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DIRECTORATE FOR
EDUCATION & HUMAN RESOURCES

Programs and Initiatives in the Directorate for Education and Human Resources

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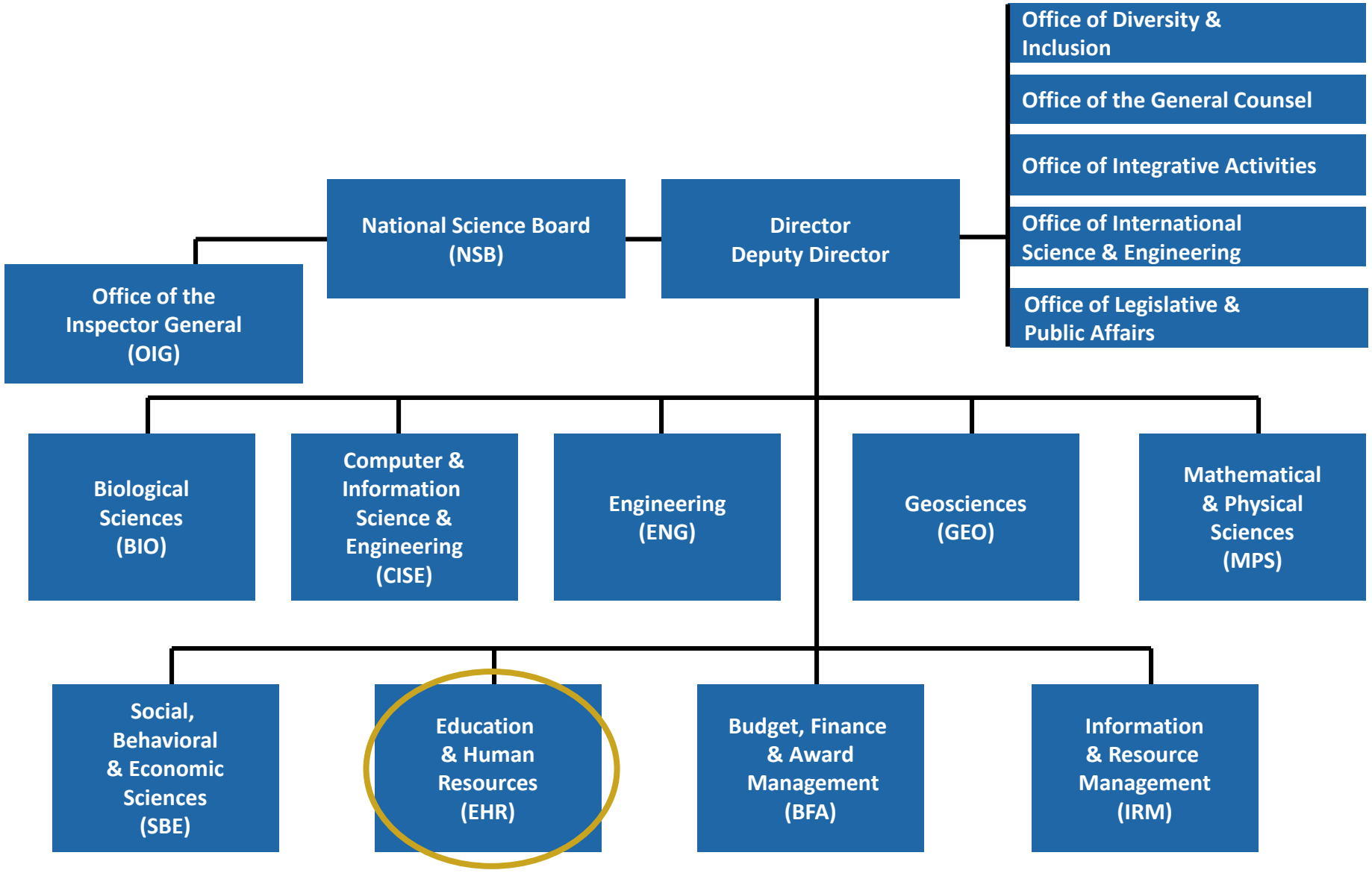
The National Science Foundation



