

Evaluation of the NSF ADVANCE Catalyst project at Murray State University

Differences and Deficits Affecting Women STEM Faculty: Creating a Framework for Change at a Rural Public University

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This report is based on discussions and observations during a site visit on Wednesday and Thursday, 25-26 September 2019, as well as documents provided before, during, and after that visit or available via the internet. This report is a summative assessment at the conclusion of the project.

Executive Summary

The project team worked very well together, and the support for the project at Murray State University, as well as the timeliness of the project, has led to an extremely successful ADVANCE project. Clear assignment of responsibilities, good communications, mutual respect, and quality work has resulted in a strong foundation of data for further development of MSU initiatives. All work proposed in the original proposal has been carried out consistently with the spirit of the proposal, including where changes were made to better suit conditions. The project team started a peer mentoring program that is already well on its way to being institutionalized. Advisory board structures have strengthened channels of communication. Site visits as well as visitors brought to campus provided information and experience valued by the community. The survey and other data collection have supported the identification of real issues facing rural institutions such as Murray State, and therefore open the potential for contributions as the team works to address those issues. A team with significant overlap with the Catalyst team has already receive an ADVANCE Adaptation award, and thus Murray State University is poised to build on the momentum generated by the project evaluated here.

Objective 1:
Identify the pattern
of representation of
women in STEM
disciplines

Four activities were planned to address this objective:

1. Policy & Program Review

Dr. Robin Zhang led in this area, compiling an extensive comparison of policies. Building on the matrix available from the ADVANCE Implementation Mentors Network resources, the review also included 32 benchmark institutions. A report summarized the findings and how MSU compared to the reviewed institutions.

2. Analysis of Existing Data

Dr. Maeve McCarthy led this project component, and the Murray State Office of Institutional Research and Office of Institutional Diversity, Equity, and Access were very helpful. Data is broken down to look at MSU as a whole, and also the subgroups: JCSET, STEM, SBES, and STEM plus SBES. This data can be generalized as showing that the percentage of women is generally higher in the non-tenure-track category across the board. A slight upward trend from 2013-2017 is apparent in most categories, but overall percentages are markedly lower for all the subgroups than for MSU as a whole. This data provides a good baseline to track changes moving forward.

3. Focus Group Interviews and Individual Interviews

The choice was made early in the project to use individual interviews rather than focus groups to encourage freer speech on the part of participants, despite the larger amount of time required for this approach. Dr. Echo Wu conducted interviews to complement the survey questions and worked on that analysis. After completion of the interviews and associated analysis, Dr. Wu's portion of the project was completed. Findings from the interviews largely corroborated the survey findings.

4. Survey

Results of the survey were released to the university in a well-designed summary report which focused on the more significant results. Dr. Paula Waddill led the survey design and analysis. Using Cornell's Survey Research Institute as well as the presidential support for a well-timed survey resulted in an excellent response rate of 61% completing the

survey and an additional 11% partially completing the survey. The validity of the survey findings are further supported by the similarity between the demographic characteristics (academic rank, sex, and STEM/NonSTEM) of respondents and the original population.

Objective 2: Learn about the various policies and programs for institutional transformation that have been successfully implemented at other similar universities, and educate MSU stakeholders about issues that contribute to underrepresentation of women faculty in STEM.

Three activities were planned to address this objective.

1. Site Visits

In total, four site visits were carried out, each time by two members of the research team. Paula Waddill and Maeve McCarthy visited University of West Florida during the first year of the grant; Paula Waddill and Robin Zhang visited Middle Tennessee State University during the second year; during the third year Claire Fuller and Maeve McCarthy visited University of Washington and Paula Waddill and Robin Zhang visited University of New Hampshire.

The deliberate spacing and planning of the site visits provided great value. The research team was able to make good use of the visits to develop their initiatives at MSU. In particular, the visits during the third year were invaluable to the development of the initiatives that went into the successful ADVANCE Adaptation proposal.

2. Workshops

Each year of the grant, two visitors were brought to campus to conduct workshops and hold discussions on campus related to ADVANCE topics. The spacing of these visits was undoubtedly an aid to keeping momentum and visibility up related to the initiatives of the project. In addition to these six visitors, each of whom provided a general seminar as well as a lunchtime workshop for STEM women, a two workshop day was conducted by COACH and open to all women.

3. Meetings at MSU

Each member of the research team had roles on campus that contributed to the dissemination of project findings, which were expanded over the duration of the grant by Dr. Wu becoming a department chair and Dr. McCarthy becoming an Interim Assistant Dean.

