



Graduate Women "Lean In": Building Community and Broadening Understanding

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Abstract

The College of Engineering at Michigan State University developed a facilitated book discussion series that used the best-selling book “Lean In” by Sheryl Sandberg¹ as a framework for promoting professional development and community building for graduate students. Building on the themes of the book, this program sought to promote reflection among participants about the choices and actions that women can take to position themselves for success—and encouraged exploration of students’ personal vision of success. Results of pre- and post-tests, along with observational data gathered by the facilitators, indicated that students were concerned largely by two topics: concerns about how to balance their career ambition and their goals for a fulfilling personal life (whatever that may be), and how to have positive and beneficial relationship with mentors or advisors. Students also shared their challenges and frustration with advisors and mentors, and provided brainstorming and support to help negotiate these relationships. The assessment data were hand-coded to identify common themes² and the results include some striking perspectives of graduate women in STEM (Science, Technology, Engineering, Math) and suggestions of ways to better support members of this group through co-curricular programs.

Introduction

In 2013, the College of Engineering at Michigan State University (MSU) was awarded a mini-grant to support a co-curricular program for graduate students that used the best-selling book, *Lean In: Women, Work and the Will to Lead*¹ as a framework for promoting professional development and community building. “Lean In” encourages both men and women to examine the opportunities and challenges that women experience in various contexts, and reflects many of the concerns and experiences of women in STEM (Science, Technology, Engineering, Math). While this book encourages reflection about the choices and actions that women can take to position themselves for success, the focus is not on climbing the “corporate ladder.” Instead, Sandberg recognizes that women assume many important roles throughout society, and that individual definitions of success vary:

This book makes the case for leaning in, for being ambitious in any pursuit. And while I believe that increasing the number of women in positions of power is a necessary element of true equality, I do not believe that there is one definition of success or happiness. Not all women want careers. Not all women want children. Not all women want both. I would never advocate that we should all have the same objectives. Many people are not interested in acquiring power, not because they lack ambition, but because they are living their lives as they desire. Some of the most important contributions to our world are made by caring for one person at a time. We each have to chart our own unique course and define which goals fit our lives, values, and dreams. (Sandberg 2013, p. 10)

A facilitated book discussion series was developed to explore some of the unique and complex challenges that women face at home, at work, and in the classroom—both in general and in the context of traditionally male-dominated STEM disciplines. While this paper offers an overview of the design and evaluation of this project, the primary focus is on the findings from our largely qualitative dataset and their implications for facilitating supportive communities for graduate women in STEM. A separate paper³ is available for readers who are interested in lessons learned from the design and implementation of this project, including sample assessment instruments and logistical information to assist in replicating or adapting this project for other audiences.

Background and Motivation

This project was developed in the context of broader efforts on the MSU campus, both to advance the success of women in STEM disciplines and to support graduate students' personal and professional success. The program was funded by a grant through MSU's Creating Inclusive Excellence Program,⁴ which reflects the institution's core value of inclusiveness.⁵ During this project, the University was in its final year of a six-year National Science Foundation (NSF) ADVANCE grant, a federal program designed to increase the recruitment and retention of women in faculty science positions.⁶ The "Lean In" project complements MSU's efforts through ADVANCE to providing support—in policy and in programming—to improve the pipeline of women pursuing advanced degrees in STEM fields.⁷ Women are generally the minority gender in STEM fields, and the "Lean In" discussion project helped participants explore how they can add diversity to their fields while also experiencing full inclusion with their colleagues. Finding this balance can be challenging and some participants shared that the isolation they felt in their departments or labs contributed to a sense of inferiority or an "imposter syndrome."⁸ Participating in these discussions helped several students realize that they were not alone in feeling marginalized, and provided resources and support to navigate or negotiate potentially marginalizing experiences. Other students insisted that their gender did not impact them in any negative ways—that "it didn't matter to my colleagues that I'm the only woman" as one participant argued—a notion that students explored and challenged, supported by the arguments articulated in the "Lean In" text.

