

UNDERSTANDING ENGINEERING at NSF

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WELCOME



To succeed in obtaining NSF support for your scholarly activities, you must understand

NSF's

- ❑ Mission
- ❑ Structure
- ❑ Funding Process
- ❑ Priorities

NSF's Engineering Mission

NSF supports fundamental research on engineering systems, devices and materials and their underpinning processes and methodologies

- ❑ We are not a mission specific agency (such as NASA, DOE)
- ❑ Integration of known technologies and knowledge into a system, however important, is not our mission

The Nature of Engineering Research

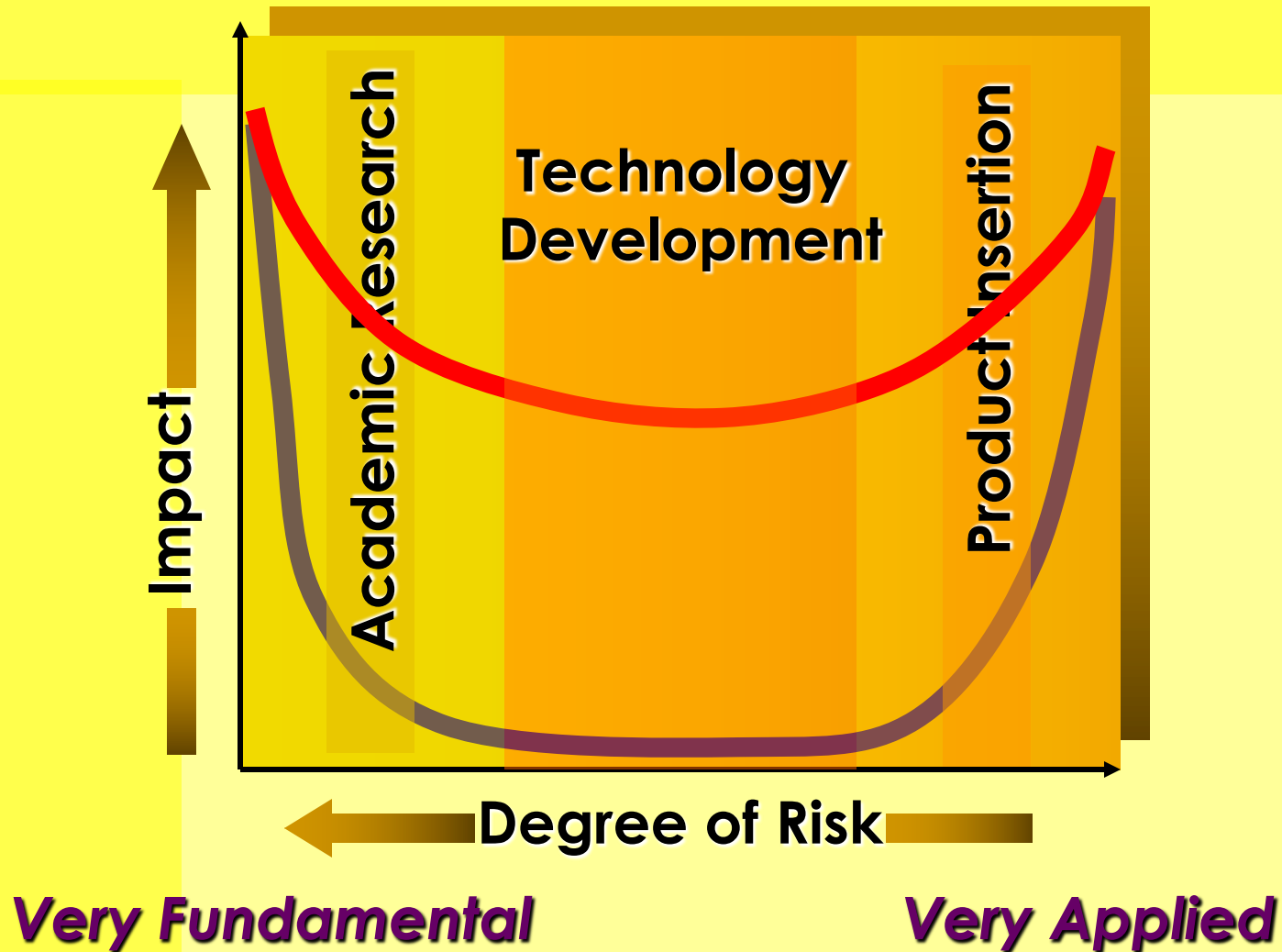
All engineers work on the development of systems, in one way or another

