

# NSF Proposal Submissions

(including supplemental requests)

Lynnette Madsen, DMR Sept. 2010

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## 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 or will be returned without review
- Instructions in Grant Proposal Guide (GPG)

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## Characteristics of Supplements

- Currently abstract is not modified, so 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: Not supported through supplemental funding:
  - REU students
- Re-budgeting to accommodate different priorities is Ok, often approval is not required by NSF

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## Examples from FY10 (8 in total)

- 2 ACI Fellowships (recognition award)
- 1 MIPR Army Office; Army Office supplied funds
- 1 Small supplement to work with national laboratory; Sandia co-funded
- 3 GOALI supplements including one emergency (one-year extension with extenuating circumstances)
- 1 Other emergency: equipment failure

## 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

## Cover Page

COVER SHEET FOR PROPOSAL TO THE NATIONAL SCIENCE FOUNDATION					FOR NSF USE ONLY
PROGRAM ANNOUNCEMENT/SOLICITATION NO./CLOSING DATE: <small>For a response to a program announcement/solicitation enter NSF ID#</small>					NSF PROPOSAL NUMBER <b>1006640</b>
NSF ID# 09-79 10-11-09					
FOR CONSIDERATION BY NSF ORGANIZATION UNIT(S): <small>(Indicate the most specific unit known, i.e. program, division, etc.)</small>					
DMR - CERAMICS					
DATE RECEIVED	NUMBER OF COPIES	DIVISION ASSIGNED	FUND CODE	DUNSF (Data Universal Numbering System)	FILE LOCATION
11/02/2009	4	03070000 DMR	174	09487394	03/08/09 8:00am
EMPLOYER IDENTIFICATION NUMBER (EIN) OR TAXPAYER IDENTIFICATION NUMBER (TIN)	IS THIS PROPOSAL BEING SUBMITTED TO ANOTHER FEDERAL AGENCY? YES/NO		IF YES, LIST AGENCY(IES)		
956006145	<input type="checkbox"/> A RENEWAL <input type="checkbox"/> AN ACCOMPLISHMENT-BASED RENEWAL		NO		
NAME OF ORGANIZATION TO WHICH AWARD SHOULD BE MADE			ADDRESS OF AWARDER ORGANIZATION, INCLUDING 9-DIGIT ZIP CODE		
University of California Santa Barbara			Office of Research Rm 327 Charles Hall SANTA BARBARA, CA 93106-2950		
AWARDEE ORGANIZATION CODE (IF KNOWN)			ADDRESS OF PERFORMING ORGANIZATION, IF DIFFERENT, INCLUDING 9-DIGIT ZIP CODE		
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)					
<input type="checkbox"/> AWARDER ORGANIZATION (Check All That Apply)		<input type="checkbox"/> SMALL BUSINESS		<input type="checkbox"/> MINORITY BUSINESS	
<input type="checkbox"/> SMALL BUSINESS		<input type="checkbox"/> FOR-PROFIT ORGANIZATION		<input type="checkbox"/> WOMAN-OWNED BUSINESS	
TITLE OF PROPOSED PROJECT: OXIDE MOLECULAR BEAM EPITAXY OF HIGHLY-PERFECT THIN FILM FERROSKITES					
REQUESTED AMOUNT	PROPOSED DURATION (in months)	REQUESTED STARTING DATE	SHOW RELATED PRELIMINARY PROPOSAL NO. IF APPLICABLE		
5 390,000	36 months	05/01/10			

## Cover Page

<input type="checkbox"/> BIOGRAPHICAL SKETCHES (GPG 10.7) <input type="checkbox"/> DISCLOSURE OF CONFLICTS OF INTEREST (GPG 10.8) <input type="checkbox"/> PROPRIETARY & PRIVILEGED INFORMATION (GPG 10.9, 11.C, 11.G) <input type="checkbox"/> HISTORIC PLACES (GPG 11.C.2) <input type="checkbox"/> EAGERS (GPG 11.D.2) <input type="checkbox"/> VETERINATE ANIMALS (GPG 11.D.6) (ACUC App. Due)		<input type="checkbox"/> HUMAN SUBJECTS (GPG 10.7): Human Subjects Assurance Number _____ Example Submission: _____ at PI App. Date _____ <input type="checkbox"/> INTERNATIONAL COOPERATIVE ACTIVITIES: COUNTRY/COUNTRIES INVOLVED _____ (GPG 11.C.2) <input type="checkbox"/> PIPIR RESOLUTION OF APPLICABLE GROUPS WHERE EACH COUNTRY REPRESENTATION IS REQUIRED FOR BROAD IMPACTS SECTION (GPG 11.C.1)	
PIFD DEPARTMENT: <b>Materials</b> PIFD FAX NUMBER: <b>805-893-8486</b> PIFD POSTAL ADDRESS: <b>Santa Barbara, CA 931065950</b> PIFD COUNTRY: <b>United States</b>		PIFD NAME: _____ PIFD TITLE: _____ PIFD PHONE NUMBER: _____ PIFD FAX NUMBER: _____ PIFD E-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.

