YEAR 2 EXTERNAL EVALUATION

MAKING WAVES (WOMEN ACADEMICS VALUED AND ENGAGED IN STEM): DISRUPTING MICROAGGRESSIONS TO PROPAGATE INSTITUTIONAL TRANSFORMATION

NSF ADVANCE IT GRANT, UNIVERSITY OF MASSACHUSETTS LOWELL

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1. EXECUTIVE SUMMARY

The University of Massachusetts Lowell (UML) is completing its second year of their 5-year NSF ADVANCE-IT grant, Making WAVES (Women Academics Valued and Engaged in STEM), or WAVES for short. The grant's overarching goal is to establish an academic environment that supports STEM women to achieve to their highest potential by reducing the interpersonal and institutional microaggressions that undercut both their ability to be productive and their general sense of well-being. The Year 2 external evaluation incorporates both quantitative and qualitative data collected by the internal and external evaluators. The report shares findings on the extent to which the Year 2 grant activities have moved UML closer to achieving its three goals and social science research, detailed below:

Objectives and Key Impacts

Goal 1: Disrupt microaggressions
- **Survey-feedback cycles** to enable departments and colleges to raise awareness and help them set and track progress toward equity goals
  - **Information campaign** to raise awareness of subtle biases that affect women in STEM
  - **Equity Leaders Training** for faculty identified by STEM deans as well respected, opinion leaders to develop a distinctive UML approach to bystander training and to build leadership skills for addressing subtle biases
  - **Bystander Training for faculty** facilitated by Equity Leaders to promote skills to address subtle bias and build broad-based support for reducing bias at interpersonal and institutional levels

The Subtle Gender Bias Index (SGBI) Survey was administered for a second time in 2017 and results showed significant differences in key areas by gender and race. The WAVES team is conducting additional analyses and has been using results to inform its programs. The WAVES team launched its microaggressions awareness campaign and sponsored events to raise awareness of bias, in addition to training Equity Leaders in bias and bystander theory. Equity Leaders developed and conducted bystander training workshops.

Key Accomplishments for Goal 1:
- The WAVES team disseminated SGBI findings to university stakeholders. In interviews, faculty and administrators said that more information and analysis would be useful.
- Launching the microaggressions awareness campaign to coincide with the roll out of the new bystander training workshops.
- A cadre of Equity Leaders were trained to conduct bystander workshops.
- People who participated in the pilot bystander workshops reported that after the training, they were more knowledgeable about bias and its impacts, and were more willing to intervene when they witnessed subtle bias.

Goal 2: Provide alternative support mechanisms for faculty

- Expand the **50/50 Lecture series** to highlight multiple pathways for success in STEM and provide mentoring opportunities for faculty hosts
- **IDEA (InterDisciplinary Exchange and Advancement) Leadership Fund** to provide collaborative mentoring and support for both female and male faculty

One 50/50 Lecture was held in Year 2, with four lectures planned for the 2018-2019 academic year, at which time the series will be expanded to include disciplines beyond STEM and SBS. Five proposals for the IDEA Leadership Fund (which was also expanded to disciplines beyond STEM and SBS) were selected for funding and awardees are receiving leadership training from the Center for Women and Work.

Key Accomplishments for Goal 2:
- The 50/50 Lecture series is well received by faculty and administrators and provides information that attendees think will help them professionally.
- In interviews, IDEA leaders stated that the IDEA Leadership training has helped them solve problems within their own research groups, helped them set goals, helped them address work-life balance, and expanded their professional networks.

Goal 3: Promote Equity and Accountability
- **Foggy Climate Initiative** to establish detailed decision-making procedures for high stakes decisions (P&T, annual reviews, merit), to analyze and promote equity by gender around service assignments, and review university policies that affect gender equity
- **WAVES Accountability Initiative** to create and implement a protocol for college and department self-assessment, goal setting, action planning, and annual evaluation of progress

In Year 2 the Foggy Climate Committee disseminated a protocol for personnel decision making and has been overseeing implementation of other university practices that support equity. The parental leave policy was changed from opt-in to opt-out in the faculty contract. The WAVES team is continuing to work to implement Digital Measures, a data collection tool that can help with tracking service equity, and to encourage faculty to utilize the system. Four STEM departments are participating in efforts to engage in departmental equity strategic planning which will eventually also support efforts related to the STEM Equality Achievement (SEA) Change Program. They have formed Equity Action Teams and are working with WAVES to develop strategic plans around gender equity.

Key Accomplishments for Goal 3:
- More than half of UMass Lowell departments have implemented some variation of the protocol for personnel decision making.
- The WAVES team has refined service data collection methods for Digital Measures and are working to increase faculty participation.
- Department-level gender equity planning is underway in Biology, Chemistry, Electrical and Computer Engineering, and Plastics Engineering.

Social Science Research

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The purposes of the social science research agenda are to: (1) provide new nuanced and more ecologically valid insights into microaggressions faculty experience and their consequences; (2) examine the extent to which individuals witness other faculty experiencing microaggressions and whether (and how) they intervene as bystanders (3) add to the body of literature on understanding how gendered microaggressions are experienced in the context of intersectional racial identities; (4) answer the call for additional research on effective intervention strategies.

Three related studies, grounded in daily diary methodology, are being conducted:
> Study 1: Understanding microaggressions: Incidence, impact and intersectionality in a national sample
> Study 2: Understanding microaggressions: Incidence, impact and intersectionality at UMass Lowell (in conjunction with the bystander training initiative)
> Study 3: Impact of daily diaries on attitudes toward microaggressions

In grant Year 2 the WAVES team launched the Daily Bias Survey in order to document occurrences of microaggressions and related responses, job satisfaction, and well-being. The team is currently conducting analyses of the data collected thus far and expects to have preliminary findings available to the team during grant Year 3.

Key Accomplishment for Social Science Research:
- More than 100 people participated in the Spring 2018 National Daily Bias Survey. The team is working to collect additional data in order to better assess the incidence and effects of bias events.

Summary and Recommendations

Year 2 Strengths:
- Bystander training participants more knowledgeable about bias and its impacts, felt more confident using the strategies they learned to intervene, and were more willing to intervene when they witnessed situations involving bias;
- Robust data and research (SGBI Survey, Daily Bias Survey, bystander training);
- Launching the departmental equity planning process;
- Modification of the parental leave policy, from opt-in to opt-out; and
- 50/50 Lectures are drawing a high level of interest among faculty.
- Inclusion/extension of key programming such as bystander training, 50/50 Lectures, and IDEA Leadership to faculty beyond STEM

Year 2 Challenges:
- Faculty time is limited, and there is not always the capacity to implement programs on the initial timeline.
- Some faculty and administrators who are not in NSF-funded STEM fields feel excluded from some of the WAVES messaging.

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- The Foggy Climate Initiative has great potential to gather important data about service time, but some faculty see the Digital Measures software as confusing or onerous and may choose not to participate as a result.
- The department equity planning process is very time consuming and labor intensive.

Key Recommendations:

The following recommendations should be considered to strengthen existing efforts, help the team prepare for the 3rd year NSF site visit, and assist with decision-making regarding sustainability in later grant years. Key recommendations, grouped thematically, include:

Data and Evaluation
- Provide a written summary of key findings from the SGBI Survey to faculty and administrators.
- Provide deans with written summary of unit-level findings from the SGBI Survey, as possible. This information can help them identify areas where they may need to take action and provide guidance as to how they can encourage departments to utilize the findings.
- Review and re-align internal evaluation to reflect program priorities and emerging key activities, including evaluation of longer-term impacts for key initiatives.
- Continue to work with campus stakeholders to encourage faculty to enter data on service in Digital Measures.

Messaging, Inclusion, and Communication
- Disseminate information about SEA Change, particularly to leaders who will be impacted by it or may wish to participate in the future.
- Moving forward, engage SBS departments the Departmental Equity Plans and encourage participation as 50/50 Lecture hosts by SBS faculty.
- Ensure the language used in messaging is as inclusive as possible.
- Increase engagement with the deans of education, health sciences, and education.

NSF 3rd Year Site Visit
- Work closely with the internal and external evaluators to plan for the 3rd Year Site Visit by NSF. The team might consider a leadership retreat focused on preparation for the site visit and/or engaging other ADVANCE institutions for guidance.
- Consider utilizing the EAB to help prepare for the site visit. For example, other institutions found EAB feedback on the site visit presentation was extremely useful.

Other
- Monitor attendance at bystander training and target recruitment accordingly to ensure participants are drawn from all faculty ranks, units, and demographic groups.
- Consider ways to streamline or adapt the process for departmental equity planning so that it can be replicated more easily campus wide.
- Devise a plan for the recruitment and onboarding of new Equity Leaders to ensure a consistent flow of facilitators.

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In conclusion, Making WAVES has launched key initiatives and should begin to evaluate impacts and refine activities in preparation for the third year NSF site visit. As the grant enters its third year, the WAVES team will also want to include discussions of sustainability in its evaluation and planning efforts.

2. INTRODUCTION

2.1 Organization of the Report

This report describes external evaluation findings pertaining to Year 2 of the University of Massachusetts Lowell (UML) NSF ADVANCE-IT grant. The report is divided into several sections. Following this introduction, Section 2.2 provides a brief overview of the major goals of the UML ADVANCE grant, and Section 3 describes the evaluation objectives and methods. Section 4 summarizes ADVANCE Indicators Toolkit data as it pertains to overall program goals. Section 5 covers the main activities undertaken in Year 2 of the grant. This section includes evaluation findings from both the internal evaluation team and the external evaluator. The report concludes with a summary of main findings and key recommendations.

2.2 Summary of UML's ADVANCE-IT Grant, Making WAVES

The University of Massachusetts Lowell (UML) is completing its second year of their 5-year NSF ADVANCE-IT grant, Making WAVES (Women Academics Valued and Engaged in STEM), or WAVES for short. The grant's overarching goal is to establish an academic environment that supports STEM women to achieve to their highest potential by reducing the interpersonal and institutional microaggressions that undercut both their ability to be productive and their general sense of well-being.

To achieve the overarching goal, the specific goals and proposed interventions are:

Goal 1: Disrupt microaggressions
- **Survey-feedback cycles** to enable departments and colleges to raise awareness and also to help them set and track progress toward equity goals
- **Information campaign** to raise awareness of subtle biases that affect women in STEM
- **Equity Leaders Training** for faculty identified by STEM deans as well respected, opinion leaders to develop a distinctive UML approach to bystander training and to build leadership skills for addressing subtle biases
- **Bystander Training for faculty** facilitated by Equity Leaders to promote skills to address subtle bias and build broad-based support for reducing bias at interpersonal and institutional levels

Goal 2: Provide alternative support mechanisms for faculty
- Expand the **50/50 Lecture series** to highlight multiple pathways for success in STEM and provide mentoring opportunities for faculty hosts

- **IDEA Leadership Fund** (InterDisciplinary Exchange and Advancement Communities) to provide collaborative mentoring and support for both female and male faculty, with a focus on Associate Professors

Goal 3: Promote Equity and Accountability
- **Foggy Climate Initiative** to establish detailed decision-making procedures for high stakes decisions (P&T, annual reviews, merit), to analyze and promote equity by gender around service assignments, and review university policies that affect gender equity
- **WAVES Accountability Initiative** to create and implement a protocol for college and department self-assessment, goal setting, action planning, and annual evaluation of progress

Social Science Research Agenda

The purposes of the social science research agenda are to: (1) provide new nuanced and more ecologically valid insights into microaggressions faculty experience and their consequences; (2) examine the extent to which individuals witness other faculty experiencing microaggressions and whether (and how) they intervene as bystanders (3) add to the body of literature on understanding how gendered microaggressions are experienced in the context of intersectional racial identities; (4) answer the call for additional research on effective intervention strategies.

Three related studies, grounded in daily diary methodology, are being conducted:
> Study 1: Understanding microaggressions: Incidence, impact and intersectionality in a national sample
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> Study 3: Impact of daily diaries on attitudes toward microaggressions

Theory of Change

The theory of change is derived from research evidence that in order to reduce wide-spread microaggressions, organizations must (a) involve multiple levels and diverse constituencies throughout an organization; (b) support the development of alternative patterns; (c) engage in transparent decision making procedures; and (d) create accountability for achieving equity goals. The following complementary interventions are designed to address three interconnected issues:

- *Disrupting microaggressions by engaging the university community* via department-based feedback-goal setting cycles, a multi-pronged information campaign, and faculty-run bystander training workshops
- *Promoting alternative interactional patterns that support the success of STEM women* via 50/50 Lectures and IDEA Leadership Fund as innovative formats for

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reducing isolation and providing access to professional and personal resources
- *Changing targeted aspects of the institutional context* via the Foggy Climate Initiative to establish detailed procedures for committee decision making and workload distribution and a WAVES Departmental Accountability Initiative

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The theory of change guiding the grant activities is presented in Figure 1.

FIGURE 1. MAKING WAVES THEORY OF CHANGE

MODEL OF CHANGE: MICROAGGRESSIONS IN CONTEXT

ADDRESS ORGANIZATIONAL CONTEXT

- Foggy Climate Initiative (decrease ambiguity)
- WAVES Accountability Initiative (increase accountability)

DISRUPT MICROAGGRESSIONS
- Awareness (survey feedback cycles & info campaign)
- Equity Leaders Training
- Bystander Workshops

PROMOTE ALTERNATIVE PATTERNS
- 50/50 Networks
- IDEA Leadership Fund

INDIVIDUAL OUTCOMES
- Productivity
- Professional connectedness
- Job satisfaction

UNIVERSITY OUTCOMES
- Representation
- Promotion
- Leadership

3. EVALUATION OBJECTIVES AND METHODS

3.1 Evaluation Period and Objectives

The evaluation activities described in this report address the period between October 2017 (completion of the Year 1 external evaluation report period) and September 2018, encompassing the grant's second year of funding.

Evaluation objectives for this annual report are to:
- describe implementation activities, successes, and challenges;
- monitor the status of implementation progress toward program goals;
- document impacts of the program activities to date;
- provide formative feedback to facilitate project refinements; and
- enhance communication among the leadership team and stakeholders.

3.2 Structure of Evaluation Responsibilities

Evaluation activities were undertaken by internal and external evaluators.

Dr. Jill Lohmeier, Associate Professor, Research Methods and Program Evaluation in Education at the University of Massachusetts Lowell is the internal evaluator. She supervises graduate students and staff at the Center for Program Evaluation who assist the internal evaluation efforts. Key internal evaluation efforts in Year 2 included:
- Summarizing findings from UML-ADVANCE event evaluation forms;
- Attending project meetings and retreats;
- Providing feedback to the external evaluator and the UML-ADVANCE team on evaluation activities and procedures;
- Observing key program events; and
- Analyzing data from the SGBI Survey and presenting findings.

Dr. Mariko Chang, President of Mariko Chang Consulting, Inc., is the external evaluator. Key evaluation efforts undertaken by the external evaluator in Year 2 included:
- Providing feedback on internal evaluation efforts;
- Attending the June 2018 Making WAVES Retreat;
- Interviewing key stakeholders to inform the annual evaluation;
- Summarizing "toolkit" indicator data; and
- Conducting an annual external evaluation to provide formative feedback that utilizes data collected by the internal evaluator and the project team.

3.3 Evaluation Methods and Data

This external evaluation incorporates both quantitative and qualitative data derived from the sources described below.

Interviews: Dr. Chang conducted interviews in October 2018 with the following stakeholders: the principal investigator (PI), the co-PIs, the provost, deans, department chairs, Internal Advisory Board members, social science research team, and key institutional partners (e.g., Vice Provost for Faculty Success). While most interviews took place in person, some were conducted by phone when scheduling constraints rendered in-person interviews less feasible. A total of 37 people were interviewed.

Workshop/Event Evaluations: Evaluation findings from key events and workshops were developed by the internal evaluators and the project team. Findings were provided to the external evaluator (Appendix A) and key findings are summarized in this report.

Institutional Data: Department-level data on STEM/SBS faculty composition (such as the number of faculty by rank and gender) and other ADVANCE Indicators Toolkit data were provided by the internal assessment team to the external evaluator.

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Surveys: The Subtle Gender Bias Index (SGBI), developed through the ADVANCE PAID grant and revised with the IT grant, was administered during summer 2017. A summary of findings was made available to the external evaluator. The findings from the 2017 SGBI Survey can also be compared to the baseline (survey administered prior to the IT grant) to assess changes in awareness and experience of microaggressions.

