



NSF-BSF Programs

STAFFORD PLACE

COMMENT

This presentation is mainly intended for Israelis who are interested in submitting an application to one of the NSF-BSF programs. The emphasis is on describing some of the differences between the common practices in Israel by the ISF and BSF, and those of the NSF. Please note that this is not meant to be a manual for submission of proposals to these programs.

Several slides are from talks given in the Israeli universities by Dr. Michelle Elekonich from the Integrative Organismal Systems division of the NSF. Occasionally, the font in some of these NSF slides has been changed to bold, in order to emphasis issues that are different from the practice in Israel. These changes are noted on the slides.



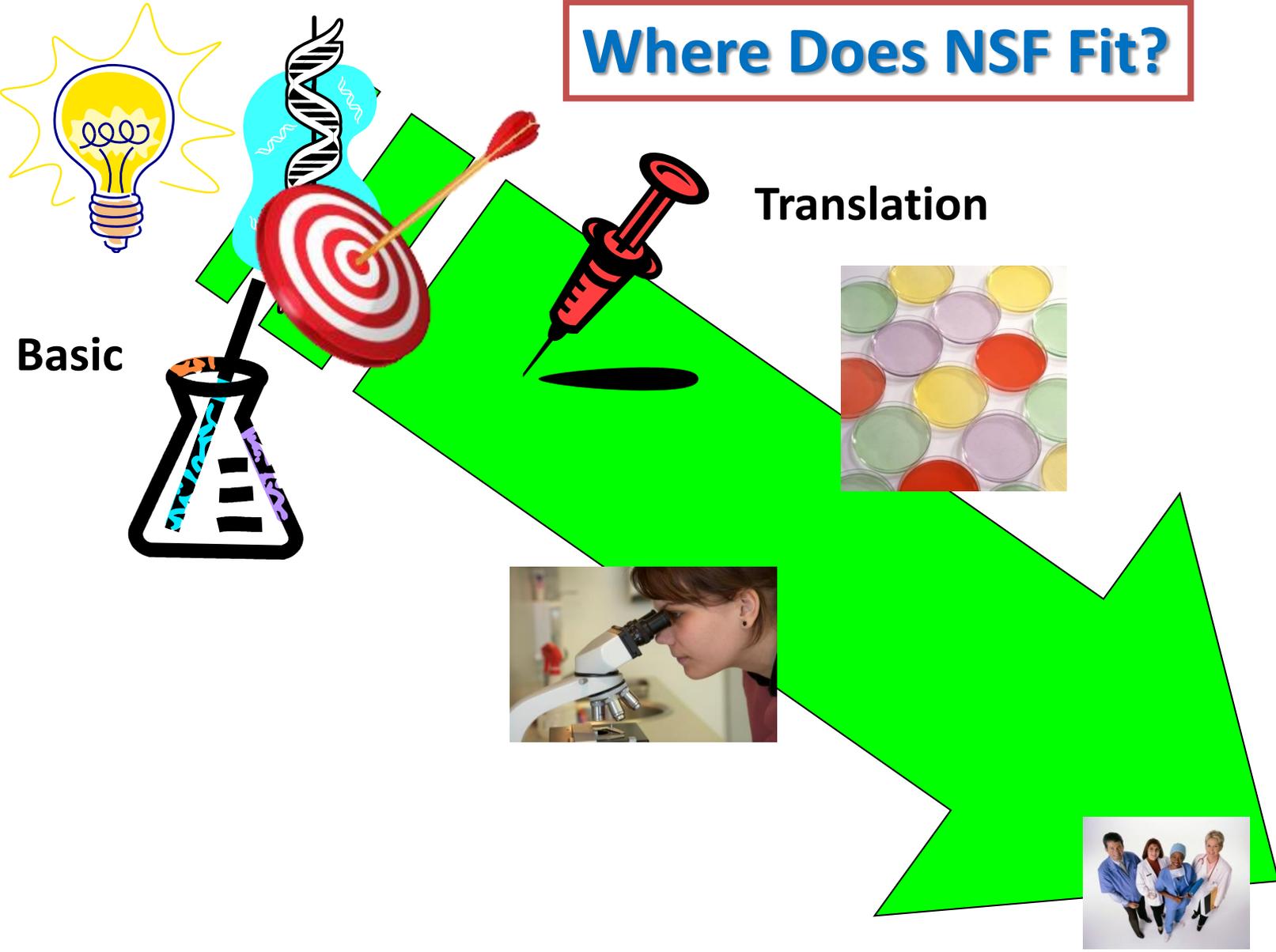
NSF's Mission

- Support for basic science in all fields of fundamental science and engineering, **except for the medical sciences.**
- Keeping the United States at the leading edge of discovery in areas from Astronomy to Zoology
- High-risk high payoff ideas
- **Fully integrated with education**
- **Train tomorrow's scientists and engineers**

(Bold items are not in the original NSF slide and are intended to alert the Israeli applicant about a point that may be different from common practice in Israel)



Where Does NSF Fit?



Basic

Translation