A strength of the project was regular meetings of the PIs with deans, upper level administrators, and chairs of STEM departments and programs. The presence of upper administration at these meetings showed support for the program. Particularly noteworthy is that MSU changed presidents during this project, and the new president also attended every one of these meetings, expressing interest in following up on survey findings about faculty wanting to leave MSU.

Open conversations at these meetings not only raised the visibility of the project and its findings but gave stakeholders not a part of the research team an opportunity for input. Comments about the meetings from participants included that they were well-organized, focused, and respected the expertise of participants. Conversations at these helped figure out ways to obtain data or approach policy changes that would be more productive. All members of the project team are very highly respected.

Objective 3:
Improve campus climate by establishing a sustainable mentoring program for women STEM faculty

Two activities contributed to this objective:

1. Peer Mentoring Circles

Due to the early funding decision, peer mentoring circles have had three cycles of implementation and refinement. After initial training provided by an external expert (Dr. Christine Grant from North Carolina State University via Google Hangouts), later mentor trainings were locally developed and implemented.

This program is in the process of being institutionalized, with scheduling handled by the faculty development center. Administration has voiced some support for the funding of the mentors, which is an important recognition of this being valued service.

2. Assessment of the Impact of the Circles

Each year, assessment of the peer mentoring circles has been conducted. The three years of data show strong positive response. The increasing positive trend may reflect some self-selection, as those for whom the groups are beneficial hear about the program.

Evaluation of whether the role of mentor and facilitator was blurred was specifically requested. Participants and mentors indicated that the line between mentor and facilitator was fairly clear. While the facilitators are respected and their opinion is valued if they choose to contribute, the groups seem to understand that they are all expected to contribute support – consistent with the concept of *peer* mentoring. The circles have already served important supportive functions for some members, who have felt more confident in their actions due to the sounding board available through the circles.

Each year, the topics have been reviewed and, in some cases, updated. In discussions about the long-term functioning of such groups, a number of ideas were voiced: having folks who have been in the circles before bring a fresh resource; finding different ways to approach perennial topics such as imposter syndrome; considering whether to open peer circles to men (although there were some strong thoughts that this should be optional and would change the nature of the discussions); and whether some people would take a break from the circles and then return to participating. The circles are already being expanded beyond the original design to include more women.

Other observations

Three of the external speakers who came in to give workshops (Objective 3.2) were also members of the external advisory board, which strengthened those connections and facilitated communication.

The meetings of the internal advisory group contributed to related activities are able to move forward synergistically, rather than in ignorance or competition. For example, work by Human Resources to better publicize existing policies can proceed in consideration of survey and interview findings but also with assistance from dissemination avenues provided by grant activities, and possible revisions of policies can be discussed more comprehensively. This bodes well for the larger ADVANCE grant now underway at MSU.

Various groups on campus are also acting on survey results, such as trying out different mentoring approaches in their own areas or how to better publicize and utilize existing policies. Administration has expressed interest in further exploring or acting on some of the survey finding, particularly those about stressor and issues related to why faculty might leave MSU.

In various conversations with faculty, there was strong support for ADVANCE goals, but also frustration that progress in this area can be so slow – not only at MSU, but nationwide and socially. Among the points of frustration mentioned: the slow rate of change; losing outstanding faculty because their partner cannot find employment in the area; an inability to compromise when someone is an excellent teacher and a partner of a current faculty but their research interests do not align with departmental needs; variations in negotiating power between departments in hiring; difficulty with some administrative positions where a person may not be open to new initiatives but cannot be replaced; lack of clarity on recusal and conflict of interest procedures (that can contribute to reluctance to hire or promote partners); difficulties in hiring women when a department currently has none or very few and cannot offer a salary competitive with comparable universities. There were also comments that finding time to attend seminars is difficult, but that the dissemination of reports was helpful. Overall, the tenor of my conversations during the site visit suggested that there is support for more work to hire women faculty.

The peer mentoring circles provide a venue for guidance through policies and practices that may be hard to ask about, such as maternity leave and the promotion & tenure process. They also build social networks – a finding in the survey, but mentioned by participants as fostering connections outside one's discipline that, in some cases, have become close friends.

Overall, the proposed project was carried out as intended. Changes made were consistent with the goals of the project. The project team worked well together and the university was supportive. The information identified and the programs initiated poised this institution and team to continue to make progress with regards to understanding the advancement of women in university faculty, particularly at a rural university.