Applying for an NSF CAREER Grant

April 29, 2013

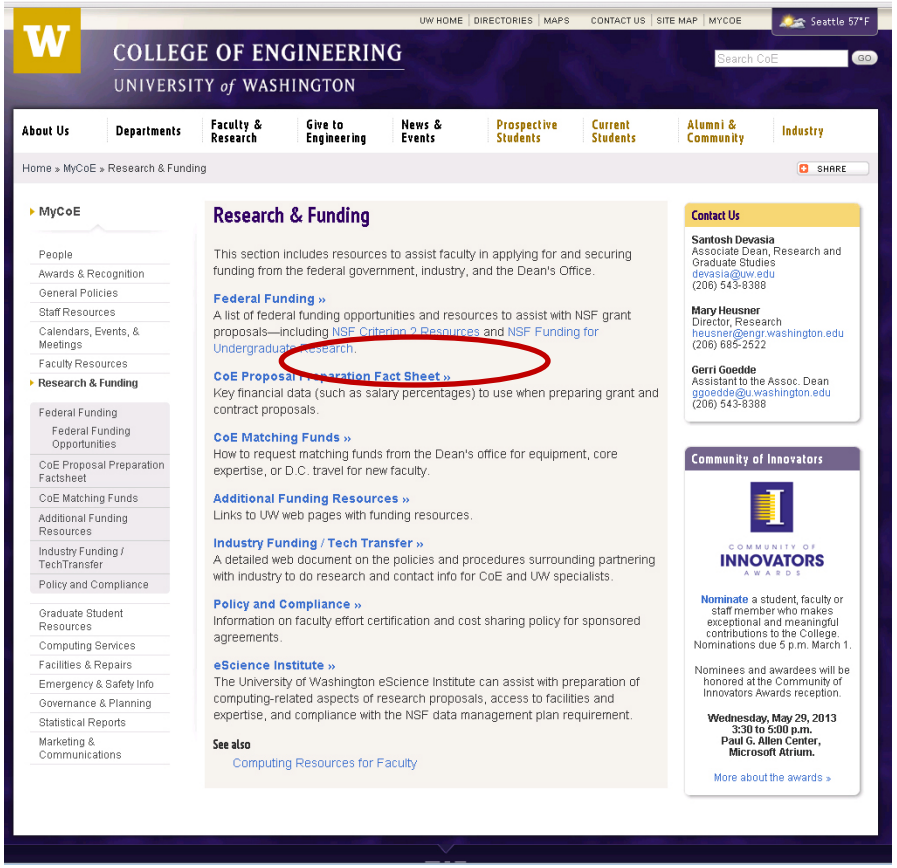
UW Program Contacts

- CoE Boilerplate – Eve Riskin
- OMAD & LSAMP – Kristian Wiles
- UW Math Academy – Angela Ballasiotes

EVE RISKIN

CoE Criterion 2 Boilerplate

- Research & Funding: http://engr.washington.edu/mycoe/research/index.html
- Criterion 2 Boilerplates: http://www.engr.washington.edu/?q=mycoe/research/criterion2/index.html



- MyCoE
  - People
  - Awards & Recognition
  - General Policies
  - Staff Resources
  - Calendars, Events, & Meetings
  - Faculty Resources
- Research & Funding
  - Federal Funding
    - Federal Funding Opportunities
    - NSF Criterion 2 Resources
    - NSF Funding for Undergraduate Research
  - CoE Proposal Preparation Factsheet
  - CoE Matching Funds
  - Additional Funding Resources
  - Industry Funding / TechTransfer
  - Policy and Compliance
- Graduate Student Resources
- Computing Services
- Facilities & Repairs
- Emergency & Safety Info
- Governance & Planning
- Statistical Reports
- Marketing & Communications

NSF Criterion 2 Resources

NSF proposals are evaluated based on two main criteria: 1) intellectual merit and 2) **broader impacts**.

Resources in this section are intended to help CoE faculty strengthen their NSF proposals with respect this second criterion, defined by the following questions:

- How well does the activity advance discovery and understanding while promoting teaching, training, and learning?
- How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)?
- To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships?
- Will the results be disseminated broadly to enhance scientific and technological understanding?
- What may be the benefits of the proposed activity to society?

NSF Resources

Dear Colleague letter on broader impacts
Examples of broader impacts activities

CoE Resources

Student Academic Services (SAS) can help you address broader impacts in your proposals.

Sample Text for Proposals

As a starting point, you may want to adapt sample text provided below. ***Please be sure to edit and personalize the text enough to be meaningful.***

To be most effective, you should contact someone in SAS to discuss your plans to collaborate with us.

