

Panel Summary #1

Proposal Number: 0811250

Panel Summary:

The panel was enthusiastic about this proposal and its potential for institutional change. The University has had a good track record in recruiting women into STEM disciplines, the initiatives were all grounded in the recent literature on institutional transformation and respond to specific needs on the UNL campus. The panel was impressed by the proposal's emphasis on learning about internal climates at UNL and their links to institutional change. These findings would add an important dimension to our understanding of internal climates and their relationship to institutional transformation.

Intellectual Merit:

The panel felt the proposal had particular strengths, and highlighted in particular several areas. The designated funds and start-up costs for spousal/partner hires should promote the hiring of more women. The proposed initiatives target women at all levels, with separate structures built into the proposal for both recruitment and promotion/retention. For recruitment, making conversations about parental leave and flexible work options a part of pre-hiring are helpful. Regarding retention, the panel liked the notion of writing circles and support for mid-career faculty, which we felt addressed potential issues of the glass ceiling at the associate level. The PIs situated their ideas in the recent literature on institutional transformation and of innovations of other ADVANCE programs.

Lastly, there was strong opinion that this study had specific promise for innovating a method for analyzing internal department climate and applying this knowledge to programs to aid retention and promotion. The panel was extremely enthusiastic about the potential of this research to contribute to outreach as well as scholarly research. The panel was also impressed that though the bulk of the network research is to be conducted by an assistant professor, this faculty member has appropriate external and university support.

Some on the panel discussed the language used to describe the network research in relation to research productivity. In particular, some on the panel noted that the desire to predict productivity levels without also asking faculty to specify their external collaborators may predetermine the influence of department-based social networks on research productivity. One panelist included a reference on this topic that may be useful in this regard (see below). Including outside faculty collaborators on the survey would provide the opportunity to theorize about these connections in addition to addressing the important role of internal department climate and connectivity. In other words, by excluding collaborators and network members outside the department setting, the research may underplay the importance of both interdisciplinary research and potentially productive research collaborations with disciplinary partners outside of one's department. Some panelists noted that many female faculty members in STEM fields routinely collaborate with faculty outside their departments - both as a survival strategy and as a strategy to develop national and international reputations necessary to achieve tenure and promotion. In addition, the nature of faculty hiring in many STEM departments necessarily means that faculty must collaborate with colleagues in other departments and

universities because departments do not necessarily hire in clusters of faculty that may collaborate internally. The panelists thought that the inclusion of these additional network data would provide even more information along with the rich internal connectivity particularly for women in STEM departments as diverse as those in engineering, basic science, and social science.

There was debate about this, however. Given the focus of ADVANCE on institutional transformation, a focus on departmental networks seemed appropriate to some panel members, and would add to the social science literature in this area. The panel also desired to see more information about how the projected results of the network study would be tied to future implementation and transformation efforts, as well as some preliminary results of the network survey pilot project noted in the project description. In the final analysis, the panel suggests that the researcher also collect data about external collaboration, and consider the influence of these external links in the measured outcomes.

Lastly, there were a few additional comments that the panel thought could be considered by the grant team. There was a concern on the panel that the team is missing the inclusion of an important target group - senior STEM men. The panel was encouraged by the activities targeting junior women, recruitment ambassadors embedded in the department, and recruitment funds to engage reluctant departments. But the panel was concerned that \$4K would not be a sufficient enough incentive for this latter group, who are essential to institutional transformation. The panel also discussed using an internal university evaluator. A panelist with experience on the topic of evaluation raised the point that having an internal evaluator can be useful because the person is on site and can be easily accessed, but may cause problems if members on the team become unhappy with their work (e.g., firing them may be hard). Others on the panel felt the goals of the internal evaluation were well specified, however. Lastly, the panel suggested that the usefulness of the implicit bias literature could be considered not just for tenure and promotion, but also for recruitment efforts where these effects are likely to be particularly influential.

Fox, Mary Frank and Mohapatra, Sushanta. "Social-Organizational Characteristics of Work and Publication Productivity Among Academic Scientists in Doctoral Granting Departments." *The Journal of Higher Education* 78 (Sept/Oct 2007): 542-571.

Broader Impact:

The panel felt very positive about this proposal's potential for broader impact in institutional transformation. The university has done considerable groundwork in assessing the status and climate for women on campus, and seems poised for change. There appears to be sufficient evidence of institutional buy-in, and a lot of important ground work appears to have been done on this campus with the creation of policies and support in a number of areas. There appear to be more than token proportions of women in STEM departments, which is a good basis with which to work. The panel also resonated with the fact that the team appears to be thinking about ways in which to disseminate or incorporate the results of this work to the Omaha campus. In addition to the ADVANCE funding, the university itself has dedicated money towards the proposed changes, and the commitment to funding for five years beyond the grant date promotes confidence in the universities commitment to long term institutional change. Lastly, the panelists felt the research component had a broad potential for impact, both in scholarly research and

further outreach. We felt the broader impact implications of the proposed activities were substantial.