WAVES Program Documentation and Process Data: Information from project activities and project records were provided to the external evaluator.

4. SUMMARY OF INDICATORS TOOLKIT DATA

Key indicators of women's status in STEM and SBS are collected in the Indicators Toolkit data reported by the university to NSF and to the internal and external evaluators. Data on STEM and SBS women's representation by rank and in leadership positions as well as among those hired, leaving the university, and being promoted are summarized in this section.

4.1 Composition of Women Faculty in STEM and SBS by Rank

In Fall 2017 (Year 2 of the grant), STEM departments included 198 tenured/tenure-track faculty in total, and SBS included 68 faculty members. Overall, 19% of STEM faculty and 49% of SBS faculty were women (Figures 2 and 3). The percentage of women in SBS decreased slightly from Year 1 to Year 2, from 52% to 49%, but remained the same in STEM (19%). Both the STEM and SBS fields showed a slightly higher proportion of women in assistant professor positions than in associate or full professor ranks, with 21% women assistant professors in STEM and 52% in SBS. The lowest proportion of women is at the full professor rank for both STEM (18%) and SBS (42%).

Figure 2. Percent of Women Faculty in STEM by Rank and Year*
(number of women / total faculty in parentheses)

Rank	Year 1 (2016-17)	Year 2 (2017-18)
All ranks	19% (38/195)	19% (38/198)
Asst.	26% (12/47)	21% (11/53)
Assoc.	20% (11/55)	20% (11/54)
Full	16% (15/93)	18% (16/91)

Year 1 data is from Fall 2016 and Year 2 data is from Fall 2017.

Figure 3. Percent of Women Faculty in SBS by Rank and Year*
(number of women / total faculty in parentheses)

	All ranks	Asst.	Assoc.	Full
Year 1 (2016-17)	52% (34/66)	50% (11/22)	57% (13/23)	48% (10/21)
Year 2 (2017-18)	49% (33/68)	52% (12/23)	50% (13/26)	42% (8/19)

Year 1 data is from Fall 2016 and Year 2 data is from Fall 2017.

4.2 Recruitment of Women STEM and SBS Faculty

In Year 2 of the grant, 14 faculty were hired in STEM and 6 in SBS departments (Figure 4). In STEM, women represented only 14% (N=2) of new hires (Figure 5), a decrease from 31% in Year 1 and 25% in the baseline (2015). In SBS, one woman was hired in Year 2 (17%), a decrease from two women hired in Year 1 (40%) and three in the baseline (60%). However, given that small numbers are likely to fluctuate over time, these data should be interpreted cautiously.

Figure 4. Percent of Women among New Hires, STEM and SBS
(number of women / total faculty in parentheses)

	STEM	SBS
Baseline (2015-16)	25% (3/12)	60% (3/5)
Year 1 (2016-17)	31% (5/16)	40% (2/5)
Year 2 (2017-18)	14% (2/14)	17% (1/6)

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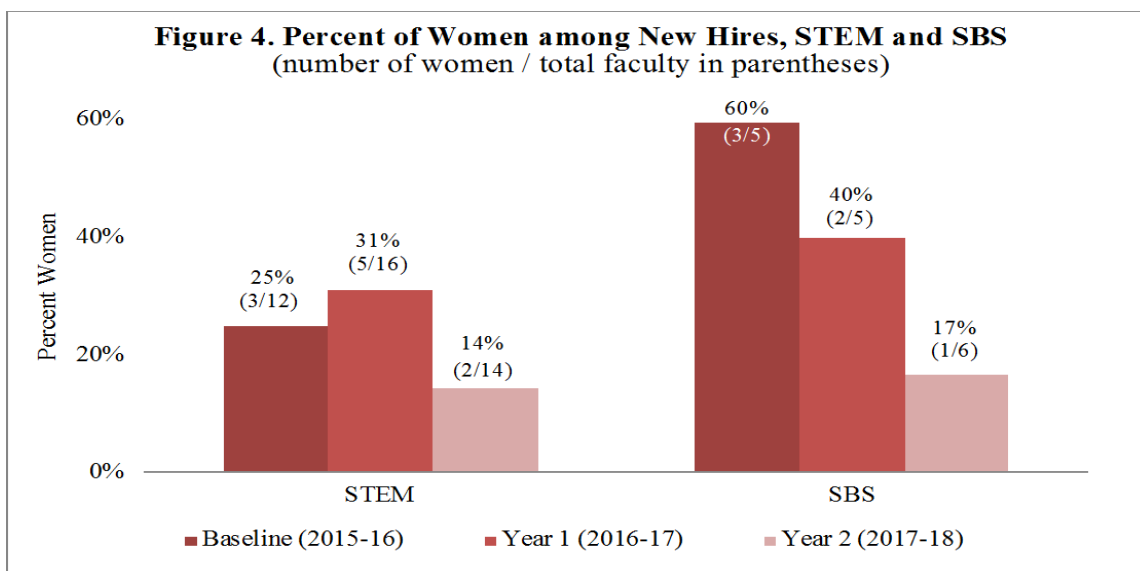
4.3 Retention of Women STEM and SBS Faculty

As shown in Figure 5, as of March 2018, no women STEM or SBS faculty left the university (other than through retirement) in Year 2. There were two men in STEM who departed, one assistant professor and one full professor (data on rank of departures not shown). In Year 1, one STEM female faculty member left the university and one in the previous three years, as opposed to three men who departed during those years. Two of the three men who left were full professors and one associate professor. In comparison, both women who left were assistant professors. In SBS, three female and five male faculty left in the three years before the start of the grant. Six of the SBS faculty who left during the baseline were assistant professors, and two were full professors (one woman and one man, data not shown).

Taken as a whole, data suggest that most faculty attrition occurs at the rank of assistant professor, and more so for women faculty (4 out of 5). It is unclear whether assistant professors are leaving in anticipation of a negative tenure decision or whether they found opportunities at other institutions that for other reasons pulled them away from UMass Lowell.

Figure 5. Women's Percent of Voluntary, Non-Retirement Attrition, STEM and SBS
(number of women / total faculty in parentheses)
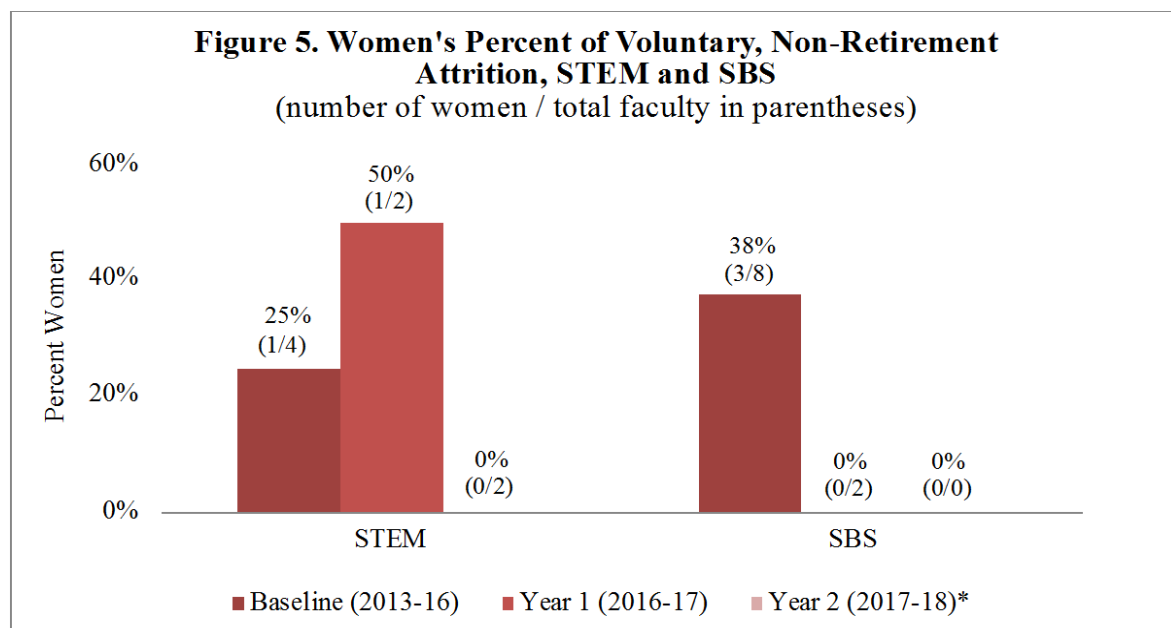
Year 2 attrition data is up to March 2018.

4.4 Advancement of Women STEM and SBS Faculty

In Year 2, no women and two men STEM faculty received tenure; however, in SBS fields, four of the five faculty who received tenure (80%) were women (Figure 6). In STEM, these numbers represent a decrease compared to Year 1, when three of six (50%) faculty who received tenure were women. Conversely, in SBS, no women received tenure in Year 1. In the baseline (2009-2016), 17% of tenure approvals in STEM were for women faculty, and 56% in SBS. Given the small numbers, these findings should be interpreted cautiously.

There were no tenure denials in Years 1 or 2. In the baseline, there were no women and three men in STEM who received denials, and two women and three men in SBS.

Figure 6. Percent of Women among Tenure Approvals, STEM and SBS
(number of women / total faculty in parentheses)
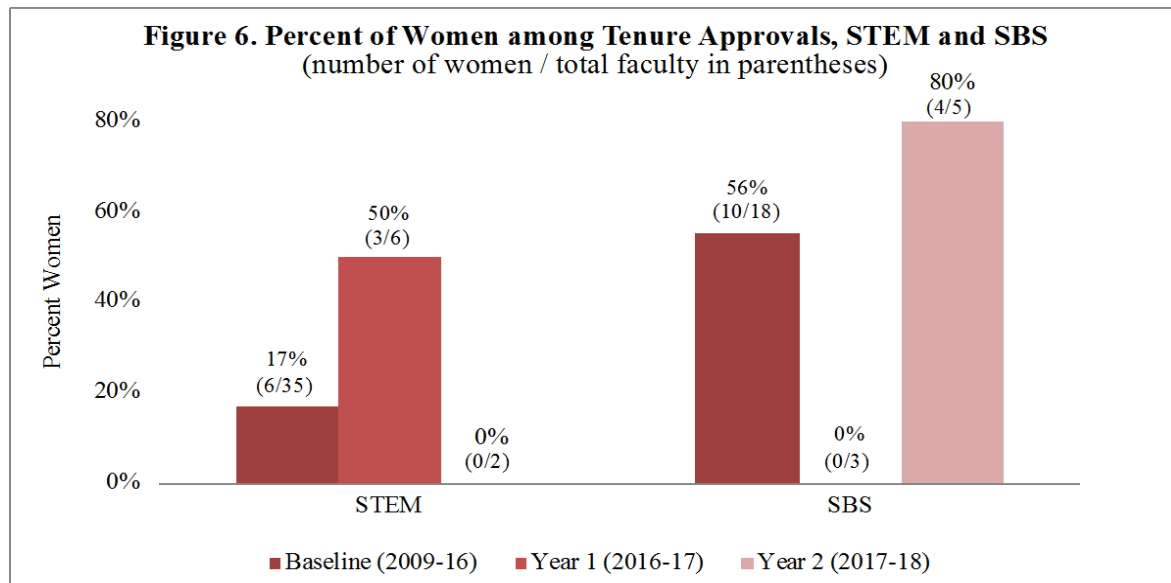
Although the numbers are small for both STEM and SBS, there has been an apparent decrease in the percent of women among faculty members promoted from associate to full professor from the baseline to Year 2 (Figure 7), although it is unknown how many were eligible for promotion in Year 2. In STEM, women comprised five of nineteen (26%) of these promotions during the baseline, one of four (25%) in Year 1, and zero of six (0%) in Year 2. In SBS, there was one woman (50%) who was promoted from associate to full professor in Year 2.

Figure 7. Percent of Women among Promotion Approvals from Associate to Full Professor, STEM and SBS
(number of women / total faculty in parentheses)
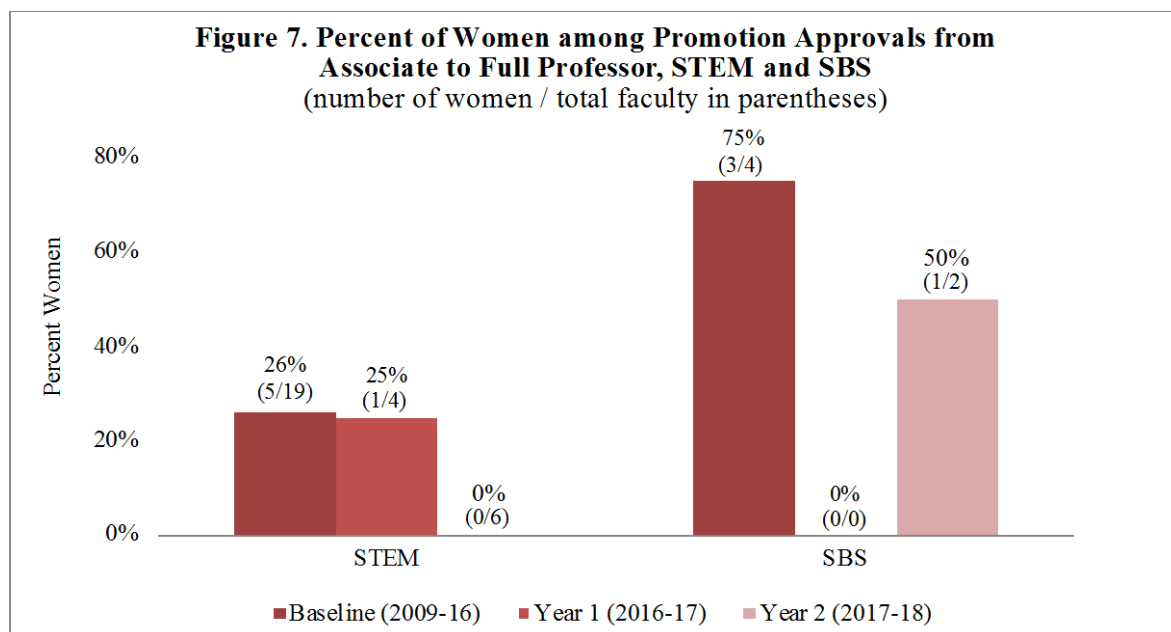
As with tenure, there were no promotion denials in Years 1 or 2. During the baseline, there were no women and eight men in STEM who received promotion denials, and six women and seven men in SBS.

4.5 Summary Across Year 2 Indicators

A summary of the gender composition, percent hired, percent attrition, and percent of women tenured/promoted by rank in STEM and SBS during the grant's second year are presented in Figures 8-13.

At the assistant professor rank, the percent of women hired in STEM was slightly lower than their representation (Figure 8), a sign that if hiring trends continue, the percent of women assistant professors in STEM will not increase, all else being equal. In SBS (Figure 9), the percent of women hired in Year 2 is also lower than their representation (which is at parity with men). In Year 2, women were promoted to the associate level less frequently than men in STEM (zero of two promotions) and more than men in SBS (four of five promotions). However, given the very small numbers involved, data from additional years are needed to draw substantive conclusions.
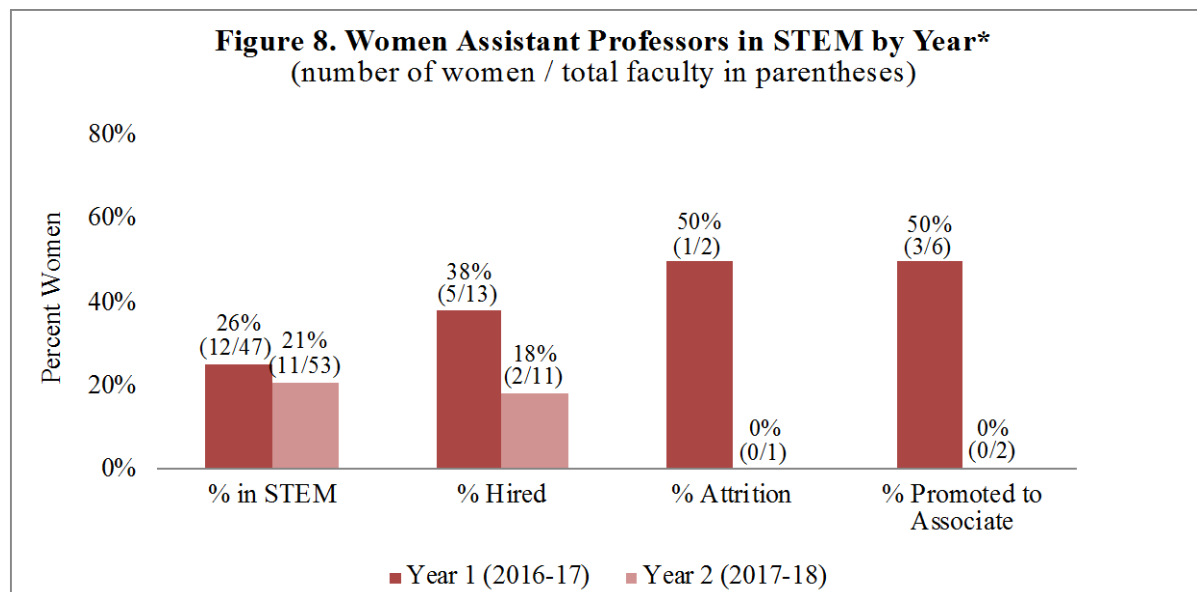
Figure 8. Women Assistant Professors in STEM by Year*
(number of women / total faculty in parentheses)

% in Field and % New Hires are at Fall. % Attrition is for academic year (2017-2018 partial up to March).