Sample Text for Participation in the Engineering Bridge Program

Sample Text for Participation in Student Recruitment

Sample Text for Participation in Engineering Discovery Days

(starting spring 2010)

Sample Text for Participation in the Summer Mathematics Academy

Sample Text for Participation in Seattle MESA

Support Letter Templates

SAS is pleased to offer a letters of support for grant applications that propose to partner with us on broader impacts goals. To expedite your support letter, please customize one of the templates below and send it to Associate Dean Eve Riskin (riskin@u.washington.edu) for final edits.

General support letter
Support letter for proposals that emphasize partnerships with WiSE

Additional Resources

Outreach Partnerships with Pacific Science Center

Contact Us

Specific contact information follows each block of sample text under CoE Resources at left.

See also:

Student Academic Services staff directory »

Community of Innovators

COMMUNITY OF INNOVATORS AWARDS

Nominate a student, faculty or staff member who makes exceptional and meaningful contributions to the College. Nominations due 5 p.m. March 1.

Nominees and awardees will be honored at the Community of Innovators Awards reception.

Wednesday, May 29, 2013
3:30 to 5:00 p.m.
Paul G. Allen Center, Microsoft Atrium.

More about the awards »

KRISTIAN WILES

ANGELA BALLASIOTES

Broader Impact Programs

- Office of Minority Affairs & Diversity
- LSAMP
- Math Academy

PAST AWARDEES

- Max Lieblich, Mathematics
- Marco Rolandi, Materials Science & Engineering
- Wendy Thomas, Bioengineering

CAREER advice

Max Lieblich
Department of Mathematics

Intellectual merit

- General rules for a good proposal
  - Specific ideas
    - Example: “Conjecture: this map is an isomorphism” not “Question: what can we say about this map?”
    - Fishing expeditions smell bad
  - Specific strategies
    - I will approach the problem this way (but it might fail)
  - Mix of time horizons
    - Clean up existing things. Attack hard new thing. Etc.

Intellectual merit

- CAREER-specific
  - Graduate student projects
    - They're not going to prove the Hodge Conjecture
  - Longest time horizon is longer
    - But you might have a good idea about it that will take a while to study
  - Big ideas can be bigger
  - But: graduate student projects need to be small

Broader impact

- Do not propose to do your job
  - "I will teach a new graduate course!"
    - Of course you will
    - That's YOUR JOB
- Target different age levels
  - Conference organizing: common, seems OK
  - Summer programs/HS outreach
  - Undergrad research? (In math this is not so common.)
- You need an evaluation plan
  - Is my recruiting effort working?
  - What metric will I use?

What I did/didn't do

- Did
  - Look at examples
  - Read the RFP
  - Submitted a standard grant proposal with large overlap (back up plan!)
- Didn't
  - Call the program officer
  - Lose too much sleep

How I Learned to Stop Worrying and Love the Career Proposal

Marco Rolandi

UW MSE

4/29/2014

1st Time Around

- Started at UW in fall 2008
- Applied in Summer 2009
- Encouraging Program Manager
- Good preliminary data
- Unique, but vague outreach activities
- Lukewarm reviewer response
- Encouraged to reapply by program manager

2nd time around

- Improved and more in depth research plan
- Publication on cover of top tier journal
- Very detailed outreach with high-school partnership
- Pretty much same response for the science
- Quite some criticism for the outreach plan

“Even Christopher Columbus did not get funded at first”

Dr. M.K. Yu


ARCTIC OCEAN
Greenland
Svalbard (Nor.)
ARCTIC OCEAN
United States of America
Canada
Iceland
Norway
Sweden
Finland
Russia
United Kingdom
Denmark
Neth.
Ireland
Ger.
Pol.
Estonia
Latvia
Belarus
Ukraine
Kazakhstan
Mongolia
France
Italy
Rom.
Georgia
Bulgaria
Azer.
Uzb.
Kyrgyzstan
Tajikistan
Turkm.
Portugal
Spain
Turkey
Greece
Syria
Lebanon
Iraq
Iran
Afg.
Pakistan
China
N. Korea
S. Korea
Japan
Tunisia
Morocco
Algeria
Libya
Israel
Jordan
Kuwait
Nepal
Bhutan
India
Laos
Burma
Bangl.
Taiwan
Western Sahara
Egypt
Saudi Arabia
U.A.E.
Oman
Mauritania
Mali
Niger
Chad
Eritrea
Yemen
Djibouti
Sudan
Senegal
Guinea-Bissau
Sierra Leone
Liberia
Cote d' Ivoire
Ghana
Togo
Nigeria
Camr.
C.A.R.
Ethiopia
Somalia
Gabon
Dem. Rep. of Congo
Uganda
Kenya
Tanzania
Rep. of the Congo
Angola
Zambia
Malawi
Namibia
Zimbabwe
Madagascar
Botswana
Mozambique
Swaziland
Lesotho
South Africa
Thailand
Cambodia
Vietnam
Philippines
Sri Lanka
Malaysia
Indonesia
Papua New Guinea
Solomon Islands
Fiji
Australia
New Zealand
PACIFIC OCEAN
ATLANTIC OCEAN
INDIAN OCEAN
PACIFIC OCEAN
ATLANTIC OCEAN
Mexico
Guatemala
Honduras
Nicaragua
Costa Rica
Panama
Colombia
Ecuador
Ven.
Guyana
Suriname
French Guiana
Brazil
Peru
Bolivia
Paraguay
Chile
Argentina
Uruguay


