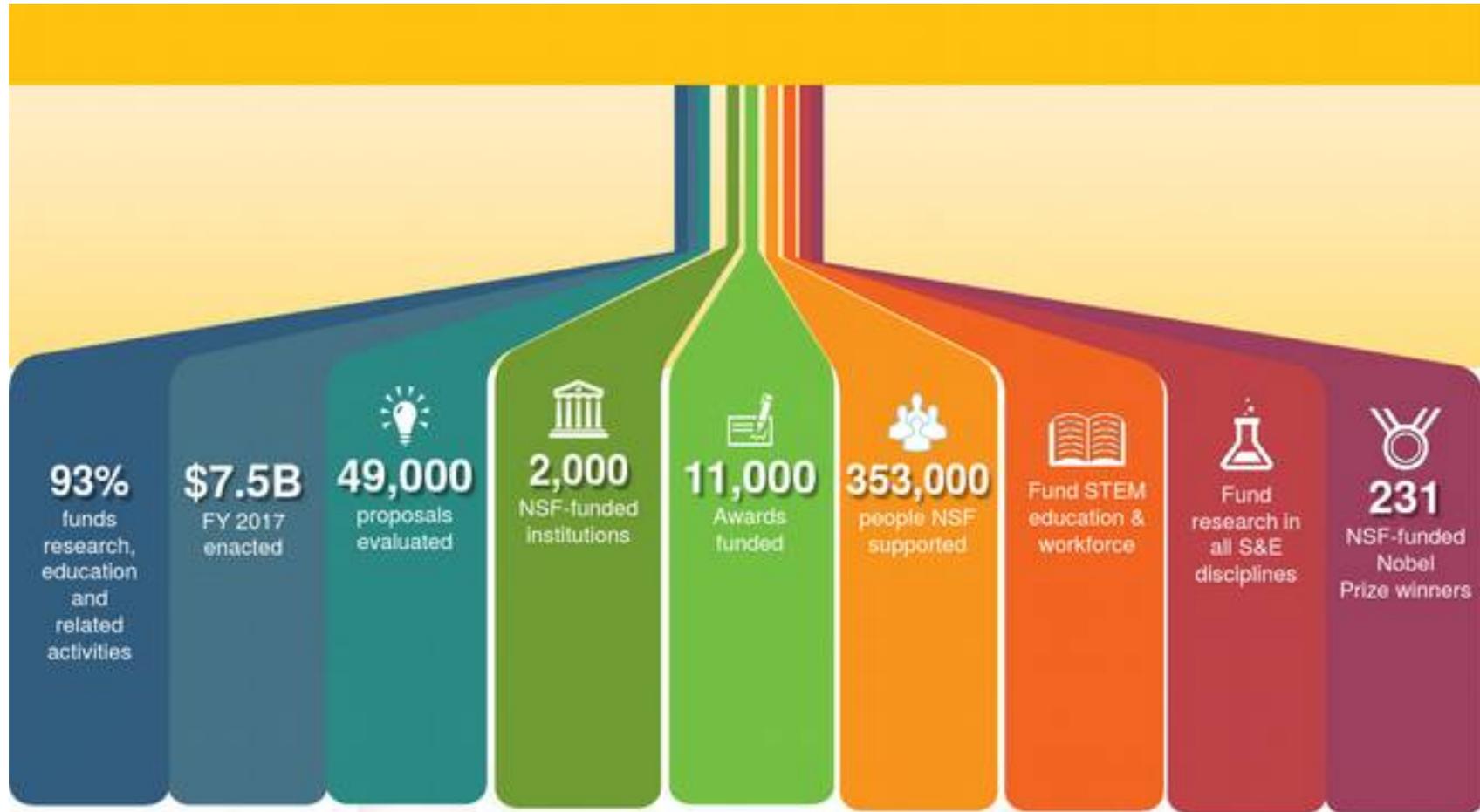
- Independent Agency
- Supports basic research & education
- Uses grant mechanism
- Low overhead and highly automated
- Discipline-based structure
- Cross-disciplinary mechanisms
- National Science Board