Figure 9. Women Assistant Professors in SBS by Year*
(number of women / total faculty in parentheses)
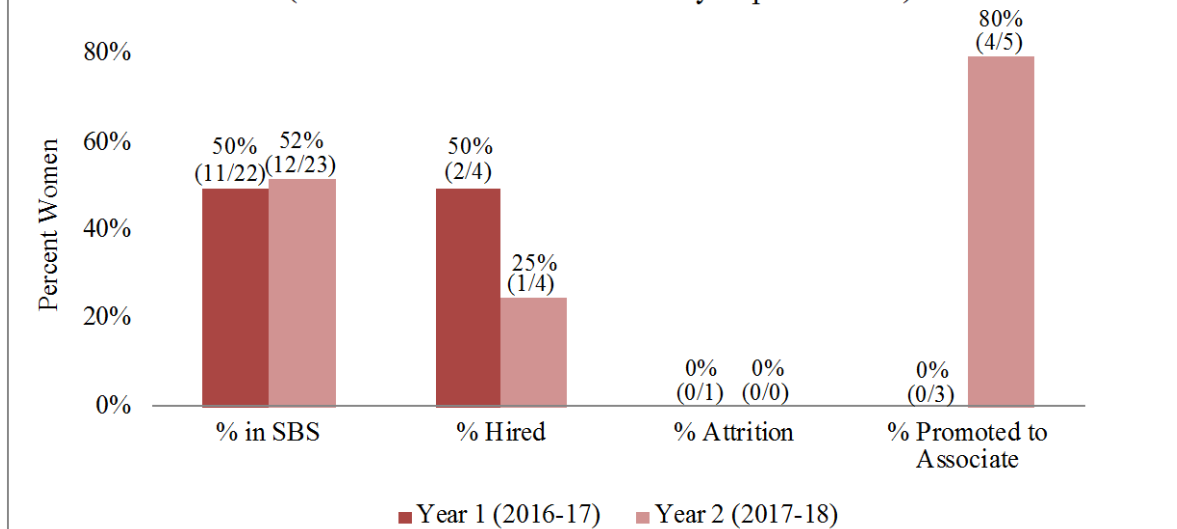
*% in Field and % New Hires are at Fall. % Attrition is for academic year (2017-2018 partial up to March).

At the rank of associate professor, during the grant's first two years, none of the three STEM associate professors hired were women and only one of the ten total STEM faculty promoted to full professor were women (Figure 10). In SBS, where women comprised 50% of associate professors in Year 2, there were neither hires nor voluntary leaves and one woman and one man were promoted to full professor (Figure 11).

Figure 10. Women Associate Professors in STEM by Year*
(number of women / total faculty in parentheses)
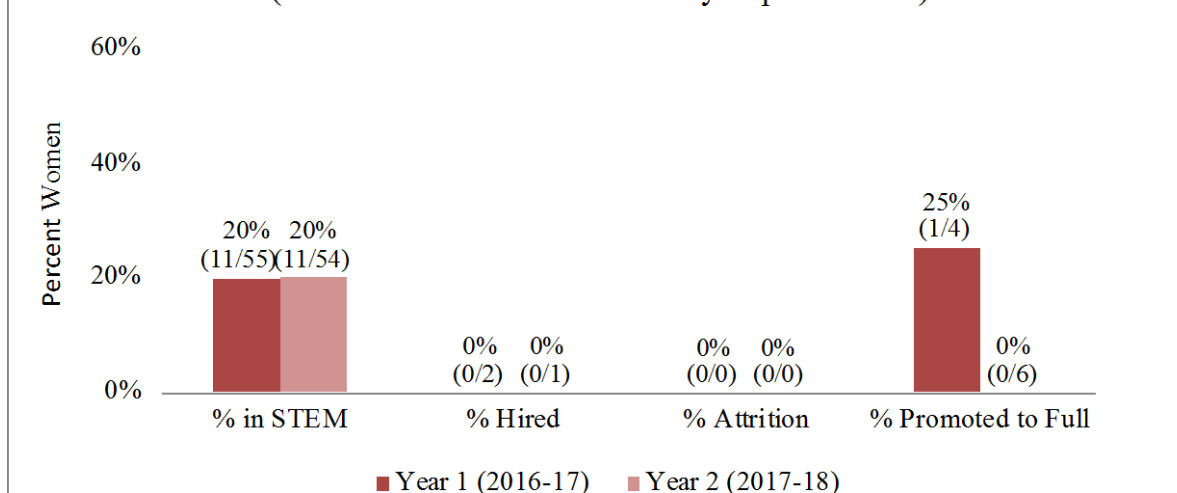
*% in Field and % New Hires are at Fall. % Attrition is for academic year (2017-2018 partial up to March).

Figure 11. Women Associate Professors in SBS by Year*
(number of women / total faculty in parentheses)
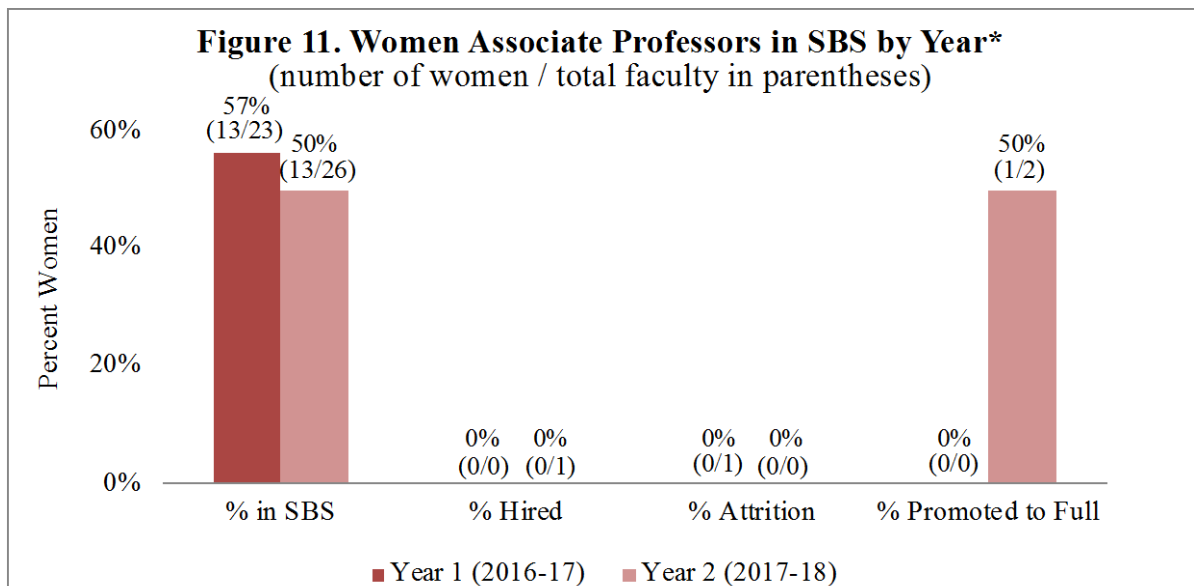
% in Field and % New Hires are at Fall. % Attrition is for academic year (2017-2018 partial up to March).*

At the rank of full professor, there was very little movement during Year 2. From Year 1 to Year 2 the percent of full professors who were women increased slightly in STEM, from 16% to 18%, and dropped from 48% to 42% in SBS (Figures 12 and 13). Two faculty members were hired at the rank of full professor in STEM and one in SBS; in both cases these hires were men. One STEM full professor man left the university in the 2017-2018 academic year.
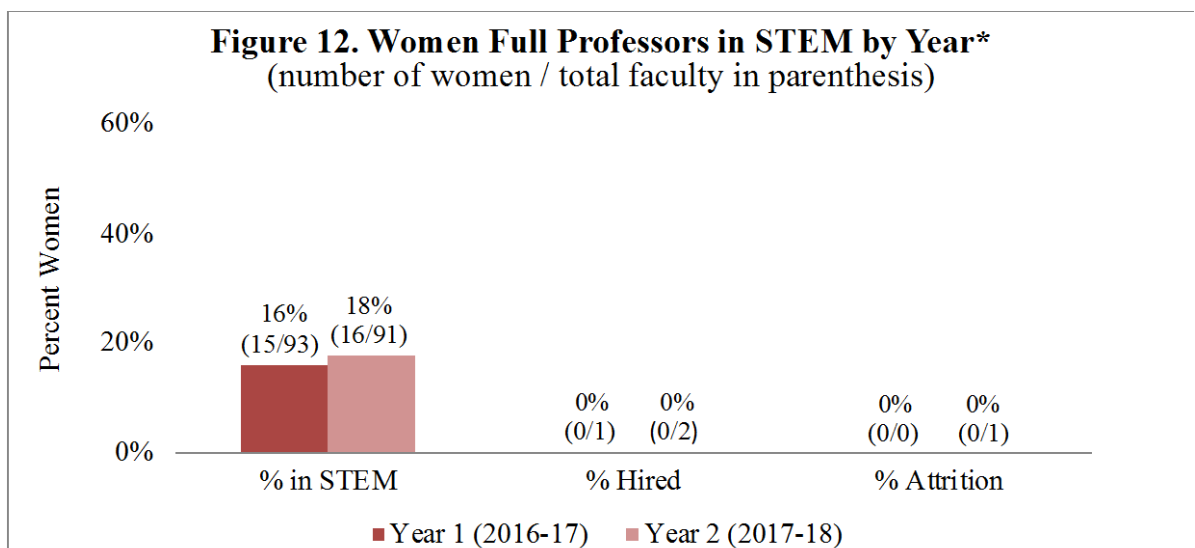
Figure 12. Women Full Professors in STEM by Year*
(number of women / total faculty in parenthesis)

% in Field and % New Hires are at Fall. % Attrition is for academic year (2017-2018 partial up to March).*

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Figure 13. Women Full Professors in SBS by Year*
**(number of women / total faculty in parenthesis)**
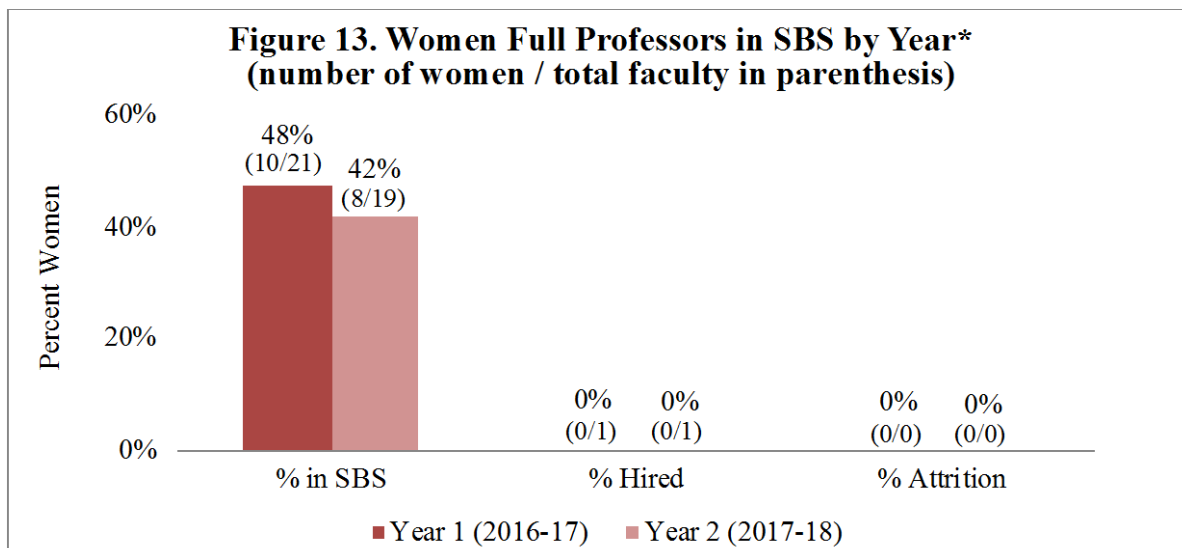
* % in Field and % New Hires are at Fall. % Attrition is for academic year (2017-2018 partial up to March).

Continued monitoring of gender equity in faculty composition, hires, attrition, and tenure and promotion will allow the university to determine where strengths and challenges lie and hopefully inform efforts to improve diversity and equity for its faculty as a whole.

4.6 Women in Leadership Positions

Women comprised 29% of faculty leadership positions in Year 2 (Table 1). Although they are better represented in top administrative positions such as the categories of president, vice-president, provosts, vice-provosts (50%); deans (43%); and associate deans (50%), there are fewer women in other leadership positions. For example, there are no STEM deans or associate deans who are women and only four out of thirty (13%) STEM department heads (which includes chairs, associate chairs and directors) are women. Women make up 38% of SBS department heads, but are still underrepresented given that in SBS 50% of associate professors and 42% of full professors are women (Figure 3).

Table 1. Faculty in Leadership Positions by Gender, Year 2

	Total	Men	Women	% Women
President, Vice-Presidents, Provosts, Vice Provosts	8	4	4	50%
Deans (incl. Honors College)	7	4	3	43%
Deans - STEM only	3	3	0	0%
Associate Deans	6	3	3	50%
Associate Deans - STEM only	2	2	0	0%
STEM Department Heads (Chair, Assoc Chair, Director)	30	26	4	13%
SBS Department Heads (Chair, Assoc Chair, Director)	8	5	3	38%

5. KEY FINDINGS FROM YEAR 2 ACTIVITIES

5.1 Goal 1: Disrupt Microaggressions

Grant activities proposed to address Goal 1 include:
- **Survey-feedback cycles** to enable departments and colleges to raise awareness and also to help them set and track progress toward equity goals
- **Information campaign** to raise awareness of subtle biases that affect women in STEM
- **Equity Leaders Training** for faculty identified by STEM deans as well respected, opinion leaders to develop a distinctive UML approach to bystander training and to build leadership skills for addressing subtle biases
- **Bystander Training for faculty** facilitated by Equity Leaders to promote skills to address subtle bias and build broad-based support for reducing bias at interpersonal and institutional levels

5.1.1 SGBI Survey Feedback

The Subtle Gender Bias Index (SGBI) was designed to measure the presence and impact of microaggressions experienced by faculty at UMass Lowell, and to examine differences in gender-based experiences of microaggressions. The original SGBI was designed to assess women's experiences in academic settings. The WAVES team adapted it so that it could be used to assess experiences of both women and men. The survey was first administered in fall 2015 and summer 2017.

In summer 2017, 370 faculty (65%) responded to the SGBI Survey. Results showed significant differences in key areas by gender and race. For example, compared to male faculty members, female faculty members reported more gender bias on campus and reported feeling devalued more often in university settings. In terms of race and ethnicity, white faculty members reported more gender bias than other races, but non-Asian faculty of color reported more social identities for which they felt they had been devalued. The WAVES team is working to further analyze the survey and has been using the results to inform its programs.

During Year 2, the WAVES team has been disseminating findings through presentations at UMass Lowell (for example: the UMass Lowell University Executive Committee, Academic Council, Senate Executive Committee, meetings with chairs and deans, Health Sciences annual retreat). They also provided hard copies of their powerpoint slides.

Evidence of Impact: Interviews

In interviews, stakeholders affirmed the usefulness of the SGBI survey feedback, for example:

"Meg and Jill came and presented the results of the survey. The survey was quite interesting. Unfortunately, some of the subsamples were small so it was difficult to make statistically significant conclusions…What was interesting to find out was that the least happy group was the associate professors. We had a really good discussion with Meg and Jill and the chairs in that meeting. We talked about what it really means and what we can learn from that survey."

