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Programs and Initiatives in the Directorate for Education and Human Resources

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Program Director

Division of Graduate Education

Directorate for Education and Human Resources

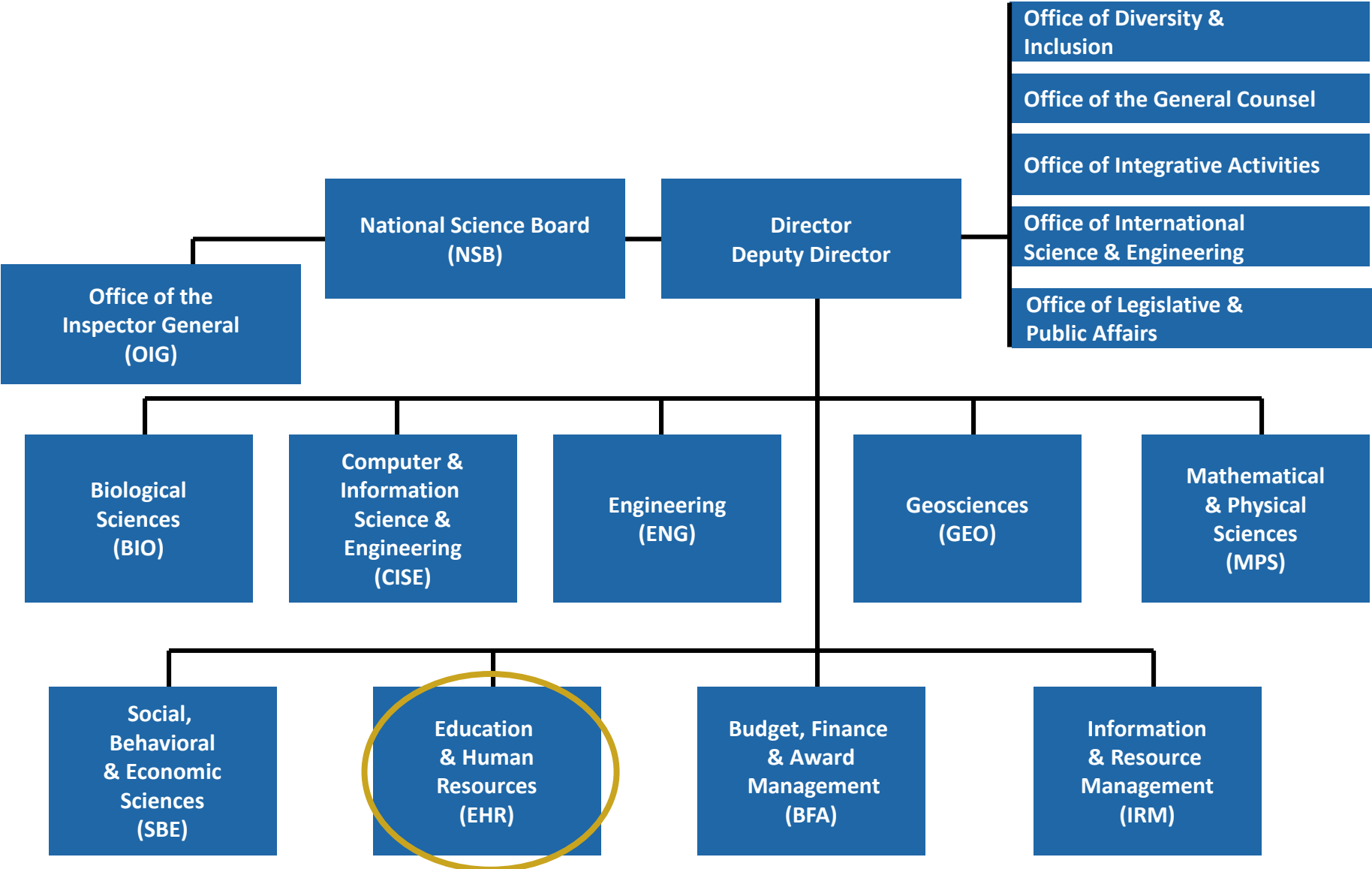
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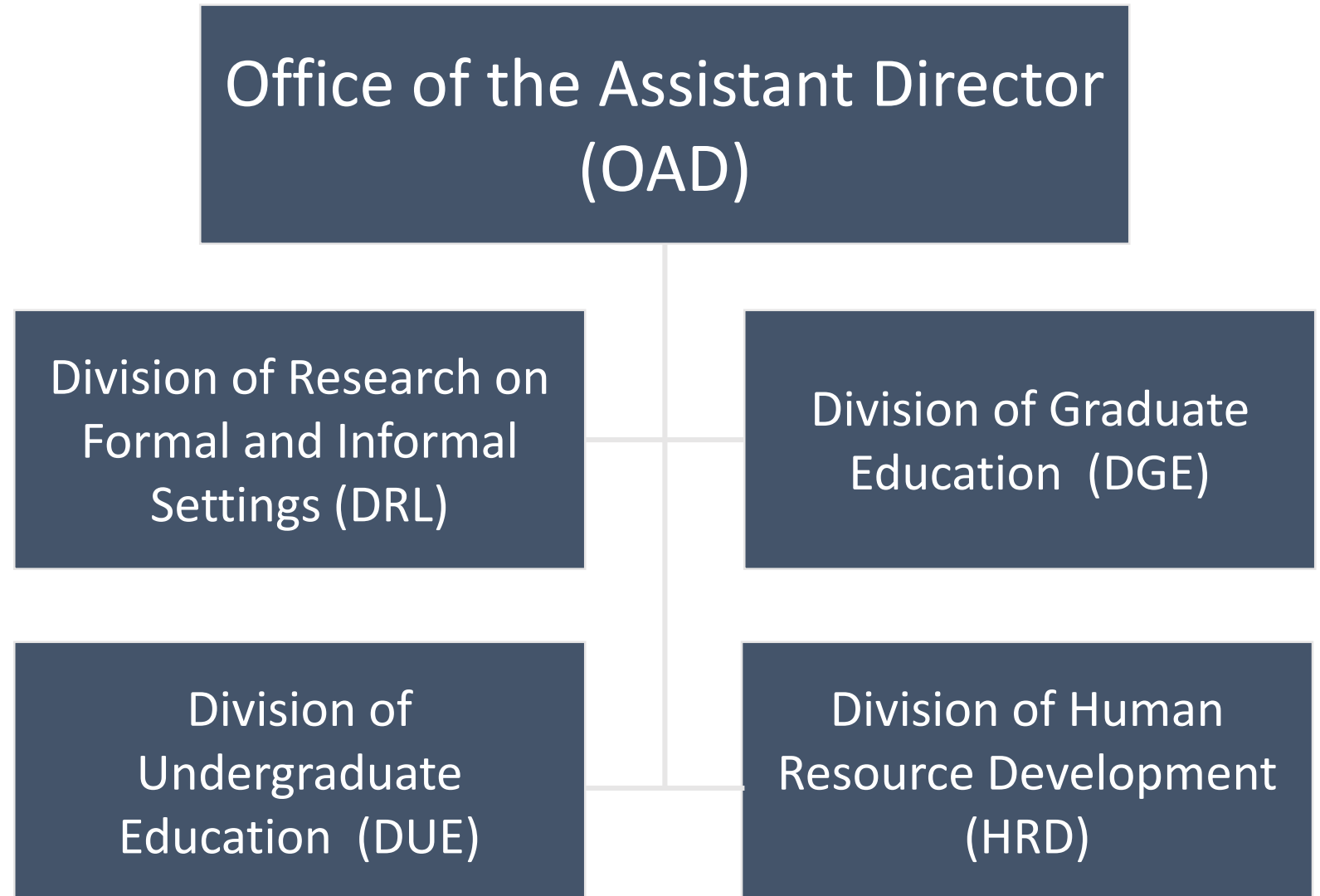
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EHR Organizational Structure



