Gender Bias and Venture Funding:
Discussing Bias in the Entrepreneurship Classroom

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Abstract

We report on the findings from an in-class experiment that represents a learning innovation which can enable classroom-based conversations about bias in the domain of entrepreneurship. More specifically, the present learning innovation explores gender bias in venture funding with regards to entrepreneurship. In an introduction to entrepreneurship class, we randomly assigned students to one of three experimental conditions—students evaluated an executive summary for a venture either written by a woman, or a man, or one in which the gender was neutral (i.e., the control group). Students acted as if they were considering an investment and reported whether, for example, the executive summary was well written as well as how much equity they would want in the venture as a potential investor. Overall, these results provide evidence consistent with the inference that the students sampled in this study did not use gender as a decision-making heuristic when evaluating entrepreneurial opportunities. We discuss the results of our experiment and describe (a) how to replicate this activity, (b) how to discuss this in the classroom, and (c) how to adapt this activity to explore other types of bias (e.g., race, ethnicity, weight-based, etc.).

**Keywords**: bias; gender; venture; funding; entrepreneurship
Topics

Relevant entrepreneurship topic areas include the following:

- Gender bias and entrepreneurship
- Inequality in venture financing
- Opportunity evaluation

Provided teaching materials:

- Appendix A. “Female” Condition - Executive Summary for Excellerate Energy LLC
- Appendix B. “Male” Condition - Executive Summary for Excellerate Energy LLC
- Appendix C. “Gender neutral” Condition - Executive Summary for Excellerate Energy LLC
- Appendix D. Business Pitch Evaluation Form
- Appendix E. Classroom Exercise Debrief with Additional Resources and References
- Table 2. Questions to ask to collect data from students about the executive summary

Learning objectives for students:

- Gain experience in opportunity evaluation
- Understand what gender bias is and how it may relate to entrepreneurship
- Begin to identify potential decision-making patterns that lead to bias (with regards to gender)
- Gain a practical understanding of experimental designs and how they can reveal implicit biases

Overview: Opportunity Evaluation and Bias

The evaluation of entrepreneurial opportunities involves a subjective judgment on the part of one person (or a group) of another person (or a startup team) (Pollack, Rutherford, & Nagy, 2012). This judgment is based on both the idea as well as the person presenting the idea, as well as the team and organization overall (Kaplan, Sensoy, & Strömberg, 2009; MacMillan, Siegel, & Narasimha, 1985; Shane & Venkataraman, 2000)—and, it is in this interaction between entrepreneurs and other stakeholders, specifically investors, where bias can often occur.

Within this process of opportunity evaluation, of one party making a judgment about another, there are multiple reasons why bias is thought to exist. For example, it is suggested that
bias may exist due to issues related to different goals between investors and entrepreneurs (Collewaert, 2012), perceived similarity/dissimilarity (Murnieks, Haynie, Wiltbank, & Harting, 2011), and even geographic location (Cumming & Dai, 2010). We focus, in the present learning innovation, on the bias introduced by the perception of gender.

Although there are many suggested explanations for the extant disparity with regards to gender, there is ample evidence that perceptions of gender (e.g., Gupta, Goktan, & Gunay, 2014; Gupta, Turban, & Bhave, 2008), may affect women’s performance and bias investors’ decisions about entrepreneurial opportunities (e.g., Balachandra, Briggs, Eddleston, & Brush, 2017; Bigelow, Lundmark, McLean, & Wuebker, 2014; Johnson, Stevenson, & Letwin, 2018; Malmström, Voitkane, Johansson, & Wincent, 2018). Research in the area of gender bias with respect to opportunity evaluation highlights limited differences between the business ventures of men and women (Eddleston, Ladge, Mitteness, & Balachandra, 2016)), rather research has suggested that funding disparities can be attributed to cognitive, perhaps unconscious bias, that investors have when funding new ventures. Supporting this, research suggests that when there is a lack of information on a new venture’s business model, investors tend to rely on bias with respect to the individual entrepreneur. For women, this reliance on bias in the absence of information can be disadvantageous to securing venture funding (Eddleston et al., 2016). Furthermore, fewer than 5% of Angel investors are women, worldwide (Harrison & Mason, 2007). For a review of the premise that gender perceptions affect important outcomes in entrepreneurship, Gupta, Turban, Wasti and Sikdar (2009) provide important insights.

To attempt to address the myriad reasons for this gender disparity (e.g., bias, discrimination, different goals between men vs. women, access to information and resources), we have witnessed a proliferation of research and programs focused on increasing the participation
and success of women in entrepreneurship (Amatucci & Sohl, 2004; Brush, Kelley, & Duffy, 2012; Foss, Henry, Ahl, & Mikalsen, 2018; Jennings, & Brush, 2013). And, although there has been an increase in the quantity and quality of academic research related to gender bias in the domain of entrepreneurship and venture funding, this disparity related to women in entrepreneurship needs to be discussed in the classroom. Put succinctly, as researchers we know that this issue exists—but, much less has been done about discussing this issue in the college classroom.

The entrepreneurship classroom is an ideal place to have discussions about bias—and, past studies involving learning innovations have found that faculty norms do influence student’s attitudes at the college level (Milem, 1994). Thus, we—as faculty members—can have an impact on the future of the field of entrepreneurship by having open conversations about bias. Accordingly, in order to introduce the topic of bias in entrepreneurship into a classroom setting, we designed the following activity.

**The Activity**

We present a learning innovation that offers a way to bring the conversation about bias in entrepreneurship into the classroom. In the following sections, we discuss the activity we did, and then report on the findings. Additionally, we explain (a) how to replicate this activity, (b) what went well and how to discuss this in the classroom, and (c) how to adapt this activity to explore other types of bias (e.g., race, ethnicity, weight-based, etc.).

We conducted this activity in an introduction to entrepreneurship class during the Spring 2018 semester, at a large public university in the southeastern United States. The class was composed of 312 students (36% female). The vast majority of students were majoring in business administration (n = 252). Students not associated with the business school included
design majors \((n = 2)\), physical sciences \((n = 10)\), engineering and computer science \((n = 30)\), and social science majors \((n = 18)\). Students differed across class levels: first year \((n = 13)\), sophomore \((n = 123)\), junior \((n = 133)\), seniors \((n = 43)\). These students had an average age of approximately 21 years old.

The experiment we conducted for this activity followed the same logic of prior studies in human resources that used resumes that were identical in every way except for the applicant’s name \(\text{(e.g., Bosak & Sczesny, 2011)}\). Recent work in the entrepreneurship literature has investigated the relationship of gender bias with regards to initial public offering (IPO) evaluations in a similar fashion \(\text{(Bigelow et al., 2014)}\).