Yet, some stakeholders were unsure how to utilize the data because they did not know if campus-level or even college-level findings could be applied to individual units and/or because they felt additional analyses were needed to better understand the findings. For example:

"The findings are not department specific, right? It's a little bit difficult to act on it. For example, if somebody didn't tell me there was something wrong in my department then I'm not going to act on it. Therefore, I haven't heard any complaints within the department about inequities that are taking place. If I did then I would do something about it."

"That women in the group looked relatively happy compared to the rest of the group surprised us. We wondered if there was really no problem. But we realized that probably most of them [the women in that college] were lecturers or assistant teaching professors…We would need to separate out the lecturers from the tenure track faculty to understand this finding."

Some stakeholders mentioned concerns that faculty could be identified if they answered the detailed demographics at the end of the survey, which may have made some faculty uneasy about answering the demographic questions.

Several stakeholders, especially administrators, said it would be useful to have a written summary of key findings that they could refer to which would not only help them accurately recall the information, but could also be used in strategic communications to further existing efforts to improve climate and enhance efforts to support a diverse, inclusive, and equitable institution.

Recommendations:
- In addition to the powerpoint slides, provide a written summary of key findings to faculty and administrators to help them retain the information presented and utilize findings to support efforts to improve climate.
- Consider making key findings available on the Making WAVES website.
- Consider responses to counter-arguments about the findings and incorporate answers to counter-arguments in messaging.
- Follow up with deans and department chairs to discuss any impacts to emerge from the survey feedback (for example, if they shared information with faculty and/or took any actions as a result of the information).

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UML ADVANCE Year 2 External Evaluation, prepared by Mariko Chang Consulting, Inc.

5.1.2 Information/Awareness Campaign

The WAVES team collaborated with the Office of Communications to launch an awareness campaign to coincide with the roll out of the new bystander training workshops in fall 2018. The awareness campaign involved posting signs around campus, featuring a mosquito to demonstrate that like mosquito bites, one microaggression may not be a big deal. But being bitten multiple times, year-round, is a big deal (see Figure 1 below).

Figure 1: WAVES Awareness Campaign

Evidence of Impact: Interviews

In interviews, stakeholders noted the visibility of the microaggression awareness campaign:

> "I do believe that people are more aware of microaggressions, simply prepared to talk about it, than maybe before WAVES was here. I think that's a positive thing. The dissemination, talking about it, and the bystander training and the posters and all of these things…. I think it started people talking about microaggressions and stuff, and I think it helps."

> "The posters with mosquitos were quite noticeable and I could hear colleagues talking about them. It made people more curious to learn about microaggressions."

One interviewee, however, commented that the analogy of a mosquito was troubling because mosquitos are doing something instinctual and the microaggressions are culturally driven.

Making WAVES has also sponsored and supported events to raise awareness of bias, bystander intervention strategies, and themes related to promoting a positive climate that

supports diversity, inclusion, and equity for all faculty, with a particular focus on women faculty and those from underrepresented groups.

During Year 2, public events co-sponsored by WAVES included a workshop on Bias Awareness Training by Dr. Stephanie Goodwin (Wright State University) and talks by Dr. Abigail Stewart (University of Michigan) and Dr. Jessi Smith (Montana State University). The workshop by Dr. Goodwin was initiated by the College of Education, and the talks by Dr. Stewart and Dr. Smith were part of a series organized by the Office of the Provost.

Evidence of Impact: Event Evaluation Forms

The internal evaluation team distributed and analyzed data from the post-event evaluation forms for the workshop with Dr. Goodwin and talk by Dr. Stewart (no evaluation forms were distributed for the talk by Dr. Smith), which are provided in Appendix A and summarized below.

Dr. Stephanie Goodwin conducted a Bias Awareness Training Workshop at UML in December 2017. The event involved theater performances by professional actors and interactive elements that provided strategies for recognizing and addressing bias. Of the 37 attendees, 24 responded to a survey about the training. The majority of respondents found both the lecture portion and the interactive session to be informative, effective, useful, and engaging. In open comments, attendees most frequently mentioned the acting and interactive nature of the scenarios to be the most useful and learned the most about specific strategies or skills that they could use in the future.

In early 2018, Dr. Abigail Stewart delivered a talk at UML on changing departmental culture. There were 62 attendees at the event, which focused on Dr. Stewart's research on departmental change, an element of the University of Michigan's ADVANCE grant related to promoting diversity at the departmental level. A majority of survey respondents agreed or strongly agreed that they learned something valuable from the session and indicated that the most significant take-away was the relationship between diversity and excellence. In open comments, participants requested further information about how to increase and support diversity among faculty and several suggested that additional training would be helpful.

5.1.3 Equity Leaders and Bystander Training

During Year 2, ten Equity Leaders were trained in subtle bias and bystander theory, developed a bystander training workshop, conducted workshop pilots, and rolled out the workshop in fall 2018. Using examples of microaggressions experienced at UML, Dale Young (Assistant Professor, English-Theatre Arts) crafted scripts for the bystander workshops.

Evidence of Impact: Workshop Evaluation Forms

Participants in the three pilot workshops conducted in spring 2018 were asked to complete surveys to evaluate the quality and effectiveness of the trainings and findings were summarized by the WAVES team (Appendix B). The majority of attendees reported that after the training, they were more knowledgeable about bias and its impacts, and how to intervene when they witness bias among colleagues. They also felt more confident in using one or more strategies to intervene when a situation involving bias occurs and were more willing to intervene when they witness subtle bias. Attendees indicated that they thought the interactive portion of the training was somewhat short, but the lecture portion was about the right length. In response to a question about how to make the training more relevant, participants suggested providing data from the faculty survey and real-life specific examples.

Evidence of Impact: Interviews

Stakeholders noted the growing interest in bystander training (for example, "there is a buzz about it") and that it was especially attractive to faculty because it was a faculty-led effort, as this stakeholder articulated:

> "It's squarely led by faculty for faculty…It's taken stories from faculty and incorporated it into the training. The faculty are running the training, not an HR person. And the actors have been from the faculty, so it feels very real and not constrained."

Stakeholders also mentioned that there was a change in culture in faculty receptiveness to the ideas of microaggressions and training to reduce biases:

> "What's exciting is momentum building … We have two departments that have stepped up to be the department role models [to say] they'll all go through their training. And [the training has] been well received, to the point where people are writing me asking for more options [to attend]. …That's a good sign because three, four years ago when I would do training during our retreats, certain people would say, 'Well this is a waste of time.' So I think we're turning that corner."

> "[At] one training there were a couple people there who basically made the statement of this doesn't happen in my department.…There will always be a cadre of folks— and they fit into a stereotype of long-tenured men—that will resist some of this. But I get the sense that it's cracking a bit."

As of the time of the data collection for the external evaluation, the training was attracting much interest from participants, but especially from junior faculty and lecturers (now called teaching faculty) and staff (who can participate on a space-available basis). Attendance from associate and full professors was not as strong. To help address this disparity, the Dean of Science will be working with WAVES to host a special invitation bystander intervention training for associate and full professors in his college with a reception to encourage associate and full professor faculty to attend.

Some constructive feedback that interviewees offered were that some felt the examples were too obvious ("not micro enough") and should address more subtle biases and that some attendees didn't resonate with the examples, such as the opening segment of someone complementing a woman's hair. Another stakeholder commented that in addition to training bystanders, it's important to empower the person who is being treated unfairly as there are often no bystanders present when incidents occur.

In terms of recommendations, faculty mentioned that it could be helpful if bystander training attendees were given a list of resources that they could take with them and refer to later. Others mentioned that a follow-up event or regular communications could help keep participants engaged in the material long after the workshop has ended.

The Equity Leaders had developed expertise and embraced their responsibilities. They are committed, but noted that it is a significant time commitment, more so than they had anticipated. They mentioned that it is unadvisable to have assistant professors in this role given the time demands, but noted that one Equity Leader was an assistant professor whose research dovetails with the workshop material.

The research team is using pre-post validated measures to examine the impact of the training. The research team is also exploring options for examining if the evaluation tool is generalizable in other settings and is reaching out to others doing complementary research and trainings.

Recommendations:
- Continue to track attendance by rank, gender, and unit to assess whether the training is reaching a wide audience; focus efforts at recruitment for future trainings accordingly.
- Reach out to UC Davis, who has implemented search committee training for faculty by faculty and have discussed ways to transition and onboard new leaders; they may have suggestions for how to recruit, train, and transition faculty into these types of roles.
- Devise a plan for the recruitment and onboarding of new Equity Leaders to ensure a consistent flow of facilitators.
- Discuss whether to have the team member who is an assistant professor continue to serve as an Equity Leader. While her research dovetails with the content and she is a valuable team member, perhaps there are ways to reduce the time commitment for her.

5.2 Goal 2: Provide Alternative Support Mechanisms for Faculty

The activities proposed to address the second goal are designed to promote collegial exchange and expand women's access to professional and personal support networks. The two interventions include:
- Expansion of the 50/50 Lecture series
- IDEA (InterDisciplinary Exchange and Advancement) Communities

5.2.1 Expansion of the 50/50 Lecture Series

The 50/50 Lecture series predates the UML ADVANCE-IT grant and consists of lectures given by notable scientists and engineers in which half of the lecture addresses their research interests and the other half their career path. As part of the 50/50 Lecture series, a UML faculty hosts the researcher for a full day on campus allowing opportunities to develop collaborations, seek mentoring, discuss research ideas, and expand networks. To build on the prior lecture series, WAVES increases the opportunities for networking, mentoring, and collaboration by providing funding for follow-up visits to the speaker's institution and/or a conference where the speaker and host can meet.

During Year 2, a more formal application process was developed and several applications for 50/50 lectures were received. One 50/50 Lecture was held, with others planned for the 2018-19 academic year. The 50/50 lecture that took place in Year 2 featured Dr. Thomas J. Webster (Director of the Nanomedicine Laboratories at Northeastern University), whose lecture was titled "A University Career in Biomaterials: Balancing Education, Research, Life, Personal Expectations, and Still Loving Every Minute!" The lectures are being evaluated using event evaluation forms and interviews will be conducted in Fall 2018 with the hosts to assess potential impacts experienced by the faculty hosts.

With the support of additional institutional funds, the 50/50 Lecture series is being expanded to the Humanities and other disciplines beyond STEM and SBS. In the first two years of the grant, however, SBS has not been represented. This is not surprising given that the lecture series (which predates the receipt of the ADVANCE IT grant) was initiated as focusing on STEM. In Year 3, four 50/50 lectures will take place, including one in the Humanities (funded by the institution). The other three lectures are in STEM disciplines and none are in SBS disciplines.

Evidence of Impact: Event Evaluation Forms

The internal evaluation team developed, distributed, and analyzed the post-event evaluation forms for the 50/50 lecture and provided a summary to the external evaluator (Appendix A). Of the 19 event attendees, 9 completed the evaluation survey. The majority of respondents found the career path information from the session conducted by Dr. Webster to be informative and learned something that will help them professionally. Almost all (89%) of survey participants would recommend the 50/50 Lectures to others and would like to attend other events sponsored by the program. In open comments, attendees suggested future event topics such as careers of women in STEM and global warming, and a 75/25 split between career and technical elements.

Evidence of Impact: Interviews

In interviews with the external evaluator, faculty and administrators spoke positively of the 50/50 Lecture Series, for example:

"I want to highlight how much I and other faculty love the 50/50 events because there's something positive about them. Something uplifting about them. Here was somebody successful but also somebody with a story to tell, sometimes [how they persisted] against adversity and everything."

"The 50/50 lectures are great. The faculty and students appreciate hearing about the speaker's life path, in addition to their research. We have plenty of research-focused talks on campus. The 50/50s are more holistic and help us appreciate the personal side of the researcher."

"The 50/50 lectures show junior faculty that they can be successful in research and that there's not just one way to do it."

Recommendations:
- Proceed with plans to conduct interviews with the 50/50 Lecture hosts to assess potential longer-term professional and personal impacts of the experience
- Continue to encourage the SBS disciplines to host speakers for the 50/50 Lecture series

5.2.2 IDEA Leadership Fund and Leadership Training

Making WAVES is collaborating with the Provost's Office and the Vice Chancellor for Research to support the professional development of associate professors through the InterDisciplinary Exchange and Advancement (IDEA) Leadership Fund. The IDEA Leadership Fund supports innovative research, scholarly, and interdisciplinary collaboration around a theme at UMass Lowell. Associate professors were invited to submit IDEA Leadership Fund proposals through the Research and Innovation Opportunities Portal and of ten proposals submitted in Year 2, five were selected for funding. Funding from the Provost's Offices allowed expansion of this opportunity to faculty in colleges other than science and engineering. IDEA leaders receive leadership training from the WAVES team.

Evidence of Impact: Interviews

When interviewed, the IDEA leaders articulated several ways that the IDEA Leadership training had helped them solve problems within their own research groups, helped them set goals, helped them address work-life balance, and expanded their network, for example:

"[I took an exercise that we did with the IDEA leadership training group] and replicated it with some changes with my own group. It went so well and it was so useful for the group… I find it very helpful that I can reach out to Robin or Meg and I ask, 'This is happening. What would you recommend?' Or in the group, we kind of share 'Oh, this is happening,' and then we're like, 'Oh, this is what I'm doing. I'm doing it this way.' It's really helpful."

"[A] strength of the group is that it is spread across campus….I think that helps because it opens up doors and identifies people if we don't have that connection."

"...we always have agenda for the meeting and we also get homework....We got a chart that ask us what are the goals for your group, collectively? When do you hope to accomplish this particular goal? What are you going to do for it in September, in October, November? Then how about your personal leadership goals, same thing. I think it's really helpful and …unless somebody checks on me, I'm very unlikely to do it, which is terrible, but I'm pretty sure they'd be checking and talking with us about it. Just writing it down actually was helpful."

"The things that we're asked to think about are not just how do you become a better administrator, a better leader at the university. It's how do you live life better?"

"The leadership component is very helpful for me. I feel very, very comfortable facilitating students, but facilitating my peers is not so easy I'm finding, especially since some of them are full professors and I am an associate professor."

One stakeholder, however, mentioned that the requirement that the IDEA leaders attend leadership training may deter some from applying, explaining that some may think "Great; that's going to be another set of meetings that I have to put into my calendar….I think there's at least a subset of people that maybe don't see the value in learning some of these skills."

Recommendation:
- Establish a mechanism for evaluating the leadership training

5.3 Goal 3: Promote Equity and Accountability

The third goal seeks to address aspects of organizational context to decrease ambiguity around standards and to increase accountability around equity goals. The two interventions to address Goal 3 include:
- Foggy Climate Initiative
- WAVES Accountability Initiative

5.3.1 Foggy Climate Initiative

The objective of the Foggy Climate Initiative is to increase transparency in evaluations by establishing detailed decision-making procedures for high stakes decisions and to analyze and promote equity by gender around service assignments.

A subcommittee of the Internal Advisory Board, the "Foggy Climate Committee," has been established to oversee implementation and sustainability of university practices that support equity. The committee's charge is to: (1) expand adoption of the personnel decision making protocol, (2) address inequities in service contributions of faculty, and (3) identify and

address personnel policies relevant to supporting equity (for example, family leave and salary review procedures).

A protocol for personnel decision making (item 1 of the committee's charge) was disseminated during 2016-17 and again in the 2017-18 academic year. A WAVES survey of department chairs in 2017 indicated that 53% of all departments have implemented some variation of the protocol.

A significant policy achievement was changing the parental leave from opt-in to opt-out. With that policy change now part of the faculty contract, the team has decided the next policy focus will be partner hiring and members of the subcommittee are beginning work on this area.

To improve service equity, the subcommittee is focusing on data collection on faculty service. The university is promoting the use of a centralized system of data collection (Digital Measures) pertaining to faculty work, including service. Members of the WAVES team helped the university establish categories for documenting service. Faculty participation in entering their data into Digital Measures varies substantially. In some colleges undergoing accreditation, for example, faculty were requested to enter their data into Digital Measures (and if they did not enter it, student workers entered it from their 16A forms). The WAVES team has also met with groups of faculty to encourage them to enter their data into Digital Measures and answer questions.