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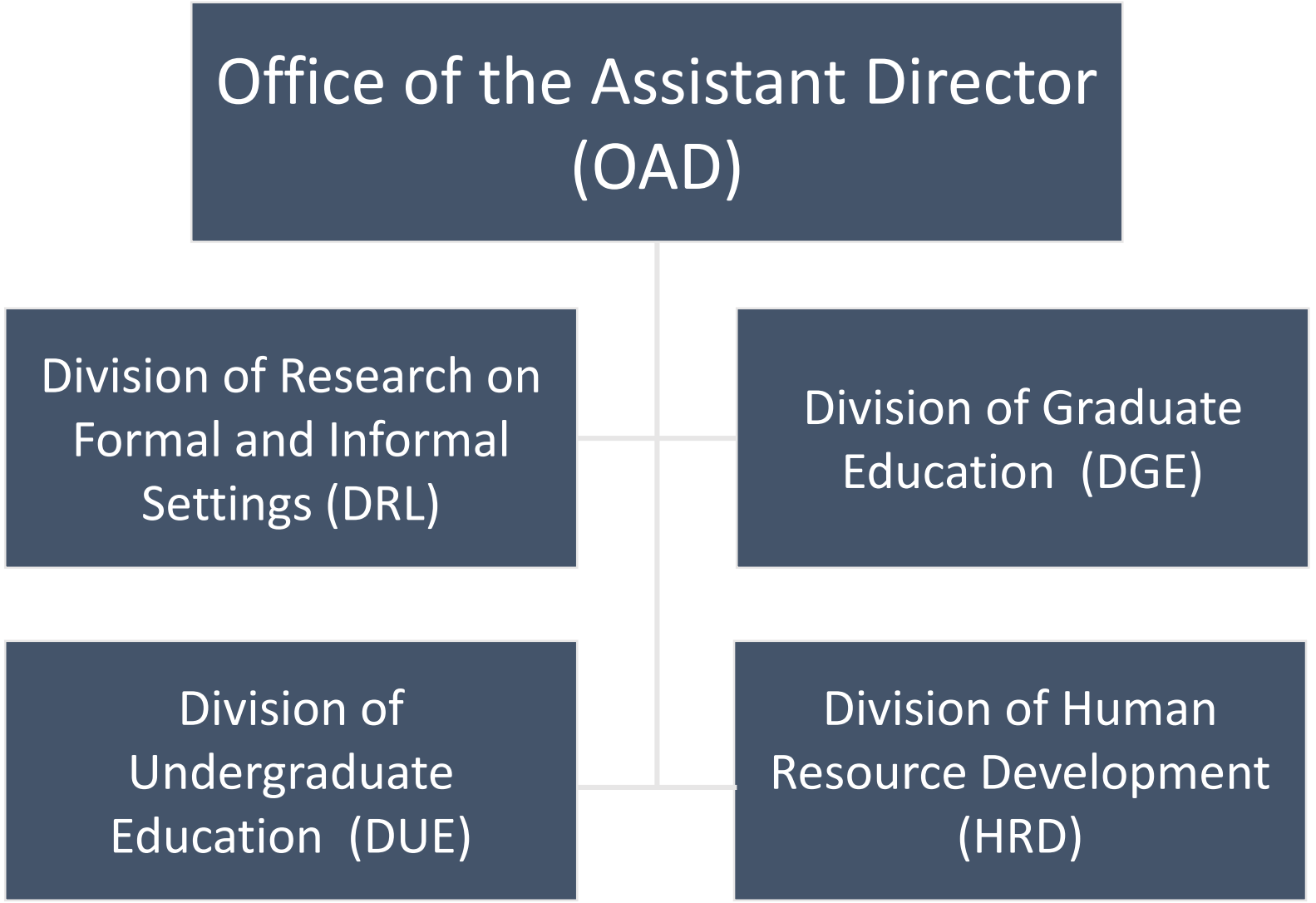
EHR Organizational Structure



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EHR Investment Priorities

STEM Learning and Learning Environments

- Build on cognitive and “non-cognitive” foundations in STEM.
- Support research and the development of innovative tools, approaches and practices in formal and informal STEM learning contexts.