We use the term ‘experiment’ here to highlight that the activity presented in this paper is a true experiment where one single variable is being manipulated across multiple independent (i.e., randomly assigned) groups while all other variables are held constant \(\text{(e.g., see Cook, Campbell, & Shadish, 2002)}\). For the activity, we manipulated gender using executive summaries that highlighted a business opportunity. The executive summaries contained the exact same language and only the gender specific nouns and pronouns were changed \(\text{(i.e., see Appendix A, Appendix B, and Appendix C)}\), and this represented the independent variable of interest: gender.

To test the effect of the independent variable on the dependent variable \(\text{(see Table 2)}\), the class roster was downloaded and all 312 students were randomly assigned to one of three groups. Random assignment was conducted using a random number generator in excel \(\text{(i.e., the} = \text{RAND()} \text{function)}\).\(^1\) Random assignment has three purposes in an experiment: (1) to distribute idiosyncratic characteristics of respondents \(\text{(e.g., sex, age, major, etc.) to not bias the results, (2) to permit the computation of unbiased standard errors such that the independent variables effect}

\(^1\) One can also use the ‘randomizr’ package in R to complete the random assignment task \(\text{(https://cran.r-project.org/package=randomizr)}\).
is not confounded with other variables, and (3) to help ensure that the error effects are statistically independent (Kirk, 2007).

Once we randomly assigned individuals to one of the three experimental conditions—i.e., the “male,” “female,” and “neutral” conditions—during class, they were provided with the corresponding executive summary—one page, single spaced—and given 15 minutes to read it. The executive summary of a new venture was one from the energy industry (note: the energy industry was chosen as we surmised that very few students would have practical knowledge of such a venture). The executive summary contained all necessary information for a typical investor to make an informed decision such as market size, market characteristics, founder specific information, industry specific information, current financial status of the company, and future strategic orientation (i.e., vision for growth). Overall, the business content of each executive summary across groups was identical. There were 7 specific pronouns referring to either a man or a woman throughout Group 1 and Group 2, respectively.

- Group 1 ($n = 102$) was assigned an executive summary with a male name, Larry McIntosh, and where all pronouns were changed to male specific pronouns (e.g., He, Him).
- Group 2 ($n = 105$) was provided with an executive summary with a female name, Lynne McIntosh, and all female pronouns (e.g., She, Her).
- Group 3 ($n = 105$) had no specific name or gendered pronouns and instead referred to “the president” or the “founder” of the venture.

After the 15 minutes allotted to read the executive summary, each student was emailed an online survey matched to their experimental condition that aimed to capture perceptions as to the quality of the investment opportunity. Here, students were told to act as if they were considering
an investment. Then, we calculated responses to explore the presence of a mental heuristic triggered by gender in each experimental condition. Due to random assignment to condition, any individual differences or other biases (or self-perceptions) should have been mitigated (via this random assignment).

**Activity Pre-Brief**

We recommend that before conducting the in class experiment that the instructor of the course provide a lecture on how opportunity evaluation is generally conducted in an entrepreneurial setting (e.g., angel or venture capital investment). There are multiple references that may be used for this pre-discussion on venture opportunity evaluation (e.g., see Huang & Pearce, 2015; Kawasaki, 2004). We suggest using Kawasaki (2004) for which we provide a one-page opportunity evaluation checklist (see Appendix D) for the instructor to pass out to students as a reference before beginning their own evaluation of a business opportunity with respect to the in class activity. Here, we recommend the instructor spend approximately 10-15 minutes reviewing the components of evaluating an entrepreneurial venture before the students begin the in class survey across the three different gender categories. Of course, we expect that this one-page checklist will supplement already existing lecture material on opportunity evaluation from the primary instructor’s course syllabus. Thus, we recommend this activity be completed once the instructor has covered opportunity evaluation in the course.

**Replicating This Activity**

Here are our thoughts about conducting this activity (see Table 1 for suggested steps and timing). We suggest that this activity and debrief will take about 75 minutes to run. It can be done in a shorter amount of time (if needed)—or, it could be spread out over multiple class periods to delve more deeply into these topics. Once the time and date of the class are chosen, we
suggest identifying a generic or non-descriptive title for the activity like “Venture Evaluation” to communicate with the class so as not to disclose the goal of the activity. Our particular goal of the activity was to generate a discussion of bias, but other examples of possible goals could include: (a) demonstrating bias (e.g., show that bias exists in decisions), and/or (b) explaining how to avoid bias (e.g., tell students to ignore gender and see what happens).

Overall, splitting the class into groups without arousing suspicion was essential to what we wanted to accomplish. Accordingly, if this is the goal, the division into groups needs to be done in such a way that it is not obvious that there are three different versions of executive summaries being distributed. Cross-pollination, and having students discuss the summaries with each other before the activity is completed, would ruin the surprise—so, it is important that the goal of the activity (in our case, to discuss bias) is not disclosed until after the activity is completed. In our specific situation, we addressed this by saying that individual results would be confidential and that each person needed to work alone.²

Activity Debrief

After the activity is complete, the debrief and discussion is crucial to creating a successful and engaging learning outcome. We recommend having set discussion questions to display (via PowerPoint or other) in class. Here, we suggest displaying the questions (e.g., what did you notice about this executive summary?) in class and have the students pair up and discuss (i.e., “pair” and then “share”). Having the students share in small groups and then report back to the class seemed (for us) to be an effective way to generate discussion. We recommend being cognizant of the fact that, when discussing bias, it is important to be sensitive to students’

² It is possible to conduct an activity such as this, but disclose the purpose in advance. In our case, this would have affected our analyses. Each individual instructor should choose an approach that fits the learning outcomes for the class.
personal issues that might arise. For example, it is likely that multiple students in class have experienced bias. We recommend creating special office hours (online and/or in-person) whereby individuals who want to discuss things further can do so in a supportive environment (i.e., some students feel comfortable sharing in a large group, and some do not).  

Furthermore, regarding the debrief, to aim focus on debriefing the role of gender bias in opportunity evaluation, we have provided a one page sheet (Appendix E) highlighting (a) the definition of unconscious bias, (b) general facts about bias, (c) evidence from prior research on how gender influences opportunity evaluation, and (d) a list of group discussion questions. Here, we recommend that the instructor distribute this one pager on gender bias as a means to wrap up the activity and extend this activity through the last question, which asks, “Thinking about this experiment regarding gender bias in venture funding and opportunity evaluation, do you think there are any other important biases that may affect the amount of investment a new venture receives (e.g., school pedigree, weight, attractiveness, etc.)?” Related, to receive a detailed PowerPoint slide deck containing options for debriefing this activity, please send an email to the corresponding author to obtain a free copy of the slides.