Utility

NSF *At A Glance*

- U.S. Federal Agency-~3000 employees
- Budget: ~ \$7 Billion
- ~11,000 awards per year from > 51,000 submissions/yr.
- Uses temporary academic and permanent NSF staff for program management





Look here
for funding
opportunities

Look here
for awards
history

- HOME
- Research Areas
- Funding
- Awards
- Document Library
- News
- About NSF

- Biological Sciences (BIO)
- Biological Sciences (BIO) Home
- About
- Programs
- Staff
- Funding
- Awards
- News
- Events
- Additional Resources
- Biological Infrastructure (DBI)
- Environmental Biology (DEB)
- Emerging Frontiers (EF)
- Integrative Organismal Systems (IOS)
- Molecular and Cellular Biosciences (MCB)
- Get BIO Email Updates

Home > Research Areas

Email Print Share

Molecular and Cellular Biosciences (MCB)

MCB supports quantitative and interdisciplinary approaches to deciphering the molecular underpinnings of complex living systems

[READ MORE](#)

Announcements

- CSBR Update [Read More](#)
- NEON Update [Read More](#)
- Origin of Life: A Joint Ideas Lab Activity [Read More](#)

[See All](#)

News

- Community College Innovation Challenge names 2016 winners
JUNE 24, 2016
- 'Amazing protein diversity' is discovered in the maize plant
JUNE 24, 2016
- Researchers discover oldest evidence of 'farming' -- by insects
JUNE 22, 2016

[See All](#)

