NSF/CISE -- US-Israel BSF
International Opportunity
Collaborative Proposals

Sol Greenspan & Jack Snoeyink
CISE: Directorate for
Computer & Information Science & Engineering
NSF: National Science Foundation
Want to tell you about these..

Each year, the BSF offers grants in several scientific programs:

**Regular research grants**
Open to all scientists from Israel and the USA who would like to conduct joint research in a variety of scientific research. Please verify your eligibility before submitting. Read more about the program [here](#).

**Start-up research grants**
Open to American and Israeli scientists who are in the initial stages of their independent careers. Find more details [here](#).

**Transformative Science Research grants**
A new program in 'Transformative Science' was launched in 2010. This is a small program of up to 2 awards annually that will receive larger grants than in our regular program. To be awarded a grant, the program must be 'transformative'. The BSF has adopted the NSF definition for 'Transformative Science', which is: Research driven by ideas that have the potential to radically change our understanding of an important scientific concept, or lead to the creation of a new paradigm, or a new field of science. Such research is characterized by its challenge to current understanding or by its pathways to new frontiers. Find more details [here](#).
Advances Search Results

You Searched For:
NSF Organization
Keyword: BSF
Active Awards: true
Expired Awards: true
Refined by
State: Alabama(1)
          California(9)
          Connecticut(2)
          Georgia(3)
          Massachusetts(7)

Show More ...

Export up to 3,000 Awards:
Sort By:
Start Date

Results size:
30 per page

NSF Award Search: CISE awards with BSF in title/abstract;
bar = award height = amount.

- **BSF:2012304:Method for Preprocessing Population Correlation Data**
  - Award Number:1331176
  - Principal Investigator:Eleazar Eskin; Co-Principal Investigator:
  - Organization:University of California-Los Angeles;
  - NSF Organization:CCF Start Date:09/01/2012
  - Award Amount:$40,000.00; Relevance:77.8;

- **BSF:2012338:Shortest Paths: Upper and lower bounds**
  - Award Number:1330843
  - Principal Investigator:Virginia Williams; Co-Principal Investigator:
  - Organization:University of California-Berkeley;
  - NSF Organization:CCF Start Date:09/01/2012
  - Award Amount:$44,999.00; Relevance:77.8;

- **BSF:2012348:The Boundaries of Privacy**
  - Award Number:1331343
  - Principal Investigator:Katrina Ligett; Co-Principal Investigator:
  - Organization:California Institute of Technology;
  - NSF Organization:CCF Start Date:09/01/2012
  - Award Amount:$60,000.00; Relevance:77.8;

- **BSF:2012338:Shortest Paths: Upper and lower bounds**
  - Award Number:1417238
  - Principal Investigator:Virginia Williams; Co-Principal Investigator:
  - Organization:Stanford University;
  - NSF Organization:CCF Start Date:09/01/2013
  - Award Amount:$44,999.00; Relevance:77.8;

- **BSF:2012299:Efficient Algorithms for Geometric Optimization**
  - Award Number:1331133
  - Principal Investigator:Pankaj Agarwal; Co-Principal Investigator:
  - Organization:Duke University;
  - NSF Organization:CCF Start Date:09/01/2013
  - Award Amount:$32,843.00; Relevance:77.79;

- **BSF:2012139:Computing Structures Beyond Moore and von Neumann**
  - Award Number:1329374
  - Principal Investigator:Eby Friedman; Co-Principal Investigator:
  - Organization:University of Rochester;
  - NSF Organization:CCF Start Date:10/01/2013
  - Award Amount:$40,000.00; Relevance:77.8;

- **BSF:2012338:Parallel GPU Algorithm for Proximity Analysis of Large Graphs**
  - Award Number:1330843
  - Principal Investigator:Virginia Williams; Co-Principal Investigator:
  - Organization:University of California-Berkeley;
  - NSF Organization:CCF Start Date:09/01/2012
  - Award Amount:$44,999.00; Relevance:77.8;
Goal & Structure of the Program

• Goal: Increase collaboration between US & Israeli researchers
  – NSF funds US researchers (<$500K/3 years in CISE)
  – BSF funds Israeli researchers

• PIs submit same proposal (body) to NSF & BSF
  – If recommended for funding by NSF, BSF will fund their part
    (no additional reviews; no “double jeopardy”)
  – BSF allows simultaneous submission (as regular grant); NSF does not.

• Instruction links:
  – Special, CISE Dear Colleague Letter (DCL) NSF 17-020
  – General, Policy Guide (PAPPG) NSF 17-1 general
  – BSF site: NSF-BSF Joint Funding Programs
  – BSF: Tips for Israeli applicants to NSF/BSF
Participating NSF CISE Solicitations

Submission window for Small proposals: 01 - 15 Nov 2017

- **Secure and Trustworthy Cyberspace (SaTC) Program, since fall ‘14**
  Solicitation [NSF 17-xxx](#) (to appear)  
  Prior year [NSF 16-580](#)

- **Computing & Communication Foundations (CCF) core, added fall ‘15**
  Solicitation [NSF 17-xxx](#) (to appear)  
  Prior year [NSF 16-578](#)

- **Computer & Network Systems (CNS) core, added fall ‘16**
  Solicitation [NSF 17-xxx](#) (to appear)  
  Prior year [NSF 16-579](#)

Success rates about **20%**

- **Information & Intelligent Systems (IIS) core, added ?**
  Solicitation [NSF 17-xxx](#) (to appear)  
  Prior year: [NSF 16-581](#)

- Watch for update to Oct ’16 DCL: [NSF 17-020](#), and BSF news.
What to do...