GERMANIA
SARMATIA
EUROPA
ITALIAE
Mare Internum
Pontus Euxinus
LIBYA
SCYTHIA
SOGDIANA
Mare Caspium
SINAE
AFRICA
AEGYPTUS
MEDIA PERSIS
BACTRIA
ARIA
ARABIA
GEDROSIA
INDIA
AETHIOPIA
Macrobia
TAPROBANE
Oceanus Indicus
Sinus Arabicus
Sinus Persicus
Alexandria
Antioch
Damascus
Tyre
Dura-Europos
Ctesiphon (Seleucia)
Hecatompylos
Merv
Bactra
Samarkand
Kokand
Kashgar
Aksu
Kuldja
Turfan
Anxi
Dunhuang
Wuwei
Chang'an
Luoyang
Charsadda
Taxila
Begram
Mathura
Pataliputra
Tamluk
Masulipatam
Adan
Leuces Limen
Leucecome
Ningbo
Hangzhou
Fuzhou
Quanzhou
Guangzhou
(Nanhai, Canton)
Oc Eo

3nd time around

- Completely different research plan on new topic
- New NSF Program
- Good preliminary data (eventually published in Nature Communication in the fall)
- New far fetched theory to explain experimental results
- No changes in outreach plan

3nd time around

- Excellent/ V. Good across the board
- Very positive about the science
- Extremely enthusiastic about research plan
- **A posteriori: topic opens possibility for researchers already in the program (reviewers) to apply their knowledge to new areas**

A few pointers

- Stop worrying
- Listen to advice but do not forget who you are
- Propose something that you really want to do for the next five years
- Find a good home (your Spain) for your future research
- Hire an editor (~ $500)
- Be really nice to people, plants, and animals– you are going to need a lot of good Karma

CAREER PANEL

April 29, 2014
Comments from Wendy Thomas
from her experience as a reviewer
And a bit as an awardee

Talk to your Program Officer

- Unless you have a trip planned to DC anyway, talking on the phone is just fine.
- After one phone call, I was invited to a panel.
- The POs can help you find the right program for your idea. A bad fit is bad for your proposal in spite of ways to get it transferred.
- The PO has some discretion, so make a good impression.

What reviewers look for in Research

- A combination of theoretical models and experiments
- A few equations make the theory clear
- Fundamentals: Novel concepts or technology that provide a high ‘intellectual merit’
- Clearly described significance to one or more scientific or engineering communities
- Clearly described broader impact of the research on general society

Broader Impacts: 2-3 pages

- A well thought-out and creative outreach component can make the difference between two strong proposals.
- Include stuff you do anyway (supervise REUs, contribute to curriculum) to add breadth.
- Include citations for your outreach and education.
- Include plans for evaluation and revision.
- Maximize intellectual content and minimize administrative duties with partnerships; efficiency is good for your career development.

unique to the CAREER mechanism: Your career development

- Be explicit! Include a section where you …
- Clarify how your proposal is distinct from your past work and your advisors' programs.
- Provide explanations or preliminary data that demonstrate that you are qualified (or even the best person) for this work anyway.
- Explain how your proposal prepares you for really exciting long-term plans.

QUESTIONS & ANSWERS

Additional Resources

- ADVANCE resource library – 20+ past presentations/speakers on this topic (http://advance.washington.edu/apps/resources/results.phtml?srchType=simple&srchTxt=NSF+career&matchStr=yes)
- NSF CAREER website – list of past awardees. Can search for ones here at UW
- Marketing for Scientists: How to Shine in Tough Times book