Divisions

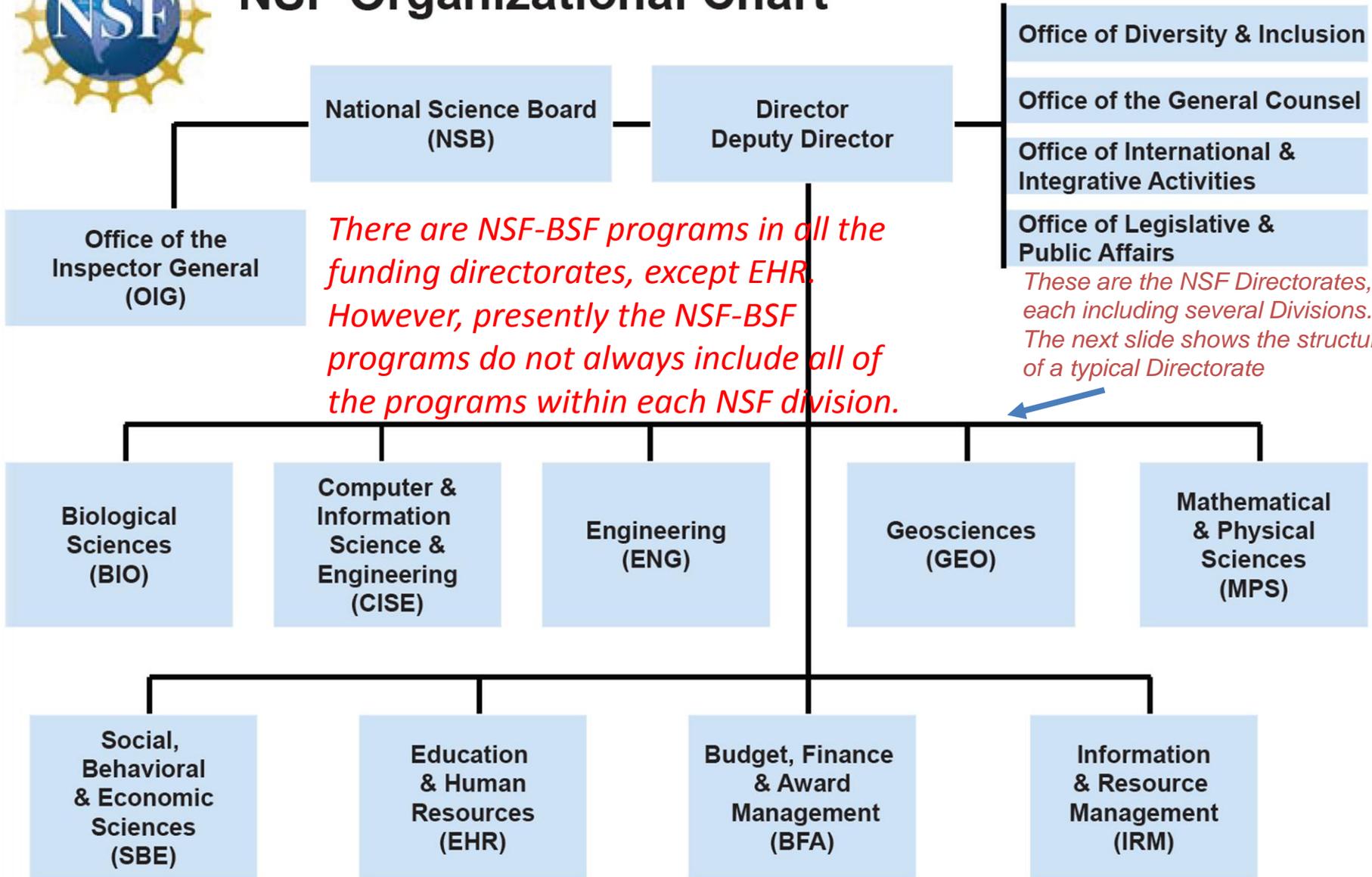
ACTIVE NSF-BSF PROGRAMS -2016

- Ecology & Evolution of Infectious Diseases (annual)
- Computational Neuroscience (annual)
- Physics (annual; solid state physics is part of the materials program)
- Oceanography (semi-annual)
- Renewable Energy (annual)
- Cyber Security and Privacy (annual)
- Economics (semi-annual)
- Psychology (semi-annual)
- Electrical Engineering (annual)
- Computer Science (annual)
- Materials (annual; includes solid state physics)
- Earth Sciences (annual)
- Integrative Organismal Systems (annual; with pre-proposals)
- Molecular and Cellular Biology (annual)
- Environmental Biology (annual; with pre-proposals)





NSF Organizational Chart



There are NSF-BSF programs in all the funding directorates, except EHR. However, presently the NSF-BSF programs do not always include all of the programs within each NSF division.