**Measures Used as the Study Outcomes**

For the purposes of this activity, the predictor variable was the condition to which each student was assigned (i.e., male, female, neutral). For the outcomes, we included 15 items—see Table 2 for a complete list—related to students’ possible perceptions of the executive summary and the business opportunity. These 15 items were designed based on extant literature related to business pitches and success outcomes (e.g., Nagy, Pollack, Rutherford, & Lohrke, 2012;

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3 All of the materials for this activity, the R code, data, and the variable codebook will be made freely available to anyone who wishes to replicate this activity in their classroom (please email the corresponding author for access).
Pollack et al., 2012; van Werven, Bouwmeester, & Cornelissen, 2015). In the analyses, for control variables, we included age (M = 21.33), class rank, race, sex, major, level of business education, past work experience in entrepreneurship. Education was measured by class rank or year in college; i.e., 1 = first year, 2 = sophomore, 3 = junior, and 4 = senior. Race was coded as 1 = white, 2 = black or African American, 3 = American Indian or Alaska native, 4 = Asian, 5 = Native Hawaiian or Pacific Islander, or 6 = other. Sex was a binary measure of 1 = male and 2 = female. Business education was coded as the number of courses taken relative to starting a business. Past work experience in an entrepreneurship was measured as the number of startups worked for in the past. Table 2 provides means and standard deviations for all study variables.

Exploratory Factor Analysis (EFA) was used to determine the dimensionality of our focal dependent variables. The EFA was conducted using an oblique rotation with principal axis factoring (Fabrigar & Wegener, 2011). Multiple methods were used to assess the dimensionality of our initial set of dependent variables; i.e., cumulative variance extracted, a scree plot, and a parallel analysis. Results from the EFA analysis suggested the following three dimensions: (1) opportunity, (2) risk, and (3) investment. An index was created for each dimension based on the results of the EFA (see Table 3).

Insert Tables 1, 2, and 3 about here

Between Group Results from the Experiment

Mean differences between the three randomly assigned groups (i.e., male condition, female condition, and neutral condition) were tested using a multivariate regression procedure.

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4 Some instructors will certainly want to expand on the dichotomous nature of sex—e.g., male, female, male-to-female transgender, female-to-male transgender, other. This presents another avenue for discussion in class, especially since one of the experimental conditions was gender neutral.
Two dummy coded variables were created for the male only and female only groups, where the neutral group was coded as a zero vector. To test the means between each of the three groups, two dummy variables are required. In our case, the neutral group, while not coded as a separate dummy variable, is represented by the intercept of the regression equation; i.e., the value of the dependent variable when all variables are variables are equal to zero (see Table 4). Thus, including the dummy coded variable for the male and female groups in the regressions models provided a direct test of the mean difference relative to the intercept, which reflected the control group’s mean value for each respective dependent variable. To complete our group comparisons, instead of recoding a new set of dummy variables to test the mean difference between the male and female groups, we used the ‘linearHypothesis’ command in the ‘car’ package in the R programming language (Fox & Weisberg, 2011; R Core Team, 2016) to test the mean differences between the male and female means for each respective dependent variable. This test is provided in Table 4 as “Means test.” In sum, the analytical technique applied in the current study is equivalent to the F-test provided in an analysis of variance (ANOVA) (e.g., see Fox, 2016).

Results from the regression models indicated that no gender bias (i.e., no mean differences) was present across all dependent variables (i.e., Opportunity, Risk, or Investment). See Table 4 for detailed results. Of note, we also tested differences across each 15 dependent variables (Table 2) as a means to generate more discussion about these results in the classroom. For example, future educators who use this approach may find differences in only a few dependent variables. Interestingly, the only difference in our study was regarding question 7 (see Table 2), which read, “This business is novel,” and showed that the male group mean (M = 4.42) was significantly lower than the control group mean (M = 4.55, b = -0.36, t = -2.09, p = .038)
indicating that words such as “the president” or “founder” resulted in higher perceptions of novelty in the business executive summary.

Overall, these results provide evidence consistent with the inference that the students sampled in this study did not use gender as a decision-making heuristic when evaluating entrepreneurial opportunities. These results provide a contrast to currently published work on similar topics (e.g., see Bigelow et al., 2014) and suggest that future inquiry regarding the topic of gender in entrepreneurship is needed.

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Insert Table 4 about here
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**Within Group Results from the Experiment**

To further analyze the mean differences respective to the dependent variables listed in Table 2, we also looked at the results respective to each experimental condition, which were (a) the male specific executive summary ($n = 105$), (b) the female executive summary ($n = 102$), and (c) the gender neutral executive summary ($n = 105$). This resulted in conducting 45 regression analyses (i.e., fifteen regressions for each of the three groups). Only two regressions out of the 45 total explained a significant portion of variance. Interestingly, both of the models with significant results were within the female specific executive summary group. Here, results indicated that women (i.e., identified by self-reported biological sex) tended to be more likely to recommend that their friends ($b = .40, t = 2.19, p = .031; R^2 = .17, F(7) = 2.83, p = .010$) and family ($b = .52, t = 2.51, p = .014; R^2 = .18, F(7) = 2.98, p = .007$) invest in the business opportunity written with female nouns and pronouns (Table 5). These within-group results did not exist within the male specific or gender-neutral executive summaries. Thus, for this particular sample of respondents, results suggest that women are more likely to recommend that their friends and family invest in
women-owned startups, which aligns well with existing research highlighting that women entrepreneurs tend to seek funding more often from female investors (Becker-Blease & Sohl, 2007). However, this analysis highlights a new and unique finding that women recommend that others invest in women-owned new ventures. This finding may have important implications for the crowd-funded endeavors of women entrepreneurs, and could provide an interesting conversation topic in a classroom about the practical impact of women recommending women-owned businesses.

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Insert Table 5 about here
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Theoretical Context and Debriefing in the Classroom

From a theoretical perspective, this activity has roots in both the decision-making (Huang & Pearce, 2015; Shepherd, Williams, & Patzelt, 2015; Zacharakis & Shepherd, 2001) and bias literatures (Busenitz & Barney, 1997; De Martino, Kumaran, Seymour, & Dolan, 2006). What is important to convey to students is that decision-making is not always rational (Simon, 1979). And, cognitive biases due to myriad influences can affect how an idea, as well as a person, is perceived.