One key challenge of implementing the survey of faculty service hours is getting faculty buy-in, particularly given the extra effort that may be involved in tracking their time, as these interviewees explained:

> "Until there are actual consequences, the system is challenging and I don't see tenure-track or non-tenure-track [faculty] taking the time unless there is a demonstrated linkage of this equals this outcome."

> "Digital Measures is a tool that is designed to help with a task. And in this case…the faculty don't need that task. WAVES needs that task or the university needs that task so there's no incentive for the faculty to do that task."

As a data collection tool from which to analyze service equity, Digital Measures will only be as good as the data entered, which currently lacks uniform buy-in from faculty across the institution. Over time, Digital Measures may become more widely utilized, but its utility for promoting service equity during the grant's timeline may be limited since it is likely to take additional time for it to become more widely utilized by faculty. As a result, the WAVES team may not be able to address this goal fully in the near term.

Recommendations:
- Continue to work with other campus stakeholders to encourage faculty to enter data on service in Digital Measures

- Consider beginning with a single STEM/SBS college in the service equity work, one in which faculty buy-in for entering data into digital measures can be harnessed and data can be analyzed and shared with faculty and administrators as a test case and model moving forward.

5.3.2 WAVES Accountability Initiative

The WAVES Accountability Initiative is modeled after the work of other ADVANCE institutions and will become a model for the SEA Change efforts at UML, dovetailing with the university's participation in a pilot of the national STEM Equality Achievement (SEA) Change Program to achieve Bronze-level recognition.

In Year 2, four departments agreed to work with WAVES to develop strategic departmental plans around gender equity: Biology, Chemistry, Electrical and Computer Engineering, and Plastics Engineering. Participation involves forming a Departmental Equity Action Team, climate assessment (an external consultant has conducted interviews with department members), a follow-up survey, and holding feedback sessions and strategic planning around gender equity. As of the end of Year 2, the participating departments have formed their Equity Action Teams and interviews with the external consultant. The WAVES team is planning to stagger next steps to engage the departments in equity planning so that work can be made more manageable. WAVES intends to develop and administer the follow-up survey with two departments in fall 2018.

Evidence of Impact: Interviews

Some stakeholders were able to articulate the ways that the department equity plans and SEA Change are mutually supportive, as this interviewee explained:

> "The WAVES team is helping us create equity plans. SEA Change ensures that we stick to those plans over the long term. When the ADVANCE grant is over, equity plans will be a mechanism for demonstrating our commitment as part of SEA Change and to show that we have set goals and are meeting them. First for getting individual departments accredited and then the university."

Yet, while departmental goal setting will support SEA Change, stakeholders noted that many departments don't know about SEA Change yet since it is still in its early stages at the university. And some deans were also not familiar with the SEA Change initiative (or did not recognize it by name), suggesting that as the institution moves forward, additional communication about SEA Change and ways that ADVANCE might potentially support it will be necessary.

Recommendations:
- While SEA Change may indeed support the sustainability of the departmental equity plans, additional attention to accountability in the shorter term may be helpful since SEA Change may take a while to take hold across the university.

- As currently formulated, the departmental equity planning process is very time consuming and labor intensive (including types of expertise such as conducting interviews and focus groups that rely on someone external to the department), which may make the model difficult to replicate on a widespread basis. While the current four participating departments are good pilots, the team should also consider ways to streamline or adapt the processes so that they can be replicated more easily campus-wide.

5.4 Social Science Research

The purposes of the social science research agenda are to: (1) provide new nuanced and more ecologically valid insights into microaggressions faculty experience and their consequences; (2) examine the extent to which individuals witness other faculty experiencing microaggressions and whether (and how) they intervene as bystanders (3) add to the body of literature on understanding how gendered microaggressions are experienced in the context of intersectional racial identities; (4) answer the call for additional research on effective intervention strategies.

Three related studies, grounded in daily diary methodology, are being conducted:
Study 1: *Understanding microaggressions: Incidence, impact and intersectionality in a national sample.* Employs daily diaries to track occurrences of microaggressions (witnessed and experienced) and their relationships with job satisfaction and well-being

Study 2: *Understanding microaggressions at UMass Lowell* (in conjunction with our bystander training initiative) Employs daily diaries to track occurrences of microaggressions (witnessed and experienced) and bystander action (or inaction) at UMASS Lowell. Includes the ability to track responses from faculty who have participated in bystander training and those who have not.

Study 3: *Impact of daily diary evidence on attitudes toward microaggressions*: An experimental study that will provide new insights into the efficacy of the daily diary data to influence attitudes about microaggressions

WAVES kicked off data collection efforts for the Daily Bias Survey at the October 2017 AWIS conference. In Phase 1 (which began in October 2017), 24 faculty completed the baseline survey and 32 participated in the Daily Bias Survey. At the completion of Phase 1, the WAVES team surveyed participants to collect formative feedback regarding what factors encouraged or prevented them from completing their entries.

Phase 2 was launched in January 2018, using a snowball approach. To date, more than 100 people have completed the Daily Bias Survey. The research team is seeking additional data because about one-third of participants reported no bias event during the measured time frame (30 days) and additional data about events are needed to empirically assess the effects

of the event. The team is currently conducting analyses of the data collected thus far and expects to have preliminary findings available to the team during grant Year 3.

The research team will be launching Study 2 shortly, in conjunction with the roll-out of the bystander intervention workshops in fall 2018. The team is also finalizing the incentives to encourage participation.

5.5 Other Key Findings

1. Messaging and Inclusivity

Some key stakeholders commented that the messaging was sometimes perceived as unintentionally exclusionary. For example, some objected to the term "non-STEM" and felt that it was a disparaging term. And some mentioned that there were women holding dean positions in non-NSF-funded disciplines that could be powerful allies and leaders supporting WAVES efforts but that they had not yet been brought in to the fold effectively.

2. Internal Evaluation Efforts

As the project has evolved, evaluation needs have likewise evolved. The evaluation plan should be reviewed to ensure it is aligned with the project needs and that internal evaluation resources are able to support priorities. An adjustment in scope, focus and/or resources (such as staffing) for internal evaluation may be necessary to ensure a robust and meaningful evaluation can occur. Additional evaluation efforts targeted at key initiatives and longer-term impacts should be considered in the re-alignment.

3. Importance of accountability

In interviews, some stakeholders noted that there is evidence of the importance of accountability, both in terms of deans holding departments accountable and departments increasingly holding themselves accountable for equitable outcomes, especially in the search process, for example:

> "We're making progress without me having to always be the gatekeeper…. [One department] cancelled one of its searches because they all agreed that their pool wasn't diverse enough and it wasn't worth going forward despite having almost 150 applications. That was a nice step."

Moreover, departments are learning that broadening their searches is beneficial. For example, one stakeholder described a search where a woman candidate was ranked 4th and they were not initially going to bring her to campus until the dean provided funding. But "she bubbled right to the top and it was a lesson for this department who is thrilled."

4. Internal Advisory Board (IAB)

The Internal Advisory Board is comprised of the Equity Climate Committee, which is a committee under the pillar of the Strategic 2020 Committee on Global Engagement and Inclusive Climate. This structure was based on a recommendation from the Chancellor that the Strategic 2020 Committee serve as the WAVES IAB, thus providing an avenue for

interweaving the WAVES goals into the new strategic plan. The committee is co-chaired by Dr. Meg Bond (Co-PI) and Dr. Joe Hartman (Dean of College of Engineering).

The IAB is engaged and has a more nuanced understanding of the WAVES goals than they did during the grant's first year. The board is comprised of the three STEM deans, faculty from across all colleges and across ranks, including non-tenure-track faculty, as well as the Senior Associate Vice Chancellor for HR.

The WAVES team reports the IAB is meeting its needs and is strategically positioned for institutional impact. The WAVES team should periodically assess whether the structure of the IAB can continue to meet the grant's objectives as they pertain to institutionalization of the initiatives.

6. CONCLUSION AND RECOMMENDATIONS

In grant Year 2, WAVES continued successful initiatives launched during the grant's first year and also launched four key initiatives: Bystander Training (provided by Equity Leaders), Department Equity Plans, IDEA Leadership Fund (in collaboration with the Provost's Office and the Vice Chancellor for Research), and the Daily Bias Survey.

Year 2 Strengths:
- Bystander training participants more knowledgeable about bias and its impacts, felt more confident using the strategies they learned to intervene, and were more willing to intervene when they witnessed situations involving bias;
- Robust data and research (SGBI Survey, Daily Bias Survey, bystander training);
- Launching the departmental equity planning process;
- Modification of the parental leave policy, from opt-in to opt-out; and
- 50/50 Lectures are drawing a high level of interest among faculty.
- Inclusion/extension of key programming such as bystander training, 50/50 Lectures, and IDEA Leadership to faculty beyond STEM

Year 2 Challenges:
- Faculty time is limited, and there is not always the capacity to implement programs as planned.
- Some faculty and administrators who are not in NSF-funded STEM fields feel excluded from some of the WAVES messaging.
- The Foggy Climate Initiative has great potential to gather important data about service time, but some faculty see the software as confusing or onerous and may choose not to participate as a result.
- The department equity planning process is very time consuming and labor intensive.

Key Recommendations:

The following recommendations should be considered to strengthen existing efforts, help the team prepare for the 3rd year NSF site visit, and assist with decision-making regarding sustainability in later grant years. Key recommendations, grouped thematically, include:

Data and Evaluation
- Provide a written summary of key findings from the SGBI Survey to faculty and administrators.
- Provide deans with more detailed unit-level findings from the SGBI Survey, as possible. This information can help them identify areas where they may need to take action and provide guidance as to how they can encourage departments to utilize the findings.
- Review and re-align internal evaluation to reflect program priorities and emerging key activities, including evaluation of longer-term impacts for key initiatives.
- Continue to work with campus stakeholders to encourage faculty to enter data on service in Digital Measures.

Messaging, Inclusion, and Communication
- Disseminate information about SEA Change, particularly to leaders who will be impacted by it or may wish to participate in the future.
- Moving forward, engage SBS departments the Departmental Equity Plans and encourage participation as 50/50 Lecture hosts by SBS faculty.
- Ensure the language used in messaging is as inclusive as possible.
- Increase engagement by deans of Health Sciences, Education, and Business

NSF 3rd Year Site Visit
- Work closely with the internal and external evaluators to plan for the 3rd Year Site Visit by NSF. The team might consider a leadership retreat focused on preparation for the site visit and/or engaging other ADVANCE institutions for guidance.
- Consider utilizing the EAB to help prepare for the site visit. For example, other institutions found EAB feedback on the site visit presentation was extremely useful.

Other
- Monitor attendance at bystander training and target recruitment accordingly to ensure participants are drawn from all faculty ranks, units, and demographic groups.
- Consider ways to streamline or adapt the process for departmental equity planning so that it can be replicated more easily campus wide.
- Devise a plan for the recruitment and onboarding of new Equity Leaders to ensure a consistent flow of facilitators.

In conclusion, Making WAVES is reaching its stride now that key initiatives are underway and can now focus on evaluating impacts as the grant moves into its third year, thus allowing the program to fine-tune its activities and support a rigorous evaluation of impacts to guide discussions of sustainability down the road. The third year NSF site visit will provide the team with essential feedback as the team transitions toward the second half of the grant period and makes decisions about sustainability and institutionalization.

APPENDIX A: INTERNAL EVALUATION TEAM SUMMARIES

Briefing on the Evaluation Results of
UMass Lowell's December 2017 Bias Awareness Training Workshop
CPE Briefing 1712

Submitted to: Meg Bond, Ph.D.

Psychology Department

December 20, 2017

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Briefing on the Evaluation Results of

UMass Lowell's December 2017 Bias Awareness Training Workshop

On December 1, 2017, Dr. Stephanie Goodwin delivered a training on bias awareness at

the University of Massachusetts Lowell. The event was attended by 37 people (31 females, 6

males). Each attendee was asked to complete a 13-item post-event survey. The survey had three

close-ended questions, six open-ended questions, and four demographic questions (see

Appendix). This briefing presents the results of the survey.

Survey Participants

Out of the 37 event attendees, 24 responded to the survey. Tables 1 through 4 below

presents the demographic details of the survey respondents. It is important to note that the

university status question allowed participants to select multiple responses to accommodate

respondents who serve in multiple roles at the university.

Table 1

Participants' Status at the University

Status at the University	Number of Respondents
Postdoctoral Fellow	1
Department Chair	1
Program or Center Director Staff	2
Full Professor	1
Associate Professor	7
Assistant Professor	6
Adjunct Professor Lecturer	1
Visiting Lecturer	1
Non-Tenure Track Faculty	1

Note. Some of the values in this table represent duplicate counts.

Table 2

Participants' Gender

Gender	Number of Respondents
Female	17
Male	3
Prefer not to say	1
Prefer to self-describe	1

Table 3

Participant's College

College	Number of Respondents
CWW	1
Education	8
Engineering	2
FAHSS	2
Health Sciences	3
MSB	2

Note. CWW is a center not affiliated with a particular college.

Table 4

Participant's Attendance at Previous Stephanie Goodwin Presentation

Did you attend the other Stephanie Goodwin presentation at UMass Lowell last year?	Number of Respondents
Yes	4
No	18
I don't remember	0

Closed-Ended Questions

Survey participants were asked three close-ended questions. Based on their experience

during the workshop, the first close-ended question asked participants to rate the extent to which

they agreed or disagreed with nine statements using a five-point Likert scale (1 = Strongly

Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree). All 24 participants

completed the first close-ended question. Overall, participants' perceptions of the workshop

results are positive (M=4.36). The workshop result with the highest mean is the item that asked

participants if they are more knowledgeable about how to intervene when witnessing bias among colleagues (M=4.58). The workshop result that had the lowest mean is the item that asked participants if they are better able to recognize bias when it occurs in the workplace (M=3.96). Frequency distributions and descriptive statistics for these items are presented in Table 5.

The second and third close-ended questions used semantic differential scales. More specifically, they asked participants to rate their perceptions of two workshop aspects (lecture and acting portions) using five bipolar pairs of adjectives: not informative/informative, not effective/effective, not useful/useful, not engaging/engaging, and too long/too short. Each scale had seven points. The number of participants that completed each bipolar pair varies. Overall, participants found the lecture and acting portions of the workshop to be informative, effective, useful, and engaging. They also found that the length of both portions of the workshop to be neither too long nor too short. Frequency distributions and descriptive statistics for these items are provided in Tables 6-10.

Table 5

Frequency Distribution and Descriptive Statistics of Participants' Perceptions of Workshop Results

As a result of this workshop…	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**	**N**	**Mean**	**S.E.**
I am more knowledgeable about bias and its impact in general.	0	0	2	11	11	24	4.38	0.132
I can better recognize bias when it occurs in the workplace.	0	0	9	7	8	24	3.96	0.175
I am more knowledgeable about how to intervene when I witness bias among colleagues.	0	0	2	6	16	24	4.58	0.133
I am more willing to intervene when I witness subtle bias.	0	0	4	8	12	24	4.33	0.155
I feel more confident in using one or more new strategies to intervene when a situation involving bias occurs.	0	0	3	13	8	24	4.21	0.134
I am hopeful that efforts such as this session will reduce bias at this university.	0	1	5	4	14	24	4.29	0.195
I would like to attend future university events about bias.	0	0	1	10	13	24	4.50	0.120
I am likely to discuss the material covered today with my colleague(s).	0	0	3	6	15	24	4.50	0.147
I would like to learn more about dealing with subtle bias.	0	0	2	9	13	24	4.46	0.134

Table 6

Frequency Distribution and Descriptive Statistics of Participants' Perceptions of the Informativeness of Workshop Aspects

Aspect of Workshop	Uninformative						Informative			
	1	2	3	4	5	6	7	N	Mean	S.E
I found the talk (lecture portion) of the workshop to be...	0	0	0	0	1	5	18	24	6.71	0.112
I found the interactive (acting portion) of the workshop to be...	0	0	0	0	0	5	19	24	6.79	0.085

Note. These items were reverse coded.

Table 7

Frequency Distribution and Descriptive Statistics of Participants' Perceptions of the Effectiveness of Workshop Aspects

	Ineffective						Effective			
	1	2	3	4	5	6	7	N	Mean	S.E
I found the talk (lecture portion) of the workshop to be...	0	0	1	0	6	16	0	23	6.61	0.151
I found the interactive (acting portion) of the workshop to be...	0	0	0	0	0	4	19	23	6.83	0.081

Note. These items were reverse coded.

