

Development of a Training Workshop for Undergraduate Mentor TAs in an Introductory Engineering Course

Dr. Tanya Kunberger, Florida Gulf Coast University

Dr. Kunberger is an Associate Professor in the Department of Environmental and Civil Engineering in the U. A. Whitaker College of Engineering at Florida Gulf Coast University. Dr. Kunberger received her B.C.E. and certificate in Geochemistry from the Georgia Institute of Technology and her M.S. and Ph.D. in Civil Engineering with a minor in Soil Science from North Carolina State University. Her areas of specialization are geotechnical and geo-environmental engineering. Educational areas of interest are self-efficacy and persistence in engineering and development of an interest in STEM topics in K-12 students.

Dr. Chris Geiger, Florida Gulf Coast University

Chris Geiger is an Associate Professor and Chair of the Department of Bioengineering in the U.A. Whitaker College of Engineering at Florida Gulf Coast University. He received his M.S. and Ph.D. degrees in Biomedical Engineering from Northwestern University in 1999 and 2003, respectively, and his B.S. in Chemical Engineering from Northwestern University in 1996.

Dr. Jackie Greene, Florida Gulf Coast University

Dr. Jackie Greene is Assistant Director of the Lucas Center for Faculty Development at Florida Gulf Coast University. She worked in faculty development during her career with public schools, the National Board of Professional Teaching Standards, and in her current position. She is involved with the SPARCT Program as a member of the planning committee and she analyzes the qualitative data for program review and assessment purposes. Dr. Greene received her degrees from Kent State University and Florida Gulf Coast University.

Development of a Training Workshop for Undergraduate Mentor TAs in an Introductory Engineering Course

Abstract

Over the past three years, faculty at Florida Gulf Coast University have re-envisioned the freshman-level introductory engineering course required by multiple programs in the College of Engineering [Kunberger and Geiger, 2015, Kunberger, Geiger and Reycraft, 2016]. One aspect, the addition of Mentor TAs, was intended to develop informal near-peer mentor experiences, considered a “practice-based” mentoring initiative [Packard, 2016]. These students would serve not only as a traditional TA in providing feedback on course deliverables, but would also serve as a mentor within this first course in engineering in order to increase retention and promote a more inclusive culture in the college.

The most recent evolution of the introductory engineering course added a summer training workshop for course Mentor TAs. This 30-hour workshop took place over a one-week period in the summer and included both face-to-face and online components. Topic coverage fell into one of three main categories: 1) university employment expectations, 2) course logistics and expectations, and 3) effective interactions between Mentor TAs and students enrolled in the course. Workshop effectiveness was evaluated through a mixed method approach including the use of pre and post workshop surveys and end of the semester focus group discussions with students serving as Mentor TAs as well as post course surveys of course-enrolled students. A complete discussion of the developed workshop and the future direction of the program is also included.

Introduction and Background

Over the past three years, faculty at Florida Gulf Coast University (FGCU) have re-envisioned the freshman-level introductory engineering course required by multiple programs in the U. A. Whitaker College of Engineering (WCE) [Kunberger and Geiger, 2015, Kunberger, Geiger, and Reycraft 2016]. This introductory engineering course was completely revised for the 2014 – 2015 academic year, and a series of smaller modifications have been implemented in subsequent years. As the WCE has grown and matured over its 11+ years of existence, curricular changes at the program level have been implemented to ensure each programs’ educational offerings are current and fit the needs of their constituents. Beyond the classes that are unique to each program, the College also has a number of courses, primarily at the freshman and sophomore level, that are common across multiple programs. Here, the challenge in updating or changing these courses is ensuring the needs of a more diverse constituency are met. As previously described [Kunberger and Geiger, 2015], our introductory engineering course was changed to create a cohesive educational experience for the students, while continuing to meet the programmatic needs of the engineering programs involved as the first touchpoint those programs have with their students.

Many of the courses within the WCE practice high impact practices as recognized by the

Association of American Colleges and Universities (AAC&U), particularly with respect to common intellectual experiences, writing-intensive courses, and collaborative assignments and projects [Kuh, 2008]. At FGCU, a majority of our courses are taught in an integrated lecture-lab environment, such that a three credit-hour course meets for five hours per week. This extended contact time, in addition to studio classrooms based on the SCALE-UP (Student Centered Active Learning Environment with Upside-down Pedagogies)¹ model [Beichner, 2000] allows for unique opportunities in curricula development. The goals of the course revision were to continue to find ways to integrate high impact practices into the curriculum, providing the students a first year experience within a learning community. While the size of the course and the number of faculty assigned to teach the course prohibits these experiences to be facilitated directly by faculty, the spirit of these practices could be implemented using near-peer mentoring and learning facilitation. From a mentoring perspective, prior research [Brainard and Carlin, 1998, Marable, 1999, Good, Halpin and Halpin, 2000, and Farver and Gattis, 2006] has shown peer mentoring to be effective in improving retention and increasing academic growth with a variety of student populations.