In addition to promoting inclusivity on campus, MSU is a leader in providing holistic support to graduate students and offers a variety of programs designed to provide mental, physical, and academic support to graduate students in all disciplines.⁹ The MSU College of Engineering has also developed a series of professional development and community-building activities for graduate students and post-doctoral scholars.^{10,11} The "Lean In" project complements these offerings by intentionally targeting a subgroup of students—in this case graduate students in STEM—to create a community with a certain set of shared experiences from which they can all draw to persist and thrive in their programs.¹² For some students, this was the first co-curricular program in which they had participated, and several commented how eager they were to continue to engage with their peers in different ways. Because this program drew a diverse group of participants, they were able to share resources from across campus and the community, ranging from the Graduate Women in Science student group to workshops offered by the MSU Graduate School and even local resources for shopping and entertainment. The first 30 minutes of the two-hour discussion was intentionally designed for informal chatting, and the conversations often centered on sharing resources among students. These types of peer to peer

recommendations can provide powerful messages to students that their peers are invested in their success, and so are the institutions that educate them; for participants who were feeling particularly isolated, such “invitations to participation” in learning communities can be powerful tools for promoting student success.¹³

Program Objectives and Logistics

The overarching goal of this project was to promote reflection about the choices and actions that women can take to position themselves for success, and to encourage participants to explore and articulate their personal visions of success. More specifically, program activities and evaluation criteria were developed with two objectives in mind:

1. Encourage a broader understanding among graduate students of the range of choices, opportunities and challenges that women must navigate, and of the impact of culture, community and context on women, whether in their personal lives, in higher education, or in the workplace.
2. Encourage and support the development of community among graduate students.

The program met six times (approximately bi-weekly) during the spring semester of 2014 in a large conference room in the College of Engineering. Discussion sessions were held during lunch time (12:00 p.m. until 2:00 p.m.) and participants were free to come and to leave during that timeframe based on their individual schedules. Three of the discussions were held on Wednesdays, and three were held on Thursdays; this was a deliberate choice to allow students with standing commitments on certain days to participate in at least some of the discussions. All participants received a copy of the book, “Lean In,; and a blank journal in which they were encouraged to record their observations and experiences. Sessions were widely publicized among University graduate programs in STEM, as well as select programs from the social and behavioral sciences. 60 individuals registered for the project, either by completing a brief online registration form or by coming to one or more of the discussion sessions. 25 participants were “highly engaged” in the project, meaning that they attended 2-6 of the sessions; the remaining 35 students were part of the “low engagement” group that attended 0 or 1 of the in-person sessions. Although the program welcomed all STEM graduate students, the response was overwhelmingly from female students; 2 male students did participate in the final discussion session. Detailed participation statistics, along with information about the curriculum design and evaluation methodology, are provided in a separate paper.³

Given the personal nature of the topic, the facilitator decided—very intentionally—to integrate flexibility into the program structure in order to be as responsive as possible to participants’ needs and requests. Thus, the early discussion sessions had a more structured approach with quiet time for journaling, a brief video presentation drawn from resources provided by leanin.org, and then group discussion. As the discussion series progressed and a degree of group cohesion developed, the participants began talking directly to each other about a variety of topics and expanding beyond their peer or affiliation groups to share problems, ideas, and solutions. At this point, the facilitator intentionally shifted the focus of the curriculum to spend less time helping participants develop specific skills and instead encourage participants to share their goal-

setting and problem-solving strategies. For example, after the group watched a video negotiation, a participant introduced a challenge she was having in her lab and asked for feedback. The group members offered different ways to think about or frame the problem; shared solutions and ideas for negotiating; and helped the original participant understand and articulate her goals and her “ideal” outcome for the problem. Creating space for such discussions was very important as the group developed, so final two sessions minimized the formal curriculum in favor of sharing and group discussion. The six discussion sessions focused on the following topics:

- **Introductions and Understanding Participants’ Goals:** gathered data about participants’ goals and expectations, and shared information about the structure and purpose of the discussion series.
- **The Power of Telling Stories:** introduced the idea that sharing stories is a way to talk about oneself in a way that frames and highlights our strengths, instead of allowing “others” to tell our story.
- **Identifying and Working with Strengths and Weaknesses:** how to focus energy in ways that help grow strengths, and how to shed obligations that only highlight weaknesses.
- **Mentoring:** how to determine whether a mentor is needed; how to find a mentoring relationship; the value some women find in having multiple mentors for different purposes; the difference between sponsorship and mentoring; what role a mentor should play in one’s life.
- **Negotiation:** discussion of effective negotiation strategies and a case study of a failed negotiation; each participant was asked to commit to practice negotiating something (big or small) before the next session.
- **Wrapping Up and Moving Ahead:** additional discussion on both the mentoring and negotiation topics, as well as opportunities for participants to follow up on problems or situations that group members had shared in previous sessions.