Broadening Participation and Institutional Capacity in STEM

- Promote accessibility, supports and success for underrepresented groups through high-quality STEM education.

STEM Workforce

- Build capacity and prepare a diverse STEM workforce.
- Capitalize on novel advances in science and technology.
- Address emerging global, social, and economic challenges and opportunities.

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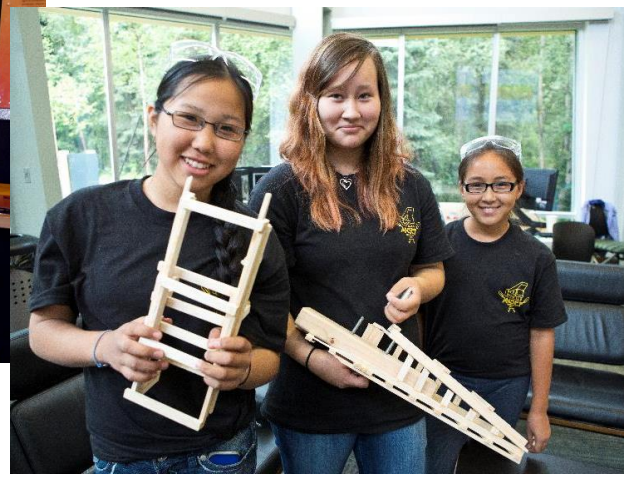
Advancing STEM Learning through Research



- Generate new knowledge about STEM learning & education.
- Develop a diverse workforce ready to advance the frontiers of science and engineering for society.
- Grow and sustain a STEM-literate public.

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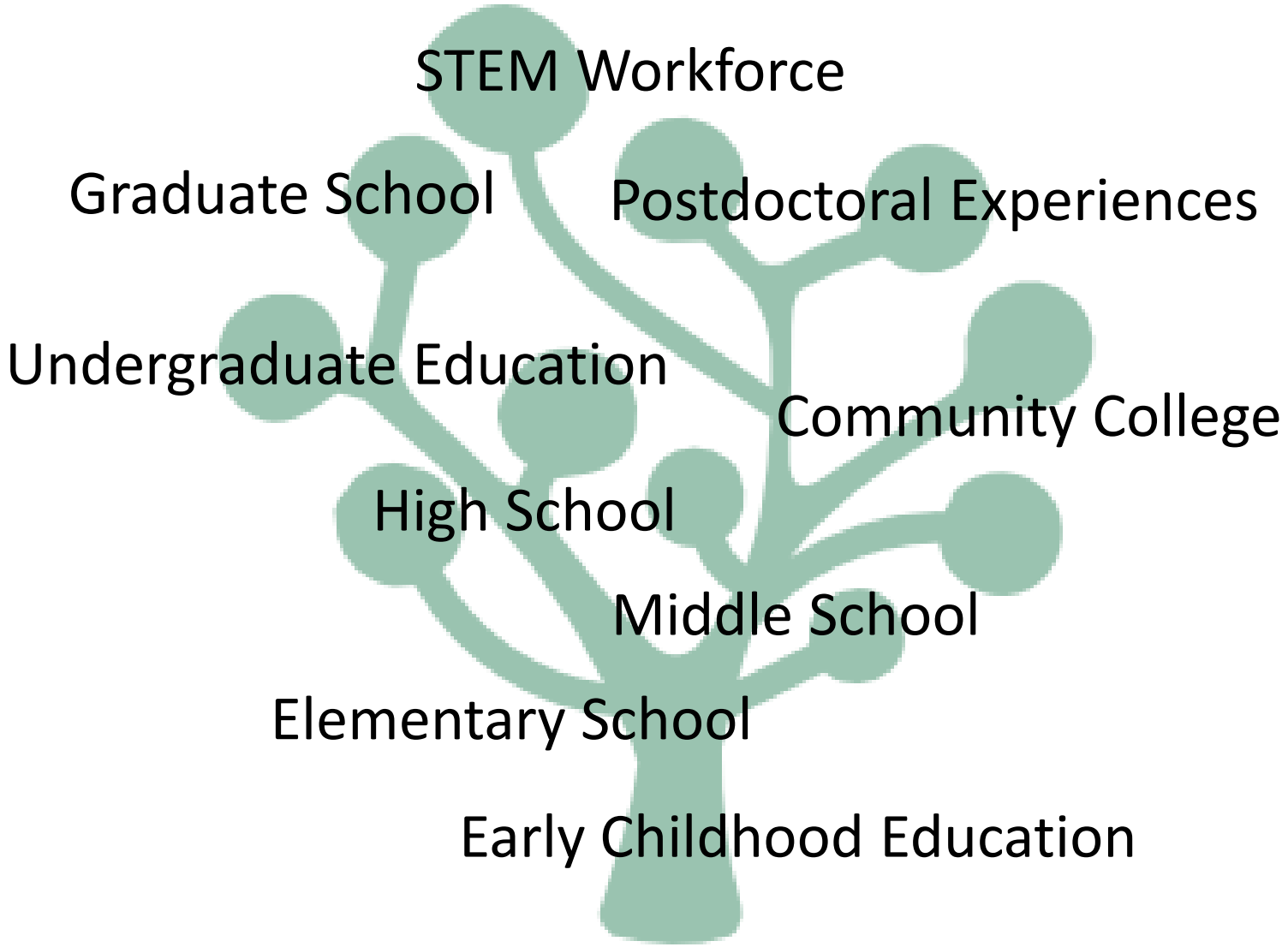
Advancing STEM Learning at All Levels