Fundamental engineering research is not system specific

Applied engineering research is system specific

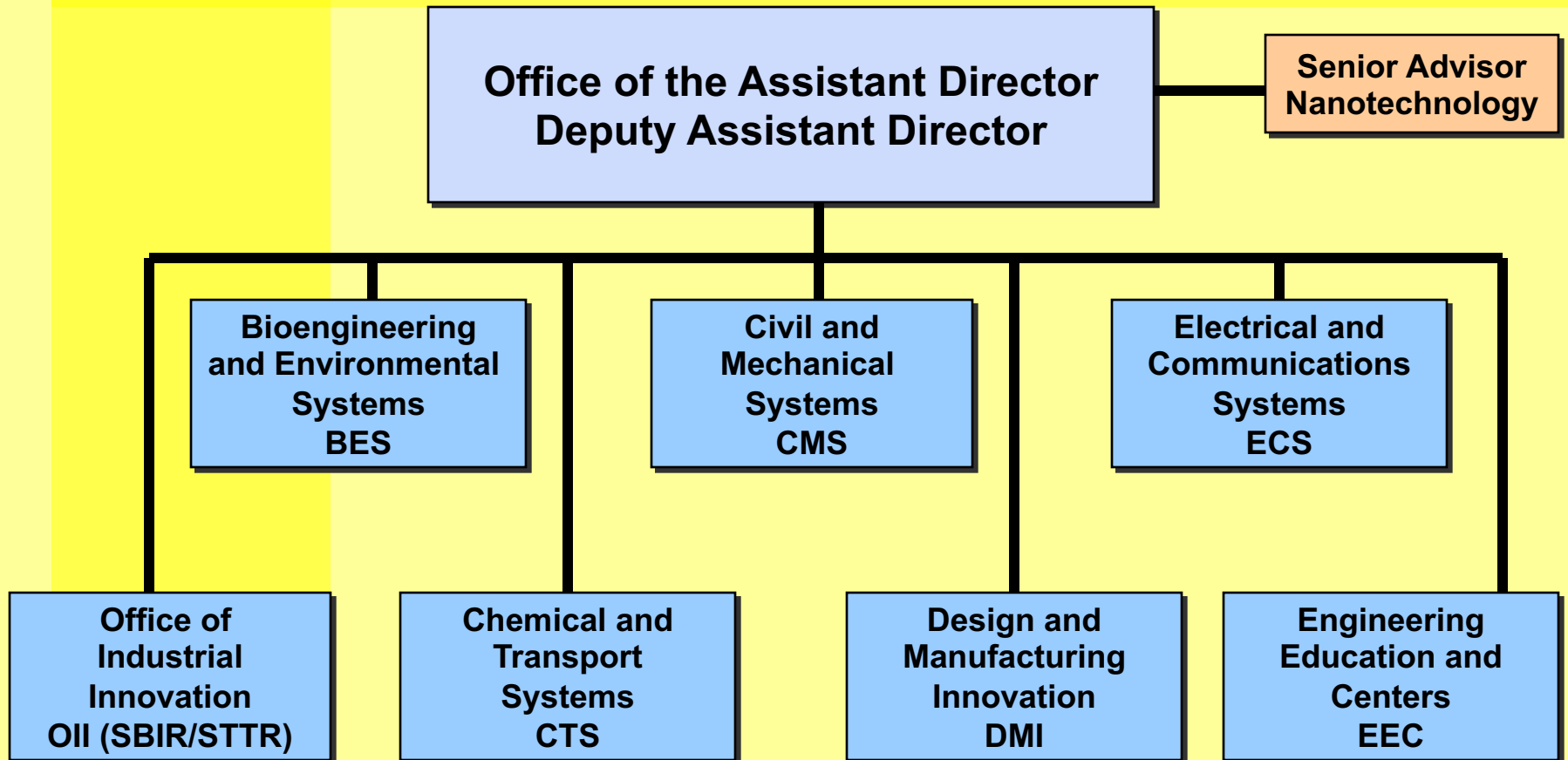
Both are necessary for the development of useful systems