Throughout the project, students were concerned largely by two topics: how to balance their career ambition and their goals for a fulfilling personal life (however they may define that), and how to have positive and beneficial relationship with mentors or advisors. Students also shared their challenges and frustration with advisors and mentors, and provided brainstorming and support to help negotiate these relationships.

Evaluation Methodology

Assessment and evaluation were an integral part of this project from its initial conception. The budget for this project proposed, and was funded, with an explicit eye for evaluation and an experienced educator was hired to plan, execute, and evaluate the program. Approval for research with human subjects was obtained from the University’s Institutional Review Board

(IRB), and participants were provided with an informed consent form and had the option to participate in the discussion series with—or without—contributing data to the evaluation process. The guiding principal in designing the project was one common to many student-centered program efforts: ¹⁴ is what we are doing a good use of resources, and does it show a positive influence on our students and on their personal goals for participating in this program? A secondary goal was to develop an evaluation instrument that could be adapted for use in future co-curricular programs for graduate students in the College of Engineering.

The program and assessment plans were designed using the core principles put forth by the American Association for Higher Education: ¹⁵

1. The focus of assessment is not on “assessment for assessment’s sake,” but, rather, on exploring what students are doing and how they are developing in a manner producing evidence that can lead to decisions to improve learning.
2. Learning and development are recognized as dynamic processes in which learning needs to be purposefully mediated and not just expected.
3. The learning outcomes are clearly and succinctly stated.
4. The program design is implemented in such a way that the outcomes should be met if participants engage in the program as program designers intend.
5. Because inquiry is ongoing, assessment—being nothing more than inquiry placed into a manageable framework—is an ongoing, organized process.
6. Assessment design processes and conversations for improving student learning and development are collaborative, involving people and resources across departments and divisions.
7. Students, parents, faculty, student affairs professionals, and community partners assess student learning and development that they really care about.
8. Programs that are assessed align with larger institutional learning outcomes or strategic initiatives.
9. Evidence of student learning and development is shared in a manner that is transparent and understandable to those outside the profession.

A strength of this project is that it started with an idea, and then the goals, curriculum, and evaluation efforts emerged in tandem. The curriculum used the “Lean In” text as a unifying framework, but maintained flexibility to follow students’ shared interests and conversations in a manner that fostered community. Given the flexible structure of the curriculum and the relatively fluid nature of the discussion, the evaluation effort focused heavily on qualitative data. This choice was informed by Creswell,¹⁶ and is appropriate in the context of this project for a number of reasons:

1. Qualitative data collection permits participants to share as much, or as little, about their experience as they choose, using their own language.
2. In this brand-new program it would have been difficult to develop a quantitative instrument, such as a survey, that would accurately predict the most important topics of conversation, and doing so would possibly limit the data collected. Instead, gathering qualitative data permits a more user-driven experience.

3. While it is possible to quantitatively measure many aspects of this largely subjective experience, forcing participants to scale their experience in a quantitative measure would yield less compelling data. For example, the qualitative information participants' shared about the impact of meeting new colleagues and expanding their social network as part of this project was far more interesting and illuminating than a quantitative measure of satisfaction in this area ("On a scale of one to ten, how satisfied were you with the expansion of your social network?").
4. By asking intentionally open-ended questions, our qualitative assessment methods created opportunities for individuals who prefer to share feedback or ideas in writing instead of in conversation with the group.

Gathering and evaluating qualitative feedback throughout the discussion series also allowed the facilitator to adjust the curriculum in response to students' needs and feedback. For example, the qualitative feedback from the first two sessions indicated that students found more value in having conversations, learning new skills, and sharing ideas with the group than in journaling individually. Therefore, the curriculum for the remaining sessions was adjusted to focus less on journaling and more on those learning activities that were student-articulated priorities.