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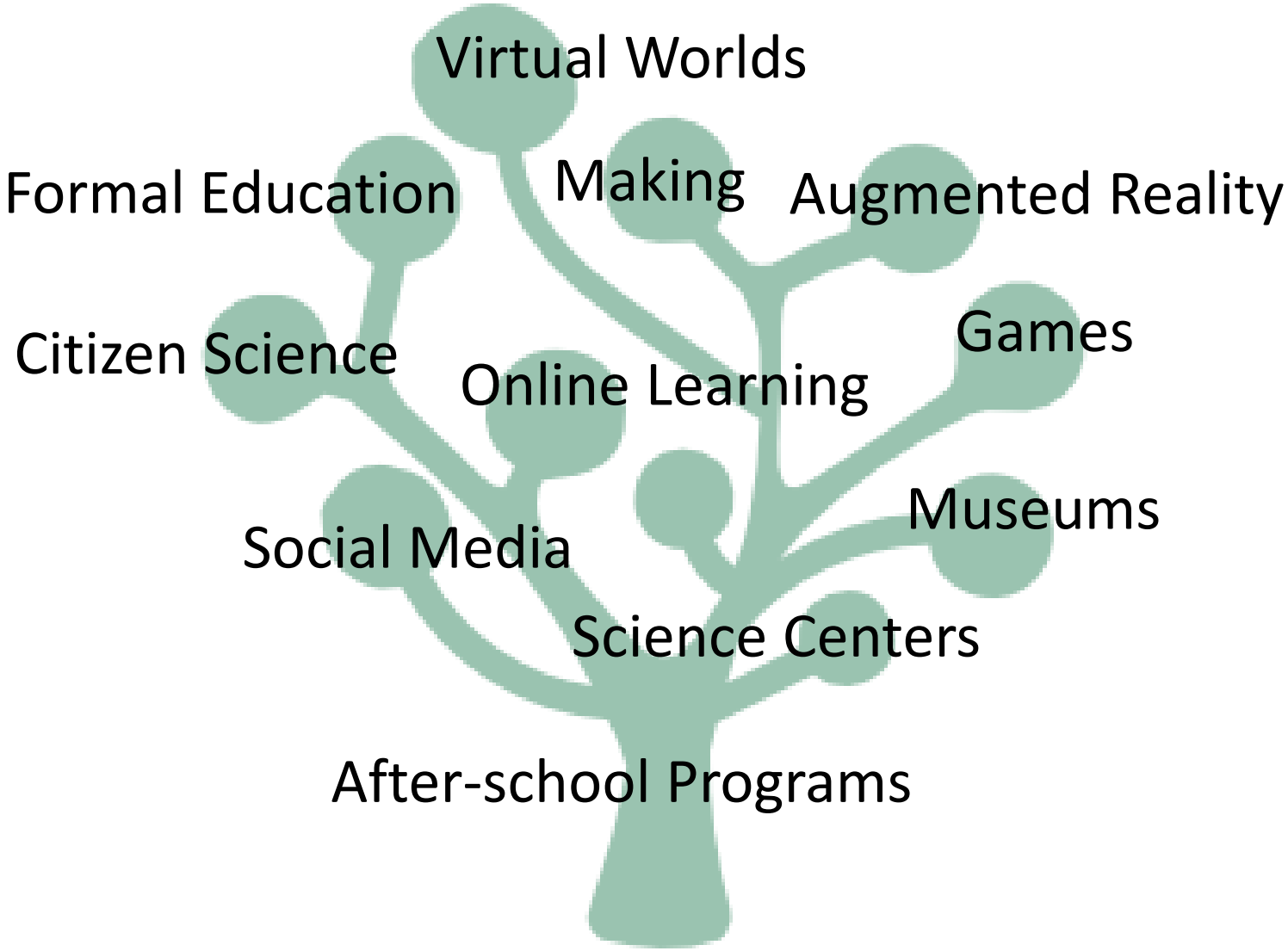
Advancing STEM Learning Across Contexts