The Impact of Research

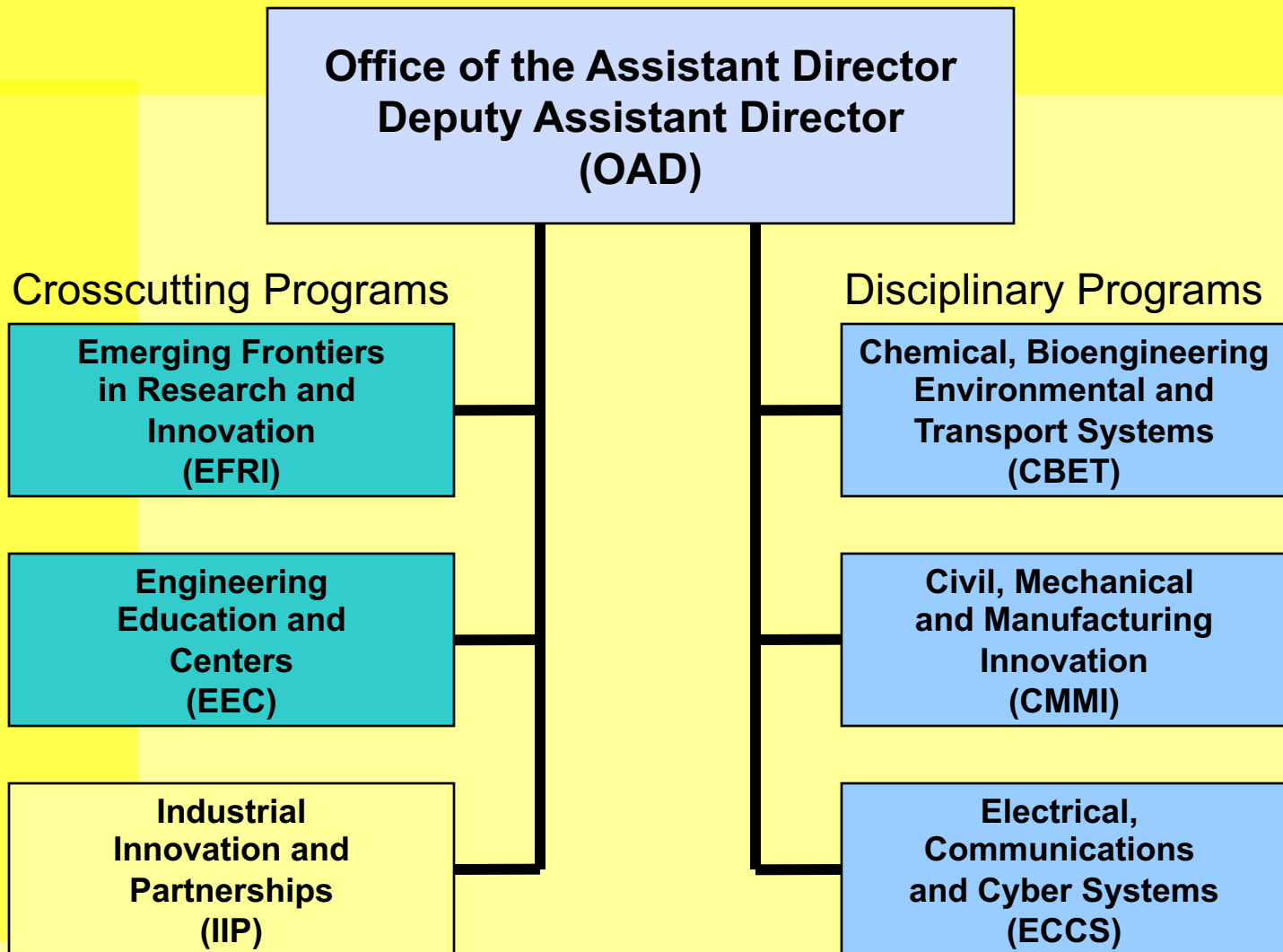


Directorate for Engineering

Current Structure



New Organizational Structure



Why should I care about the ORG chart ?