The learning outcomes were communicated by the facilitator at the start of each discussion session, and the program was designed in such a way that students could gain value from participating in just one session, as well as in several or all sessions. The overarching program goals that were previously outlined—to build community and to help students explore their personal and career goals—informed the specific learning outcomes for each session. Each session was designed to balance the goals of student participants and the goals for the program planners. Fortunately, there was a great degree of overlap: all involved recognized that a primary motivation would be to expand networks, meet new people, and create a community of graduate students in STEM. But we also recognized that creating community is only a starting point, and that the real value of the program was going to be in developing new skills, knowledge, and attitudes among participants that would complement a growing support system.

Our assessment strategy was fairly straightforward: a basic "pre- and post-test" survey administered at the start and end of students' participation in the discussion series, and an open-ended, qualitative feedback form distributed at the end of each discussion session. (Copies of all assessment instruments, along with a detailed discussion of their development, are available separately.³) For participants who attended several—or even better, all—sessions, individual session feedback offered a formative assessment of their experience in the program: they could tie together different sessions, offer suggestions for next time, explain more about ongoing concerns in their experience. For others, attendance was limited to one session, and as such, they shared with us in "one shot" their views on the program. The challenge, then, was to gather as much feedback as possible at different points along the way so we could gather as complete a picture as possible about impacts on individual participants, despite the program having a fluctuating roster of participants. After compiling the assessment data from each of the sessions, as well as the pre- and post-test questionnaires, responses were hand-coded to identify common themes,² which are described below.

Finding 1: Students' Motivations and Goals for Participating

In the pre-experience survey, respondents were asked about their motivation for participating in this program. The most common responses to the checklist of reasons included interest in reading the book (83%) or to “think purposefully about goal setting.” Less common motivators were expanding one’s network (39%), free food (57%), or being invited or encouraged by a peer (43%). Yet the qualitative responses, both on the pre-program survey and from observations of discussion in the first session, suggest a deeper motivation for participating: **many participants feel isolated in their work.** One participant shared that she was there “to find some friends,” since she was the only woman in her work group and missed the opportunity to socialize with other women. Other participants indicated that having a structured program gave them “‘permission’ to leave the lab” or provided a chance to “take some time in my day to get out of my science bubble.”

43% of participants indicated that they engaged in the program primarily because of an interest in co-curricular offerings, and these data together show the value of this type of program, which was designed to bring students together in formal ways. While many departments and the MSU Graduate School offer social opportunities (such as coffee hours, or pizza nights), such events are primarily—and often explicitly—social, and the implied lack of structure can deter some students. During our group discussions, it became clear that **many students felt a certain reluctance to “leave their labs”** without a pressing reason. However, participants felt that a formal program like the “Lean In” discussion series, which was supported and encouraged by the University (and had a registration process and advertising flyers) was a formal-enough justification for them to leave the lab and engage in co-curricular conversations. Thus, for the participants in this project, the presence of a structured and facilitated program offered certain advantages over less formal activities that are primarily focused around social activities.

Further, the pre-program assessment also yielded generalized concerns about succeeding as a woman in science. It seems, based on their written and verbalized goals, that many in the room were aware that they were likely to encounter (or continue to encounter) professional challenges related to their gender, and they saw this program as a chance to better understand and interrupt the phenomenon, as well as to learn strategies to cope with challenges they may face in the future. As one participant wrote in her pre-program assessment, “I expect to gain energy, motivation, and inspiration from hearing this sort of dialogue and taking time to think about myself...I want to be satisfied by who I am and what I can do for myself...I often find myself hoping that someone will give me a word of encouragement, advice, or (at times) thanks...but I would like to be able to give that to myself to meet my own needs.” The most common concern or question expressed on pre-experience surveys was: how can successful women achieve work/life balance and have success in both family and career? Other common concerns expressed by participants on the pre-program surveys included: overcoming feelings of “inadequacy” or the imposter syndrome;⁸ how to speak up when silenced, interrupted, or ignored; and how to negotiate for what participants need to be successful.