# NSF internal organization



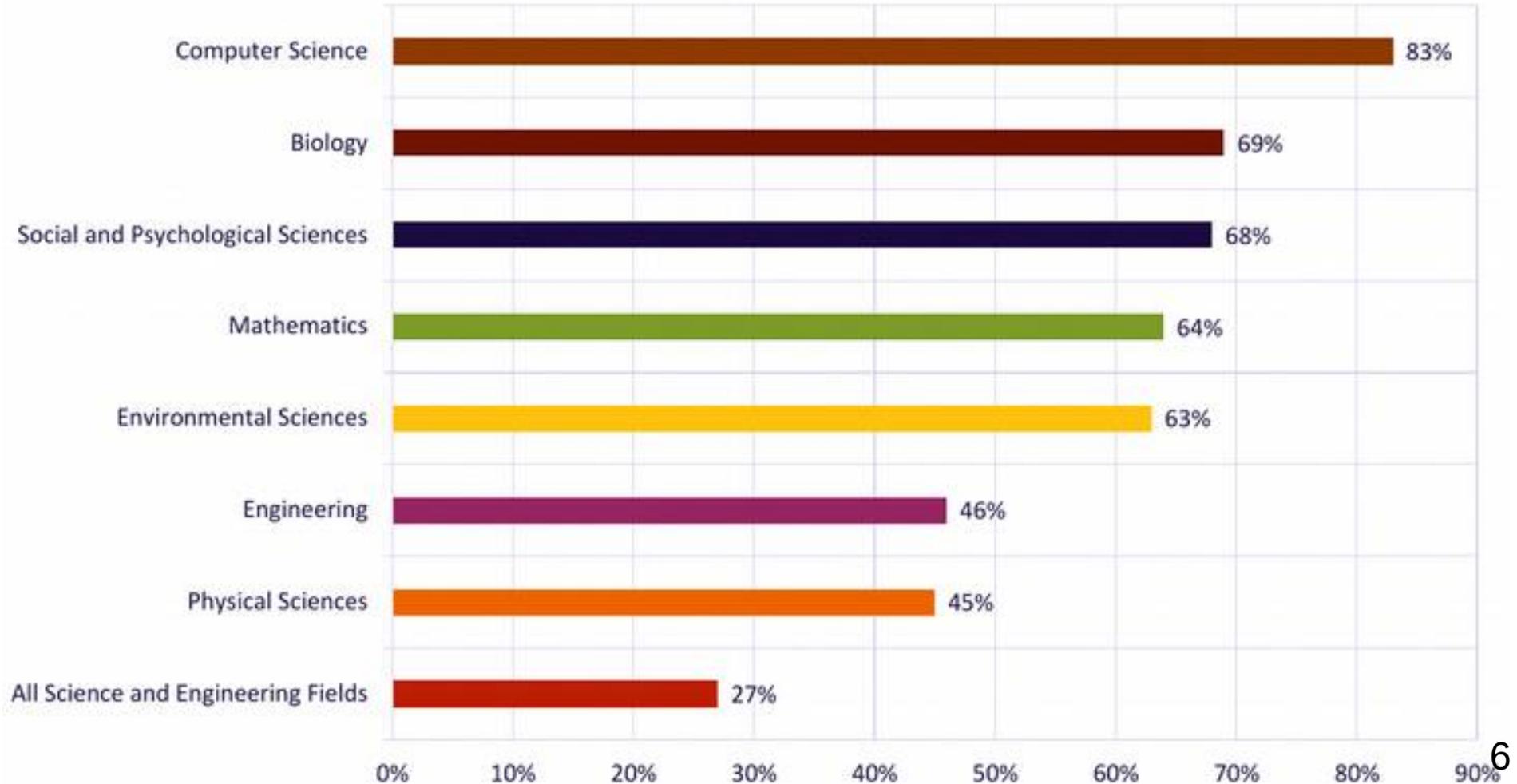
# NSF by numbers in 2017



# NSF awards, declines and funding rates



# Percentage of funds per area from the total federal fund



# Type of NSF programs

- Research
- RAPID & EAGER
- RAISE
- GOALI
- Ideas Lab
- FASED
- Conferences
- Equipment
- Travel
- Facility / Center
- Fellowships