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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.

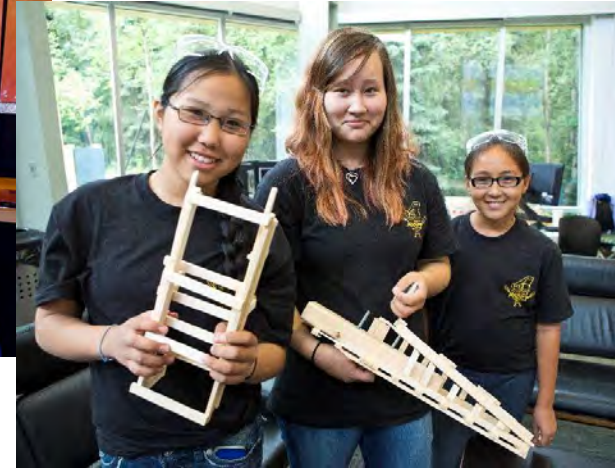
STEM Workforce

- 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.

Advancing STEM Learning through Research

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- 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.

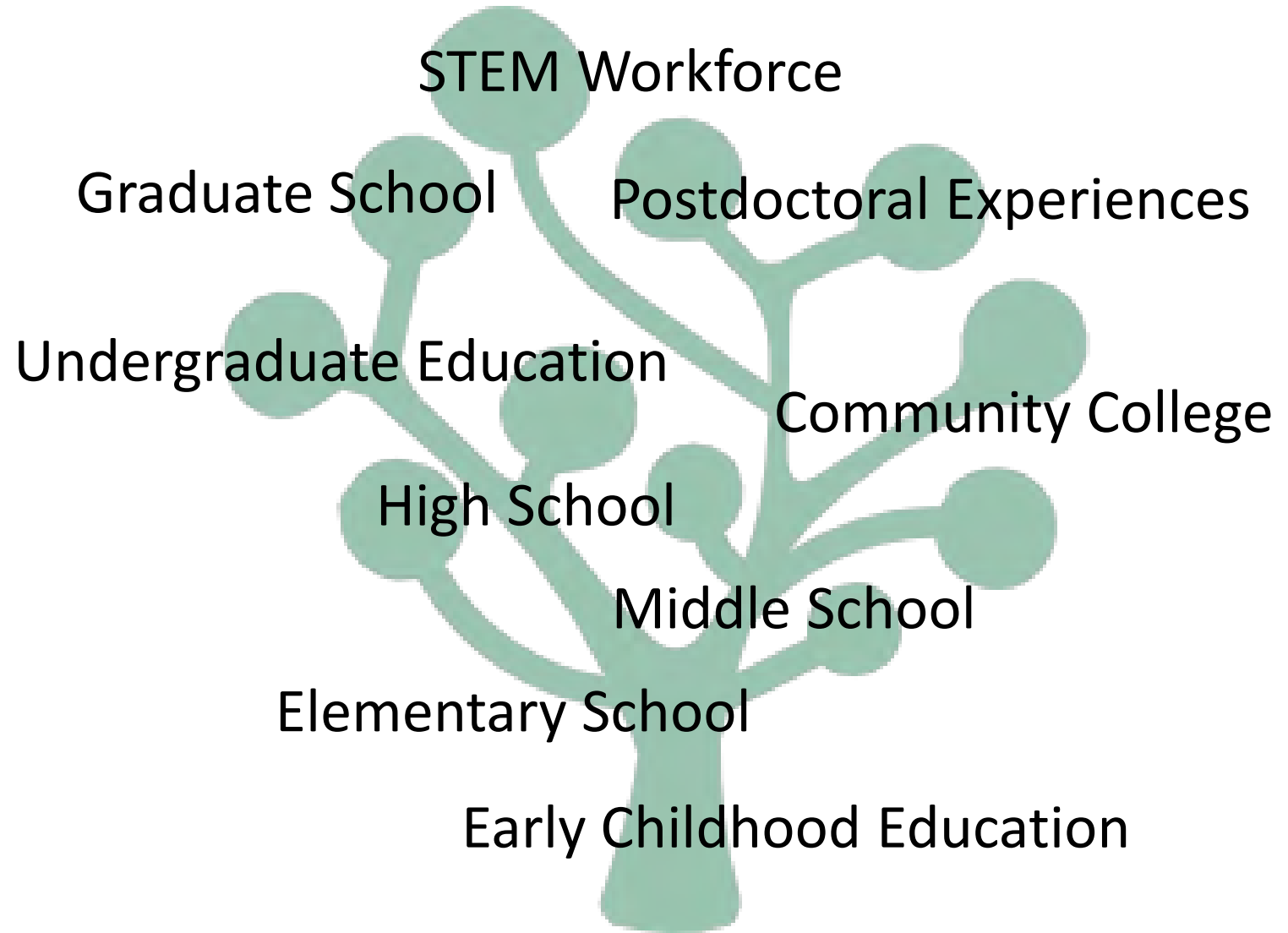
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Advancing STEM Learning at All Levels