Finding 2: Students Value Structured Conversations with Each Other

By a significant margin, students articulated that the discussions they had with other students

were something they sought and which motivated their participation, kept them engaged, and provided the greatest source of new learning and new connections. This was listed as the primary motivation for participation in the program, cited by 19 of 37 students. Further, in the qualitative section, students indicated that they expected a large degree of conversation, discussion, and interaction with others, to both engage in “open discussion and thought into the topics brought up in this book as well as general topics about women in science careers...and to be able to share my experience with others in and outside the program.” The feedback from sessions that featured more discussion elicited the most positive satisfaction comments. In response to “how did this session serve your needs?” participants shared feedback such as “It was good to hear other women’s experiences,” “The big group discussion was awesome!” or “I benefit a lot from hearing other women’s experiences.”

Finding 3: Continuation of Conversation

Structuring this program around the “Lean In” text provided a common framework for conversations, which often continued across several discussion meetings. This was an intentional design decision in creating the program, in order to facilitate ongoing, in-depth conversations and community building among participants. In sessions three through six, it became clear via observation and written feedback that students truly valued the ability to share their particular problems and brainstorm solutions, and then follow up in subsequent meetings: What was the resolution? What was the response to the resolution? How did other students approach similar problems in a different way?

For example, one student shared the experience of finding an internship for the summer, and the other women in the program were able to become invested in this process. The group helped her develop a strategy to pursue a position for which she was not a “perfect fit;” identify criteria to decide between two great—but widely different—offers; and negotiate with the employer that most interested her. This was not a narcissistic exercise for a particularly extroverted student; rather, it provided a peer “case study” to apply the information and suggestions from the “Lean In” book, grapple with how internships work in different fields, how to weigh offers and consider the implications of choosing one over the other, and how the experience related to others who were also going through the process of finding internships.

Such “stories” united the group and helped create a community of support and problem solving, and also encouraged engagement. One student joked, “I almost didn’t come today because I have so much to do, but then I remembered “Lori’s” [not her real name] internship, and I had to see how it all worked out. I’m so glad I decided not to skip it today. The discussion was great.” One international student lamented, however, that the discussion was useful but that she was a bit frustrated because her job prospects involving a level of complications with regard to visas.

Students commented, both via observation and written feedback, that they appreciated this cohesion and valued hearing others’ stories, sharing their own, and helping with problem-solving. Participants wrote that they participated in part because of this exchange: “I expect to discuss my experiences as a woman in science and also hear perspectives of others.” And the value of storytelling and sharing is put succinctly by one participant, who wrote “I really like hearing stories and problems from others because they relate to me more than they know.”

Finding 4: Expand a Network of Women in Science

As planners predicted, students were eager to expand their network of peers. The opening session needs assessment indicated that 21 of 37 of students indicated “meet new people” as a primary motivation to participation. This was echoed in the qualitative section, where students clarified a desire to “meet new people.” As one participant poignantly shared, when asked what she sought as a result from participation, that “I would like to meet and learn from other women—graduate school has been lonely so far.” Another student identified as her primary goal, “making friends (there are literally no women in my research group)”. While for some participants a desire to “meet people in other fields” was a motivation, for others they were particularly interested in “meet other women in sciences.” This is a slight, but significant, distinction that separates a program like this—targeted at women in science—from larger University programs involving students from a broader pool of experiences and backgrounds.

The value of hearing from women with similar experiences came through in the evaluations for several sessions. For example, one woman wrote “it was great to talk to other women in science/technology and hear their stories,” or gaining “peace of mind from talking with others who have similar situations.”

Finding 5: Family and Partner Concerns

The pre-experience surveys indicated that participants were significantly interested in exploring the challenges of work-life balance, specifically how/whether high-achieving female students will be able to achieve the kind of professional and family success they seek in the future. Given the importance and prevalence of this topic, it was interwoven throughout the discussion series rather than devoting a single session to this concern. Several of the participants were student parents and the two staff facilitators were also working, professional mothers; overall, this provided a rich opportunity for discussion about goals and values related to partners, family, and child-rearing strategies. The role of family, of partners, and work/life balance was a theme throughout the book, and at each discussion session one or more students raised concerns about their current or future partner and support for their career ambitions, or current or future family concerns.

The group was quite diverse, including many students who were currently single and not parents, but there were a number of students who are already partnered and/or parenting. These varying viewpoints were very helpful in all conversations about the roles of families, partners, and children in all of our discussions, but were perhaps most useful when people asked pointed questions about strategies for “making it work.” In these moments, the varied strategies used by women in the room presented a diverse set of approaches and illustrated that for every family, solutions vary and that many possibilities exist to support women in their career pursuits.