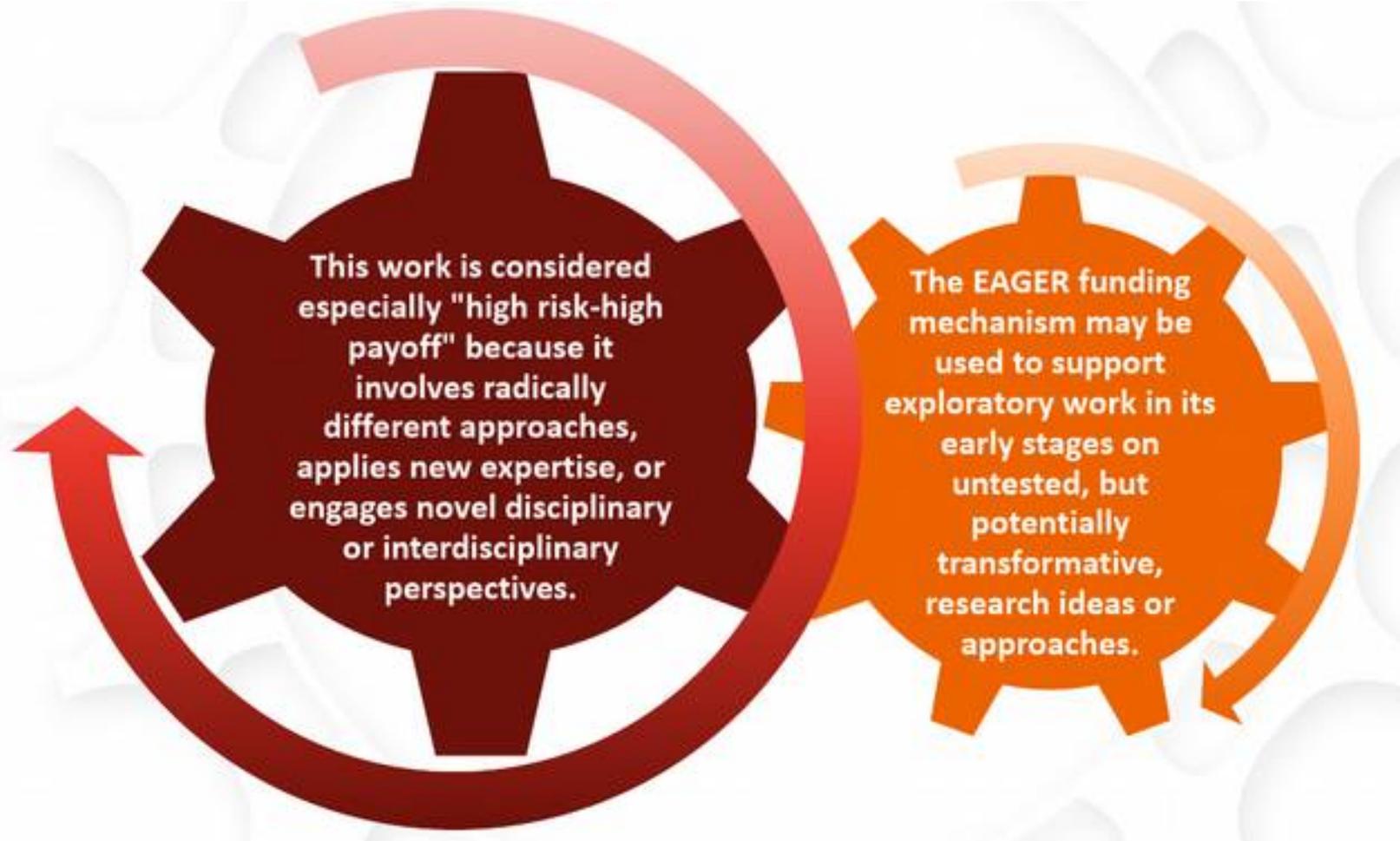


# Grants for Rapid Response Research (RAPID)

Projects having a severe urgency with regard to availability of, or access to data, facilities or specialized equipment, including quick-response research on natural or anthropogenic disasters and similar unanticipated events