Table 8

Frequency Distribution and Descriptive Statistics of Participants' Perceptions of the Usefulness of Workshop Aspects

	Not Useful						**Useful**			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**N**	**Mean**	**S.E**
I found the talk (lecture portion) of the workshop to be...	0	0	0	0	3	3	17	23	6.61	0.151
I found the interactive (acting portion) of the workshop to be...	0	0	0	0	1	4	18	23	6.74	0.113

Note. These items were reverse coded.

Table 9

Frequency Distribution and Descriptive Statistics of Participants' Perceptions of the Appeal of Workshop Aspects

	Boring						**Engaging**			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**N**	**Mean**	**S.E**
I found the talk (lecture portion) of the workshop to be...	0	0	0	2	0	9	12	23	6.35	0.184
I found the interactive (acting portion) of the workshop to be...	0	0	0	0	0	4	19	23	6.83	0.081

Note. These items were reverse coded.

Table 10

Frequency Distribution and Descriptive Statistics of Participants' Perceptions of the Length of Workshop Aspects

	Too Short					Too Long				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**N**	**Mean**	**S.E**
I found the talk (lecture portion) of the workshop to be...	1	2	3	12	3	0	1	22	3.82	0.260
I found the interactive (acting portion) of the workshop to be...	1	2	5	11	1	3	1	23	4.04	0.263

Note. These items were reverse coded.

<h1 style="text-align:center">Open-Ended Questions</h1>

In addition to close-ended questions, participants were asked to respond to six open-ended responses regarding: the most and least useful aspects of the workshop; the most significant things they learned from the workshop; questions they still had after the workshop; suggestions for making the training more relevant to the UMass Lowell context; and, any other comments or suggestions.

Most Useful Workshop Aspects

Of the 24 participants, 19 responded to the second open-ended question: What aspect of the workshop did you find to be the most useful? Figure 1 provides a summary of what participants cited as the most useful aspects of the workshop.

Acting and the Interactive Nature of Scenarios (13 total comments)
- "Interactive play with suggestions from the audience"
- "The acting and changing the scenarios"
- "Discussion revolving around the scenarios"

Gaining Skills or Strategies (4 total comments)
- "Meeting dynamics skills were helpful"
- "Methods for confronting bias"
- "Verbal/nonverbal strategies for intervening"

Other Useful Aspects (2 total comments)
- "Emotional connection"
- "Why it is mportant to be an 'upstander'"

Figure 1. Most useful aspects of the workshop for participants and some illustrative quotes.

Least Useful Workshop Aspects

Of the 24 participants, 14 responded to the third open-ended question: What aspect of the workshop did you find to be the least useful? Figure 2 provides a summary of what participants cited as the least useful aspects of the workshop.

Time allotted for Activites
(4 total comments)

- "I think it would have been even more useful to have more time to debrief aournd the table and to practice there"
- "The written responses to the skits. There was basically no time to complete them so attempting to was distracting.
- "We didn't get as much of a chance to actively use/explore."
- "The poker chips - there wasn't enough time to really put together the color and number stragegy."

Logisitics
(3 total comments)

- Technical issues with microphone volume
- Lunch would be better than breakfast
- "Maybe offer lunch instead of breakfast?"

Other comments
(7 total comments)

- "Best I've been to"
- "None"
- "Not really sure"
- "n/a" (2 comments)
- "Often the repetitions were confusing - as to improvements so it helped to have specific points to clarify"
- "Complexity of situations"
- "Practicing - nobody did it"

Figure 2. Least useful aspects of the workshop for participants and some illustrative quotes.

Significant Workshop Take-Aways

Of the 24 participants, 19 responded to the following open-ended question: What were the two most significant things you learned from this workshop event? Of those 19 respondents, 16 shared two responses and three shared one response. Figure 3 provides a summary of the participants' significant workshop take-aways.

Strategies or Skills
(14 total comments)
- Pivoting
- Intervening through questions
- Having a goal for the interaction
- "How to better run out program meetings"
- "Pedagogical approaches to professional development"

How to Match Strategies or Options to Particular Circumstances
(10 total comments)
- "Took kits"
- "Framework for options"
- "Multiple ways to confront bias"
- We do not need to be confrontational when addressing bias

Recognizing bias
(3 total comments)
- Distinguishing between "urgent" and "subtle" bias
- Reacting "properly" to bias is important "because of the cost of perpetuating bad habits"

Actors
(3 total comments)
- "Asking questions of actors in character was super effective"
- "Difficulty of responding appropriately in the moment (actors have experience)"

Role of Power and Status
(2 total comments)
- "Various response don't always work, depending upon power relationships and personalities."

Other Take-Aways
(4 total comments)
- "Arouse dissonance!"
- "How other people see incidents"
- "How to respond to bias 'proactively'"
- "Bystanders have an urgent obligation to act"

Figure 3. Participants' significant workshop take-aways and some illustrative quotes.

Lingering Questions

Of the 24 participants, twelve responded to the fifth open-ended question: What one question do you still have after attending this workshop? Figure 5 provides a summary of their lingering questions.

Navigating challenges associated with power imbalances that could impact job prospects	•"How can I say things contrary to what my superiors believe without hurting my chances of being re-hired by them?" •"As a junior faculty how to confront bias without losing a job or being affected when going up for tenure" •"Specific low power/low status ways to respond that navigate academic tenure dynamics"
Ally-Related	•"How to intervene as ally without having a blow up at a faculty meeting." •"How to continue to be an ally for lots of different 'groups'"
Action required	•"When some episodes call for official report rather than ordinary bystander action."
Department-Related	•"How to use it to improve the climate in my department."
Student-Related	•"Dealing with student issues."
Actor-Related	•"How much research do actors have to do to make sure they reflect general attitudes"
Other Questions/Comments	•"Why don't we have an ombuds at UML?" •"N.A." •"Have to process"

Figure 4. Participants' lingering questions and some illustrative quotes.

Suggestions for Making Training More Relevant

Of the 24 participants, 14 responded to the fourth open-ended question: Do you have any suggestions for making a training such as this more relevant to the UMass Lowell context?

Five comments recommend that more of the UMass Lowell community experience the training. Two comments suggest a departmentalized training format. Others suggest that the training expand its focus and include additional scenarios or contexts. Figure 5 provides a summary of responses to this question.

Suggestions

- *"Keep doing it, reach upper levels, more resistant."*
- *"Bring to a group that needs it, but is not here today."*
- *"Advanced training - everyone also needs to be here."*
- *"Share with wider audience."*
- *"At least one time a semester encourage ALL faculty and staff to attend."*
- *"It's good as it is."*
- *"All scenarios happen here."*
- *"Bring back the Ombudsman's office."*
- *"Do a version of it with our department? Or do a follow up where we actually do it. Invite students too!"*
- *"I think everyone would enjoy it. I wonder if it could be a shorter (1.5 hours and in phases - 1, 2, 3.). Then different departments could host them over a period of time that is less a 1/2-day affair and allows reflection and practice in between."*
- *"Including material to formulate/identify bias against students, between students and with non-tenured faculty."*
- *"More student based scenarios."*
- *"Speaking specifically about status/hierarchy and consequences of bystander intervention."*
- *"Biases stemmed from the intersectionality of gender, race, etc."*
- *"I think cultural aspects are important among faculty from all different countries."*

Figure 5. Suggestions for making training more relevant.

Additional Comments

Of the 24 participants, seven responded to the last open-ended question: Any other

comments or observations you would like to share about this event? Figure 6 provides a

summary of the additional comments provided.

Appreciation and Praise (5 total comments)
- •"Awesome and effective event"
- •"Loved it, thank you"
- •"Great job!"

Add more diversity dimensions (1 comment)
- •"It would be great to have more diverse issues homophobia, immigration status (dis)ability, etc."

Further distribution (1 comment)
- •"Please bring this to our college! All faculty and staff need this workshop. More upper administration/directors need this workshop. Today is a small sampling of UML employees."
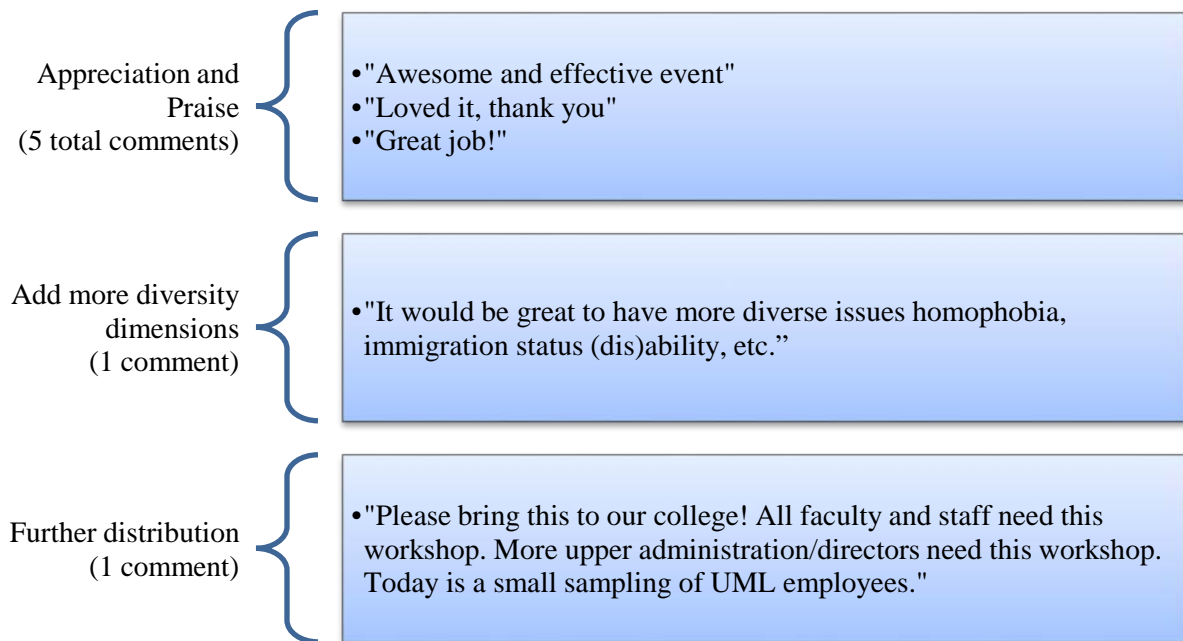
Figure 6. Additional comments provided by participants and some illustrative quotes.

Appendix

Survey Instrument

Bias Awareness Training
UMass Lowell
December 1, 2017

Thank you for your attendance at today's workshop. To assess the degree to which this workshop is fulfilling a university need, please take 5 minutes complete this evaluation survey following the presentation. By completing this survey, you are giving consent for your participation and for us to use this anonymous data in any reports, publications, or presentations.

1. **Please rate the following on your level of agreement.**

As a result of this workshop….	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A. I am more knowledgeable **about bias and its impact in general.**					
B. I can **better recognize** bias when it occurs in the workplace.					
C. I am **more knowledgeable about how to intervene** when I witness bias among colleagues.					
D. I am **more willing to intervene** when I witness subtle bias.					
E. I feel **more confident in using one or more new strategies** to intervene when a situation involving bias occurs.					
F. I am **hopeful that efforts such as this session will reduce bias** at this university.					
G. I would like to **attend future university events about bias**.					
H. I am likely to discuss the material covered today **with my colleague(s).**					
I. I would like to **learn more about** dealing with subtle bias.					

2. I FOUND THE TALK (LECTURE PORTION) OF THE WORKSHOP TO BE:

Informative	1	2	3	4	5	6	7	Uninformative
Effective	1	2	3	4	5	6	7	Ineffective
Useful	1	2	3	4	5	6	7	Not useful
Engaging	1	2	3	4	5	6	7	Boring
Too long	1	2	3	4	5	6	7	Too Short

3. I FOUND THE INTERACTIVE PORTION OF THE WORKSHOP (ACTING) to be:

Informative	1	2	3	4	5	6	7	Uninformative
Effective	1	2	3	4	5	6	7	Ineffective
Useful	1	2	3	4	5	6	7	Not useful
Engaging	1	2	3	4	5	6	7	Boring
Too long	1	2	3	4	5	6	7	Too Short

4. What were the **two most significant things you learned** from this workshop event?

    1. _____

    2. _____

5. What aspect of the workshop did you find to be the **most useful**?

6. What aspect of the workshop did you find to be the **least useful**?

7. Do you have any suggestions for making a training such as this **more relevant to UML context?**

8. What one question do you still have after attending this workshop?

9. Did you attend the other Stephanie Goodwin presentation at UMass Lowell last year?

    Yes   No   I don't remember

10. Please indicate your status at the university *(Please circle all that apply)*

    Postdoctoral Scholar   Assistant Professor   Associate Professor   Full Professor
    Department Chair   Staff   Program or Center Director   Dean
    Associate Dean   Other:_____

11. What best describes your gender?

    O Female   O Male   O Prefer not to say   O Prefer to self-describe _____

12. My College is: _____

13. Any other comments or observations you would like to share about this event?

Report on the Evaluation Results of

UMass Lowell's Provost Speakers Series Event

Dr. Abigail Stewart, January 18, 2018

CPE Report 1802

Jill H. Lohmeier, Ph.D.

Amanda Trainor Ed.M.

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Report on the Evaluation Results of UMass Lowell's Provost Speakers Series Event

Dr. Abigail Stewart, January 18, 2018

On January 18, 2018, Dr. Abigail Stewart delivered a talk entitled ""Changing Departmental Cultures: Benefits, Risks, and How it Happens" at the University of Massachusetts Lowell. She discussed findings and recommendations from her research on the STRIDE initiative, which is an element of the University of Michigan's ADVANCE grant focused on diversity and excellence in faculty recruitment and hiring. The event was attended by 62 people (45 females, 17 males). Each attendee was asked to complete a 15-item post-event survey. The survey had seven closed-ended questions and three open-ended questions about the presentation, two closed ended questions about other events, and three demographic questions (see Appendix). This report presents the results of the survey.

Survey Participants

Out of the 62 event attendees, one was a video technician recording the event, and five were part of the WAVES team. These individuals did not complete the evaluation survey. Of the remaining 54 attendees, 34 (63%) responded to the survey; however, not all of the participants responded to every item on the survey. Tables 1 through 3 below present responses to the survey's demographic questions.

Participant Role's at UMass Lowell

The participant title question allowed participants to select multiple responses to accommodate respondents who serve in multiple roles at the university. Participants could also self-describe their role as something other than the options provided on the survey form.

Table 1

Participants' Role at the University

Status at the University	Number of Respondents
Associate Professor	7
Staff	5
Associate Dean	3
Full Professor	7
Assistant Professor	1
Department Chair	4
Dean	2
Associate Librarian	2
Senior Lecturer	1
Lecturer	1
Student	1
Did not respond	6

Note. Some of the values in this table represent duplicate counts.

Participant Gender

Table 2

Participants' Gender

Gender	Number of Respondents
Female	20
Male	8
Did not respond	6

Participant College

The participant college question allowed participants to write in their college. Some

respondents wrote in affiliations with university offices that are not colleges (e.g., "HR") or that

did not clearly identify their specific college (e.g., "science").

Table 3

Participant's College

College	Number of Respondents
Education	1
Engineering	4
FAHSS	9
Health Sciences	2
HR	1
Library	2
Science	2
Student Affairs	1
Did not respond	11

Closed-Ended Questions

Survey participants were asked nine closed-ended questions, including seven about the presentation, and two questions about their attendance at other Provost Speaker or WAVES events. The questions about the current event asked participants to rate their level of agreement with seven statements using a five-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree). Overall, participants' perceptions of the event were positive (M=4.31). The statement with the highest mean asked participants how informative they found the workshop (M=4.47). The lowest mean was in response to whether participants learned something about subtle gender bias in the academy (M=4.09). This "low" mean is still quite high, and corresponds to a response slightly higher than "agree". Frequency distributions and descriptive statistics for these items are presented in Table 4. It is important to note that one survey participant indicated "strongly disagree" for all seven statements about the event. This participant did not provide answers to any open-ended questions; it is possible that they may have misunderstood the survey scale. No one else strongly disagreed with any of the statements.

Perception of Presentation

Table 4

Participants' Perceptions of Presentation

Please rate the following on your level of agreement.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N	Mean	S.E.
I found the talk informative.	1	0	0	14	19	34	4.47	0.135
I learned something about subtle gender bias in the academy	1	0	5	16	11	33	4.09	0.153
I am hopeful that efforts such as this session will reduce bias at this university.	1	0	3	11	19	34	4.38	0.152
The information presented is applicable to my work life.	1	1	1	16	15	34	4.26	0.154
I would like to attend future university events about subtle gender bias.	1	0	2	12	16	34	4.41	0.147
I am likely to discuss the material covered today with my colleague(s).	1	0	2	17	14	34	4.26	0.142
I would like to learn more about dealing with subtle gender bias.	1	0	5	9	18	33	4.30	0.166

Questions about Other Events

Two closed-ended questions asked participants if they had attended a Provost Speaker event or a WAVES event before. Participants' responses for these items are provided in Tables 5 and 6 below.

