



National Science Foundation *Overview and Funding Opportunities*

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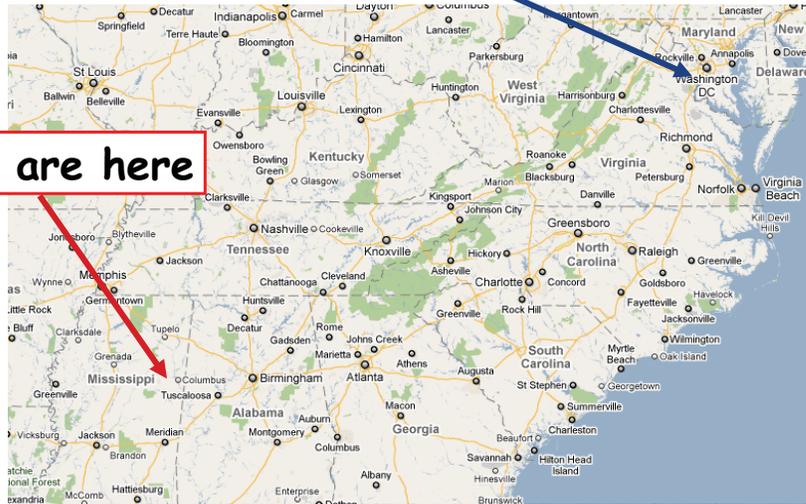
Outline

- Overview of NSF
 - Where we are
 - What we do
 - How we are organized
 - Types of funding opportunities
 - Submitting proposals
 - Proposal review process
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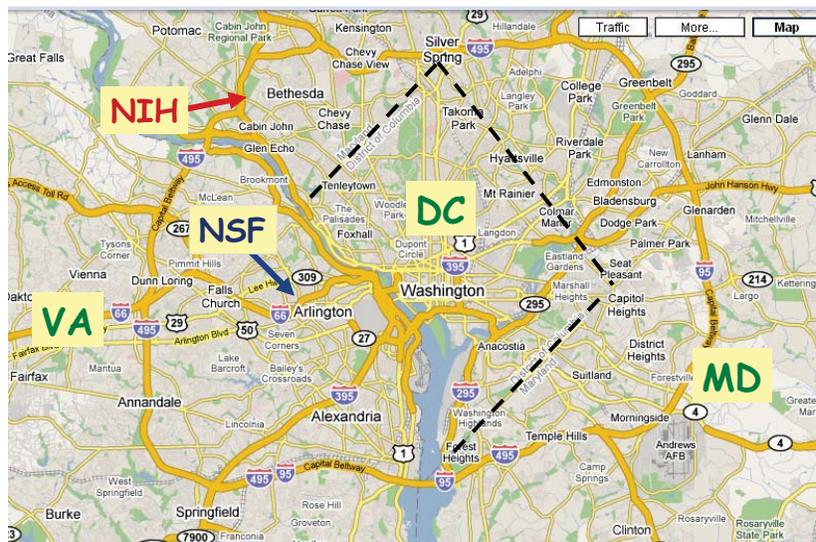