While mentoring benefits was one factoring contributing to the integration of these individuals into the course, the TA aspect was a second consideration. As FGCU is a teaching intensive environment, the inclusion of course TAs allows faculty members to provide grading and feedback in a timelier manner. When considering the TA perspective, Ghazali and Diefes-Dux [2012] and Verleger and Diefes-Dux [2013] have recognized the importance of student feedback from TAs, and the need to train TAs to be able to provide feedback that is both relevant and meaningful. Meaningful and timely feedback in this introductory course in particular is critical, as successive assignments build directly upon earlier ones, all of which contribute to the overall final course expectations as detailed in the next section of this paper. The critical value of robust feedback combined with the relative inexperience (with regards to providing feedback) of the individuals eligible to serve as TAs emphasized the need to provide training and support for these individuals. While previous studies have considered TA training workshops [Roberts, Hollar, and Carlson, 1997, Marikunte et al., 2006, and Karim, 2011], the focus has been on graduate students, rather than the undergraduate students selected as Mentor TAs for this course. Thus, while the need for training may be similar, the approach to this training and training coverage may differ.

Course Overview

One challenge associated with this introductory course is its one-credit hour status, meeting only once a week for 100 minutes. The modest class time coupled with the single credit hour requires any course evolution to maintain of a reasonable level of expectations in order to prevent an unreasonably heavy workload. The present balance includes an overarching semester group project, with an individual final presentation component, and a series of individual and group

¹ <http://scaleup.ncsu.edu/>

deliverables throughout the semester that feed into the aforementioned final deliverables. As a required course for three of the four engineering programs at the University, the course enrolls approximately 150 students annually, with the fall semester enrollment being almost twice the size of the enrollment in the spring semester. Although multiple sections are typically offered, simultaneous timing of the sections allows for single large presentations as well as smaller class meetings.

Since Fall 2014, the course itself has not drastically changed; however, additional participants have been added to the course to provide supplemental elements important to courses offering a first-year experience. Starting with the 2015-2016 academic year, Mentor TAs were added to the course to provide more direct interactions with each of the student research groups. As previously described [Kunberger and Geiger, 2016], for the 2015-2016 academic year, the TAs were hand-selected by the instructors, and consisted of upperclassmen from all three engineering programs. Although no formal training was provided, regular meetings were held with the instructors and the TAs to go over assignments, and identify potential pitfalls for the upcoming week. Starting in Fall 2016, Mentor TA selection and training are as described in the next section of this paper. For both cohorts, the expectations for the course includes active engagement in both the physical class as well as the virtual Learning Management System (LMS).

While Mentor TAs are welcome to attend the larger presentation classes, they are utilized primarily in the smaller class meetings. These classes begin with a short 5 – 10 minute topic overview, followed by a 15 – 20 minute discussion using a think-pair-share approach. The remaining class time (45 – 60 minutes) is devoted to team meetings. During these sessions, Mentor TAs take attendance, facilitate course logistics, and ensure that each team receives at least two visits from different individuals during the “team meeting” portion of the class. In the virtual environmental Mentor TAs provide feedback to students on individual and group submissions, many of which are foundational for the semester-long group project. For group submissions, Mentor TAs are assigned specific groups to which they provide feedback. This assignment provides continuity throughout the course, ensuring that comments or points requiring additional clarity are addressed in subsequent submissions. Assignments are based on mentor interest in team topics, with mentors being responsible for anywhere between 2 – 4 teams (depending on class size and number of mentors).

At the end of the semester, the Mentor TAs are also responsible for grading final individual presentations and the supporting materials for those presentations. The scaffolded nature of assignments results in the need for robust, critical, and meaningful feedback at every stage to allow for continual improvement and the potential for the strongest final deliverables possible. Although faculty members offer feedback at multiple points throughout the semester, the Mentor TAs are responsible for providing comments on a weekly basis, a skill that is often a new experience for them and a significant contributing factor to the creation of the training workshop.

Workshop Overview

Toward the end of the academic semester prior to the workshop (Spring 2016), the authors sent out a survey to current students within the College of Engineering asking for individuals who would be interested in serving as a Mentor TA for the introductory course for the upcoming academic year. The survey asked questions regarding their major, what year they were in their program of study, why they wished to be involved with the course, what skills they would bring to the position, as well as their course and work schedules if known. Based on these parameters, a desire for diversification, and feedback from faculty within the College of Engineering who had these students in previous classes, eight students were selected to be Mentor TAs for the upcoming academic year, including one student who had been a TA the previous year. Prior to the start of the workshop, all the new Mentor TAs were required to complete the sign-on process for on-campus University workers, which included the completion of appropriate paperwork for human resources and a subsequent background check.