Summary:

The panel was in full support of this proposal. There was consensus on the panel that this proposal had high intellectual merit and the potential for significant broader impact. The panel felt the research component was viable and pioneering, and was enthusiastic about the initiatives and goals of the team in bringing about institutional transformation.

Panel Recommendation: Highly Recommended

Review #1

Proposal Number: 0811250

Performing Organization: U of Nebraska-Lincoln

NSF Program: ADVANCE - Institutional Transformation

Principal Investigator: Couture, Barbara A

Proposal Title: ADVANCE Institutional Transformation Award: An institution-wide collaboration to hiring, retaining, and promoting women STEM faculty at the University of Nebraska-Lincoln

Rating: Very Good

REVIEW:

What is the intellectual merit of the proposed activity?

It appears that UNL has amassed significant support in a university-wide effort, committing additional funds to the project during the grant dates and an additional five years of support after the grant expires. The staff is well qualified and includes a diverse set of university players, in addition to an accomplished advisory board. The proposed activity is presented with a very clear discussion of the structures that will be created to enact change. The creation of PROMOTE and RECRUIT committees is a useful division of responsibility to implement the proposed changes. Lastly, the proposal is well-grounded in past research and theory. It is innovative in its application of this theory to action on recruitment and retention. Implementing structure to address implicit beliefs in a systematic way is to be commended, as is the focus on network analysis.

One weakness of the proposed activity is the fact that much of the proposed activity is available to departments on an "as requested" basis. Although one program has funding available for departments that pay attention to these issues, many other proposed activities are only proposed for those who are interested in participating. It seems likely that a large organizational unit could

be created but not utilized as heavily as the authors would like without clear incentives to do so. Lastly, the authors do not mention the existing family policies at UNL and whether or not there is a need to address family issues at a policy level in the university. It would be useful to hear about the success of these existing programs, or some statistics on their use by women (and men) faculty.

As a network scholar who pays strong attention to organizational structure, I am in strong support of the innovativeness of network analysis to this topic. The project is well conceived, both in infrastructure and design. It would be a great asset to the literature on women in science, and could feasibly be a good tool for other departments to implement in understanding how their women are located in the department. However, if pilot work has been done already, it would be useful to know what measures were collected, what type of analysis was conducted, and the outcome of the pilot work. Furthermore, there was little discussion about what the team would do with the results to implement change in the long term.

What are the broader impacts of the proposed activity?

By combining both original research as well as top down administrative approaches to address the situation for women in science, this proposal has the ability to advance knowledge and understanding while broadening the participation of underrepresented groups. The diversity of approaches will likely be conducive to wide dissemination on a number of fronts.

As mentioned above, one weakness of the proposed activity is that the authors create space for change through individuals, but allow departments to pick and choose the kind of assistance they would like. In addition, it is difficult to assess the impact of the network component without having a more clear definition of the work to be done or pilot analysis. On the one hand, a good network analysis would be a goldmine of information, for both UNL and society at large. On the other, the results could be quite limited in their influence.

Summary Statement

In addition to the above statements, it is notable that this proposal comes from a university that presents clear evidence of institutional readiness to support the necessary data collection and administrative participation in the proposed effort. In addition, there is monetary support from the university already in place, as well as a strong cadre of academics on external advisory. The institution appears ready to commit to making use of the research findings for transformative purposes. The details about how departments will make use of these research funds is less clear, however.

Review #2

Proposal Number: 0811250

Performing Organization: U of Nebraska-Lincoln

NSF Program: ADVANCE - Institutional Transformation

Principal Investigator: Couture, Barbara A

Proposal Title: ADVANCE Institutional Transformation Award: An institution-wide collaboration to hiring, retaining, and promoting women STEM faculty at the University of Nebraska-Lincoln

Rating: Good

REVIEW:

What is the intellectual merit of the proposed activity?

- Evidence of institutional buy-in includes letter of support signed by all STEM chairs and Senior Vice Chancellor for Academic Affairs as Co-PI.