These are the NSF Directorates, each including several Divisions. The next slide shows the structure of a typical Directorate





Directorate for Biological Sciences (BIO)

An example of an NSF directorate

Emerging Frontiers (EF)

Division of Biological Infrastructure (DBI)

Human Resources

Research Resources

Division of Environmental Biology (DEB)

Ecosystem Science

Evolutionary Processes

Population and Community Ecology

Systematics & Biodiversity Science

Division of Integrative Organismal Systems (IOS)

Behavioral Systems

Developmental Systems

Neural Systems

Physiological & Structural Systems

Plant Genome Research Program

Division of Molecular and Cellular Biosciences (MCB)

Cellular Dynamics and Function

Genetic Mechanisms

Molecular Biophysics

Systems and Synthetic Biology

Core Programs are within each cluster

NSF-BSF PRINCIPLES (1)

- NSF-BSF programs are not “special programs”; rather they are incorporated into the regular “core programs” of the NSF in the relevant disciplines.
- Submission of an NSF-BSF application is made by the U.S. partner (only) to the NSF, and a few days after the NSF deadline, also by the Israeli (only) to the BSF.
- Formally, the Israeli partner is not considered by the NSF as a PI. However, his role, budget and CV are integral parts of the proposal, and the proposal is evaluated as a collaborative proposal, rather than a U.S. one.
- Evaluation is made by the NSF, using its protocol and practices. In some of the programs, Israelis may participate as panel members and/or ad-hock reviewers.
- The BSF screens the proposals to assure that the role of the Israeli is substantial and that the cooperation is meaningful.



NSF-BSF PRINCIPLES (2)

- If an NSF-BSF application is selected by the NSF for a grant, the U.S. PI receives a regular NSF grant, while the Israeli receives a grant from the BSF.
- The BSF is committed to award a grant to any NSF-BSF application that has been selected for a grant by the NSF, as long as it passed the initial screening of the BSF, which is made prior to the NSF evaluation.
- BSF grants to the Israelis in the program range between \$50,000/year for a purely theoretical project, to a maximum of \$80,000/year for a project involving lab/field work.
- BSF supports the NSF-BSF grants to the Israelis using special funds from the Israeli Council of Higher Education, and the classical BSF program is not affected in any way.



NSF-BSF PRINCIPLES (3)

- BSF allows an Israeli scientist to have only a single active application to the NSF-BSF program, even if the relevant NSF program allows the submission of two applications.
- An Israeli scientist will not receive a second NSF-BSF grant before his current grant ends. Therefore, a new application by an Israeli NSF-BSF grantee can be submitted only in the last year of the current grant.
- It is permitted to hold simultaneously an NSF-BSF grant and a grant from any of the other programs of the BSF, and/or apply simultaneously to both.
- It is permitted to submit the same application to both the NSF-BSF and the regular BSF programs. However, if both are granted, only the NSF-BSF one will be funded.



Statistics of NSF-BSF submissions, grants and success rates in 2016

<u>Discipline</u>	2016			
	Submissions	Grants	Success rate NSF-BSF	General NSF success rates
Pre-integrative organismal systems	40	12*	30%	25%
IOS	12			
Pre-Environmental Biology (DEB)	22	9*	40%	25%
DEB	10			
Molecular & cellular Biology (MCB)	36	4	11%	15%***
Oceanography**	20	5	25%	22%***
Earth Sciences	9	3	33%	20-25%
Physics	16	≥5 (1)	≥31%	
Materials	48	≥10 (2)	≥20%	15-20%
Computing and Communication Foundations (CCF)	17	≥6 (2)	≥35%	25%***
Electrical, Communications	11	3	27%	20%
Psychology**	13	6	46%	17%
Economics**	2	0	0%	
Computational Neuroscience (CRCNS)	12	4	33%	15%
Ecology & Evolution of Infectious Diseases	3	1	33%	13%
Energy for Sustainability	11	1	9%	14%***
Cyber Security	12	3	25%	16%
	261	≥51	≥24%	Without DEB & IOS



United States – Israel
Binational Science Foundation

* Pre-proposals; **Semi-annual- shown are 2 last cycles; *** Based on previous years;
(X) Pending