Attendance at Previous Provost Speaker Series

Table 5

Participant's Attendance at Previous Provost Speaker Series Events

Is this your first time attending a Provost Speaker Event?	Number of Respondents
Yes	11
No	22
Did not respond	1

Attendance at Previous WAVES Events

Table 6

Participant's Attendance at Previous WAVES Events

Is this your first time attending a WAVES event?	Number of Respondents
Yes	13
No	20
Did not respond	1

Participants were asked to respond to three open-ended responses regarding: 1) the two most significant things they learned from the talk; 2) one question they had about the topic after the talk; and 3) any other comments or observations about the event.

Significant Learnings

The first open-ended question asked: What were the two most significant things you learned from this talk? Of the 34 survey participants, 23 participants responded to this question. Six provided at least one response; 17 provided two responses. Figure 1 shows a summary of what participants cited as the most significant learnings from the talk.

Relationship between diversity and excellence (7 comments)	• "Diversity improves excellence" • "Good examples - good strategies to discuss mutually necessary tie between diversity and excellence" • "People often associate diversity with inferiority"
Acknowledging problems; accepting responsibility (6 comments)	• "Accept that we have a problem" • "Departments must recognize a problem before it can be fixed" • "Need to accept responsibility"
Role of leaders (5 comments)	• "Chairs must lead from the front" • "Department chair can be catalyst for change" • "Have a senior faculty stand up"
Role of belief and optimism (4 comments)	• "That departments that want to change will change" • "That telling faculty that the power of beliefs/attitudes is critical to change can make a difference" • "How pessimism is a bad factor"
Addressing toxic behaviors (4 comments)	• "Bring toxic people's behaviors into the open" • "Faculty need to speak up as a group to thwart toxic personalities and environment"
Standing up; being proactive (4 comments)	• "Stand up!" • "Not doing anything is acutally doing something - standing in the way!"
Other Comments (7 comments)	• "Change is slow" • "Hiring committee strategies" • "Surprised at the helplessness some felt"

Figure 1. Significant learnings for participants and some illustrative quotes.

Lingering Questions

Of the 34 survey participants, 17 responded to the second open-ended question: What one question do you still have after attending this workshop? Figure 5 provides a summary of their questions.

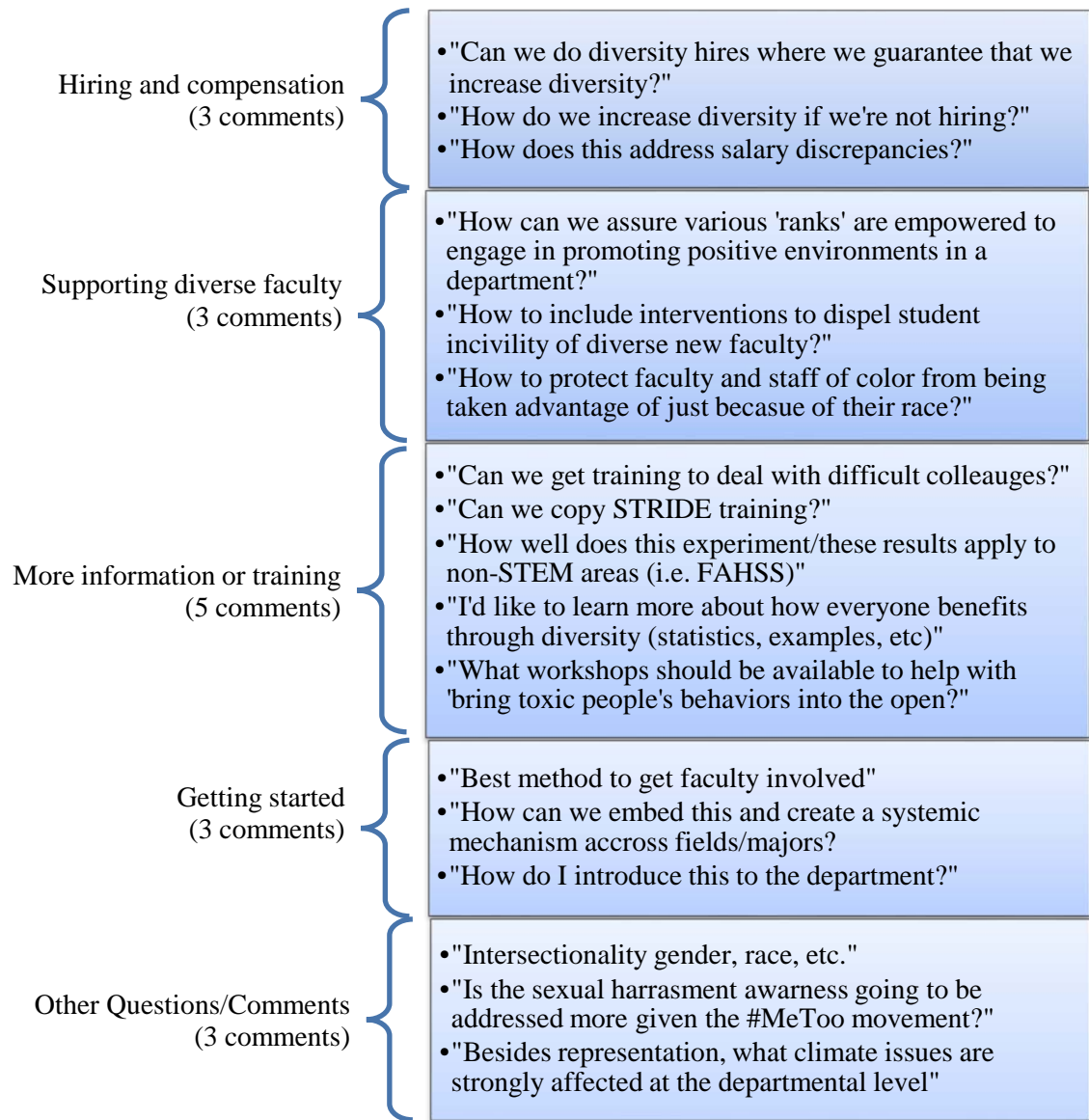| Category	Comments
Hiring and compensation (3 comments)	• "Can we do diversity hires where we guarantee that we increase diversity?" • "How do we increase diversity if we're not hiring?" • "How does this address salary discrepancies?"
Supporting diverse faculty (3 comments)	• "How can we assure various 'ranks' are empowered to engage in promoting positive environments in a department?" • "How to include interventions to dispel student incivility of diverse new faculty?" • "How to protect faculty and staff of color from being taken advantage of just becasue of their race?"
More information or training (5 comments)	• "Can we get training to deal with difficult colleauges?" • "Can we copy STRIDE training?" • "How well does this experiment/these results apply to non-STEM areas (i.e. FAHSS)" • "I'd like to learn more about how everyone benefits through diversity (statistics, examples, etc)" • "What workshops should be available to help with 'bring toxic people's behaviors into the open?"
Getting started (3 comments)	• "Best method to get faculty involved" • "How can we embed this and create a systemic mechanism accross fields/majors? • "How do I introduce this to the department?"
Other Questions/Comments (3 comments)	• "Intersectionality gender, race, etc." • "Is the sexual harrasment awarness going to be addressed more given the #MeToo movement?" • "Besides representation, what climate issues are strongly affected at the departmental level"

Figure 4. Participants' lingering questions and quotes.

Additional Comments

Of the 34 participants, 10 responded to the last open-ended question: Do you have any other comments or observations you would like to share about this event? Figure 6 provides a summary of the additional comments provided.

Appreciation and Praise (8 comments)

- "Excellent speaker!"
- "Great event! Thanks for offering this"
- "Thanks!"

Further Learning (2 comments)

- "It was interesting that there was little proress made in the first five years. I'd like to hear more about how you made so much more progress in the next 5-6 years.

- "This was a great event. I would like to know more about microaggression and gender bias - as well as racial bias."
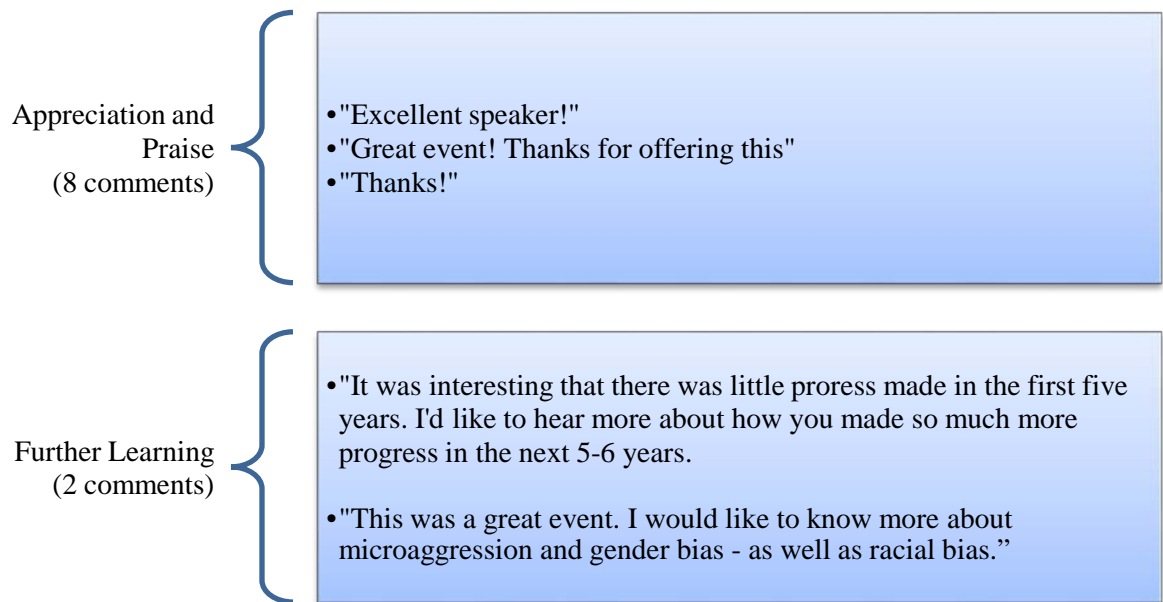
Figure 6. Additional comments provided by participants and illustrative quotes.

Conclusions

The Abby Stewart talk was both well received and well attended. Despite being during the winter break, many faculty from various departments attended the event. A strong majority of attendees agreed or strongly agreed with each of the statements about learning something valuable at the event. Additionally, more than half of the respondents were able to provide an example of something learned at the talk, with half of the respondents providing two responses. Half of the respondents also left with questions related to the topic that they still would like answered. This information should be used to

guide the content planning for future talks and WAVES events. Finally, all of the additional

comments made by respondents were positive.

Appendix

Survey Instrument

	Provost Speaker Series Dr. Abigail Stewart January 18, 2018	
University of Massachusetts Lowell UMASS		Center Work & Women

Thank you for your attendance at today's presentation. To assess the degree to which this series is fulfilling a university need, please take 5 minutes complete this evaluation survey following the presentation. By completing this survey, you are giving consent for your participation and for us to use this anonymous data in any reports, publications or presentations.

14. Please rate the following on your level of agreement.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
J. I found the talk informative.					
K. I learned something about subtle gender bias in the academy					
L. I am hopeful that efforts such as this session will reduce bias at this university.					
M. The information presented is applicable to my work life.					
N. I would like to attend future university events about subtle gender bias.					
O. I am likely to discuss the material covered today with my colleague(s).					
P. I would like to learn more about dealing with subtle gender bias.					

15. Is this your first time attending a Provost Speaker Event? *(Please circle)*   Yes   No

16. Is this your first time attending a WAVES Event? *(Please circle)*   Yes   No

17. Please indicate your title *(Please circle all that apply)*

Student	Postdoctoral Scholar	Assistant Professor
Associate Professor	Full Professor	Department Chair
Staff	Program or Center Director	Dean
Associate Dean	Other: _____	

18. Which gender do you most identify with? *(Please circle)*

Male   Female   Transgender male   Transgender female   Other

19. My College is: _____

20. What were the **two most significant things you learned** from this talk?

I. _____

II. _____

21. What is one question about the topic that you have after attending this talk?

22. Do you have any other comments or observations you would like to share about this event?

THANK YOU for taking the time to complete this form!

UMASS LOWELL

Center for
Program
Evaluation

50/50 Initiative Post Event Survey Summary

Thomas J. Webster

April 4th, 2018

Jill Lohmeier, Ph.D.

Bangsil Oh, M.Ed.

50/50 Initiative Post Event Survey Summary

Event description

The 50/50 lecture was held on Wednesday, April 4th, 2018 at 1:30pm in Alumni Hall. The lecture was titled "A UNIVERSITY CAREER IN BIOMATERIALS: Balancing Education, Research, Life, Personal Expectations, and Still Loving Every Minute!" and the speaker was Thomas J. Webster, director of the Nanomedicine Laboratories at Northeastern University. The series focused not on his research, but on his struggles as he tried to meet his own high expectations in the classroom and in research.

Survey Participants

The 50/50 initiative post-event survey was administered on the day of the lecture. The surveys were placed on attendees' seats prior to the presentation and were collected as attendees left the event. The purpose of the survey was explained to the participants, and survey completion was voluntary. The survey contained nine questions: one included 10 sub-questions to be answered using a 5-point Likert scale; two were a "yes" or "no" question; three were open-ended questions; and two were demographic questions. The survey took approximately 5 minutes for participants to complete.

Out of 19 participants at the event, nine (47.4%) completed the survey. The demographic details are provided in Table 1.

Table 1
Participant Demographic

		Number of Participants
Status	Student	3
	Associate Prof.	1
	Other	1
	Did not answer	4
Field of study	Biomedical Engineering	1
	Business	1
	Chemistry	1
	Engineering	1
	Plastic Engineering	1
	Did not answer	4
First time attending 50/50 lecture	Yes	3
	No	2
	Did not answer	4
First time attending WAVES' event	Yes	3
	No	2
	Did not answer	4

Participants' Perspectives on This Event

About 89% of the participants 'agreed' or 'strongly agreed' that they found the information regarding career path informative (M=4.56, SE=.242), and that they learned something from this event that will help them with their careers (M = 4.33, and SE = 0.236). Furthermore, 89% of the participants would recommend the UML 50/50 talks to others (M = 4.56, and SE = 0.242), and that they would like to attend future events sponsored by UML 50/50 Initiative (M = 4.44, and SE = 0.242). The frequency distributions are presented in Figure 1.

