

# NSF Proposal Submissions

---

Lynnette Madsen, DMR June 2012

1

## Supplemental Requests

- Should be unanticipated; otherwise include in original proposal (to strengthen it, particularly the broader impacts)
- All requests to be made in Jan./Feb. (unless exceptional circumstances, e.g., time sensitivity)
  - July-Sept.: CAREER proposals sent for review
  - Sept.-Dec.: new proposals are sent for review
  - **Jan.-Feb.: supplemental requests to CER**
  - Mar.-Apr.: recommendations
  - May-Aug.: generally \$0 available
- Must be compliant (returned without review/ declined)
- Instructions in Grant Proposal Guide (GPG):
  - brief (less than 5-8 pages in the Project Description)
  - includes both intellectual merit and broader impacts
  - Not a repeat of original proposal; explanation of how new funds would be use
  - Budget: indirect costs are fixed for life of award

Lynnette Madsen, DMR June 2012

2



## Characteristics of Supplements

- Currently abstract of main award is not modified, so supplements are not reflected on website
- **International Supplements:** often funded in part by our Office of International Science and Engineering (OISE)
- **GOALI:** often funded in part by MPS' Office of Multidisciplinary Activities (OMA) to promote collaboration with industry
- CER Program: REU students are not supported via supplemental funding

Re-budgeting to accommodate different priorities is okay, often approval is not required by NSF

Lynnette Madsen, DMR June 2012

3

## Examples from FY12 (~33)

- 17 to attend this year's and/or next year's PI workshop (\$1691-\$6111)
- 5 AGEP-GRS (~\$52K-60K): paid by MPS, not CER
- 1 NSF-NIST
- 2 national labs.
- 2 extensions
- 2 GOALIs
- 1 international
- 4 instrumentation acquisition, upgrade or development
- 1 doctoral student tuition

Lynnette Madsen, DMR June 2012

4



## Changes for FY13

- Groups should consider a submission under a Materials Genome Initiative (MGI) effort, such as **Designing Materials to Revolutionize and Engineer our Future (DMREF)**:  
<http://www.nsf.gov/pubs/2011/nsf11089/nsf11089.jsp?org=DMR>.  
A new announcement will be made for FY 2013.
- As well the **Materials Research Science and Engineering Centers (MRSEC)** have a competition every three years for both team and center activities.
- Focused Research Groups
  - Prior to 2012: budgets up to \$500K welcome
  - 2013<sup>+</sup>: **budget up to \$250/300K welcome**

Lynnette Madsen, DMR June 2012

5

## Submitting New & Renewal Proposals

- **Window: opens in Sept.**, submit early to allow the most time for review, an early decision, compliance issues, etc.
- Consider 4 years, unless a shorter duration makes more sense
- **Include all broader impacts upfront**, rather than planning on a supplemental request
- Equipment <\$100K may be included, it should be well justified
- New and Renewal proposals are treated the same
- Pick your best project, team, etc.
- Options: unsolicited, GOALI, FRG, RUI, GOALI/FRG