For our particular activity, we found non-significant differences between each randomly assigned, experimental, group for each of the 3 outcomes we included. In short, when we showed these numbers (mainly the means across conditions, Table 2) to the students we were able to share the news that—among this sample of students—the manipulation of gender as a predictor variable was not an influential factor in students’ perceptions of the potential value (i.e., opportunity) of the executive summary of a new venture.
In undertaking this activity, the main goal was to develop a short activity that we could do in one class period that would provide an opportunity to discuss the topic of bias with regards to gender and entrepreneurship. Accordingly, the non-significant findings with regards to the outcomes did not affect our main goals—and, the significance (or lack thereof) was not meant to be a focal point of the activity. Had we found evidence consistent with the inference that gender was a significant predictor of students’ ratings, that would have produced one trajectory of debrief. More specifically, had we found that gender influenced perceptions of outcomes, we would have debriefed the activity in class from a developmental framework (i.e., how we identify potential for bias and mitigate it in the future). Rather, as we found that gender did not influence students’ perceptions of outcomes, we debriefed the activity in terms of an explanatory framework—that is, we discussed why the bias does exist currently and how it can be mitigated moving forward.

An additional learning outcome of the current activity is that it provided some students with their first understanding of how experiments can be used to answer important questions one might have in practical settings or later in their careers. Accordingly, after the discussion of gender in entrepreneurship ended, all students were briefly introduced to the concept of experimental design and how this methodology can help address important questions. The difference between random sampling and random assignment was also discussed, in addition to how the mean differences were statistically tested using multivariate multiple regression analyses. At the end of the discussion regarding statistical methodology, the students were provided with multiple routes to continue their learning of these topics; e.g., online courses, free e-books on statistical programming languages (e.g., R programming and Python programming),
and academic papers highlighting similar topics relating to gender differences in entrepreneurship (e.g., Bigelow et al., 2014).

What Worked Well And What We Would Change?

Perhaps not surprisingly, students greatly enjoyed this activity. It provided an avenue to include an experiential component in one class, and it provided the context for a great discussion. In a large class, such as the one in which we conducted this activity, it is not always simple to have a class discussion. However, this activity proved an exceptional opportunity to get students talking with each other.

In future iterations of this activity, we are considering making a few alterations related to (1) making it more “realistic”, and (2) changing the written format of the “pitch.” One thing we are considering is having students rate more than one venture—and, we might allocate a certain amount of “money” that students can spend. For example, we may provide a fictional cash account to each student and have them, in the online survey where they rate the executive summaries, give each venture a monetary award. This would more closely model what an investor might experience. Second, we believe it would be valuable to videotape a pitch for the purpose of collecting data on perceptions of displayed emotion with respect to the business pitch (i.e., positive and negative affect perceptions). Here, this would allow a nuanced and more advanced experimental design to help introduce students to how perceived emotion and gender differences may interact to influence venture investment (i.e., watching a pitch vs. reading one). Related, we may also run this activity with three versions of audio pitches—one spoken with a female voice, one spoken with a male voice, and one where the spoken voice is gender neutral.

Should the opportunity arise, interesting opportunities for future iterations of this could change factors such as the “team” for Excellerate Energy (e.g., more team members, etc.). As
with all investment opportunities to consider, there are multiple variables to weigh—so far, in this work, we simply looked at an idea and gender. But, future iterations can change other aspects to highlight nuances such as projected revenue (high vs. low), growth potential (fast vs. slow), etc. One additional aspect to consider are the individual differences among students—for example, future iterations could measure gender perceptions (pre-existing) and use that to further the conversation about bias. In our particular case, random assignment to experimental condition mitigated the impact of systematic individual differences, but none-the-less, individual difference may exist.

**Applying This Activity to Other Contexts**

This activity provides an effective path to consider biases of other types, besides gender. For example, a growing body of research identifies race as a potential for bias (e.g., Koellinger & Minniti, 2006; Ogbolu & Singh, 2013). Other iterations of this activity could easily be adapted to explore how a person’s “ethnic” name (rather than gender) could affect students’ perceptions (e.g., Bertrand & Mullainathan, 2004; Purkiss, Perrewé, Gillespie, Mayes, & Ferris, 2006). Attractiveness as well as weight are also known predictors of investors’ perceptions (e.g., Baron, Markman, & Bollinger, 2006; Brooks, Huang, Kearney, & Murray, 2014; Pollack, Burnette, & Hoyt, 2015). Other iterations of this activity could easily be adapted, and revised, to vary the weight of a person pitching (e.g., include a picture of a slim vs. overweight person at the top of the written executive summary) or their attractiveness (e.g., include a picture of an attractive vs. less attractive person at the top of the written executive summary). For example, Muntean (2016) provides a similar exercise that utilizes a role playing exercise to engage students in a discussion of how cognitive errors can affect venture financing decisions.
For a more experienced group, perhaps at the graduate level, the activity could also be adapted and debriefed to discuss the difference between explicit and implicit bias in occupation titles. For example, the current executive summaries could also be adapted to include verbiage associated with different job qualifications and certifications; e.g., a CPA designation and audit experience. Adding a higher level of complexity to the executive summaries and having students rate the perceived (or anticipated) performance of the venture, but also the job fit based upon differences in their knowledge, skills, and abilities (KSAs) may help advance our understanding of how bias in entrepreneurial role identities occurs with respect to gender. Looking more into implicit and explicit bias and stereotypes is important as Gupta and colleagues (2008; 2009) find evidence that certain job roles are considered more masculine; e.g., Accountant and Engineer.

On a different pedagogical note, the addition of job roles and KSAs to the current experiment may help students develop a deeper understanding of a statistical concept known as moderator variables (Aguinis, Edwards, & Bradley, 2017), and how they occur in an applied management context. In other words, students will be more readily prepared to address questions such as, “how does implicit vs. explicit bias change the relationship between gender and the performance ratings of entrepreneurial ventures?” For graduate students, a robust debrief of the experiment may provide a heightened awareness of when gender bias effects performance ratings or when alternative explanations may exist. Overall, this pedagogy and experimental focus provides students with an applied understanding of bias and also the analytical thinking skills required to recognize such bias.
Last, we note a limitation of our work—that is, these results most directly apply to a U.S.-based sample of students. According to Costa, Terracciano and McCrae (2001) gender differences do present differently across cultures and that is an important consideration for future work. However, their study reported that gender bias was most pronounced in western cultures (e.g., the United States and Europe) where traditional sex roles are minimalized. Here, we recommend that a follow-up discussion, in the classroom, is worthwhile about how an organizational culture that is supportive of diversity can positively affect firm performance (Dwyer, Richard, & Chadwick, 2003). Discussing both geographic and organizational culture will further enhance each student’s understanding of how context plays an important role in understanding gender bias in entrepreneurship and in organizational settings. Overall, though, this activity should be replicated in additional locations that can provide evidence of the generalizability (or lack thereof) for these findings.