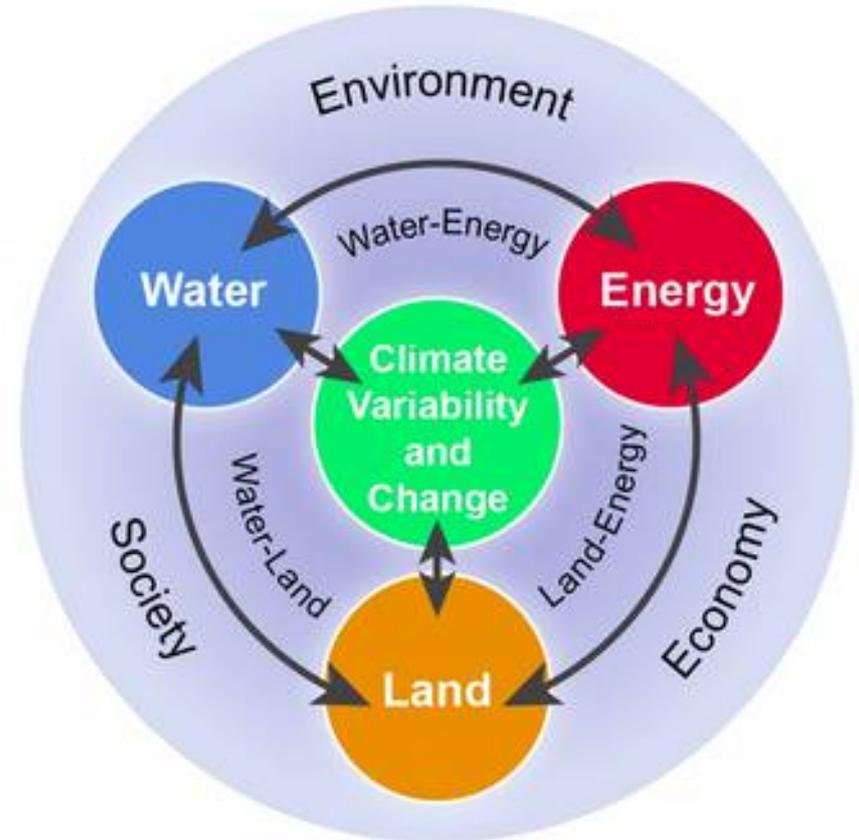


# EARLY-concept Grants for Exploratory Research (EAGER)



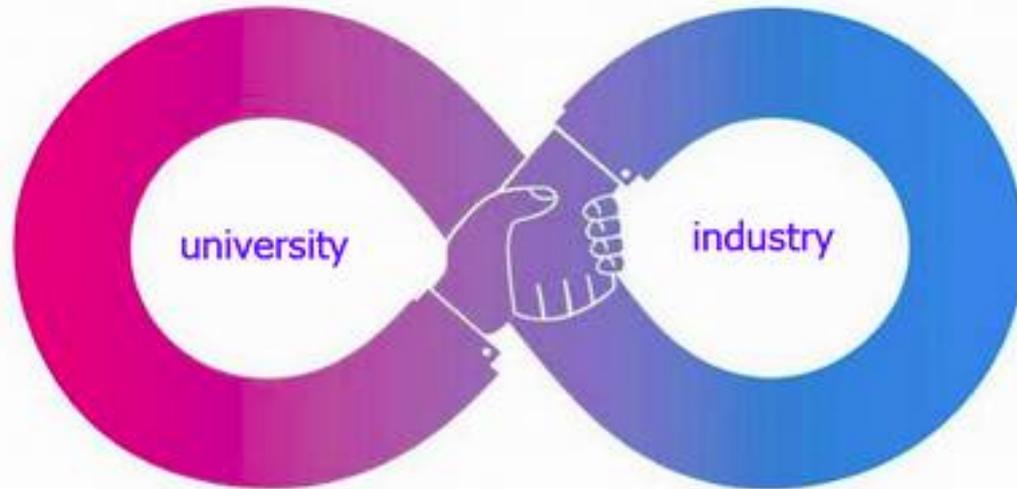
# Research Advanced by Interdisciplinary Science and Engineering (RAISE)

- Supports bold, interdisciplinary projects
- Proposals up to \$1 million and five years and require the approval of two different programs of NSF
- Submitted as a single project with subawards
- Must address how the project is better suited for RAISE than a regular NSF proposal
- Internally reviewed



# Grant Opportunities for Academic Liaison with Industry (GOALI)

- Stimulates collaboration between academic institutions and industry
- Funding requested either in conjunction with a regular proposal to a standing program or as a supplement to an existing NSF award
- Proposer must contact NSF Program Officer prior to submission



# Ideas Lab



Supports the development and implementation of creative and innovative project ideas that have the potential to transform research paradigms and/or solve intractable problems.