<http://www.nsf.gov/bfa/dias/policy/human.jsp>

## 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;

## 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 requires funding to support postdoctoral researchers 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+

## 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

## Where to submit

See Ceramics homepage at NSF for RELATED PROGRAMS (at NSF) & RELATED URLS (other agencies)

<p><b>RELATED PROGRAMS</b></p> <p>Materials World Network, Cooperative Activity in Materials Research between US Investigators and their Counterparts Abroad</p> <p>Coop. DMR, DMR, Solar Energy Initiative</p> <p>Analytical &amp; Surface Chemistry</p> <p>Small Business Technology Transfer Program - STTR</p> <p>Research Experiences for Teachers (RET) in Engineering (Program Description)</p> <p>Interdisciplinary Research (IDR)</p> <p>Center for Sustainability</p> <p>Education Centers in Research and Innovation - Office Information</p> <p>Materials Processing and Manufacturing</p> <p>Manufacturing</p> <p>Materials and Surface Engineering</p> <p>Mechanics of Materials</p> <p>Nano and Bio-Mechanics</p> <p><b>RELATED URLS</b></p> <p>Time Window for submitting unsolicited proposals to DMR Programs</p> <p>NSF Alert Service</p> <p>Science Nation highlights on funded with STTR (Doctors, Shells and Beaks at USDO)</p> <p>ACard Index of Funding Opportunities in ceramics</p> <p>Nanoceramics (Nanoscience, Science and Engineering)</p> <p>NSF-DOE Joint Workshop on Future Ultra-High Temperature Materials, January 13-14, 2009</p> <p>First Industrial Workshop in Ceramics: Data Storage Technology, Arlington, VA, January 23-24, 2009</p> <p>Aerospace, Chemical and Material Sciences (ACOMS)</p> <p>Bio-ceramics (DMR)</p> <p>Composite Materials, Cellular Materials, etc. (DMR)</p> <p>Fiber (DMR)</p> <p>Fuel Cells - Hydrogen Program (DMR)</p> <p>Fuel Cells - SOFC (DMR)</p> <p>High Temperature and Aerospace Materials (AFOSR)</p> <p>High Temperature Ceramics (DMR)</p> <p>Petroleum or Alternative Energy Research (Petroleum Research Fund)</p>
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## Materials World Network (MWN)

- Cooperative Activity in Materials Research between US Investigators & their Counterparts Abroad, Solicitation 10-588
- Questions from US investigators should be directed to NSF: Carmen Huber chuber@nsf.gov (703) 292-4939
- Full Proposal Deadline Date: Nov. 10, 2010
- 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 FY2011 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>
- J.A. DeAro & L.D. Madsen, "Transforming Universities and Colleges in the United States with Federal Government Support", (2009)
- L.D. Madsen, "NSF recognizes 3 Asst. Profs. with 2009 CAREER Awards in Ceramics", (2009)
- S. Freiman, L.D. Madsen & J.W. McCauley, "Advances in Ceramics through Government-Supported Research", (2009)
- L.D. Madsen & G.X. Tessema, "The Next Generation: Education & Broadening Participation in Science & Engineering", (2009)
- L.D. Madsen, "Ceramic Collaborations around the World", (2009)

## Descriptive Resources

- L.D. Madsen, "Basic Ceramics Research and the NSF", (2008)
- L.D. Madsen & S. Freiman, "Grand Challenges for Ceramics & Related Areas and the Critical Enablers", (2008)
- L.D. Madsen, "A Guide to NSF Success", (2007)
- L.D. Madsen, "Ceramics at NSF - Trends & Opportunities", (2007)
- L.D. Madsen, "How New Materials Figure in the Dow", (2005)
- L.D. Madsen, "Increasing the Participation & Advancement of Women in Academic Science and Engineering Careers in the USA" (2002)



## 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)

## 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

## 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
  - 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

## 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)