- The approach offered in this proposal is unlikely to produce widespread institutional transformation on this campus. The project relies too heavily on the capacity of existing policies and programming (current "Family Friendly Policies" and "Flexible Work Arrangements") and does not include a plan to evaluate the effectiveness of those policies or the need for new policies/structures beyond work/life issues. Too many of the proposed initiatives rely on either expanding resources for existing initiatives (dual-career placements) or creating "coordinator" and "disseminator" positions to centralize and raise awareness of existing policies (FFP/FWP).

Of most concern, is the systematic way in which the proposed activities miss a powerful barrier to climate change -- senior STEM men (other than chairs). Too many of the proposed ADVANCE activities target junior women or chairs. Recruitment Ambassadors (embedded in STEM departments) and mini-grants (of up to \$4,000) are offered as targeted incentives for the engagement of "reluctant" departments.

- The proposal's reliance on the development of "internal informal networks" among STEM women as the primary mechanism for delivering professional support, advancement, and leadership training is highly problematic. (e.g. the proposal identifies the lack of retention of women above the assistant professor rank in STEM due to departmental climate issues as a targeted problem, but only offers the creation of informal networks among women and chair education as the primary institutional remedy).

- The proposed university-wide committees for recruitment and retention rely almost exclusively on awareness activity (e.g. "Exposure Visits" to introduce potential recruits to the "great working environment") without outcomes oversight or addressing issues of climate and culture within departments and colleges.

- Although the proposal demonstrates familiarity with current literature indicating the need to address dynamic and mutually reinforcing nature of barriers to advancement at all institutional levels, proposed activities do not adequately assess or address climate change issues or practices at the department level beyond awareness education.

What are the broader impacts of the proposed activity?

If successful, the research component of this project has the potential to extend current knowledge in the field. However, the broader initiatives for change to be funded by ADVANCE at KU do not constitute a sufficiently innovative model for effective institutional transformation.

Summary Statement

Overall, my ranking is based on the proposal's reliance on the creation of informal networks among STEM women as a means of creating clear pathways and support for clear advancement. As a research project, it appeals greatly. As a mechanism for triggering institutional transformation, it seems high risk without (direct or indirect) compliance and accountability measures.

Review #3

Proposal Number: 0811250

Performing Organization: U of Nebraska-Lincoln

NSF Program: ADVANCE - Institutional Transformation

Principal Investigator: Couture, Barbara A

Proposal Title: ADVANCE Institutional Transformation Award: An institution-wide collaboration to hiring, retaining, and promoting women STEM faculty at the University of Nebraska-Lincoln

Rating: Excellent

REVIEW:

What is the intellectual merit of the proposed activity?

Intellectual Merit

Strengths: The University already has done considerable groundwork in assessing the status and climate for women in campus. The proposal suggests that the institution already has made substantial progress toward improving the climate for women faculty. The University has already engaged in data collection activities (exit interviews, focus groups with STEM faculty) that provide documented evidence of campus needs. Beneficial changes already have been made. For example, childcare facilities apparently are being expanded in response to prior needs assessments. Equity in faculty pay does not appear to be a problem. There is very strong administrative support for the proposal from the second-in-command academic officer, a woman, as well as from some men department heads and other midlevel administrators who have prior records of accomplishment in promoting the careers of women scientists. There is a notable commitment on the part of the associate provost to continue core programs for a five year period

after the grant ends. This will greatly enhance the likelihood that the grant can produce institutional change. The designated funds salaries and start-up costs for spouse/partner hires in STEM disciplines should benefit goals to hire more women into STEM disciplines. The P.I.'s have documented that this is a gender issue, as much larger proportions of women than men STEM faculty have academic spouses. The new initiatives target women at all levels, from new recruits to those who are seeking promotion into higher ranks. The separate strands for new initiatives, one focused on recruitment and the other on promotion, make sense. Making conversations about parental leave and flexible work options a part of pre-hiring interviews may help insure that chairs and faculty have updated knowledge of current policies and may make it easier for women to pursue such options without stigma at later points. Often the needs of mid-career women faculty are neglected as they may be asked to do much in support of more-junior women colleagues but given relatively little support and recognition themselves. This proposal provides several benefits for mid-career scholars as well as new recruits. The writing circles and financial support to participate in them should encourage women who perhaps have been isolated on campus in less supportive departments. The P.I.'s provide evidence that there are already working cross-disciplinary collaborations that can support the central aims of the proposal. There also appear to be more than token proportions of women in several STEM departments, an excellent base from which to work for institutional transformation. Some of the participants in this proposal have had current or prior successful NSF grants aimed at various aspects of increasing women's participation in science. The P.I.'s seem cognizant of recent literature on institutional transformation and of innovations of other ADVANCE programs that might be imported into this setting. Having men with track records of supporting women faculty lead workshops for department chairs is an excellent idea. Studying networks in departments is an interesting and novel idea that might tell us much more about climates that are and are not supportive for women, but the proposal might be more specific about how this information will be used to refine initiatives (see below).