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EHR PROGRAMS
(and some cross-directorate programs)

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EHR Program Overview

Division	L&LE	BP	WD
Research on Learning (DRL)	S&CC	AISL DR-K12	ITEST STEM+C CSforALL BCC-EHR*
Undergrad Education (DUE)	IUSE (EHR, HSI) S-STEM		ATE* Noyce AD* C3P* REU-Sites
Graduate Education (DGE)			SFS/CyberTraining/SaTC GRF / GRIP IGE NRT
Human Resource Development (HRD)	ADVANCE AGEP HBCU-UP TCUP DEL*	LSAMP CREST and RISE REU	PAEMST & PAESMEM CREST

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Division of Undergraduate Education (DUE) Programs

- **IUSE: EHR** Improving Undergraduate STEM Education: EHR **17-590**
- **S-STEM**: NSF Scholarships in STEM **17-527**
- **ATE**: Advanced Technological Education **18-571**
- **NOYCE**: Robert Noyce Teacher Scholarship Program **17-541**

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Division of Research on Learning in Formal & Informal Settings (DRL) Programs

- **AISL:** Advancing Informal STEM Learning **17-573**
- **CSforAll:** Computer Science for All **18-537**
- **DRK-12**: Discovery Research PK-12 **17-584**
- **ITEST**: Innovative Technology Experiences for Students and Teachers **17-565**
- **S&CC:** Smart and Connected Communities **19-564**
- **STEM+C:** STEM + Computing Partnerships **18-005Y**

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Division of Human Resource Development (HRD) Programs

- **HBCU-UP:** HBCU Undergraduate Program **18-522**
- **LSAMP:** Louis Stokes Alliances for Minority Participation **17-579**
- **ADVANCE**: Increasing the Participation & Advancement of Women in Academic Science and Engineering Careers **19-552**
- **AGEP**: Alliances for Graduate Education and the Professoriate **16-552**
- **TCUP:** Tribal Colleges and Universities Program **18-546**

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HRD Programs cont.

- **CREST:** Centers of Research Excellence in Science and Technology **18-509**
- **RISE:** Research Infrastructure for Science and Engineering **18-509**
- **PAESMEM**: Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring **16-534**
- **PAEMST**: Presidential Awards for Excellence in Mathematics and Science Teaching **16-534**

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Division of Graduate Education (DGE) Programs

- **SFS:** CyberCorps: Scholarship for Service **19-521**
- **GRFP**: Graduate Research Fellowship **18-573**
- **GRIP**: Graduate Research Internship Program **DCL 18-069**
- **IGE**: Innovations in Graduate Education **17-585**
- **NRT**: NSF Research Traineeship **19-522**
- **CyberTraining**: Training-based Workforce Development for Advanced Cyberinfrastructure **19-524**
- **SaTC**: Secure and Trustworthy Cyberspace **18-572**

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Crosscutting and Cross-divisional Programs

- **ECR**: EHR Core Research **19-508**
- **ECR: BCSER:** Building Capacity in STEM Education Research **19-565**
- **IUSE: HSI** Improving Undergraduate STEM Education: Hispanic Serving Institutions **18-524**
- **REU:** Research Experiences for Undergraduates **13-542**
- CAREER: Faculty Career Development Program **17-537**

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NSF's Ten Big Ideas

RESEARCH IDEAS

PROCESS IDEAS

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Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES)

Bring together dedicated partners

Find approaches that work

Build a nation where everyone has opportunities in STEM

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GENERAL INFORMATION

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Proposals Answer Fundamental Questions

What are you trying to accomplish?