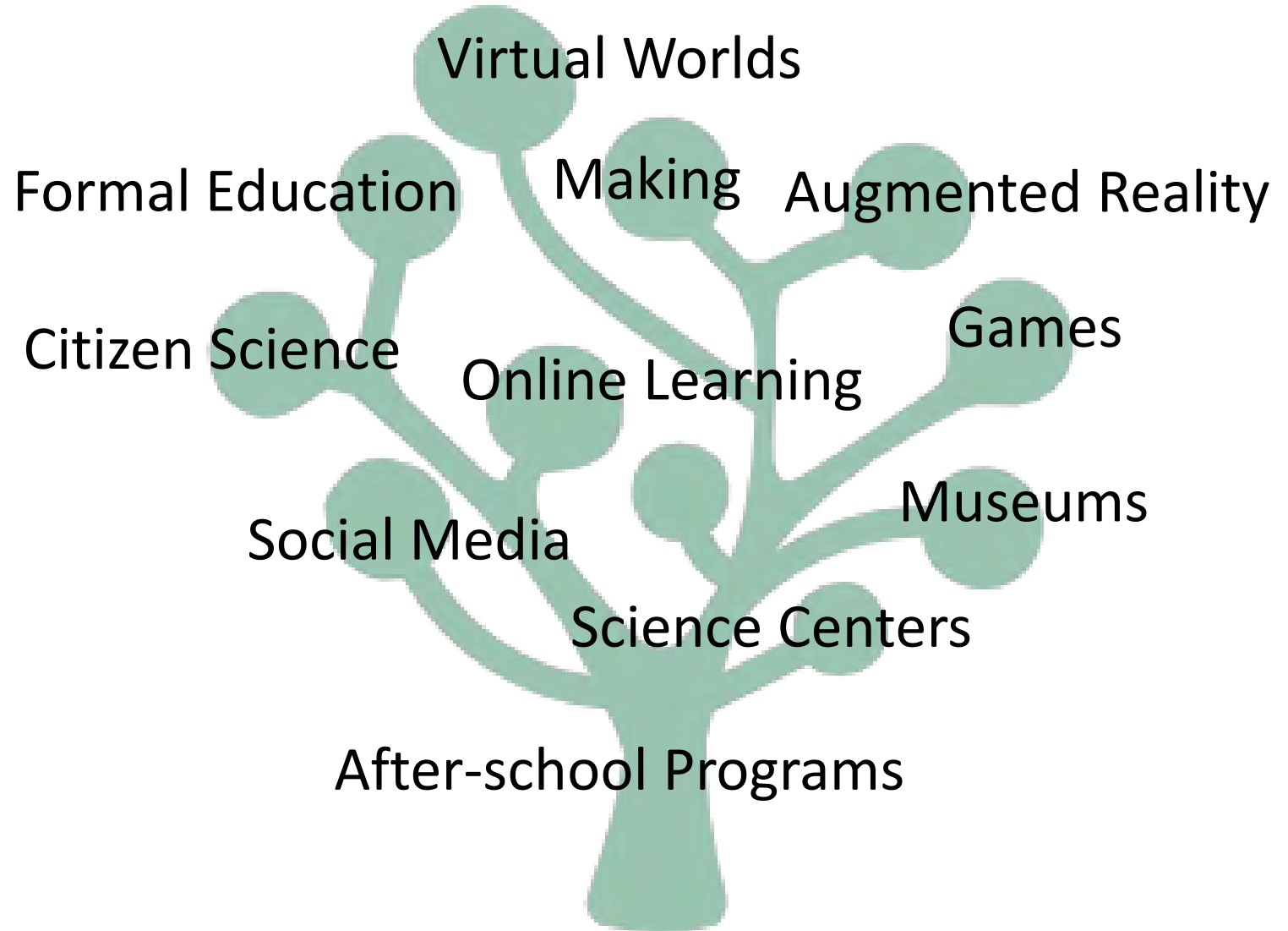
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Advancing STEM Learning Across Contexts



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EHR PROGRAMS (and some cross-directorate programs)

EHR Program Overview

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<i>Division</i>	L&LE	BP	WD
<i>Research on Learning (DRL)</i>	S&CC	AISL DR-K12	ITEST STEM+C CSforALL
<i>Undergrad Education (DUE)</i>	IUUSE (EHR, HSI) S-STEM		ATE Noyce REU-Sites
<i>Graduate Education (DGE)</i>			NRT IGE GRFP SFS/SaTC:EDU
<i>Human Resource Development (HRD)</i>	ADVANCE AGEP HBCU-UP TCUP	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 **19-601**
- **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