One student, who is also a mother, was eager to point out that she was happy to have her children in childcare, “because there are people who are much better at it—more educated, more training!—than I am.” Other mothers in the room echoed this idea, acknowledging that while they love their children, they did not necessarily feel that their children were harmed by high-quality childcare. This sentiment was seemingly appreciated by women in the room who do not

have children yet, but hope to one day, who said “this is not something that you usually hear women discussing, that they don’t necessarily like [taking care of] young children. And it’s good to know that achieving a lot in your early career can actually make it easier, later, to have children.”

“Future” families were not the only ways in which family became an important part of the program. Several participants reflected on the ways in which their own families of origin impacted their professional goals. One woman, “Anna,” described being both inspired and challenged by her own high-achieving and professional sister, who was more in some ways more successful than Anna’s equally educated brother-in-law, and the criticism levied against their parenting placed by other members of the family. “My mom is always on her about how much she makes my brother-in-law do (he is a doctor) with my nephew.” From Anna’s perspective, both her sister and brother-in-law were equally engaged in parenting, and she articulated a frustration about how much grief her mother caused her sister because of such “non-traditional” roles.

For another student, “Stephanie,” the book proved to be a powerful tool in her conversations with her parents. Though she had a close relationship with both her mother and father, her father was more of a “mentor. My mom stayed at home, and she has always been supportive, but she doesn’t really have much she can tell me about my career.” Meanwhile, Stephanie’s father had historically offered her a lot of career guidance. She shared the following: “I asked my dad to read this book [Lean In]. He gives me a lot of good advice—my mom does too, about different things, but she never really worked so I talk to my dad a lot. He read it, and he told me that he never realized how much stuff women have to deal with at work.” Thus, this program helped at least one student use the text as a way to broaden conversations with a trusted parent/advisor, and helped a father better understand how different his professional experience is from his daughter’s.

In contrast to the familial support described by Stephanie, some participants described ways in which their families were not supportive of their career ambitions. In a discussion about the “Lean In” chapter on picking the right partner one participant shared her experience: “I was supposed to marry this man, a doctor. My parents were very happy and I would have had a very good life, but he thought I would just be home, and raise the children, and that is not what I wanted. I did not want that!” She later moved to the United States to continue her studies, and is now raising two children with a man who “knows my work is very important to me.”

Many participants shared their frustration at the challenge of finding romantic partners who are supportive and not threatened by their ambition and accomplishments. For some women of color in the group, this can pose unique challenges: “My family is starting to act like I should just accept anyone, since I’m getting older and the longer I work on my education, the more they just want me to pick anyone.” Another woman of color from the same immigrant community echoed this pressure, and throughout the program several participants shared powerful examples of how their families and communities shaped their thinking about their careers and ambition.

Another woman, “Sheila,” shared a powerful message about the value of this text and this group in offering her the support for her professional ambition that may be lacking in her family. The

group was discussing the aspects of “Lean In” with which they disagreed, or found irrelevant to their experiences, when Sheila spoke up: “I just need to make a comment. This book is really, really important because even if we don’t agree with everything she says, this is the first time I have heard someone talk about how it’s okay to be ambitious in our careers. This is NOT the message I get in my family and in my community, and it has been really important for me to know that it’s okay that I want an education and career, and it’s okay that I want an important job. I don’t hear this from my community, and it was so nice to read this and have someone tell me that it’s a good goal to have.”

Noteworthy, however, is that at least three different participants indicated a frustration with the focus on partners, family, and balancing them. These women indicated that they would like support and resources for advancing their careers and finding success in ways that do not involve domestic matters, and articulated a frustration in the focus on such topics.

Finding 6: Mentoring and Guidance Concerns

We spent a significant amount of time over two sessions discussing mentoring. In “Lean In,” Sandburg challenges the notion that women should specifically seek out a mentor; instead, she advises letting mentoring relationships develop more organically.¹ This idea caused some consternation within our discussion group, in part because many of these high-achieving women have long been advised to be proactive in seeking out the support they need and were frustrated by any suggestion that they “sit back” until something emerged. Still others expressed frustration with the challenges of conflating the roles of mentor and advisor. One woman (a graduate research assistant) explained that she saw her academic/research adviser as her mentor, even though he resisted the title: “He heard me call him my mentor, and was all ‘I am not your mentor, I’m your advisor!’ What is the difference?!?” Others described their relationship with their academic/research adviser as not one they particularly wanted as a mentoring relationship, either because they did not get along with their adviser or because they did not trust their adviser to keep students’ best interests in mind.