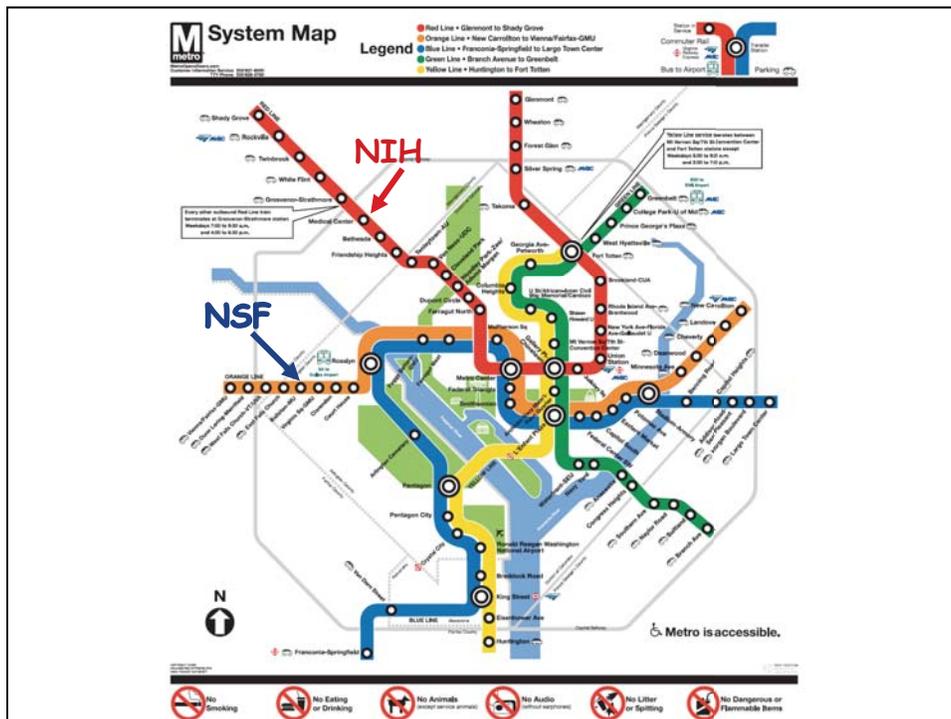
Where is the NSF?

We are here



Where is the NSF?



