http://www.uicwisest.org/

WISEST INITIATIVES / *POSTDOCTORAL PROGRAM*

The Post-doc Institute

Preparing a CAREER Proposal

Part II. Broader Impacts Criterion

Cynthia J. Jameson

Broader Impacts Criterion

What does it mean?

How well does the activity advance discovery and understanding while promoting teaching, training and learning?

- Train and mentor students
- Present seminars and organize workshops and symposia
- Update curriculum by writing texts and develop new instructional materials and/or laboratory experiments

- Share laboratory methods, instrumentation and software for data analysis
- Integrate research activities into the teaching at all educational levels
- Include students of all levels in the proposed research
- Participate in the recruitment, training, and /or professional development of K-12 teachers

- Develop research-based educational materials
- Encourage students to participate in meetings and activities of professional societies
- Establish special mentoring programs for high school students, undergraduates, graduate students

How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)?

- Establish research and education collaborations with students from underrepresented groups
- from minority-serving institutions, non-PhD granting institutions, EPSCoR institutions, community colleges, undergraduate institutions and colleges for women

- Make campus visits and presentations at institutions that serve underrepresented groups
- Mentor early career scientists and engineers from underrepresented groups
- Participate in developing new approaches to engage underserved individuals, groups, and communities in science and engineering

To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks and partnerships?

- Mentor early-career scientists and engineers
- establish collaborations with academic institutions, industry, government and international partners
- support development and dissemination of next-generation instrumentation, multi-user facilities

- Develop activities that ensure that multi-user facilities are sites of research and mentoring for large numbers of students

Will the results be disseminated broadly to enhance scientific and technological understanding?

- Write scholarly review articles and articles describing research to non-specialist audiences
- Create websites enhanced by engaging animations and movies
- Assist journalists with stories on technical topics
- Develop new art forms for communicating science to wider audiences

- Partner with museums, nature centers, science centers, and similar institutions to develop exhibits
- Give presentations to the broader community
- Make data available through databases, digital libraries, or other venues such as CD-ROMs
- Publish in diverse media to reach broad audiences
- Integrate research with education activities in order to communicate in a broader context

What may be the benefits of the proposed activity to society?

- Link discovery and societal benefit with specific examples of research application and education results
- Partner with the private sector to integrate research into programs and activities of national interest
- Analyze, interpret, and synthesize research and education results into formats understandable by the non-scientist
- Provide information for policy formulation by Federal, State, or local agencies

CAREER proposal requires more:

- INTEGRATED research and education plans
- Educational activities MUST BE RELATED to the proposed research
- Educational activities should be CONSISTENT WITH RESEARCH AND BEST PRACTICES IN CURRICULUM, PEDAGOGY, AND EVALUATION.
- STATE GOALS AND OBJECTIVES OF THE EDUCATION PLAN and INTEGRATION OF EDUCATION with RESEARCH, and the CRITERIA FOR ASSESSING THAT THESE GOALS ARE MET.
- PLANS FOR ASSESSMENT of educational plans: must USE EVALUATION METHODS used for purely educational projects (as in EHR)

Synergistic activities: demonstrate broader impacts of PI's scholarly work, e.g. :

- curricular materials and pedagogical methods
- development /refinement of research tools
- computation methodologies, algorithms
- databases to support research and education
- participation of groups under-represented in STEM

and service to STEM community beyond PI's institution