Conclusion

It is our hope, that—eventually—with time, effort, and education we can (as a society) get to a place where the perceptions of an entrepreneurial opportunity are made not by the name, gender, or race of an individual (or team) but by the quality of their idea (e.g., Brush, Greene, Balachandra, & Davis, 2018; Kanze, Huang, Conley, & Higgins, 2018). Along this line of thinking, an interesting point to consider is that the Millennial generation may not regard gender as an influential part of their set of decision heuristics, which is a contrast to existing literature on gender bias that suggests women are the target of bias in the evaluation of their venture; i.e., receiving less favorable valuations than men (Bigelow et al., 2014). Here, though, bias towards

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5 This activity could be used with more experienced samples of funders as well, as long as the differences (e.g., students vs. individuals who are well-trained in exploring opportunities for investment) in audience members are taken into account.
gender may play out in other respects (e.g., team dynamics, leadership in entrepreneurial ventures, etc.). Only additional iterations of this activity will reveal the answer here. But, potentially, if the Millennial generation is indeed less biased regarding gender, this may shift the investment landscape of entrepreneurship in 5, 10 or 20 years. Might women start to receive equal access to funding as Millennial’s move up the ranks and control these types of investment decisions? We certainly hope so.
References


Table 1. Steps of the activity, and timing.

<table>
<thead>
<tr>
<th>Step</th>
<th>Activity</th>
<th>Time</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Divide students into 3 groups (pre-divided, before class)</td>
<td>10 minutes</td>
<td>Before Class</td>
</tr>
<tr>
<td>2.</td>
<td>Prepare the 3 executive summaries (with appropriate differences based on the bias to be explored)</td>
<td>30 minutes</td>
<td>Before Class</td>
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<tr>
<td>3.</td>
<td>Open the class by discussing the process by which investors (financiers) evaluate executive summaries from ventures (handout Appendix D to facilitate)</td>
<td>10 minutes</td>
<td>During Class</td>
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<tr>
<td>4.</td>
<td>Distribute (hard copy or online) the 3 executive summaries</td>
<td>5 minutes</td>
<td>During Class</td>
</tr>
<tr>
<td>5.</td>
<td>Distribute online survey for students to complete</td>
<td>15 minutes</td>
<td>During Class</td>
</tr>
<tr>
<td>6.</td>
<td>Ask students to share in small groups what they noticed about the executive summaries. While they discuss, calculate and show means across the groups (calculate regressions if desired and show in another class)</td>
<td>10 minutes</td>
<td>During Class</td>
</tr>
<tr>
<td>7.</td>
<td>Debrief and discuss what students noticed about the executive summaries</td>
<td>10 minutes</td>
<td>During Class</td>
</tr>
<tr>
<td>8.</td>
<td>Ask if anyone noticed the gender (or other salient differences) in the executive summaries</td>
<td>10 minutes</td>
<td>During Class</td>
</tr>
<tr>
<td>9.</td>
<td>Discuss bias and how person perception can affect individual’s ratings and decisions</td>
<td>15 minutes</td>
<td>During Class</td>
</tr>
<tr>
<td>10.</td>
<td>Host office hours to discuss the activity for students who may wish to debrief further</td>
<td>60 minutes</td>
<td>After Class</td>
</tr>
</tbody>
</table>
Table 2. Means and standard deviations across experimental conditions for outcomes (N = 312)

<table>
<thead>
<tr>
<th>Dependent variables: questions</th>
<th>Group 1 (Female) Mean (SD)</th>
<th>Group 2 (Male) Mean (SD)</th>
<th>Group 1 (Neutral) Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. Overall, do you think this business will be successful?</td>
<td>3.52 (0.69)</td>
<td>3.36 (0.68)</td>
<td>3.44 (0.69)</td>
</tr>
<tr>
<td>Q2. Would you invest?</td>
<td>4.85 (1.17)</td>
<td>4.85 (1.16)</td>
<td>4.84 (0.96)</td>
</tr>
<tr>
<td>Q3. Would you advise friends to invest?</td>
<td>4.12 (2.03)</td>
<td>4.30 (2.17)</td>
<td>3.95 (2.24)</td>
</tr>
<tr>
<td>Q4. Would you advise family members to invest?</td>
<td>3.12 (0.86)</td>
<td>2.90 (0.88)</td>
<td>2.90 (1.02)</td>
</tr>
<tr>
<td>Q5. The executive summary is written well.</td>
<td>2.89 (0.80)</td>
<td>2.74 (0.86)</td>
<td>2.70 (1.01)</td>
</tr>
<tr>
<td>Q6. This is a good business opportunity.</td>
<td>2.73 (0.85)</td>
<td>2.66 (0.98)</td>
<td>2.58 (0.98)</td>
</tr>
<tr>
<td>Q7. This business is novel.</td>
<td>4.42 (1.21)</td>
<td>4.42 (1.27)</td>
<td>4.55 (1.23)</td>
</tr>
<tr>
<td>Q8. This business is likely to succeed.</td>
<td>4.97 (1.23)</td>
<td>4.83 (1.18)</td>
<td>4.96 (1.19)</td>
</tr>
<tr>
<td>Q9. Starting this type of business is low risk.</td>
<td>4.32 (1.26)</td>
<td>4.31 (1.27)</td>
<td>4.63 (1.19)</td>
</tr>
<tr>
<td>Q10. The business idea is relatively simple (i.e., not very complex).</td>
<td>4.77 (1.17)</td>
<td>4.50 (1.18)</td>
<td>4.81 (1.04)</td>
</tr>
<tr>
<td>Q11. Anyone could start this business.</td>
<td>2.95 (1.31)</td>
<td>3.08 (1.44)</td>
<td>2.99 (1.38)</td>
</tr>
<tr>
<td>Q12. I envision this business receiving high-profile endorsements in the future.</td>
<td>3.70 (1.37)</td>
<td>3.74 (1.53)</td>
<td>3.56 (1.59)</td>
</tr>
<tr>
<td>Q13. I envision this business receiving favorable press coverage in the future.</td>
<td>2.62 (1.39)</td>
<td>2.71 (1.41)</td>
<td>2.37 (1.32)</td>
</tr>
<tr>
<td>Q14. I envision this business to have a top-management team that will benefit the organization.</td>
<td>4.85 (1.34)</td>
<td>4.85 (1.12)</td>
<td>4.81 (1.37)</td>
</tr>
<tr>
<td>Q15. What is the percent (0 to 100%) of interest (i.e., ownership) in the company would you take if you invested $200,000?</td>
<td>4.83 (1.28)</td>
<td>4.99 (1.10)</td>
<td>5.05 (1.00)</td>
</tr>
</tbody>
</table>