Across the various sessions, the group discussed many aspects of mentoring, including the need for and value of having multiple mentors, and the need to be strategic (and sometimes delicate) in managing and developing a mentoring relationship with your academic/research adviser and/or your boss. For example, one woman shared frustration that her boss [research adviser] would not let her defend her dissertation until her experiment had been accepted by (another) top-tier journal. This student had completed several significant publications after several years at the University, was running out of funding, and had potentially complicated visa concerns, all of which prompted her to consider “just moving back to my home country and forget[ting] about it.” The group offered suggestions and guidance, but also recognized the limits of the mentee’s power in this circumstance: any effort that could be interpreted as undermining the adviser was risky, and seeking a “second opinion” from another mentor-like figure may not be helpful—and could lead to unanticipated repercussions if the two mentors conferred notes.

For students of color, or international students, there was a great deal of support for and conversation about the utility of multiple mentors:¹⁷ one who offers support and advice related to one’s field of study; another who can offer insight and support from the perspective of shared

culture. Despite spending two sessions reviewing different approaches to mentoring and mentee relationships, how to foster a successful relationship, including sponsorship versus mentoring,¹⁸ students still indicated feeling adrift, and anxious about feeling isolated and without support. This topic merits further exploration, both within a discipline-specific context and in cross-disciplinary groups such as this one.

Concluding Discussion and Future Work

Co-curricular programs like this are important to graduate students, and many of our participants found the formal structure of this discussion series a valid “excuse” to leave the lab and take time to network with other students. In both the pre- and post-experience surveys, however, networking remained relatively low in students’ rankings of the most valuable aspects of the program. Instead, participants identified the most useful parts of the program as: reading and discussing the book (80%); thinking and talking purposefully about goals (80%); and engaging in co-curricular opportunities for graduate students (80%).

The greatest value in this program was that it satisfied two needs among graduate trainees: (1) providing intentional, structured programs for professional and social/emotional development; and (2) providing discussion/networking activities that are flexible enough to respond to participants’ pressing concerns and allow them to solicit discussion, feedback, and advice. The “Lean In” project was tied to a very relatable and accessible text that speaks to issues relevant to many graduate students, which provided enough structure to engage participants in discussion, while allowing enough flexibility for participants to adapt the conversation as needed. This discussion series also found a good balance between structured development and social engagement: one participant wrote that “the ‘Lean In’ lunches gave purpose to taking a break besides having a nice meal...and I think the structured discussions really helped.”

One important lesson learned is that it is key for participants to understand that they are welcome, even if they haven’t “done the reading.” One participant indicated that she missed some sessions because “I thought I needed to read the book, which I didn’t feel I had the time for.” She came to the last two sessions (without reading in advance) and realized that she could gain a lot from participation, despite unfamiliarity with the “Lean In” text.

One participant suggested a year-long book club using career/STEM literature, and another student echoed this as a program idea that would be of value to her. This echoes a true strength of the “Lean In” project: bringing together women from various aspects of STEM to share their thoughts. Some participants were the only woman in their lab, where others worked in larger, more diverse labs and had ready access to other female scientists and engineers. Hearing about these differences and identifying overlapping experiences was key for participants to be able to normalize their experiences with a broader peer group of women in similar phases of work, study and life. The group shared enough foundational experiences within graduate education and academia to create cohesion in the group, but also benefitted from the wide variation in experiences across disciplines.

Since the conclusion of the “Lean In” project, nearly a year ago, a group of graduate women in science and engineering has continued to meet for lunch on a monthly basis. Many of the

participants from the “Lean In” project have continued to attend, while others have graduated and new students have joined the group. The lunch meetings are shorter (about an hour) and vary days to accommodate more students’ schedules. Yet the sense of community remains: each lunch starts with a “member update” where participants introduce themselves to the group and share a success and/or a challenge they have had in the previous month. These updates are often illuminating, and frequently students find themselves struggling with similar academic issues—research deadlines, qualifying examinations, writing journal articles and attending conferences—at similar times. Other concerns arise on a less predictable timetable, as participants share their struggles with relationships, health (mental, physical and financial), and some of the unique challenges of feeling “stuck” in graduate school as they watch family and friends make progress toward life goals outside the University.