The workshop itself was conducted over three one-half day sessions, which included a variety of teaming activities, discussion, instruction and reflection. Although each of the TAs had previously taken the course, some as recently as the previous semester, since they were selected from three different engineering programs, not all of the individuals knew one another. On the first day, as shown in Figure 1, students introduced themselves, and played a few icebreaker games to get to know one another a bit better. From there, course logistics were presented by the instructors; what the students as Mentor TAs would be expected to do, how much time they could anticipate needing to do the job well and what the course schedule would be in regards to their responsibilities. From there, students were introduced to the LMS from a teacher's viewpoint; although they had used Canvas (our LMS) extensively as a student, the new features presented to them as a TA required some additional training.

Time	Activity
9:00 - 9:30	Introduction and Ice-Breaker
9:30 - 9:45	Meet the Course Instructors
9:45 - 10:15	Mentor Expectations and Schedules
10:15 - 10:30	Break
10:30 - 11:00	Canvas from an Instructor Viewpoint
11:00 - 12:00	What Makes a Good Presentation? (rubric development)
12:00 - 12:45	Lunch (Holmes 306)
12:45 - 1:45	Rubric Use, Calibration and Revision for Presentations
1:45 - 2:00	Activity discussion and homework

Figure 1. Daily Schedule for Day 1 of the Mentor TA Training Workshop

The late morning and afternoon sessions focused on the development of an evaluation rubric for oral presentations (something they would be responsible for grading in the course), and modification and calibration of that rubric by scoring and discussing several oral presentations found on YouTube. This oral presentation rubric, shown in Figure 2, was developed exclusively by the Mentor TAs, and was used for grading the student presentations in the course this fall. For homework, students were asked to work through an information literacy project (one of the early assignments in the course) designed to introduce topics that would be covered in the third day of the workshop.

Characteristic	Weight	Excellent 100%	Very Good 85%	Fair 75%	Marginal 60%	N.A. 0%	Total
Technical Content <ul style="list-style-type: none"> <input type="checkbox"/> Demonstrates appropriate knowledge of topic <input type="checkbox"/> Content is appropriate for given audience <input type="checkbox"/> Avoids use of technical jargon and defines all acronyms and abbreviations <input type="checkbox"/> Able to answer questions from the audience 	50%						
Handout/PowerPoint <ul style="list-style-type: none"> <input type="checkbox"/> Pictures are appropriate for given format <input type="checkbox"/> Amount of text is appropriate for given format <input type="checkbox"/> Aesthetically pleasing / easy to read <input type="checkbox"/> Organization is appropriate for given format <input type="checkbox"/> References are easily found and appropriate 	20%						
Presenter <ul style="list-style-type: none"> <input type="checkbox"/> Establishes eye contact with audience members <input type="checkbox"/> Does not read from script or handout <input type="checkbox"/> Appropriate inflection and projection of voice <input type="checkbox"/> Appearance is appropriate for presentation <input type="checkbox"/> Presenter is passionate about topic <input type="checkbox"/> Body language appropriate for presentation 	15%						
Delivery <ul style="list-style-type: none"> <input type="checkbox"/> Strong introduction / opening statement <input type="checkbox"/> Logical organization <input type="checkbox"/> Presentation does not contain superfluous information <input type="checkbox"/> Minimal pausing / avoiding the use of filler words <input type="checkbox"/> Within the time limits of the presentation <input type="checkbox"/> Conclusion appropriately summarizes presentation 	15%						

Figure 2. Oral Presentation Rubric Developed by Mentor TA Students during Workshop

On day two of the workshop, as shown in Figure 3, students were presented with information regarding the University and College of Engineering, including information about resources and programs available to students, as well as additional learning opportunities that might be of interest to students coming into the introductory course. As we look to these TAs to be mentors as well as learning facilitators, having a solid understanding of these resources is crucial in helping the Mentor TAs guide the new students. Additional sessions on day two focused on how to facilitate group discussion, best practices for interacting with students in a classroom setting, and how to provide meaningful and constructive feedback to homework and in-class submissions.

The last day of the workshop (Figure 4) focused on skills needed for the semester-long research project described previously. The students met with the engineering librarian, and worked through additional information literacy activities and projects. Discussions regarding meaningful feedback, campus resources, and course logistics rounded out the day. Students were provided a survey to complete regarding the material covered in the workshop, and were asked to complete an additional online module prior to the end of the month. This online module, as shown in Figure 5, covered additional material not covered in person regarding the responsibilities and legal aspects of working with students, including the Buckley Amendment, the Americans with Disabilities Act, Sexual Harassment, Public Records Laws and how to handle students of concern or disruptive students. Originally designed for, and required by, all Adjunct Faculty at FGCU, the module was included as the Mentor TAs were dealing directly with students and had access to their grades.