- ❑ What Division / Program would be most interested in funding my proposal topic?
- ❑ What Division / Program is issuing special solicitations in my general area of specialty?
- ❑ What Program Officer should I speak to in order to determine the appropriateness of my proposal idea?

To Learn More about NSF and your Program

- ❑ Study the NSF Engineering website
- ❑ Use MY NSF
- ❑ Note that each program lists recent awards
- ❑ Know who your program manager is
- ❑ Arrange a telephone conversation or one hour visit with your program manager
- ❑ Volunteer to serve on a panel
- ❑ Put your name on your program's list of potential reviewers

Proposal Mechanisms to Engineering Directorate

- ❑ Investigator Initiated Proposals submitted to a core program
 - Regular Proposals
 - Small Grants for Exploratory Research
- ❑ Proposals submitted to “permanent” cross-cutting programs (CAREER, IGERT, MRI)
- ❑ Proposals submitted to Special Solicitations
 - Some from Engineering only
 - Some NSF-wide

Investigator Initiated Proposals

- ❑ Engineering has submission windows in fall and spring (not all Divisions have spring)
- ❑ Check with multiple program officers if your work cuts across programs
- ❑ Be aware of Collaborative grants

Small Grants for Exploratory Research (SGER)

- Program Director discretionary grants to stimulate and accelerate exciting new ideas
- Work should be highly exploratory
 - High Risk
 - High Reward
- Contact your program officer, then send a brief white paper

NSF Cross-cutting Programs

- CAREER—Early career development grants
- IGERT—Integrative Graduate Education and Research Traineeships
- MRI—Major Research Instrumentation

Each Directorate has a Cognizant Program Officer

FY06 Engineering Solicitations

1. Active Nanostructures and Nanosystems (Roco)
2. ADVANCE: Increasing the Participation and Advancement of Women in Academia
3. Bioengineering and Bioinformatics Summer Institutes (BBSI)
4. CAREER
5. CI for Environmental Observations (GEO lead)
6. Dynamic Data Driven Application Systems (CISE lead)
7. Engineering Health Care Delivery (NIBIB lead)
8. Engineering Research Centers

FY06 Engineering Solicitations

9. Future Technological Challenges in Integrative Hybrid Communications Systems (ECS/Lunardi)
10. GOALI
11. Graduate Research Supplements (ECS and BES)
12. Human and Social Dynamics
13. Interagency Biophotonics Partnership
14. Interagency Engineering Systems Biology
15. Interagency Metabolic Engineering (Heineken)
16. Industry University Cooperative Research Centers Supplements
17. Major Research Instrumentation (OIA)
18. Mathematical Sciences Priority Area (MPS)

FY06 Engineering Solicitations

19. MUSES (Durham)
20. Nano Environmental Health and Safety RFA (EPA Lead)
21. Nanotechnology Undergraduate Education (NUE/Poats)
22. NEES Research
23. NSF-CONACyT
24. NSF-DOE Partnership in Basic Plasma Science and Engineering
25. NSF-FDA Scholar-in-Residence at FDA
26. NSF-NIH Joint Solicitation on Bioengineering Approaches to Energy Balance and Obesity (Ortega)
27. NSF-NIST Interaction in Chemistry, Materials Research, Molecular Biosciences, Bioengineering, and Chemical Engineering

FY06 Engineering Solicitations

28. NSF/Sandia - Engineering Sciences for Modeling and Simulation Based Life-Cycle Engineering and Manufacturing
29. Opportunities for Collaboration Between NSF and NIST
30. Pan-American Advanced Studies Institutes Program (PASI)
31. Partnerships for Innovation
32. Research Experiences for Teachers Sites (RET Sites)
33. Research Experiences for Undergraduates Sites (REU Sites)

FY06 Engineering Solicitations

34. Research in Undergraduate Institutions (RUI)
35. SBIR/STTR – Theme 1
36. SBIR/STTR – Theme 2
37. Science of Learning Centers (SLC)

Engineering Themes

- ❑ Complex Engineered and Natural Systems
- ❑ Energy and Environment
- ❑ Innovation
- ❑ Manufacturing Frontiers
- ❑ Nanotechnology

Research Grant Funding Rate