Moving forward, we are continuing to explore ways to provide holistic support for all graduate students, while being mindful of the unique needs of graduate women. We have experimented with various formats for graduate student gatherings, and have found that keeping a “formal” structure to the monthly lunches—invited speakers or specific topics for discussion—seems to elicit more participation than a less formal setting. Yet, the program needs to remain flexible enough to accommodate students’ conversations and community building.

Acknowledgements

Funding for this project was provided by the Michigan State University Office for Inclusion and Intercultural Initiatives through the Creating Inclusive Excellence grant program. Additional support was provided by the MSU College of Engineering. The authors also gratefully acknowledge the efforts of Theresa Gonzalez, who served as the graduate program assistant and handled meeting logistics.

References

1. Sandberg S. *Lean in: women, work, and the will to lead*. 2013.
2. Gibbs GR. *Analysing Qualitative Data*. SAGE; 2008. 178 p.
3. Luchini-Colbry, Katy, Rojewski J. “Leaning In” by Leaving the Lab: Building Graduate Community through Facilitated Book Discussions. Proceedings of the Annual Conference of the American Society for Engineering Education. Seattle, WA; 2015.
4. (CIEG) Creating Inclusive Excellence Grants [Internet]. Available from: <http://www.inclusion.msu.edu/FundingOpportunities/CIEG.html>
5. Simon LAK. President’s Statement on Core Values [Internet]. Available from: <http://president.msu.edu/statements/core-values/index.html>
6. National Science Foundation. ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers (ADVANCE) [Internet]. [cited 2015 Jan 28]. Available from: http://nsf.gov/funding/pgm_summ.jsp?pims_id=5383
7. Blickenstaff JC. Women and science careers: leaky pipeline or gender filter? *Gend Educ*. 2005;17(4):369–86.
8. Clance PR, Imes SA. The impostor syndrome in high achieving women: Dynamics and therapeutic interventions. *Psychother Theory Res Pract*. 1978;14:241–7.
9. Graduate Life & Wellness | MSU Career Success [Internet]. [cited 2014 Jan 3]. Available from: <http://careersuccess.egr.msu.edu/wellness>
10. Christlieb S, Luchini-Colbry K. Developing a Graduate Research Symposium: A Case Study in Engineering. Proceedings of the North Central Section Conference of the American Society for Engineering Education.

- 2012.
11. Luchini-Colbry K, Gonzalez T. Finish my Research! Find a Job! Feel Better! Seminars to Support Engineering Graduate Students' Professional and Personal Goals. Proceedings of the 2014 ASEE National Conference. Indianapolis, IN; 2014.
 12. Tinto V. Leaving College: Rethinking the Causes and Cures of Student Attrition. [Internet]. University of Chicago Press; 1987 [cited 2015 Jan 29]. Available from: <http://eric.ed.gov/?id=ED283416>
 13. Zhao C-M, Kuh GD. Adding Value: Learning Communities and Student Engagement. *Res High Educ*. 2004 Mar;45(2):115–38.
 14. Kuh G, Others. Involving Colleges: Successful Approaches to Fostering Student Learning and Development outside the Classroom. [First Edition]. [Internet]. Jossey-Bass Publishers; 1991 [cited 2015 Jan 29]. Available from: <http://eric.ed.gov/?id=ED329177>
 15. Astin AW. Principles of good practice for assessing student learning. American Association for Higher Education; 1992.
 16. Creswell JW. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. SAGE Publications; 2013. 305 p.
 17. De Janasz SC, Sullivan SE. Multiple mentoring in academe: Developing the professorial network. *J Vocat Behav*. 2004 Apr;64(2):263–83.
 18. Earnest Friday, Shawnta S. Friday, Anna L. Green. A reconceptualization of mentoring and sponsoring. *Manag Decis*. 2004 Jun 1;42(5):628–44.