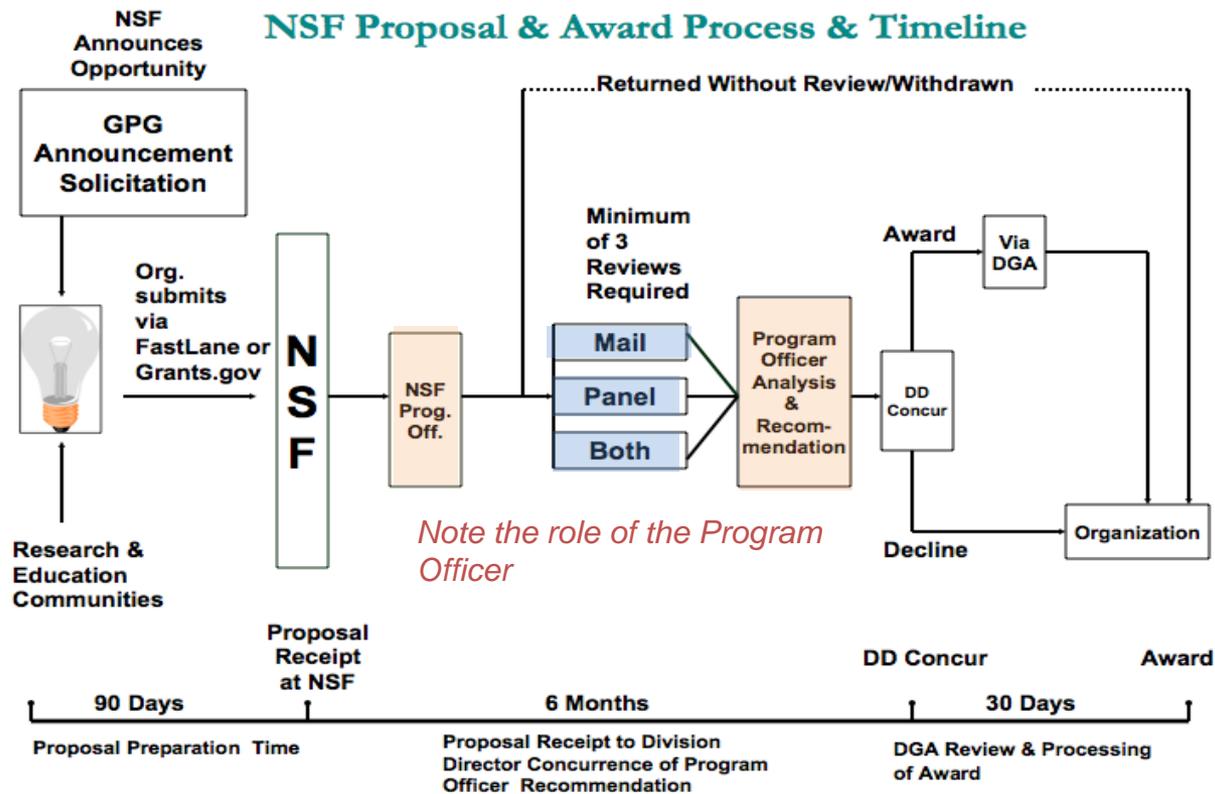
NSF MERIT REVIEW

In the next few slides, please note the following points that are different from practices used by the ISF and BSF:

- Evaluation can be made with or without external reviews.
- Panel decisions are recommendations only, and the program directors make the final grant selection. Their selection takes into account the panel recommendations, but also other considerations.
- The significance that is placed on “broader impact”.
- The observation that the term “broader impact” may have a different meaning than in Israel, with an emphasis on education and community outreach, rather than prospects for potential health benefit and/or commercialization.



Proposal Cycle and Merit Review Process



Funding Decisions

Reviews are Advisory to NSF

- **The merit review process provides:**
 - Review of the proposal and a recommendation on funding.
 - Feedback (strengths and weaknesses) to the proposers.
- **NSF Program Officers make funding recommendations guided by program goals and portfolio considerations.**
- NSF Division Directors either concur or reject the Program Officers' funding recommendations.