Sample population (n)  
102 105 105

1 Rated on a 1-to-5 scale of likelihood of success.
2 Rated on a 1-to-5 scale of propensity to invest.
3 Rated on a 1-to-7 scale of agreement.
4 Rated on a 1-to-10 scale of amount to invest (to calculate percentages, simply divide mean score by 10).
Table 3. Dimension Reduction Procedure: Exploratory Factor Analysis (EFA)

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Opportunity</th>
<th>Risk</th>
<th>Investment</th>
<th>Social</th>
<th>Writing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall, do you think this business will be successful?</td>
<td>0.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This is a good business opportunity</td>
<td>0.47</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This business is novel</td>
<td>0.38</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This business is likely to succeed (i.e., be profitable)</td>
<td>0.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I envision this business receiving high-profile endorsements in the future.</td>
<td>0.53</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starting this type of business is low risk.</td>
<td>0.52</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The business idea is relatively simple (i.e., not very complex).</td>
<td>0.84</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anyone could start this business...</td>
<td>0.48</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would you invest?</td>
<td>0.54</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would you advise friends to invest?</td>
<td>0.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would you advise family members to invest?</td>
<td>0.96</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I envision this business receiving favorable press coverage in the future.</td>
<td></td>
<td>0.74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I envision this business having a top management team that will benefit the organization.</td>
<td></td>
<td>0.43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The executive summary is well written</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.51</td>
</tr>
<tr>
<td>What is the percent (0 to 100%) of interest (i.e., ownership) in the company would you take if you invested $200,000?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sum of Squared Loadings</td>
<td>2.04</td>
<td>1.30</td>
<td>2.07</td>
<td>0.96</td>
<td>0.49</td>
</tr>
<tr>
<td>Proportion variance explained</td>
<td>0.14</td>
<td>0.09</td>
<td>0.14</td>
<td>0.06</td>
<td>0.03</td>
</tr>
<tr>
<td>Cumulative variance explained</td>
<td>0.28</td>
<td>0.36</td>
<td>0.14</td>
<td>0.43</td>
<td>0.46</td>
</tr>
</tbody>
</table>

Note. Questions are from Table 2 and arranged by factors, loadings < .35 removed for interpretability
**Table 4**

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Opportunity</th>
<th>Risk</th>
<th>Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$b$</td>
<td>$t$</td>
<td>$p$</td>
</tr>
<tr>
<td>(Intercept)</td>
<td>27.07</td>
<td>8.93</td>
<td>0.000</td>
</tr>
<tr>
<td>Male group</td>
<td>-0.52</td>
<td>-0.89</td>
<td>0.377</td>
</tr>
<tr>
<td>Female group</td>
<td>-0.86</td>
<td>-1.46</td>
<td>0.146</td>
</tr>
</tbody>
</table>

*Controls*

<table>
<thead>
<tr>
<th></th>
<th>$b$</th>
<th>$t$</th>
<th>$p$</th>
<th>$b$</th>
<th>$t$</th>
<th>$p$</th>
<th>$b$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.20</td>
<td>-1.33</td>
<td>0.183</td>
<td>0.09</td>
<td>2.37</td>
<td>0.019</td>
<td>-0.02</td>
<td>-0.78</td>
<td>0.438</td>
</tr>
<tr>
<td>Race$^1$</td>
<td>-0.01</td>
<td>-0.07</td>
<td>0.942</td>
<td>0.10</td>
<td>2.33</td>
<td>0.021*</td>
<td>-0.01</td>
<td>-0.33</td>
<td>0.743</td>
</tr>
<tr>
<td>Sex$^1$</td>
<td>-0.33</td>
<td>-0.64</td>
<td>0.521</td>
<td>0.26</td>
<td>-1.99</td>
<td>0.048</td>
<td>-0.04</td>
<td>-0.38</td>
<td>0.705</td>
</tr>
<tr>
<td>Major$^1$</td>
<td>-0.22</td>
<td>-1.08</td>
<td>0.279</td>
<td>0.02</td>
<td>-0.40</td>
<td>0.692</td>
<td>-0.03</td>
<td>-0.81</td>
<td>0.418</td>
</tr>
<tr>
<td>Class rank$^1$</td>
<td>0.40</td>
<td>1.06</td>
<td>0.290</td>
<td>-0.02</td>
<td>-0.24</td>
<td>0.808</td>
<td>-0.03</td>
<td>-0.38</td>
<td>0.701</td>
</tr>
<tr>
<td>E-education$^1$</td>
<td>-0.16</td>
<td>-0.78</td>
<td>0.434</td>
<td>0.05</td>
<td>0.89</td>
<td>0.373</td>
<td>0.09</td>
<td>2.23</td>
<td>0.027*</td>
</tr>
<tr>
<td>E-experience$^1$</td>
<td>-0.22</td>
<td>-0.77</td>
<td>0.440</td>
<td>-0.07</td>
<td>-0.98</td>
<td>0.328</td>
<td>-0.10</td>
<td>-1.90</td>
<td>0.059</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>means test</th>
<th>$F$</th>
<th>df</th>
<th>$p$</th>
<th>$F$</th>
<th>df</th>
<th>$p$</th>
<th>$F$</th>
<th>df</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>male vs. female group</td>
<td>0.33</td>
<td>1.00</td>
<td>0.568</td>
<td>0.29</td>
<td>1.00</td>
<td>0.593</td>
<td>0.84</td>
<td>1.00</td>
<td>0.361</td>
</tr>
<tr>
<td>Model $R^2$</td>
<td>0.02</td>
<td></td>
<td>0.06*</td>
<td></td>
<td></td>
<td>0.04</td>
<td></td>
<td></td>
<td>0.42</td>
</tr>
<tr>
<td>Model $F$-test</td>
<td>0.77</td>
<td></td>
<td>2.09</td>
<td></td>
<td></td>
<td>1.42</td>
<td></td>
<td></td>
<td>0.01</td>
</tr>
<tr>
<td>Model $p$-value</td>
<td>0.646</td>
<td></td>
<td>0.031</td>
<td></td>
<td></td>
<td>0.180</td>
<td></td>
<td></td>
<td>0.00</td>
</tr>
</tbody>
</table>

$N = 312$

Note. Intercept equals the control group (i.e., neutral) mean

Note. Male group = dummy variable coded 1 for male, Female group = dummy variable coded 1 for female