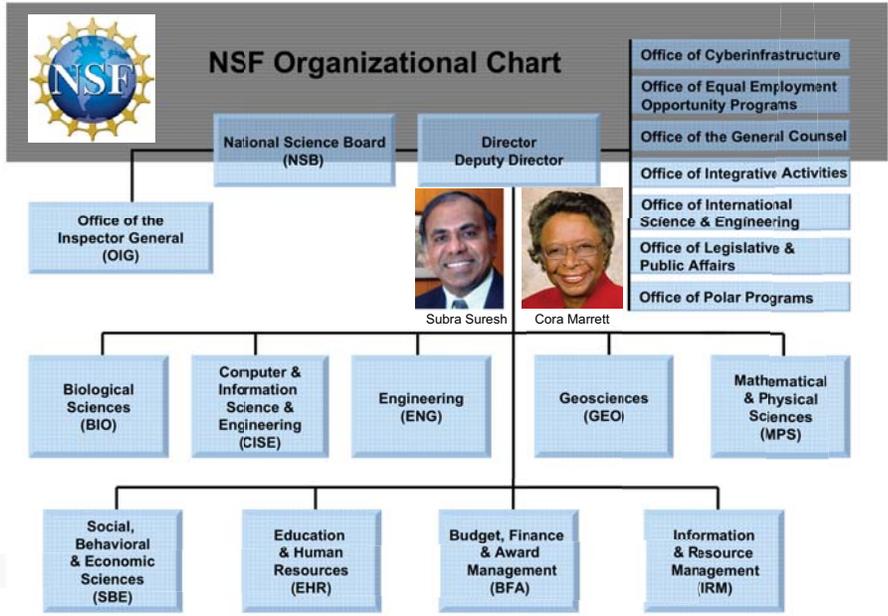


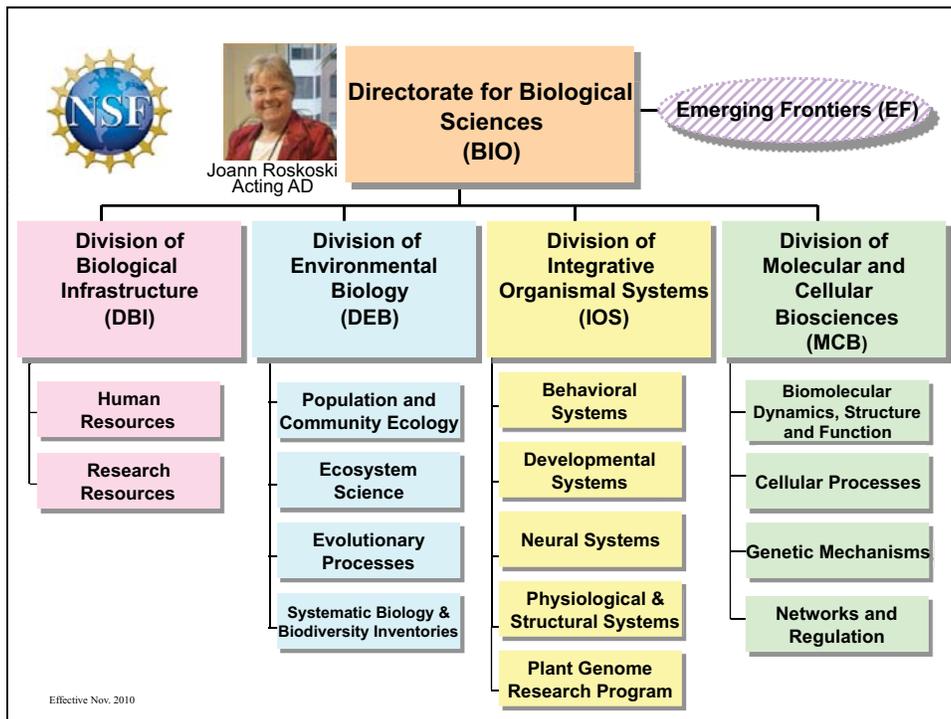
NSF

- Created in 1950 as an independent federal agency
- Budget \$6.9 billion (2010)
- Supports ~20% of federally-funded basic research in colleges and universities

NSF Mission

- Strengthen connections between discovery and technological innovation
- Modernize U.S. research and education infrastructure
- Position U.S. to benefit from global science and engineering investments
- Broaden participation, diversity and inclusiveness





Molecular & Cellular Biosciences (MCB) Mission

To support fundamental understanding of life processes at the molecular, sub-cellular, and cellular levels.





Biomolecular Dynamics, Structure and Function Cluster

- Structure and dynamics of biomolecules
- Biomolecular interactions and mechanisms
- Energy transduction: photosynthesis and biological electron transfer



Cellular Processes Cluster

- Membrane organization and function
- Organelle biogenesis, maintenance, and trafficking
- Cytoskeletal dynamics, cell division, and motility





Genetic Mechanisms Cluster

- Gene expression and epigenetics
- Chromosome dynamics, DNA replication, repair, recombination and inheritance
- Evolution of genes and genomes



Networks and Regulation Cluster

- Signaling and metabolic networks
- The minimal cell, synthetic biology, and the origins of life
- Environmental interactions and microbial communities



<http://www.nsf.gov>



Funding Opportunities

- “Regular” research proposals
- Supplements to active NSF awards





“Regular” Proposals

- Address questions relevant to any research area in division
- Require substantial preliminary data
- Typical project duration: 3-5 years



Faculty Early Career Development (CAREER) Awards

- For non-tenured faculty members who will become the next generation of academic leaders
- Support projects that effectively integrate research and education
- Require substantive preliminary data
- 5-year awards with minimum funding of \$100,000 / year





Research Coordination Networks (RCN)

- To advance a field or create new directions in research or education
- Two tracks
 - Research focused on broad research question, specific group or organisms, or technical advances
 - Undergraduate biology education focused on improving undergraduate biology curricula



BIO Supplementary Funding

- For researchers with active NSF awards
 - Research Opportunity Awards
 - Research Experiences for Teachers
 - Research Experiences for Undergraduates
 - Research Assistantships for High School Students





Research Opportunity Awards (ROA)

- Support faculty from predominantly undergraduates institutions to participate in ongoing, NSF-funded research projects
- Goals are to enhance research at both participating institutions and to improve research and teaching at the undergraduate institution
- Duration: summer or semester



Research Experiences for Teachers (RET)

- For K-12 or community college teachers
- Provide opportunities for teachers to engage in research, with eventual aim of transferring new knowledge to the classroom
- Typical duration: summer or semester





Research Experiences for Undergraduates (REU)