Project ideas typically will be high-risk/high-impact, as they represent new and unproven ideas, approaches and/or technologies.



Modeled on the "sandpit" workshops that are a key component of the United Kingdom Research Council's "IDEAs Factory" program.



# Facilitation Awards for Scientists & Engineers with Disabilities (FASSED)

- Encourages persons with disabilities to pursue careers in science and engineering
- NSF Program Officers make decisions what constitutes appropriate support on a case-by-case basis.
- Requests are made in conjunction with regular competitive proposals or as supplemental funding requests to existing NSF awards

# Conferences

- Conferences in special areas of science and engineering that bring experts together to discuss recent research or education findings or to expose other researchers or students to new research and education techniques
- Conferences supported only if equivalent results cannot be obtained at regular meetings of professional societies
- Proposals to be made at least a year in advance of the scheduled date

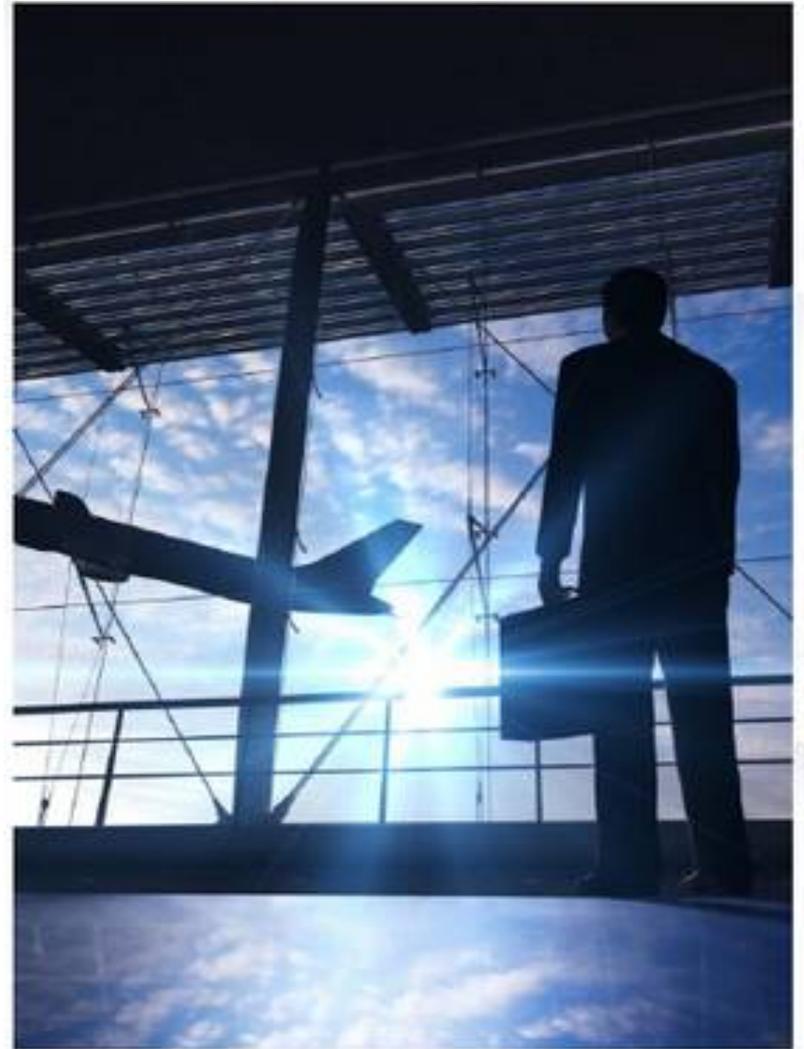


# Equipment

- Proposals for specialized equipment by an organization for:
  - Individual investigators,
  - Groups of investigators within the same department,
  - Several departments,
  - Organization(s) participating in a collaborative or joint arrangement,
  - Components of an organization, or,
  - A region
- One individual must be designated as PI
- Investigators may be working in closely related areas or their research may be multidisciplinary
- Major Research Instrumentation (MRI) Program for large-scale instrumentation acquisition