Lynnette Madsen, DMR June 2012

6



# Cover Page

**COVER SHEET FOR PROPOSAL TO THE NATIONAL SCIENCE FOUNDATION**

PROGRAM ANNOUNCEMENT/SOLICITATION NO./CLOSING DATE: If not in response to a program announcement/solicitation enter NSF 09-29					FOR NSF USE ONLY
NSF 09-29		10/31/09		<b>NSF PROPOSAL NUMBER</b> <b>1006640</b>	
FOR CONSIDERATION BY NSF ORGANIZATION UNIT(S) (Indicate the most specific unit known, i.e., program, division, etc.)					
DMR - CERAMICS					
DATE RECEIVED	NUMBER OF COPIES	DIVISION ASSIGNED	FUND CODE	DONOR# (Data Universal Numbering System)	FILE LOCATION
11/02/2009	4	03070000 DMR	1774	094878394	11/02/2009 8:28pm
EMPLOYER IDENTIFICATION NUMBER (EIN) OR TAXPAYER IDENTIFICATION NUMBER (TIN)		SHOW PREVIOUS AWARD NO. IF THIS IS		IS THIS PROPOSAL BEING SUBMITTED TO ANOTHER FEDERAL AGENCY? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> IF YES, LIST ACRONYM(S)	
956006145		<input type="checkbox"/> A RENEWAL <input type="checkbox"/> AN ACCOMPLISHMENT-BASED RENEWAL			
NAME OF ORGANIZATION TO WHICH AWARD SHOULD BE MADE			ADDRESS OF AWARD ORGANIZATION, INCLUDING 9-DIGIT ZIP CODE		
University of California-Santa Barbara			Office of Research Rm 3227 Cheadle Hall SANTA BARBARA, CA 93106-2050		
AWARDEE ORGANIZATION CODE (IF KNOWN)					
0013201000					
NAME OF PERFORMING ORGANIZATION, IF DIFFERENT FROM ABOVE			ADDRESS OF PERFORMING ORGANIZATION, IF DIFFERENT, INCLUDING 9-DIGIT ZIP CODE		
PERFORMING ORGANIZATION CODE (IF KNOWN)					
IS AWARD ORGANIZATION (Check All That Apply) <input type="checkbox"/> SMALL BUSINESS <input type="checkbox"/> MINORITY BUSINESS <input type="checkbox"/> IF THIS IS A PRELIMINARY PROPOSAL THEN CHECK HERE					
<input type="checkbox"/> FOR-PROFIT ORGANIZATION <input type="checkbox"/> WOMAN-OWNED BUSINESS					
TITLE OF PROPOSED PROJECT <b>OXIDE MOLECULAR BEAM EPITAXY OF HIGHLY-PERFECT THIN FILM PEROVSKITES</b>					
REQUESTED AMOUNT	PROPOSED DURATION (1-60 MONTHS)	REQUESTED STARTING DATE	SHOW RELATED PRELIMINARY PROPOSAL NO. IF APPLICABLE		
\$ 390,000	36 months	05/01/10			

# Cover Page

CHECK APPROPRIATE BOX(ES) IF THIS PROPOSAL INCLUDES ANY OF THE ITEMS LISTED BELOW			
<input type="checkbox"/> BEGINNING INVESTIGATOR (GPG I.G.2)		<input type="checkbox"/> HUMAN SUBJECTS (GPG II.D.7) Human Subjects Assurance Number _____	
<input type="checkbox"/> DISCLOSURE OF LOBBYING ACTIVITIES (GPG II.C.1.e)		Exemption Subsection _____ or IRB App. Date _____	
<input type="checkbox"/> PROPRIETARY & PRIVILEGED INFORMATION (GPG I.D., II.C.1.d)		<input type="checkbox"/> INTERNATIONAL COOPERATIVE ACTIVITIES: COUNTRY/COUNTRIES INVOLVED (GPG II.C.2.j)	
<input type="checkbox"/> HISTORIC PLACES (GPG II.C.2.j)			
<input type="checkbox"/> EAGER* (GPG II.D.2) <input type="checkbox"/> RAPID** (GPG II.D.1)		<input type="checkbox"/> HIGH RESOLUTION GRAPHICS/OTHER GRAPHICS WHERE EXACT COLOR REPRESENTATION IS REQUIRED FOR PROPER INTERPRETATION (GPG I.C.1)	
<input type="checkbox"/> VERTEBRATE ANIMALS (GPG II.D.6) IACUC App. Date _____		PHS Animal Welfare Assurance Number _____	
PI/PD DEPARTMENT <b>Materials</b>		PI/PD POSTAL ADDRESS	
PI/PD FAX NUMBER <b>805-893-8486</b>		<b>Santa Barbara, CA 931065050</b> <b>United States</b>	
NAMES (TYPED)	High Degree	Yr of Degree	Telephone Number
PI/PD NAME			Electronic Mail Address

Regulations give grantee institutions responsibility for setting up "Institutional Review Boards" (IRBs) to review research protocols & designs to ensure protection of rights of human subjects. The fundamental principle is that people should not (in most cases) be involved in research without their informed consent, & that subjects should not incur increased risk of harm from their research involvement, beyond the normal risks inherent in everyday life.