- Provide undergraduates with research training through hands-on participation in research, leading to presentations and publications
- Typical duration: 8-10 weeks in summer



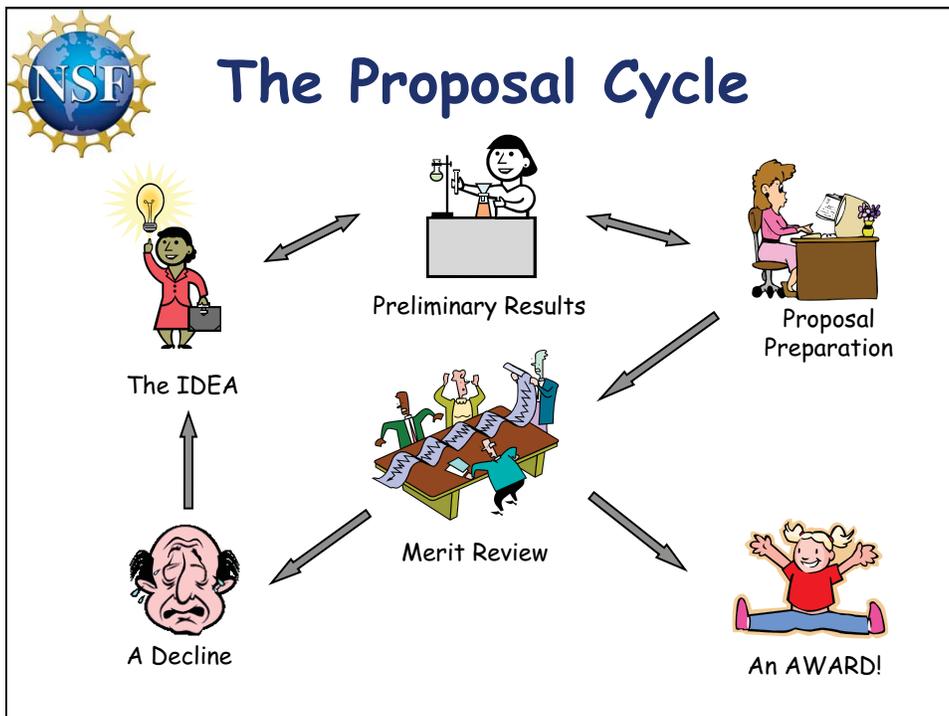
Research Assistantships for High School Students (RAHHS)

- To foster interest in pursuit of studies in biological sciences
- Targeted at high school students from underrepresented groups
- Typical duration: summer, semester, or academic year



International Collaborations

- Offer opportunities for collaborations of PI or students with international labs
- Coordinated by your program director and a program director in the Office of International Science and Engineering Program





How to submit a proposal

- Discuss your idea with your program director
- Review submission guidelines (*Grant Proposal Guide*)
- Cover all the bases
 - Intellectual Merit and Broader Impacts
 - Postdoctoral Mentoring Plan
 - Data Management Plan



Steps in Review Process

- Receipt
- Assignment to a program (or cluster)
- Administrative Review
 - Checked for compliance
 - Both review criteria addressed
 - Formatting
 - Appropriateness (Disease-related?)





Steps in Review Process

- **Scientific Review**
 - *ad hoc* reviews
 - Panel review
- **Decisions**
 - Award or decline recommendation by Program Director
 - Concurrence by Division Director
 - Award notifications by Division of Grants and Agreements



NSF Merit Review Criteria

- What is the intellectual merit and quality of the proposed activity?
 - Creativity, originality, potentially transformative concepts
 - Potential to advance knowledge and understanding within and across fields
 - Conceptualization and organization
 - Qualifications of investigators
 - Access to resources





NSF Merit Review Criteria

- What are the broader impacts of the proposed activity?
 - Discovery while promoting teaching, training and learning
 - Participation of underrepresented groups
 - Enhancement of infrastructure for research and education
- Needs to be addressed in both project summary and project description



Opportunities for You to Get Involved in Review

- Become an *ad hoc* reviewer
- Become a panelist
- Become a rotating program director



Questions?