Note. Means test is equivalent to ANOVA post-hoc test using $F$-distribution

$^1$ E-education = entrepreneurship education, E-experience = entrepreneurship experience, Race is coded such that “White” is the referent, Sex is coded as 1 = Male and 2 = Female, Major is coded such that “Business Administration” is the referent, Class rank is coded such that “First Year” is the referent.
### Table 5. Within Group Analysis Results: Female Only Condition

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Q3 (Would you advise friends to invest?)</th>
<th>Q4 (Would you advise family members to invest?)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>t</td>
</tr>
<tr>
<td>(Intercept)</td>
<td>3.11***</td>
<td>3.82</td>
</tr>
<tr>
<td>Age</td>
<td>-0.03</td>
<td>-0.72</td>
</tr>
<tr>
<td>Race(^1)</td>
<td>-0.07</td>
<td>-1.17</td>
</tr>
<tr>
<td>Sex(^1)</td>
<td>0.40*</td>
<td>2.19</td>
</tr>
<tr>
<td>Major(^1)</td>
<td>-0.07</td>
<td>-1.19</td>
</tr>
<tr>
<td>Class rank(^1)</td>
<td>0.02</td>
<td>0.18</td>
</tr>
<tr>
<td>E-education(^1)</td>
<td>0.13</td>
<td>1.96</td>
</tr>
<tr>
<td>E-experience(^1)</td>
<td>-0.20</td>
<td>-1.94</td>
</tr>
</tbody>
</table>

| Model R2 | 0.17 | 0.18 |
| Model F-test | 2.83 | 2.98 |
| Model p-value | 0.01 | 0.007 |

\(N = 105\)

\(p < .05\*, \ p < .01\**, \ p < .001\***,$

Note. Dependent variables refer to questions listed in Table 2

Note. Means test is equivalent to ANOVA post-hoc test using \(F\)-distribution

\(^1\) E-education = entrepreneurship education, E-experience = entrepreneurship experience, Race is coded such that “White” is the referent, Sex is coded as 1 = Male and 2 = Female, Major is coded such that “Business Administration” is the referent, Class rank is coded such that “First Year” is the referent.
Appendix A  
"Female" Condition- Executive Summary for Excellerate Energy LLC

One Line Overview: Excellerate Energy is an entrepreneurial venture which provides financial consulting expertise in the area of Green House Gas (GHG) emissions footprint calculations to large municipalities.

Business Summary: Experts estimate that the global carbon market will top $15 billion by 2020. However, projections show the carbon market topping $100 billion and a shortage of trained GHG experts worldwide in the near future. We are an entrepreneurial venture focused on providing financial consulting expertise on GHG emissions footprints for large municipalities. We currently have a consulting contract in Delaware and are also negotiating opportunities with other local governmental organizations.

Management: Lynne Sweet McIntosh is the President of Excellerate Energy LLC. She is a Certified Public Accountant (CPA) and has worked on compliance audits for governmental entities for the last 5 years. Her most recent position is with a governmental entity. She also has a MBA and an undergraduate degree in Chemistry. In the GHG area, she has taken Verifier training and received a Certificate of Training in GHG Accounting. Other staff members have experience in the computer programming and engineering fields. As Excellerate Energy continues to grow, we will be adding new consultants and advisors as needed.

Marketing: We are optimistic that the exposure we will receive as speakers at the American Society of Women Accountants convention will provide many leads for future training possibilities. Excellerate is in the process of applying for our own accreditation from National Association of State Boards of Accountancy (NASBA) to teach Continuing Professional Education (CPE) classes. Once this accreditation is obtained, we will advertise our CPE courses.

Finance: Excellerate presently concentrates on the governmental markets, due to management’s familiarity with these areas and our socially-purposeful orientation. As noted, Excellerate has a contract to calculate the GHG emissions footprint for a large municipality in Delaware and is also negotiating with other municipalities. Despite a loss in 2017, we fully anticipate that Excellerate will be profitable in 2018. The degree of profitability is dependent on the receipt of our accreditation from NASBA and the number of classes we are contracted to write for the training entity we recently signed a contract with.

Current Status and Requirements: Excellerate was formed in 2015 as a single member woman-owned LLC. Ownership was expanded in 2016, making it a women majority owned business. Excellerate received their first contract in December 2016 to calculate the GHG footprint for a municipality. Talks are currently in progress with other municipalities and higher education entities. Future plans include exploring the market for both small and large business entities.
Appendix B
“Male” Condition- Executive Summary for Excellerate Energy LLC

One Line Overview:
Excellerate Energy is an entrepreneurial venture which provides financial consulting expertise in the area of Green House Gas (GHG) emissions footprint calculations to large municipalities.

Business Summary:
Experts estimate that the global carbon market will top $15 billion by 2020. However, projections show the carbon market topping $100 billion and a shortage of trained GHG experts worldwide in the near future. We are an entrepreneurial venture focused on providing financial consulting expertise on GHG emissions footprints for large municipalities. We currently have a consulting contract in Delaware and are also negotiating opportunities with other local governmental organizations.

Management:
Larry Sweet McIntosh is the President of Excellerate Energy LLC. He is a Certified Public Accountant (CPA) and has worked on compliance audits for governmental entities for the last 5 years. His most recent position is with a governmental entity. He also has a MBA and an undergraduate degree in Chemistry. In the GHG area, he has taken Verifier training and received a Certificate of Training in GHG Accounting. Other staff members have experience in the computer programming and engineering fields. As Excellerate Energy continues to grow, we will be adding new consultants and advisors as needed.

Marketing:
We are optimistic that the exposure we will receive as speakers at the American Society of Accountants convention will provide many leads for future training possibilities. Excellerate is in the process of applying for our own accreditation from National Association of State Boards of Accountancy (NASBA) to teach Continuing Professional Education (CPE) classes. Once this accreditation is obtained, we will advertise our CPE courses.

Finance
Excellerate presently concentrates on the governmental markets, due to management’s familiarity with these areas and our socially-purposeful orientation. As noted, Excellerate has a contract to calculate the GHG emissions footprint for a large municipality in Delaware and is also negotiating with other municipalities. Despite a loss in 2017, we fully anticipate that Excellerate will be profitable in 2018. The degree of profitability is dependent on the receipt of our accreditation from NASBA and the number of classes we are contracted to write for the training entity we recently signed a contract with.