Lynnette Madsen, DMR 8



## Compliance

- Automatic check
- Grant Proposal Guide (GPG) very restrictive about changes to proposals after a deadline.

### COMMON ISSUES:

- Failure to address both merit review criteria separately in Project Summary
- Omitting *Results from Prior NSF Support* (within 5 years) for PI **and** any co-PIs in prescribed format;
- Omission of journal article titles from References Cited;
- Incomplete information in Current & Pending Support;

Lynnette Madsen, DMR

9

## Compliance (cont'd)

- Incomplete Biographical Sketches (i.e., failure to include the list collaborators within 4 years, co-editors within 2 years, graduate advisors, postdoctoral sponsors, postdoctoral scholars within 5 years, and all prior graduate students)
- Each proposal that requests funding to support postdoctoral research must include a mentoring plan (not exceeding one page) in Supplementary Documentation section. The mentoring plan will be evaluated during the merit review process, under the Broader Impacts criterion.
- Data Management Plans needed in 2011+

Lynnette Madsen, DMR

10



## Reviewer Suggestions

- Suggest 3 to 5 reviewer names with each proposal
- From ceramics, glasses & inorganic carbon-based materials communities
- ***At arms length***: no former students, supervisors or post-doctoral fellows; no recent collaborators (from the past 4 years); no relatives, etc
- Provide full names, e-mail addresses (to facilitate electronic review), affiliation, & their key areas of expertise
- Industrial and international reviewers and those from underrepresented groups are particularly welcome.
- Used to establish a broader database for reviewers in CER

Lynnette Madsen, DMR

11

## Reason to Suggest Reviewers

- I use suggested reviewer list arrival order to determine order to send proposals out for review;
- funds are spent continuously,
- so this is one of the advantages of
  - (a) submitting early
  - (b) with a reviewer list
- Not as critical if I am using panels, but you get to influence my panelist selections

Lynnette Madsen, DMR

12



## Where to submit

### RELATED PUBLICATIONS

[MPS AGEP-GRS Dear Colleague Letter \(NSF 12021\)](#)  
[Faculty Early Career Development \(CAREER\) Program - Includes the description of NSF's Presidential Early Career Awards for Scientists and Engineers \(PECASE\) \(NSF 11-690\)](#)  
[Research in Undergraduate Institutions \(NSF 00-144\)](#)  
[Grant Opportunities for Academic Liaison with Industry \(GOALI\) \(NSF 12-513\)](#)  
[Materials World Network: Cooperative Activity in Materials Research between US Investigators and their Counterparts Abroad \(MWN\) \(NSF 11-568\)](#)  
[Dear Colleague Letter: Designing Materials to Revolutionize and Engineer our Future \(DMREF\) \(NSF 11089\)](#)

### RELATED PROGRAMS

[Materials World Network: Cooperative Activity in Materials Research between US Investigators and their Counterparts Abroad](#)  
[Materials and Surface Engineering](#)  
[Scalable Nanomanufacturing](#)  
[Nanomanufacturing](#)  
[Materials Processing and Manufacturing](#)  
[Emerging Frontiers in Research and Innovation - Office Information](#)  
[Mechanics of Materials](#)  
[Biomechanics and Mechanobiology](#)

### RELATED URLS

[NSF Alert Service](#)  
[On-Line Forum \(IdeaScale\) on Emerging Areas in Ceramics](#)  
[Workshop on Emerging Research in Ceramics, Carbon, Glasses and Composites \(Arlington, VA\)](#)  
[Angus Kingon: Creating Economic Value From University Science: What is the Role of Faculty?](#)  
[2012 NSF Ceramic Materials Principal Investigator Workshop, June 13-14 \(Arlington, VA\)](#)  
[4th International Congress on Ceramics - ICC4 \(July, Chicago, IL\)](#)  
[Time Window for submitting unsolicited proposals to DMR Programs](#)  
[AVS International Symp. & Exhibit \(Abstracts due in May, Conf. in Oct.; Tampa, FL\)](#)

