

NSF

Directorate for Engineering (ENG)
Chemical, Bioengineering,
Environmental, & Transport
Systems (CBET)

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NSF ENG/CBET Strategy

- **Attract, stimulate, catalyze and challenge research communities to think big, enable transformational research advances, and expand national innovation capacity**
- **Portfolio balance between fundamental, applied and translational as well as small, medium and large projects**
- **Collaborate and partner within and outside NSF to maximize opportunity for the engineering research and education community to address major national priorities**

Goal: Maximize long term expected societal benefit



CBET's vision and mission is to:

- **Vision**

- Be a global leader in identifying and enabling the most innovative research and education
- Inspire the integration of physical, mathematical, and life sciences within engineering
- Cultivate a vibrant, diverse community in key, emerging, and core areas benefiting society

- **Mission**

- Promote and support transformative research & education in engineering areas based on physical, mathematical, and life sciences
- Advance knowledge
- Develop a diverse, globally-engaged workforce



CBET Clusters

Four Clusters – Each Program has ONE submission window. Ask your Program Director for specifics (Fall is Aug/Sept and Spring is Jan/Feb).

- **Chemical, biochemical, and biotechnology systems:** projects dealing with processing and manufacture of products with chemical and renewable resources (**unsolicited proposals are due in Fall & Spring; see specific program**)
- **Biomedical engineering and engineering healthcare:** novel projects that integrate engineering and life science to solve biomedical problems (**unsolicited proposals are due in Fall**)
- **Environmental engineering and sustainability:** projects addressing the reduction of adverse effects of solid, liquid, and gaseous discharges into land, fresh and ocean waters, and air that result from human activity. Research in this cluster also considers the long-term availability of these resources and energy (**unsolicited proposals are due in Spring**)
- **Transport and thermal fluids phenomena:** research on thermal, mass, and momentum transport that enable new technological solutions to understand pressing issues (energy, the environment, manufacturing, health care, ...) (**unsolicited proposals are due in Fall & Spring; see specific program**)





National Science Foundation | Directorate for Engineering
**Chemical, Bioengineering, Environmental,
 and Transport Systems Division (CBET)**

06 January 2014



**Deputy Division
 Director (Acting)**
Susan Kemnitzer



Division Director
JoAnn Lighty

**Chemical, Biochemical,
 and Biotechnology
 Systems**



**1491 Biotechnology,
 Biochemical, and
 Biomass Engineering**
Friedrich Scienc



**1401 - Catalysis
 and Biocatalysis**
George Antos



**1417 - Chemical
 and Biological
 Separations**
Rose Wesson

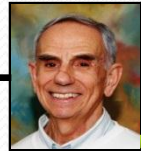


**1403 - Process
 and Reaction
 Engineering**
Maria Burka

**Bioengineering
 and Engineering
 Healthcare**



**5345 - Biomedical
 Engineering**
Thanassis Sambanis



**7236
 Biophotonics**
Leon Esterowitz



**7909
 Nano-Biosensing**
Alex Revzin



**5342 - General
 and Age Related
 Disabilities
 Engineering**
Ted Conway

**Environmental
 Engineering and
 Sustainability**



**7644 - Energy for
 Sustainability**
Ram Gupta



**1440 - Environmental
 Engineering**
William Cooper



**1179 - Environmental
 Health and Safety
 of Nanotechnology**
Barbara Karn



**7643 - Environmental
 Sustainability**
Bruce Hamilton

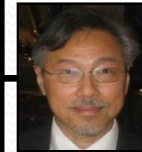
**Transport, Thermal,
 and Fluid
 Phenomena**



**1407 - Combustion,
 Fire, and Plasma
 Systems**
Ruey-Hung Chen



1443 Fluid Dynamics
**Dimitrios
 Papavassiliou**



**1414 - Interfacial
 Processes and
 Thermodynamics**
Eddie Chang



**1415 - Particulate
 and Multiphase
 Processes**
William Olbricht



**1406 - Thermal
 Transport
 Processes**
Sumanta Acharya



New Emphases In CBET

- Advanced Manufacturing: **Bio Manufacturing**, Processing & Devices (Burka, Chang, Hamilton, Olbricht, Sambanis)
- Metabolic Engineering & **Synthetic Biology** for advanced manufacturing (Srienc)
- **Brain** and Neural Engineering (Esterowitz, Sambanis)
- **Water-Food-Energy Nexus** (Cooper, Hamilton)
- Strengthening **CAREER** program (all PDs)



Faculty Early Career Development (CAREER) Program

- Supports junior faculty who exemplify the role of teacher-scholars through
 - outstanding research
 - excellent education
 - integration of education and research
- ~\$220M NSF investment for 600 awards
 - ENG awards are ~\$400K for 5 years
- Deadlines vary by directorate
 - July 2014 timeframe



Thank you and Help Please!

- **Excellent Proposals**
- **Reviewers**
- **Recruitments**
- **Suggestions for Improvement**