	Disagree	Neutral	Agree	Strongly Agree
I found the technical portion of the talk informative		11%	56%	33%
I found the information regarding career path informative		11%	22%	67%
The career issues raised in the event reflected my personal concerns.		22%	33%	44%
The career issues raised in the event raised my awareness of experiences of women in STEM		33%	22%	44%
I learned something from this event that will help me with my career.		11%	44%	44%
I was familiar with the work of the speaker before attending	22%	22%	22%	33%
I was motivated to attend the event to learn about the speaker's technical work	22%	11%	22%	44%
I was motivated to attend the event to learn about the speaker's career	11%	11%	22%	56%
I would recommend the UML 50/50 talks to others.		11%	22%	67%
I would like to attend future events sponsored by UML 50/50 Initiative.		11%	33%	56%

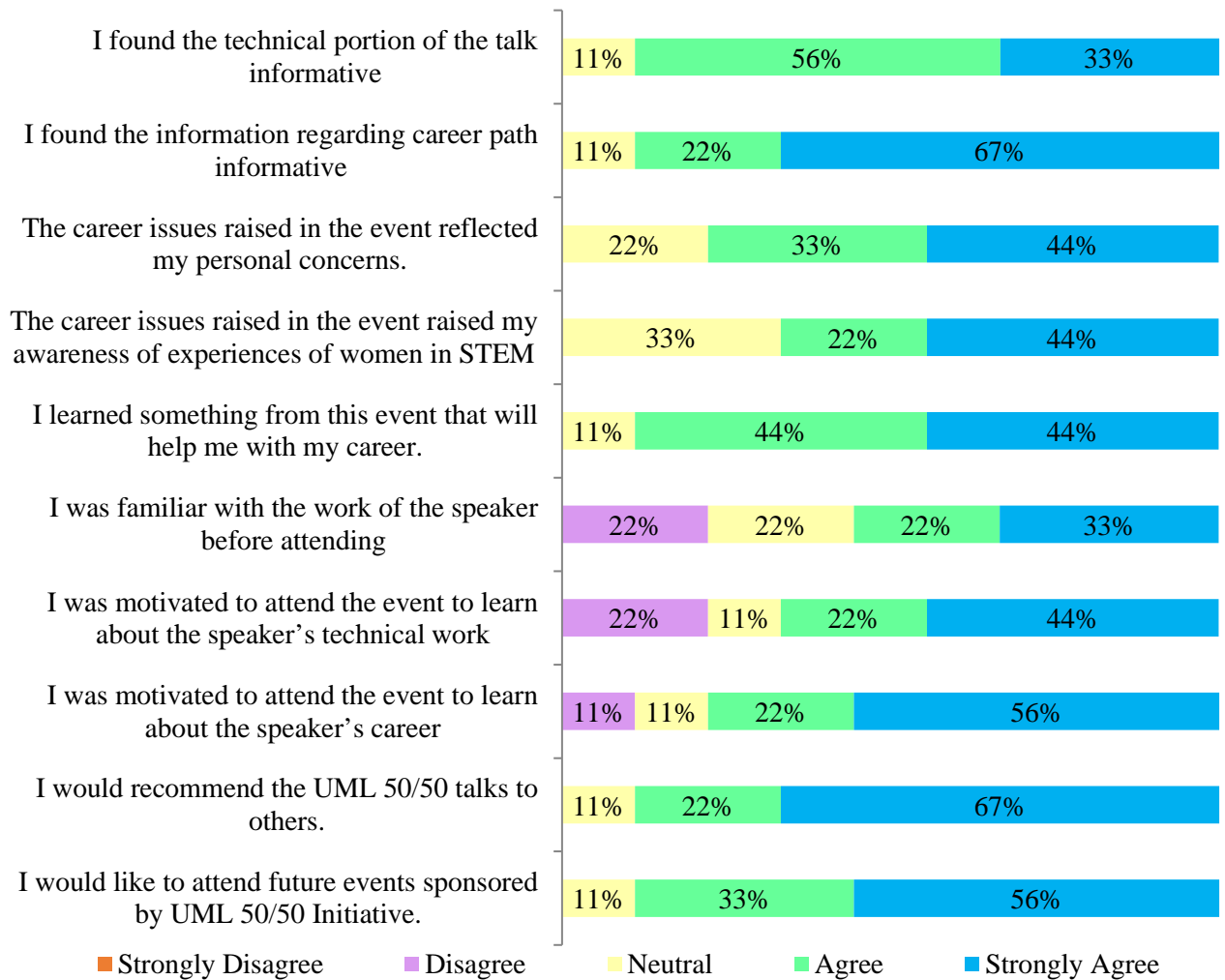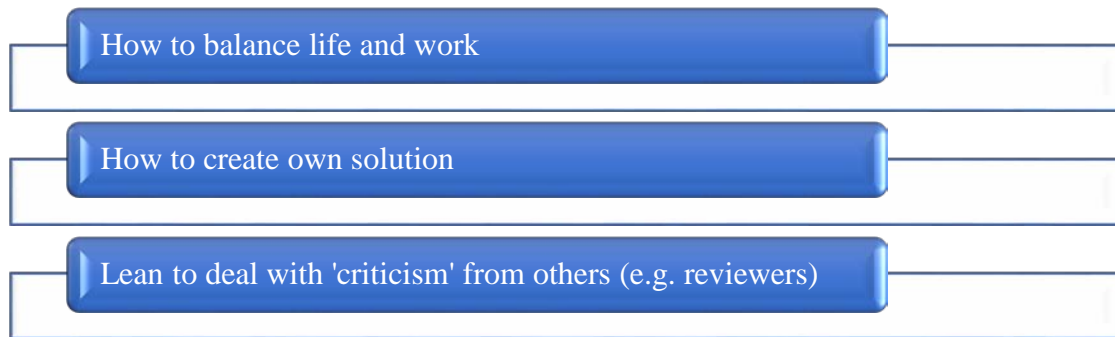■ Strongly Disagree   ■ Disagree   ■ Neutral   ■ Agree   ■ Strongly Agree

Figure 1. Frequency Distribution of the Participants' Perspectives on This Event.

Most Significant Things Participants Learned from the Event That They Will Apply to Their Work Life/Career

Five participants shared their most significant things learned from this event that they will apply to their work life/career.

How to balance life and work

How to create own solution

Lean to deal with 'criticism' from others (e.g. reviewers)

Hopes to Discuss or Address at Future Events

Three participants shared their Hopes to Discuss or Address at Future Events.

Careers of women in STEM

Global warming

75/25 lecture career/technical
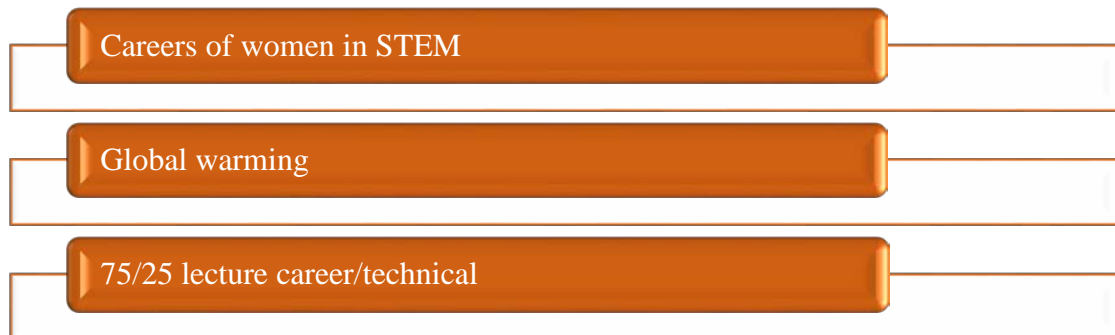
APPENDIX B: BYSTANDER INTERVENTION WORKSHOP SUMMARIES

Initial Workshop I- HSSB

Descriptive Statistics (Means and Standard Deviations) and Frequency Distribution for following ten items (Total N= 6)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N	Mean	S.D.
A. I am more knowledgeable about bias and its impact in general	0	0	0	1	3	4	4.75	.500
B. I can better recognize bias when it occurs in the workplace	0	0	1	3	0	4	3.75	.500
C. I am more knowledgeable about how to intervene when I witness bias among colleagues	0	0	0	1	3	4	4.75	.500
D. I am more willing to intervene when I witness subtle bias	0	0	1	3	0	4	3.75	.500
E. I feel more confident in using one or more strategies to intervene when a situation involving bias occurs	0	0	1	2	1	4	4.00	.817
F. I am hopeful that efforts such as this session will reduce bias at UML	0	0	0	4	0	4	4.00	.000
G. I would like to be involved in other university initiatives about bias	0	0	0	1	3	4	4.75	.500
H. I am likely to discuss the material covered today with my colleagues	0	0	1	1	2	4	4.25	.957
I. I would like to learn more about dealing with subtle bias	0	0	0	1	3	4	4.75	.500

(1= Strongly Disagree, 5= Strongly Agree)

Descriptive Statistics (Means and Standard Deviations) and Frequency Distribution for following five items (lecture portion) (Total N=6)

	1-3	4-7	N	Mean	SD
Informative	3	0	3	1.33	.577
Useful	3	0	3	1.67	1.15
Effective	3	0	3	1.67	1.15
Engaging	3	0	3	1.67	1.15
Too long	1	2	3	3.33	2.08

(1= Informative, 7= Uninformative; 1= Useful, 7=Not useful; 1= Effective, 7= Ineffective; 1=Engaging, 7= Boring; 1= Tool long, 7= Too short)

Descriptive Statistics (Means and Standard Deviations) and Frequency Distribution for following five items (interactive portion) (Total N=6)

	1-3	4-7	N	Mean	SD
Informative	3	0	3	1.67	1.15
Effective	3	0	3	2.00	.000
Useful	3	0	3	1.33	.577
Engaging	3	0	3	1.33	.577
Too long	1	2	3	4.33	2.08

(1= Informative, 7= Uninformative; 1= Useful, 7=Not useful; 1= Effective, 7= Ineffective; 1=Engaging, 7= Boring; 1= Tool long, 7= Too short)

Evaluation of the Initial Workshop II- CWW

Descriptive Statistics (Means and Standard Deviations) and Frequency Distribution for following ten questions (Total N= 9)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N	Mean	SD
A. I am more knowledgeable about bias and its impact in general	0	0	1	4	2	6	4.3	.516
B. I can better recognize bias when it occurs in the workplace	0	0	2	2	2	6	4.0	.894
C. I am more knowledgeable about how to intervene when I witness bias among colleagues	0	0	1	5	0	6	3.8	.408
D. I am more willing to intervene when I witness subtle bias	0	0	3	3	0	6	3.5	.548
E. I feel more confident in using one or more strategies to intervene when a situation involving bias occurs	0	0	1	5	0	6	3.8	.408
F. I am hopeful that efforts such as this session will reduce bias at UML	0	0	1	0	5	6	4.7	.817
G. I would like to attend future university events about bias	0	0	0	1	5	6	4.8	.408
H. I am likely to discuss the material covered today with my colleagues	0	0		4	2	6	4.3	.516
I. I would like to learn more about dealing with subtle bias	0	0	0	2	4	6	4.7	.516
J. I would like to recommend this workshop to my colleagues.	0	0	0	0	6	6	5.0	.000

(1= Strongly Disagree, 7= Strongly Agree)

Descriptive Statistics (Means and Standard Deviations) and Frequency Distribution for

	1-3	4-6	7-9	N	Mean	SD
Informative	0	1	5	6	7.5	.837
Effective	0	0	6	6	8.0	.894
Useful	0	1	5	6	8.0	1.264
Engaging	0	0	6	6	8.0	.894
Too long	1	3	2	6	5.0	1.90

following five items (lecture portion) (Total N=9)

	1-3	4-6	7-9	N	Mean	SD
Informative	0	1	5	6	8.3	1.211
Effective	0	1	5		8.2	1.169
Useful	0	0	6	6	8.5	.837
Engaging	0	0	6	6	8.8	.408
Too long	1	4	0	6	3.8	2.137

(1=Uninformative, 9= Informative; 1= Not useful, 9= Useful; 1= Ineffective, 9= Effective; 1=Boring, 9= Engaging; 1= Tool short, 9= Too long)

Descriptive Statistics (Means and Standard Deviation) and Frequency Distribution for following five items (interactive portion) (Total N= 9)

(1=Uninformative, 9= Informative; 1= Not useful, 9= Useful; 1= Ineffective, 9= Effective; 1=Boring, 9= Engaging; 1= Tool short, 9= Too long)

Initial Workshop III at O'Leary Library

Descriptive Statistics (Means and Standard Deviations) and Frequency Distribution for following ten questions (Total N= 6)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N	Mean	SD
A. I am more knowledgeable about bias and its impact in general	0	0	1	3	1	5	4.0	.707
B. I can better recognize bias when it occurs in the workplace	0	0	1	3	1	5	4.0	.707
C. I am more knowledgeable about how to intervene when I witness bias among colleagues	0	0	0	2	3	5	4.6	.548
D. I am more willing to intervene when I witness subtle bias	0	0	1	1	3	5	4.4	.894
E. I feel more confident in using one or more strategies to intervene when a situation involving bias occurs	0	0	1	3	1	5	4.0	.707
F. I am hopeful that efforts such as this session will reduce bias at UML	0	0	0	2	3	5	4.6	.548

	1-3	4-6	7-9	N	Mean	SD
Informative	0	2	3	5	7.8	1.64
Effective	0	1	4	5	8.0	1.41
Useful	0	1	4	5	7.8	1.79
Engaging	0	2	3	5	7.4	2.30
Too long	1	3	1	5	4.6	2.1
G. I would like to attend future university events about bias	0	0	0	2	3	5	4.6	.548
H. I am likely to discuss the material covered today with my colleagues	0	0	2	1	2	5	4.0	1.00
I. I would like to learn more about dealing with subtle bias	0	0	1	3	1	5	4.0	.707
J. I would like to recommend this workshop to my colleagues.	0	0	1	1	3	5	4.4	.894

(1= Strongly Disagree, 5= Strongly Agree)

Descriptive Statistics (Means and Standard Deviations) and Frequency Distribution for following five items (lecture portion) (Total N=6)

(1=Uninformative, 9= Informative; 1= Not useful, 9= Useful; 1= Ineffective, 9= Effective; 1=Boring, 9= Engaging; 1= Tool short, 9= Too long)

Descriptive Statistics (Means and Standard Deviations) and Frequency Distribution for following five items (interactive portion) (Total N=6)

(1=Uninformative, 9= Informative; 1= Not useful, 9= Useful; 1= Ineffective, 9= Effective; 1=Boring, 9= Engaging; 1= Tool short, 9= Too long)

	1-3	4-6	7-9	N	Mean	SD
Informative	0	1	4	5	8.0	1.73
Effective	0	1	4	5	8.2	1.30
Useful	0	1	4	5	8.0	1.73
Engaging	0	0	5	5	8.6	.548
Too long	2	3	0	5	3.2	1.63

Qualitative Feedback from 3 Initial Workshops, Spring 2018

	Workshop 1	Workshop 2	Workshop 3
Date	3/30/2018	5/17/2018	6/29/2018
Number of participants	6	9	6

Qualitative data

1. <u>What are the two most significant things you learned from this workshop event?</u>

    Workshop 1 –

    1) Many possible reactions and possible to intervene.

    2) Practice using strategies

    3) That these examples are from actual experiences.

    Workshop 2 –

    1) Role of HR beyond Title IX

    2) Impact on the target is key.

    3) Level of accuracy at UML

    4) Strong identification of some attendees to scenarios.

    5) Information about real-life scenarios that have occurred on campus

    6) Different strategies to intervene as a bystander (x2)

    7) Loved how the role play gives voice (literal voice) to the action and responding to a bystander.

    8) To speak to how an event makes me feel as a bystander.

    9) Love the video of mosquito analogy to chronic exposure to microaggression.

    Workshop 3 –

    1) The range of strategies – one size doesn't fit all. (x3)

    2) Implications for intervention.

    3) The value of practicing in advance.

    4) Recognition that we all have the responsibility to speak up.

    5) The mosquito analogy – better than "death by 1,000 cuts"

2. <u>What aspect of the workshop did you find to be the most useful?</u>

    Workshop 1 - Group activity

    Workshop 2 –

    1) I enjoyed the combination of didactic presentation with small group activities

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   2) Role play; discussion among colleagues (x2)

   3) Interactive

   4) Discussion was rich.

Workshop 3 –

   1) Interactive portion of workshop

   2) Role play in small groups – being "George" (x3)

   3) Skit

3. <u>What aspect of the workshop did you find to be the least useful?</u>

Workshop 1 - Watching short scenarios (difficult to understand and fast to digest)

Workshop 2 –

   1) Lecture felt a bit long and triggering

   2) Not putting context of institution and power sooner to part and how assessing the situation viewed and responded to.

Workshop 3 - Hard to create a workshop when folks are starting in different places.

4. <u>Do you have any suggestions for making a training such as this more relevant to UML context?</u>

Workshop 1 – Setup prior will probably help for audience

Workshop 2 – Share more data; give more from survey

Workshop 3 –

   1) More specific examples, not exactly skits but dialogue and general discussion. Everything (almost) seems to be gray.

   2) Give real-life specific examples (changing names)

   3) Make it mandatory

5. <u>What types of follow up training or other activities would be useful to help reinforce what you learner today?</u>

Workshop 1 – N/A

Workshop 2 –

   1) More/follow-up workshops or meetings

   2) Luncheon discussion.

   3) Action plan for other scholars

Workshop 3 –

1) Provide list of other bystanders (x2)

2) Share effective pivots/distractive phases that could be used to intervene (note cards)

3) Open discussion group among people who've attended this training – once a semester on each campus? (i.e., how are things going)

4) Not sure, but feel that university needs basic training sessions for employees

6. Any other comments or observations you would like to share about this event?

Workshop 1 – N/A

Workshop 2 –

1) Great effort on this important topic

2) Very informative.

Workshop 3 -

1) Awesome! Do more!

2) Timing of workshop in summer was good.