What will be the outcomes?

} ***Goals***

Why do you believe that you have a good idea?

Why is the problem important?

How does it tie into previous literature/efforts?

Why is your approach promising?

} ***Rationale***

Are there ways to inform decisions with data?

How will you know if you succeed?

} ***Evaluation***

How will others find out about your work?

How will you interest them?

} ***Dissemination***

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Research and Evaluation in EHR Proposals

All EHR awards should contribute to knowledge about STEM learning and learning environments, workforce development, or broadening participation.

Research

- Is integral to the project
- Contributes to generalizable knowledge
- Includes appropriate methods, depending on the research questions (qualitative, quantitative, or mixed methods)

Evaluation

- Projects have a way to assess process or outcomes
- Identifies an independent, external evaluator, depending on program solicitation requirements

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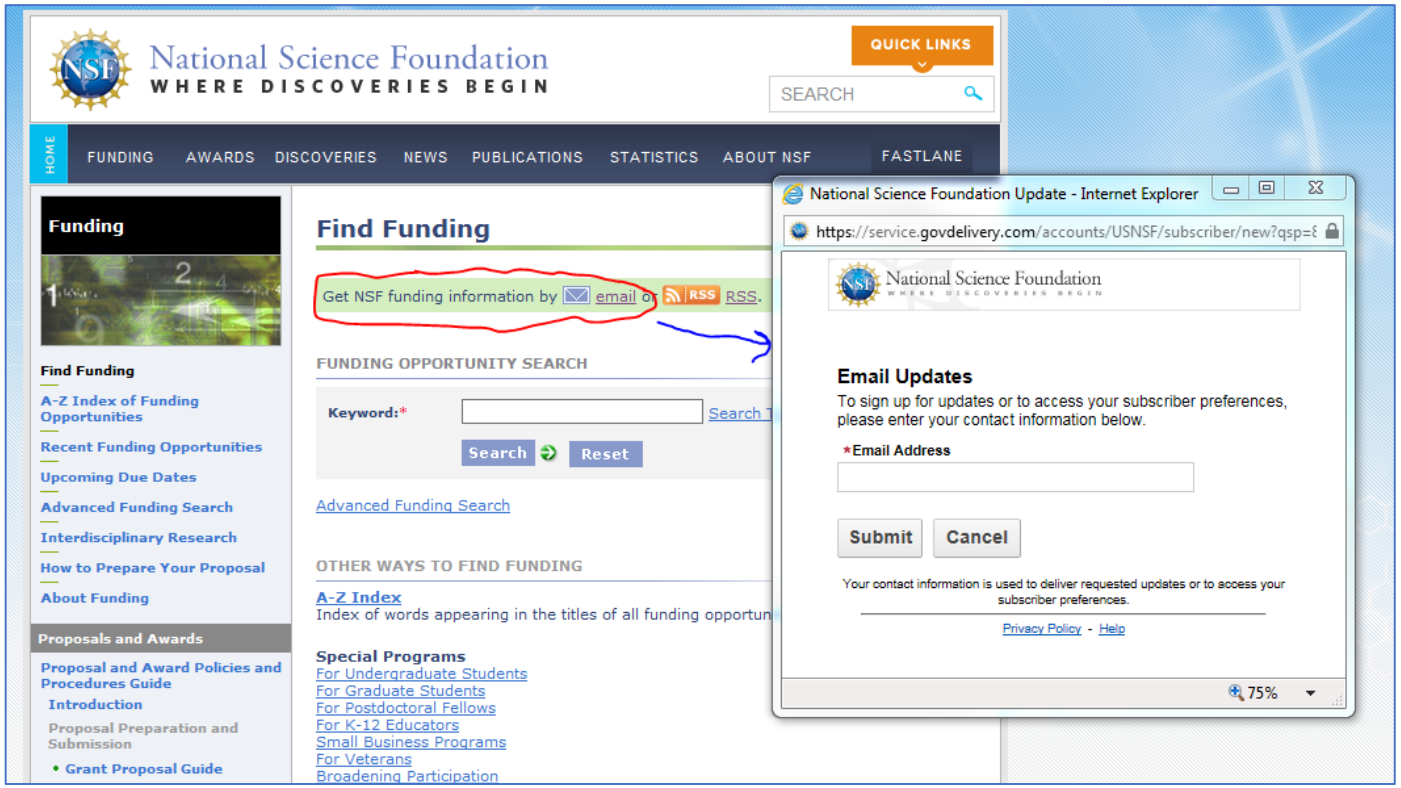
Prospective Principal Investigators



