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National Science Foundation CAREER Program

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National Science Foundation CAREER Program

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(Geosciences & Environmental Studies & Lee Honors College)

Dr. David Huffman
(Chemistry)
Faculty Early Career Development Program (CAREER)

- NSF’s most prestigious awards in support of junior faculty who exemplify the role of teacher-scholars through:
  - outstanding research
  - excellent education
  - integration of education and research
  - within context of the mission of their organizations.

CAREER Program

- Should build a firm foundation for a lifetime of leadership in integrating education and research

- Foundation-wide awards:
  - Biological Sciences
  - Computer and Information Science and Engineering
  - Education and Human Resources
  - Engineering
  - Geosciences
  - Cyberinfrastructure
  - International Science and Engineering
  - Mathematical and Physical Sciences
  - Polar Programs
  - Social, Behavioral and Economic Sciences
Eligibility

- Assistant professors without tenure (on or before Oct 1 following submission deadline)

- Hold doctoral degree

- Have tenure-track position

- May have federal funding, but plans for CAREER proposal should not overlap with work that is already funded

- Cannot apply > 3 times
Proposal Preparation

- Read the solicitation
  - Discuss with Department chair, academic mentors, past awardees

- Check for compliance
  - No Co-PIs
  - Must have departmental letter of support
  - May include letters of collaboration (NOT letters of recommendation)
  - Postdoctoral research mentoring plan (if applicable)
  - Data management plan
  - Must follow current grant proposal guide
  - No appendices permitted
  - May only submit one proposal per competition
Due Dates for 2013

- Full Proposal Deadline Date: July 22, 2013
  - BIO, CISE, EHR, OCI

- Full Proposal Deadline Date: July 23, 2013
  - ENG

- Full Proposal Deadline Date: July 24, 2013
  - GEO, MPS, SBE, OPP
Budget Preparation

$400,000 minimum (including overhead) except Biological Sciences and Polar Programs (min $500K) for 5 year period
- Check on what has been funded in the past, discuss with program officer

- Academic year salary requests allowed (e.g. for fieldwork or other extraordinary activity), but discuss first

- No funds for Co-PIs or collaborators, consultants are allowed
Proposal Submission

- Must be submitted by the due date

- May designate more than one disciplinary program on the cover sheet, choose most relevant as primary organization – DO NOT submit duplicate CAREER proposals to multiple programs

- Notification of decision within 6 months of submission
Be Aware of the Review Criteria

- How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields?
- How well qualified is the proposer (individual or team) to conduct the project?
- To what extent does the proposed activity suggest and explore creative, original, or potentially transformative concepts?
- How well conceived and organized is the proposed activity?
- Is there sufficient access to resources?
- Think carefully about the list of suggested reviewers
Integration of Research and Education

- Researchers, educators, students all “engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives”

Integrating Diversity into NSF Programs, Projects and Activities

- Broadening participation of women & men, underrepresented minorities and persons with disabilities
Haste Makes Waste

- If you aren’t ready to apply year one of your tenure track appointment, don’t apply
- Don’t think you have to apply in three successive years
- Allow yourself time to build your research program and strategize for a successful submission
- Ensure you submit a proposal that you are confident can be funded, at least for the second and third submissions
Getting the Ball Rolling

- Get to know your program officer at NSF
- Get funding from WMU via RDA or ask your Department or Dean to sponsor a trip to DC
- Discuss your ideas with your program officer
- Attend conferences and meetings that keep you active and visible in your field
- Maintain a dynamic research group
- Foster national and international collaborations
- Maintain good relationships on campus
The Proposal Idea

- Clear statement of work to be undertaken
- Must provide significant new insights
- Must integrate both research and education
- Lacking focus or proposing too much work is not a good idea
The MOST IMPORTANT PAGE of the proposal

Clear and concise self-contained description of the activity

Highlight both the intellectual merit and the broader aspects, under separate headings
Your Expertise

- Needs to be obvious that PI can do the work
- Provide evidence of your capabilities sprinkled throughout the proposal
- Demonstrate that you currently are doing this type of research or can readily transition into it
Preliminary Results

- Vital for funding of the proposal
- Must be substantial and directly applicable to the work
- Clearly indicate how the results are relevant to the work
Research Plan

- Must be able to complete the work within the time frame of five years
- Proposal should be *hypothesis* driven
- Lay out your strategy within a framework of concisely written Specific Aims
- Explain how you plan to perform the work in the context of the Specific Aims
- Identify and engage appropriate collaborators to complete your work
BROADER IMPACTS

- 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?

- Mentoring activities provided to postdoctoral researchers supported on the project will be evaluated under the Broader Impacts criterion.
Describing Your Educational Plan

- Describe your teaching philosophy
- What are the learning goals and why?
- How will your work be assessed?
- Is it innovative and novel and who will be impacted by the work?
Establishing a Track Record in Education and Outreach

- Mentoring undergraduate students during the summer through existing programs.
- Presenting your research at undergraduate and high school symposia.
- Hosting high school students and teachers in your lab.

*A long-term record in education and outreach convinces the panel that you are capable of executing various activities.*
Developing your Educational Plan

- Come up with something unique and new that you want to do.
- Show that you have the infrastructure required to execute the project.
- Provide details for your project and specific objectives.
- What is the need for the proposed project?
- Integrate your research project with the educational plan.
Educational Plans that Lack Appeal

- **Developing courses (?)**
  - What makes the course unique? Are you the first to develop the course or is this just part of your job?

- **Training undergraduate and graduate students in research (?)**
  - This is expected of you as a faculty
  - Are you establishing some unique aspect that distinguishes how you train your students relative to others?
Educational Plans With Appeal

- **Designing innovative courses or curricula**
  - Service-learning, authentic inquiry, research in undergrad classes…

- **Supporting teacher preparation or enhancement**

- **Outreach & mentoring to traditionally underrepresented groups**

- **Research on student learning & conceptual development**

- **Research on assessment & evaluation**

- **Mentored international experiences for U.S. students**

- **Linking educational activities to industrial, international, cross-disciplinary work**
The Review Process

1) Ad hoc reviewers are identified by the Program Manager.

2) Panel reviewers are selected to attend a panel meeting at NSF. Each proposal is assigned a primary panelist, secondary panelist and “Scribe” panelist.

3) Ad hoc reviews are available to all panelists electronically after they have individually reviewed and submitted their comments on the proposal.

4) Reviewers are asked to rate each proposal as Excellent, Very Good, Good, Fair or Poor. Multiple ratings are often assigned.

5) At the panel, there is general discussion about the proposal and an overall rating is determined by the panelists (for example: High Priority, Medium Priority, Low Priority, Not Competitive).

6) The panel provides the Program Manager with a recommendation for each proposal and the Program Manager also makes recommendations up the chain of command for awarding or declining a proposal.
General Advice

- Start Early!
- Be creative and innovative
- Get strong collaborative letters
- Get feedback from Peers/Colleagues/OVPR
- Seek us for assistance as needed:
  - Dr. Carla Koretsky: carla.koretsky@wmich.edu
  - Dr. Sherine Obare: sherine.obare@wmich.edu
  - Dr. David Huffman: david.huffman@wmich.edu

Good Luck!