Merit Review Criteria

- I. What is the intellectual merit of the proposed activity?
- II. What are the broader impacts of the proposed activity?

At NSF, these are considered equally important merit criteria



What is Intellectual Merit?

- Quality of the science
 - Does it answer a large important question in basic science?
 - Is it novel and exciting?
 - Will it move the field forward?
 - Is it well conceived and well planned?
 - Are the proposers well qualified?
 - Are there adequate resources in the labs to do the work?



What are Broader Impacts?

Integrated activities that:

- Promote teaching, training and learning
- Broaden participation of underrepresented groups
- Enhance infrastructure for research and education
- Broadly disseminate findings
- Benefit society
 - *Applied uses including agriculture, conservation and human health*

Not a checklist!



Examples of Broader Impacts Activities:

- Partner with museums, nature centers, science centers, and similar institutions to develop exhibits in science, math, and engineering.
- Involve the public or industry, where possible, in research and education activities.
- Give science and engineering presentations to the broader community (e.g., at museums and libraries, science cafes, on radio shows, and in other such venues).
- Participate in multi- and interdisciplinary conferences, workshops, and research activities
- Integrate research with education activities in order to communicate in a broader context.



NSF-BSF PITFALLS (1)

Topic:

- Avoid any topic that is commonly considered as health related, even if you express it in terms of basic biological research.
- Interdisciplinary research is obviously welcome. However, try to avoid esoteric topics that are not in the heart of the program to which it will be submitted. Remember, the panel's outcome is just a recommendation and the decision lies with the program director, who may not approve an esoteric project, even if hailed by the panel.



NSF-BSF PITFALLS (2)

U.S. PARTNER:

- Never agree to write the entire proposal!! The U.S. partner has an equal stake in its success and should assume a leading role!!
- Try to avoid a partner whose research has been mostly supported by the NIH, or whose research interest is health related. NSF's mission includes support of scientific infrastructure, but only those not supported by the NIH.
- A partner who already has an active grant from the specific program you are considering, and is not in its last year being scheduled for renewal, may or may not present a problem. Make sure to discuss it with him.
- Avoid “big names”, unless their contribution is apparent and assured.



NSF-BSF PITFALLS (3)

BROADER IMPACT:

- Remember that NSF panels are instructed to place an equal emphasis on broader impact as on intellectual merit.
- Read carefully the slides about Broader Impact (BI), and make sure that the proposal has a stimulating BI plan.
- Although it is not required, try to add a short Israeli BI plan.
- Make sure that the proposal includes a post-doc education plan, at least for the U.S. partner.



NSF-BSF PITFALLS (4)

COOPERATION:

- Remember that NSF is first and foremost interested in the U.S. scientist, and his role has to be significant.
- The part of the Israeli must be clearly written, explaining why it is essential.
- Attractive cooperation is between scientists with different expertise, who play different and complimentary roles in the project.
- Write a detailed cooperation plan, showing that you have thought about it, and if possible, include student exchanges.



Catalyzing New International Collaborations (CNIC)

- Office of International and Integrative Activities
- Support for international planning visits which will then result in a submission of a full NSF proposal
 - Speak with both the CNIC program director and the program director in the program a full proposal would later be submitted to
- NSF contact, email: OISE-CNIC@nsf.gov

The U.S. partner on a planned NSF-BSF proposal may approach the NSF for a small travel grant to work with his Israeli partner on the proposal.



NEED HELP?

- Any question about a possible NSF-BSF topic and/or NSF rules and practices, should be directed to one of the NSF program directors, preferably by the U.S. partner. Names, addresses and phone numbers of the NSF program directors can be found in the NSF solicitations.
- Only questions about the BSF regulations and practices should be directed to the BSF office. Names, addresses and phone numbers of the BSF staff can be found in the Call for Proposals on the BSF website.



GOOD LUCK!