Current Status and Requirements
Excellerate was formed in 2015 as a single member LLC. Excellerate received their first contract in December 2016 to calculate the GHG footprint for a municipality. Talks are currently in progress with other municipalities and higher education entities. Future plans include exploring the market for both small and large business entities.
Appendix C

“Gender Neutral” Condition- Executive Summary for Excellerate Energy LLC

One Line Overview:
Excellerate Energy is an entrepreneurial venture which provides financial consulting expertise in the area of Green House Gas (GHG) emissions footprint calculations to large municipalities.

Business Summary:
Experts estimate that the global carbon market will top $15 billion by 2020. However, projections show the carbon market topping $100 billion and a shortage of trained GHG experts worldwide in the near future. We are an entrepreneurial venture focused on providing financial consulting expertise on GHG emissions footprints for large municipalities. We currently have a consulting contract in Delaware and are also negotiating opportunities with other local governmental organizations.

Management:
The President of Excellerate Energy LLC is a Certified Public Accountant (CPA) and has worked on compliance audits for governmental entities for the last 5 years, was most recently employed with a governmental entity, and has a MBA and an undergraduate degree in Chemistry. In the GHG area, the President of this company has taken Verifier training and received a Certificate of Training in GHG Accounting. Other staff members have experience in the computer programming and engineering fields. As Excellerate Energy continues to grow, we will be adding new consultants and advisors as needed.

Marketing:
We are optimistic that the exposure we will receive as speakers at the American Society of Accountants convention will provide many leads for future training possibilities. Excellerate is in the process of applying for our own accreditation from National Association of State Boards of Accountancy (NASBA) to teach Continuing Professional Education (CPE) classes. Once this accreditation is obtained, we will advertise our CPE courses.

Finance
Excellerate presently concentrates on the governmental markets, due to management’s familiarity with these areas and our socially-purposeful orientation. As noted, Excellerate has a contract to calculate the GHG emissions footprint for a large municipality in Delaware and is also negotiating with other municipalities. Despite a loss in 2017, we fully anticipate that Excellerate will be profitable in 2018. The degree of profitability is dependent on the receipt of our accreditation from NASBA and the number of classes we are contracted to write for the training entity we recently signed a contract with.

Current Status and Requirements
Excellerate was formed in 2015 as a single member LLC. Excellerate received their first contract in December 2016 to calculate the GHG footprint for a municipality. Talks are currently in progress with other municipalities and higher education entities. Future plans include exploring the market for both small and large business entities.
Appendix D- Business Pitch Evaluation Form

Opportunity / Venture: ______________________________________

The business pitch presentations can be measured across several criteria:

- Concept
- Clarity
- Comprehensiveness
- Realistic Implementation
- Potential Value

The rubric below is simply a guide. I know that individual judges will emphasize specific aspects of each presentation based on their own expertise.

Overall, if you were to assign a letter grade (e.g., A, B+, B-), what would you award this pitch? ____________

To what extent has the team addressed the following:

<table>
<thead>
<tr>
<th></th>
<th>The Problem / Need: The pain this new venture will alleviate and the size of the market are clearly articulated.</th>
<th>Not addressed</th>
<th>Strongly addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>The Solution: How the new venture will alleviate the pain – i.e., what the new venture will sell/provide and its value proposition – is explained clearly.</th>
<th>Not addressed</th>
<th>Strongly addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>The Business Model: How the new venture will make money – i.e., the customers, the channels of distribution, and the gross margins – are explained.</th>
<th>Not addressed</th>
<th>Strongly addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>The Underlying Magic: The technology, secret sauce, or magic behind the product or service is likely to provide a competitive advantage.</th>
<th>Not addressed</th>
<th>Strongly addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Marketing and Sales: How the new venture will reach its target customer and its marketing leverage points are explained.</th>
<th>Not addressed</th>
<th>Strongly addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
<td>1 2 3 4 5</td>
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<th></th>
<th>The Competition: A complete view of the competitive landscape – perhaps including side-by-side comparisons of alternatives – is presented.</th>
<th>Not addressed</th>
<th>Strongly addressed</th>
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<th></th>
<th>The Management Team: The key players on the management team and its advisors are profiled, and their value to this new venture is clear.</th>
<th>Not addressed</th>
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<th></th>
<th>Financial Projections and Key Metrics: A financial forecast of dollars and other key metrics indicates strong potential for value creation and capture by the new venture.</th>
<th>Not addressed</th>
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<th>Current Status, Accomplishments to Date, Timeline, and Use of Funds: The current status of the product or service, what the near future looks like for the venture, and how it will use external funding are all described.</th>
<th>Not addressed</th>
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<th>Overall Impression: The new venture idea is attractive and persuasive in all aspects; a business concept with great potential, clear prospects for success, and an inspiring presentation.</th>
<th>Not addressed</th>
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Comments:
Appendix E - Classroom Exercise Debrief

What is unconscious bias?
Attitudes that affect our understanding, actions, and decisions in an unconscious manner.

General information about unconscious bias
- Everyone has some amount of bias
- Bias tends to favor one’s in-group (e.g., family, friends, local culture, etc.)
- Bias is malleable and can be changed over time

Existing research on gender and venture evaluation
1. Women do better in a crowdfunding context than men.
2. Women in the United States are half as likely as their male counterparts to engage in entrepreneurship.
3. Only 5% of Angel investors are women, worldwide—men have a much greater presence (and, the gender composition here is my difference than in entrepreneurship classrooms).
4. Entrepreneurs are perceived to have predominantly masculine characteristics.
5. Women procure less funding from banks (i.e., debt financing) than do men.
6. Women without technical backgrounds are evaluated as having less leadership ability than male peers.
7. Non-technical women receive significantly less of a capital investment than technical women, technical men, and non-technical men entrepreneurs.

Group Discussion Questions
1. Do you feel unconscious bias (e.g., gender) affects the quality of a business pitch, all else being equal? What evidence from the experiment can support or reject this claim?
2. Do you feel unconscious bias (e.g., gender) affects the amount of funding one is likely to receive in a business pitch, all else being equal? What evidence from the experiment can support or reject this claim?
3. Why might you (as students) be less (or differently) biased relative to investors evaluating business pitches? In what ways might you be more biased? What role might age, experience, and having money at stake affect situational judgments? How can bias be overcome?
4. Considering that we know unconscious bias affects everyone, how would you recommend we alleviate this issue with regards to venture funding decisions? In other words, what recommendations can you give to improve the fairness of venture funding decisions? Discuss with a neighbor for 5 minutes.
5. Thinking about this experiment regarding gender bias in venture funding and opportunity evaluation, do you think there are any other important biases that may affect the amount of investment a new venture receives (e.g., school pedigree, weight, attractiveness, etc.)?

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6 It is important to realize that this classroom exercise may not represent what happens in investment decisions.