Weaknesses: I find relatively few weaknesses in this proposal. The initiatives are closely tied to the documented needs of women faculty on campus. We don't get a lot of detail about how parental leave and flexible work schedules operate and whether the university offers paid leave and modified schedules that provide benefits. The network analyses are a fascinating research project, but the proposal is vague on how they will be used in subsequent fine-tuning of programs. I am not certain that it is feasible to conduct interviews after hires with all short listed candidates to assess possible discrimination. What would be the incentive for unsuccessful candidates to participate? Some of the training is on a voluntary basis and thus may miss those who are the most resistant to enhancing climates for women. It is unclear whether the small bonuses for participation will be effective to induce participation in such cases.

What are the broader impacts of the proposed activity?

Broader Reach

University of Nebraska has STEM departments on two campuses and eventually plans to extend ADVANCE activities to both the Lincoln and the Omaha campuses. Beginning on one campus in the initial years is nevertheless a sensible strategy. The handbooks and workshops that will be

developed for STEM departments are potentially beneficial for faculty in all departments. The P.I.'s might think about ways to reach out to more postdocs and graduate students in STEM disciplines to include in professional development activities to broaden the reach of the program. This seemingly could be done with relatively little additional cost. Most of the planned dissemination activities are fairly standard: webpages, publicity, presentations at conferences, publications, and the like.

Summary Statement

This is a strong proposal with a clear statement of campus needs and initiatives tied closely to those documented needs. It is well supported buy upper level administrators, and the institution already has made substantial progress toward creating a female and family-friendly environment on campus. There is a clear and effective strategy for evaluation, as well as a well articulated plan for dissemination of results.

Review #4

Proposal Number: 0811250
Performing Organization: U of Nebraska-Lincoln
NSF Program: ADVANCE - Institutional Transformation
Principal Investigator: Couture, Barbara A
Proposal Title: ADVANCE Institutional Transformation Award: An institution-wide collaboration to hiring, retaining, and promoting women STEM faculty at the University of Nebraska-Lincoln
Rating: Excellent

REVIEW:

What is the intellectual merit of the proposed activity?

Intellectual merit

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields?

This is a proposal that does offer some novel research on faculty networks and their links to academic success. I like this emphasis, and it moves beyond reinventing the ADVANCE wheel. I would have liked to have seen the argument for it developed out of the ADVANCE knowledge base we already have, but I give the proposers very high marks for doing something new.

How well qualified is the proposer to conduct the project? (If appropriate, comment on the

quality of prior work)

Level of qualifications is high. The social scientists have background in doing this kind of work, and the administrators and hard science types all have some recognized work or background in institutional or department transformation of this kind..

To what extent does the proposed activity suggest and explore creative and original concepts?

See above. This is a proposal that does offer some new research. It's less clear how this research will inform their approach, but it will add to our understanding.

How well conceived and organized is the proposed activity?

Very well conceived and organized. There is buy in from relevant parties, and provision of both matching and institutionalization funds.

Is there sufficient access to resources?

Yes, see above.

What are the broader impacts of the proposed activity?

Broader impacts

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

The proposal is strong in this area. Along with the new research there is the usual round of training for faculty and administrators.

How well does the proposed activity broaden the participation of underrepresented groups (including geography)?

There is discussion of racial diversity, but no real focus in the proposal on faculty of color.

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

The proposal is relatively clear about this, though it does so with the usual ADVANCE strategies (not that this is a problem). The infrastructure will persist at least five years beyond the life of the agreement. There is no discussion of partnerships beyond the campus.

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

The usual dissemination plan here. My guess is the research component will make them more

successful at publication than many, and they have the right experts on board to contribute to the literature.

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

The usual ADVANCE benefits. Ideally more hiring of underrepresented faculty.

Specific ADVANCE questions

Is there evidence of institutional readiness to support necessary data collection and faculty participation in the proposed effort? What other evidence is there of institutional support?

The proposal is very clear here. There is administrative buy in among the PIs and commitment of funds and infrastructure.

Is there evidence that the institution is committed to making use of the research findings to make transformative changes in processes and procedures?

Here there is less evidence, though I'm not sure one could have provided more. There is much discussion of soliciting participation from "reluctant" departments, and I'm guessing the development of concrete strategies will aid in this process.

Is it clear how success will be assessed?

Yes, there is a very well developed assessment plan.

Summary Statement

Overall recommendation: Excellent. Extremely well developed proposal with institutional buy in and a novel research component.