- Track Funding Opportunities
- Engage with NSF
- Answer Fundamental Questions
- Seek Collaborations & Interdisciplinary Partnerships

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Engage with NSF

- Submit Proposals
- Serve as a Reviewer & Panelist
- Join Webinars
- Consider being a Rotator
  http://www.nsf.gov/about/career_opps/rotators/index.jsp

Visit the EHR Website for information about EHR Divisions and Programs

http://www.nsf.gov/dir/index.jsp?org=EHR

Contact NSF Program Directors for Questions and Suggestions

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Making Connections: Resource Centers

- **AISL:** Center for Advancement of Informal Science Education (CAISE) informalscience.org/community
- **DRK-12:** Community for Advancing Discovery Research in Education (CADRE) cadrek12.org
- **ITEST:** STEM Learning and Research Center (STELAR) stelar.edc.org
- **MSP:** Math and Science Partnership Network (MSPnet) hub.mspnet.org
- ***CIRCL**: http://circlcenter.org*
- ***ARISE (Noyce): https://aaas-arise.org/***

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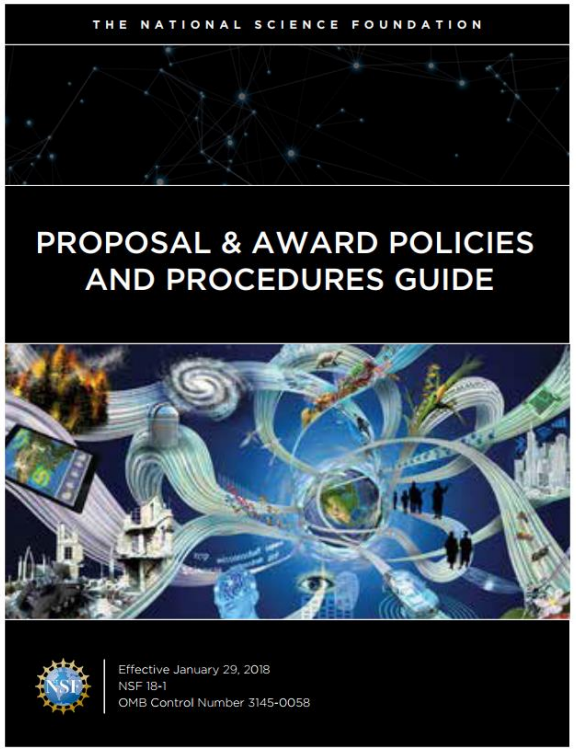
NSF Resources

Follow solicitation/ announcement/ PAPPG guidelines

The Proposal and Award Policies and Procedures Guide (PAPPG) contains documents relating to NSF's proposal and award process, including pre- and post-award information.



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NSF Resources cont.

- NSF: www.nsf.gov
- Funding Opportunities: www.nsf.gov/funding/browse_all_funding.jsp
- Award Information: www.nsf.gov/awardsearch
- Preparing Proposals: https://www.nsf.gov/funding/preparing/
- Data Management Plan: www.nsf.gov/bfa/dias/policy/dmp.jsp
- Broader Impacts: www.nsf.gov/pubs/gpg/broaderimpacts.pdf
- FastLane: www.fastlane.nsf.gov

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Thank You!

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