## Materials World Network (MWN)

- Cooperative Activity in Materials Research between US Investigators & their Counterparts Abroad, Solicitation
- Emphasis area: **Sustainability of Materials**
- Full Proposal Deadline Date: **Nov. 2012**
- An investigator may serve as **PI or Co-PI** in either (a) a proposal submitted in response to MWN or, (b) an unsolicited proposal submitted to DMR within FY 2013 submission window, **but not both**. Limitation does not apply to networks of investigators & their associated activities



## Descriptive Resources

- <http://www.nsf.gov/mps/dmr/bios/lmadsen.jsp>
  - "Transforming Universities and Colleges in the United States with Federal Government Support"
  - "NSF recognizes 3 Asst. Profs. with 2009 CAREER Awards in Ceramics"
  - "Advances in Ceramics through Government-Supported Research"
  - "The Next Generation: Education & Broadening Participation in Science & Engineering"
  - "Ceramic Collaborations around the World"
  - "Basic Ceramics Research and the NSF"
  - "Grand Challenges for Ceramics & Related Areas and the Critical Enablers"
  - "A Guide to NSF Success"

Lynnette Madsen, DMR

15



The screenshot shows the Science Careers website interface. At the top, there is a navigation bar with the Science logo and AAAS. Below that, a red banner reads "Science Careers From the journal Science". The main content area features a search bar, a "Career Advice" section, and an article titled "A Guide to NSF Success" by Lynnette D. Madsen, dated July 27, 2007. The article text includes a quote: "A strong application always demonstrates an appreciation of the background of the field, with appropriate references to the results of others."





## Common Mistakes

- Not addressing broader impacts; it comes across as an afterthought
- Not integrating education with the research
- Too many ideas; a lack of focus (young investigators)
- Renewals: failure to publish in quality journals, failure to establish themselves as leader in field and make an impact
- Ideas not described in detail. Not being specific – what will YOU do?
- Mistakes in English/grammar, figures, references, etc.
- Failure to appreciate background of field (references, originality)

Lynnette Madsen, DMR

17

## Common Mistakes (continued)

- Already well-funded at the NSF for similar activities, not applying to the most appropriate program
- Large grants: inappropriate budget request, forgetting under-represented groups (URG's)
- Instrumentation: not enough users planned – what is the impact, justifying a replacement, justification for top-of-the-line
- Incremental rather than cutting edge – what new insight is expected? Why is it important?
- Few ideas (<20%) are 'bad', but in some cases it is difficult to tell

Lynnette Madsen, DMR

18



## Interactions with NSF

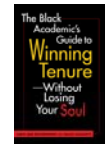
- Have a history of innovative & brilliant science and/or significant contribution/s in a broad sense
- Convey enthusiasm and knowledge
- Be a great reviewer / panelist
  - *Volunteer (send me an e-mail to express your interest)*
  - *Respond to requests*
  - *Provide detailed, timely and thoughtful comments on both criteria and any additional criteria for the specific solicitation/announcement*
- Questions: the www, your university's Sponsored Research Office (SRO), your colleagues, and PDs

Lynnette Madsen, DMR June 2012

19

## CAREER Resources

- A Ph.D. Is Not Enough: A Guide to Survival in Science  
by Peter J. Feibelman; 1993
- Becoming Leaders: A Handbook for Women in Science, Engineering and Technology  
by F. Mary Williams & Carolyn J. Emerson; 2008  
[http://catalog.asme.org/books/PrintBook/Becoming\\_Leaders\\_Practical.cfm](http://catalog.asme.org/books/PrintBook/Becoming_Leaders_Practical.cfm)
- The Black Academic's Guide to Winning Tenure - Without Losing Your Soul  
by Kerry Ann Rockquemore & Tracey Laszloffy; 2008  
[http://www.rienner.com/title/The\\_Black\\_Academic\\_s\\_Guide\\_to\\_Winning\\_Tenure\\_Without\\_Losing\\_Your\\_Soul](http://www.rienner.com/title/The_Black_Academic_s_Guide_to_Winning_Tenure_Without_Losing_Your_Soul)



Lynnette Madsen, DMR June 2012

20