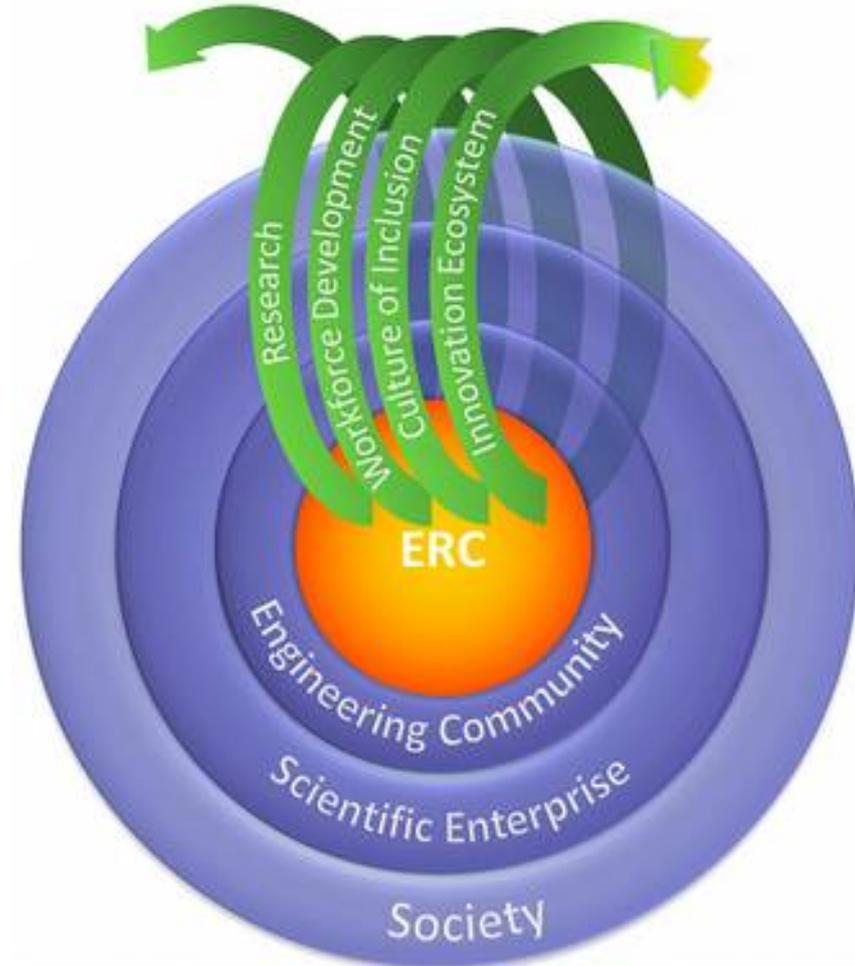
# Travel

- Proposals for participation in scientific and engineering meetings held in the U.S. and abroad are handled by the NSF organizational unit with program responsibility for the area of interest
- Group travel awards are encouraged as the primary means of support for conference travel



# Facility/research centers

- Centers exploit opportunities in science, engineering and technology in which the complexity of the research problem(s) or the resources needed to solve the(se) problem(s) require the advantages of scope, scale, change, duration, equipment, facilities, and students that can only be provided by an academic research center
- Most Center awards are limited to a maximum duration of ten years and often subject to mid-course external merit review



# Fellowships

- Two types of fellowships include Graduate Research Fellowships and Postdoctoral Fellowships
- Fellowships provide support for fellows with a focus on educational developments such as curricula development, training or retention
- Consult the relevant program solicitation for further details



**Graduate  
Research  
Fellowship  
Program**

# NSF review criteria specifics

1. What is the potential for the proposed activity:
  - Intellectual merit
  - Broader impact
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts (originality)?
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 (planning)?
4. How well qualified is the individual, team, or institution to conduct the proposed activities (team)?
5. Are there adequate resources/time available to the PI to carry out the proposed activities (resources and support)?

Q&A