Tell your story...

follow instructions carefully
NSF Reviewers see Israeli team details in “Supplemental Docs”

- Authorization to share proposal & reviews
- Bio sketches for Israeli collaborators
- Budget for Israeli collaborators

- Collaboration Plan: joint document
What to do...

Tell your story...

Know your audience.

follow instructions carefully

analytically brilliant

loses sleep over inefficiencies

believes $P = NP$

actually prefers searchable pdf
Know your audience

- Smart people, willing to serve their community
- Busy people, reviewing 7-10 proposals, knowing that the majority will not get funded
- People from diverse research areas in a program

What you can do:
- Ask colleagues to read your proposal
- Suggest reviewers in your proposal
- Volunteer to serve on a panel
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WHAT?  WHY?  HOW?
The NSF Review Criteria

• NSF programs assemble panels of experts to review proposals for its programs
• Proposals with “BSF” in the title are reviewed with other proposals in the targeted program(s)
• Panelists use standard NSF Merit Review criteria
  – Intellectual Merit
  – Broader Impacts
  – Solicitation-specific criteria
• Also comment on:
  – Description of the collaboration with Israel
  – Roles of both US and Israeli collaborators
Standard NSF Evaluation Criteria:

**Intellectual Merit**

- Importance of proposed research
  - to advance knowledge and understanding
  - within the field and across fields
- Creativity and originality
- Significance of expected contributions
- Qualifications of the PIs
- Access to necessary resources
  - Students, equipment, facilities, etc.
Standard NSF Evaluation Criteria:  

Broader Impacts

- Benefits to society and the nation(s)
- Benefits to the field and to other research fields
- Broad dissemination of tools, methods, data, results
- Integration of research and teaching, training, and learning
- Broadening participation of underrepresented groups and creating diversity in the computer systems workforce,
  - e.g., gender, ethnicity, disability, geographic, etc.
- Linkages to technology transfer opportunities
- Outreach to community, region, organizations where research outcomes (e.g., knowledge) can be shared in valuable ways
Standard NSF Evaluation Criteria: 
**Solicitation-Specific Criteria**

- Core programs have no specific criteria except submit matter scope.
- Secure and Trustworthy Cyberspace (SaTC) checks that the topic is in scope and not a good fit for one of the Core programs.
- For NSF-BSF, the appropriateness of collaboration is considered: the whole should be greater than the sum of the parts.
Merit Review Timeline

1. NSF Announces Opportunity
2. Research & Education Communities
3. Submit
4. NSF Program Officer
5. Ad Hoc
6. Panel
7. Combination
8. Internal
9. Program Officer Analysis and Recommendations
10. Division Director Concurrence
11. Award Via Division of Grants and Agreements
12. Organization
13. Decline

- Proposal Receipt at NSF
  - 90 Days: Proposal Preparation
  - 6 Months: Proposal Receipt to DD Concurrence of PO Recommendation
  - 30 Days: DGA Review & Processing
Proposal Writing Tips

• Explain the importance of the problem area, as if it were not obvious to the reader. Not only technically sound, but important!

• NSF considers both the Project and the People
  – PI capabilities are important, but the PI track record alone is not sufficient to merit new funding
  – The project description must give sufficient detail to understand the research activity and believe it is worth investing in it

• The scope of new/original work needs to be clear vis-à-vis related work by others and prior work of PIs

• Top 10 list of what to avoid...
Small fonts promote reader fatigue

Reviewers HATE small fonts

PAPPG mandates:
- 11 point font minimum
- 1 inch margins
- 6 lines max per vertical inch
Number 9: Figures Illegible

- Avoid “crowded” visuals
- Don’t assume reader will print in color
- Use vector graphic formats
Number 8: Acronyms

- Acronyms are **UGLY**, and make text hard to read.
- Acronyms limit your audience to those who already know them...
Number 7: Dissing the Competition

- Good idea: Citing others’ work
- Bad idea: Slighting others’ work

(“Others” might be sitting on the panel)
Number 6: Poor distinction between preliminary results and proposed work

• Make a clear demarcation
• Distinguish your results from others’
• Provide clear road map for future work
Number 5: Lackluster Education Plan

• Should be integrated with research plan
• Think **beyond** your present teaching duties
Number 4: Dull Broader Impacts

• Broader Impacts ask:
  – How will this work change society?

• Don’t confuse this with “extracurricular activities” not supported by the research plan

• Outreach plans should be substantiated
Number 3: (for new Pis)
Confining yourself to your PhD work

• Proposals should be forward-looking
• Move above and beyond your PhD work
• “Imagine a world ...”
Number 2: “It wasn’t clear ...”

Symptoms:
• Long-winded explanations
• Too many superfluous details
• Poor organization of thoughts into words

Remedies:
• Use fewer words
• Read first two pages aloud
• “Make every word tell”
Number 1: Research Plan lacking Cohesion

• Don’t staple together unrelated ideas
• Don’t offer a laundry list with no prioritization
• Don’t make everything look like a nail to your one hammer

• Tell a story with your narrative
What to do...

Tell your story...

Know your audience.

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WHAT?  WHY?  HOW?
Jack’s favorite writing exercises

5 rules for good writing:
write, rewrite, rewrite, rewrite, rewrite, rewrite.

Context first (Gopen and Swan)

Underline verbs: active, passive, being

Consider rewriting if half are being or passive.

Find parallelism and strengthen it

Scratch out words without changing meaning
Acronyms

NSF: US National Science Foundation
BSF: US/Israel Bi-national Science Foundation
TLA: Three-letter acronym
CISE: Computer and Information Science & Engineering Directorate of NSF
CCF: Computing & Communication Foundations Division of NSF CISE
DCL: Dear Colleague Letter – gives information about NSF programs or priorities