- **AI SL**: 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 **19-583**
- **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

- **NRT**: NSF Research Traineeship **19-522**
- **IGE**: Innovations in Graduate Education **17-585**
- **GRFP**: Graduate Research Fellowship **19-590**
- **SFS**: CyberCorps: Scholarship for Service **19-521**
- **SaTC:EDU**: Secure and Trustworthy Cyberspace **19-603**



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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 **19-540**
- **REU**: Research Experiences for Undergraduates **19-582**
- **CAREER**: Faculty Career Development Program **17-537**
- **INTERN**: Non-Academic Research Internships for Graduate Students Supplemental Funding Opportunity **18-102**

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NSF's Ten Big Ideas

RESEARCH IDEAS			
 <p>HARNESSING THE DATA REVOLUTION</p>	<p>Work at the Human-Technology Frontier: Shaping the Future</p> 	<p>Windows on the Universe: The Era of Multi-messenger Astrophysics</p> 	<p>The Quantum Leap: Leading the Next Quantum Revolution</p> 
<p>Harnessing Data for 21st Century Science and Engineering</p>	 <p>Navigating the New Arctic</p>	 	<p>Understanding the Rules of Life: Predicting Phenotype</p> 
PROCESS IDEAS			
<p>Mid-scale Research Infrastructure</p> 	<p>NSF 2026</p> 		
 <p>Growing Convergent Research at NSF</p>	 <p>NSF INCLUDES: Enhancing STEM through Diversity and Inclusion</p>		



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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 are your research hypotheses?
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

A screenshot of the National Science Foundation (NSF) website. The main page is titled 'National Science Foundation WHERE DISCOVERIES BEGIN'. It features a navigation menu with links for HOME, FUNDING, AWARDS, DISCOVERIES, NEWS, PUBLICATIONS, STATISTICS, ABOUT NSF, and FASTLANE. The 'Find Funding' section is highlighted, showing a search bar and a 'Get NSF funding information by' link with icons for email, RSS, and RSS. A red circle highlights the 'email' icon, and a blue arrow points to a pop-up window titled 'National Science Foundation Update - Internet Explorer'. The pop-up window is for signing up for 'Email Updates' and includes a form for 'Email Address' and 'Submit' and 'Cancel' buttons. The URL in the browser window is https://service.govdelivery.com/accounts/USNSF/subscriber/new?qs=.

- 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
- **Cyberlearning:** Center for Innovative Research in Cyberlearning (CIRCL) <http://circlcenter.org>
- **NOYCE:** Advancing Research & Innovation in the STEM Education of Preservice Teachers in High-Need School Districts (**ARISE**) <https://aaas-arise.org/>

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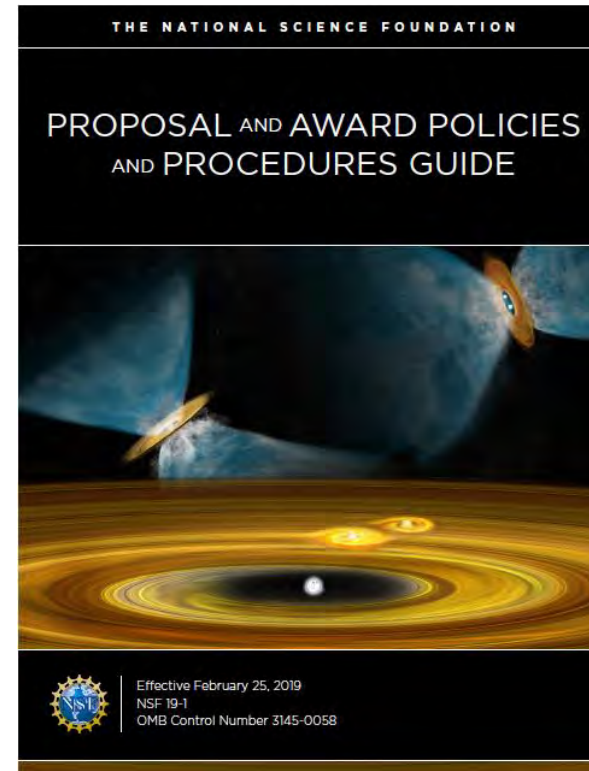
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NSF Resources

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:
https://www.nsf.gov/pubs/policydocs/pappg19_1/pappg_2.jsp
- FastLane: www.fastlane.nsf.gov

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Thank You!

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