Accomplishments

* What are the major goals of the project?

The major goal of the project is to develop the Subtle Gender Bias Index (SGBI). To date, no measure exists to assess subtle gender biases within the academic setting. The current study extends on the field’s understanding of subtle gender bias by producing a subtle gender biases index that is relevant to women within academic settings (or within STEM fields if data suggests it is more specific). The project is split into 2 major steps: (1) in-depth interviews and (2) Index development. Currently, we are approximately 50% complete with Step 1 of the project. More specifically, we are conducting qualitative analyses of our first set of one-on-one interviews collected from female STEM faculty. The interviews allow women to report experiences they have had throughout their career. After interviews are transcribed and thoroughly de-identified, researchers on our team are identifying the subtle biases that women report in their interviews.

* What was accomplished under these goals (you must provide information for at least one of the 4 categories below)?

Major Activities: During this reporting period, the research team has analyzed approximately 80% of the first of two sets of interviews, begun creating initial items for the measure being developed, and begun recruitment for the second set of interviews.

For interview set 1, we used stratified random sampling. AHEC, our target interviewing organization, randomly selected one person from each academic strata (school x assistant/associate/full) for each campus. At the time, Lowell did not have non-tenured women faculty available for the study, and Worcester did not have a female full professor available. This resulted in 9 interviews.

For interview set 2, we are using a snowball sampling strategy to sample strategically characteristics that
emerged in interview set 1 as important predictors of bias. For example, we are strategically sampling for women of color in this set because the first set of random sampling resulted in a racially all White sample. Interviewees also mentioned the importance of interviewing faculty of color at their institution.

Analyses have involved a team of 4 coders and a research assistant. All members of the analysis team were trained to code for subtle biases and micro-inequities. After reaching an acceptable level of inter-rater reliability on the first 2 interviews, coders analyzed interviews in sets of 2. Team members coded the transcribed interviews for the purpose of extracting biases and micro-inequities for index item development. For example, participants report biases in multiple areas of their life and at many different developmental stages in their career from early childhood through to the present day.

Additionally, our third party interview team has begun recruiting new participants from both the UMass Lowell and Worcester campuses.

Specific Objectives: The objective during this reporting period has been to conduct qualitative analyses with our first set of interviews and begin recruiting for our second set of interviews. From the interviews, an initial list of survey items is being developed to begin our Year 2 objectives, which are to refine the survey items and to test them.

Significant Results: Team coders have identified specific biases that constitute hostile as well as supportive department cultures and interpersonal relationships (e.g., mentors, advisors, supervisors, colleagues). Perhaps not surprisingly, interviewees also report a number of blatant biases or sexist experiences within their careers both in years past as well as currently.

Key outcomes or Other achievements: Our team of coders include researchers from different subdisciplines of psychology (i.e., community, health, clinical) and work in different environments. UMass Lowell is a traditional research university and UMass Worcester is a medical school. This unique collaboration has allowed the emergence of interesting and important discrepancies in language and interpretation of interview data and codes. This approach and composition allows the items developed from the interviews to be nuanced and will likely be a better fit for both the psychological literature as well as future participants.

* What opportunities for training and professional development has the project provided?

Our Interview Analysis Team has received training on one type of qualitative data analysis Grounded Theory Analysis and NVivo, qualitative analysis software. Our research assistant has received training on qualitative data analysis, development in understanding subtle gender biases as a field of study, and general research activities.

* How have the results been disseminated to communities of interest?

A poster was presented at the UMass Lowell faculty research symposium sharing information about the grant project and building discussion around biases that exist for women in the academy. Informally, associates at the Center for Women and Work where the research project is being housed have also heard about preliminary findings.

* What do you plan to do during the next reporting period to accomplish the goals?

In the next reporting period, we plan to complete analysis of pilot and newly collected interviews, generate a list of possible items for the measure to begin Step 2 of the project, index development.

Products

Journals
Nothing to report.

**Books**
Nothing to report.

**Book Chapters**
Nothing to report.

**Thesis/Dissertations**
Nothing to report.

**Conference Papers and Presentations**
Nothing to report.

**Other Publications**
Nothing to report.

**Technologies or Techniques**
Nothing to report.

**Patents**
Nothing to report.

**Inventions**
Nothing to report.

**Licenses**
Nothing to report.

**Websites**

<table>
<thead>
<tr>
<th>Title</th>
<th>URL</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UMass Lowell ADVANCE Website</td>
<td><a href="https://www.uml.edu/Research/ADVANCE/default.aspx">https://www.uml.edu/Research/ADVANCE/default.aspx</a></td>
<td>This site serves as the project website. It provides information for potential study participants and others who are interested in learning more about the project.</td>
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**Other Products**
Nothing to report.

**Participants**

**Research Experience for Undergraduates (REU) funding**

**What individuals have worked on the project?**

<table>
<thead>
<tr>
<th>Name</th>
<th>Most Senior Project Role</th>
<th>Nearest Person Month Worked</th>
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</thead>
<tbody>
<tr>
<td>Ivy Ho</td>
<td>Co PD/PI</td>
<td>2</td>
</tr>
<tr>
<td>Nellie Tran</td>
<td>PD/PI</td>
<td>2</td>
</tr>
<tr>
<td>Meg Bond</td>
<td>Co PD/PI</td>
<td>1</td>
</tr>
<tr>
<td>Paula Rayman</td>
<td>Co PD/PI</td>
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What other organizations have been involved as partners?

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
</tr>
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<tbody>
<tr>
<td>Central Massachusetts Area Health Education Center</td>
<td>Worcester, MA</td>
</tr>
<tr>
<td>University of Massachusetts Worcester</td>
<td>Worcester, MA</td>
</tr>
</tbody>
</table>

Have other collaborators or contacts been involved? N

Impacts

What is the impact on the development of the principal discipline(s) of the project?

Subtle biases has long been known to cause women and other minorities to under perform to a greater extent than more overt blatant biases (i.e., sexism). However, no index has been created that allows researchers and organizations to assess the extent to which these biases exist within a setting or for individual people. The development of the Subtle Gender Biases Index will allow researchers and organizations to finally assess these settings. This will ultimately facilitate more effective prevention and intervention programming.

What is the impact on other disciplines?

The research project stems primarily from work within psychology to assist in better understanding the experiences of women within the STEM disciplines. However, the index itself will allow researchers and departments across disciplines to assess their own settings.

What is the impact on the development of human resources?

Nothing to report.

What is the impact on physical resources that form infrastructure?

Nothing to report.

What is the impact on institutional resources that form infrastructure?

Nothing to report.

What is the impact on information resources that form infrastructure?

Nothing to report.

What is the impact on technology transfer?

Once the index is developed and fully validated, it will be published and made available for public use.

What is the impact on society beyond science and technology?

Researchers on the team value research and programming that improves the lives of women and other marginalized
Therefore, we see the development of the Subtle Gender Biases Index as a first step. The methodology used in this project lends itself to use and development of other indexes across disciplines and work environments. In fact, we anticipate continuing to improve and test the index in real world settings after the project is complete.

**Changes**

**Changes in approach and reason for change**
Nothing to report.

**Actual or Anticipated problems or delays and actions or plans to resolve them**
Nothing to report.

**Changes that have a significant impact on expenditures**
Nothing to report.

**Significant changes in use or care of human subjects**
Nothing to report.

**Significant changes in use or care of vertebrate animals**
Nothing to report.

**Significant changes in use or care of biohazards**
Nothing to report.

**Special Requirements**

**Responses to any special reporting requirements specified in the award terms and conditions, as well as any award specific reporting requirements.**
Nothing to report.