Time	Activity
9:00 - 9:20	Meet Our College of Education Colleague
9:20 - 10:00	WCE, EGCSP, QEP, and other acronyms
10:00 - 10:15	Break
10:15 - 11:00	Student Interaction During Class & Facilitating Group Discussions
11:00 - 11:45	Presentation Rubric Revisited
11:45 - 12:30	Lunch (Holmes 306)
12:30 - 2:00	What is meaningful feedback? (what we look for, clarification of our feedback, time for grading on own and submission)

Figure 3. Daily Schedule for Day 2 of the Mentor TA Training Workshop

Time	Activity
9:00 - 9:45	Review of effective feedback and pitfalls to avoid.
9:45 - 10:00	Break
10:00 - 12:00	Searches and Reference Managers with the Engineering Librarian
12:00 - 12:45	Lunch (Holmes 306)
12:45 - 1:30	Beyond the course - campus resources for success
1:30 - 2:00	Final logistics and Post Workshop Survey

Figure 4. Daily Schedule for Day 3 of the Mentor TA Training Workshop

Online Module

This module will provide information about the legal policies which guide our profession in the equitable treatment of all students. When you complete this module, you will understand and be able to respond to issues around each of the following:

- FERPA (Family Educational Rights and Privacy Act)
- ADA (Americans with Disabilities act)
- Civil Rights (Sexual Harassment & Relationships with Students)
- Public Records Laws
- Students of Concern/Disruptive students

Figure 5. Screen Capture of Online Training Module for Mentor TA Training Workshop

Mentor Workshop Feedback

Prior to the first day of the workshop, Mentor TAs were asked to complete a brief pre-workshop survey to help gain a baseline understanding of what previous experiences and training the participants had in regards to being a TA or mentor, as well as what they thought would be beneficial to have in a training session. Only two of the seven participants (the 8th student who had served as a TA for the course previously did not participate in the training) had previously been a TA (1 in college, 1 in high school), neither of whom were provided any training prior to being a TA. Five of the seven students had previously been a mentor (2 at the college level, 3 in high school), of which only two (both college mentors) had been provided formal training. In regards to what they were looking for in training, two of the seven Mentor TAs mentioned wanting to gain greater insight into the grading process, while three additional Mentor TAs mentioned student interactions and mentorship. In regards to the most common expected challenge to being a TA, the Mentor TAs included interacting with students, time management, effective teaching and constructive feedback.

At the end of the third day, the authors asked for feedback from the participants in an effort to find ways to improve the materials for the next time the workshop is offered. A series of questions regarding the usefulness of each module, as well as what the TAs found particularly useful or not useful were asked. Of the seven participants surveyed, five of the seven found the grading and rubric development the most useful module of the workshop. The TAs suggested that these activities gave them a better sense as to what to look for in grading and general, and provided them with additional confidence as to how to provide meaningful feedback to students when grading their assignments. In fact, a majority of the TAs recommended that for future iterations of the workshop, additional activities geared toward practicing and norming grading would be of value in helping them become a better TA. A vast majority of the modules scored very highly with the participants on a 5-point Likert scale. Averages ranged from 3.5 for information regarding the QEP to 5.0 for information regarding the use of a reference manager, with an overall average Likert score of 4.46 for the 17 modules.

Focus Group Format

A colleague in the College of Education, whom the participants had met during the training workshop over the summer, conducted focus groups for the TAs at the end of the Fall 2016

semester. Table 1 provides a list of questions the Mentor TAs were asked during the focus group sessions conducted both in the Fall of 2016 as well as in the 2015 – 2016 academic year with TAs that did not go through the summer workshop. Future research will code responses to draw comparisons regarding the effectiveness of this training program, strengths and challenges of serving in a Mentor TA position, as well as potential changes to the program. Preliminary results suggest that outcomes fall into three distinct categories including development of relational knowledge and skills, self-awareness, and career identity.

1. Do you feel the training benefitted you as a TA? Why or why not?
2. Which component of the training was the most effective and why?
3. What additional training would be beneficial and why?
4. What would you change / remove from the training and why?
5. What surprised you the most about the TA/mentor experience?
6. What was the most difficult aspect of the TA/mentor experience?
7. Why did you choose to participate in the TA/mentoring program?
8. What previous experiences led you to be interested in TA/mentoring for EGS 1006L?
9. What skills did you possess that led to success in the program?
10. What skills did you develop by participating in the program?
11. Has this experience changed your view / opinion of engineering and how?
12. Has this experience influenced your future career path and how?
13. What did you learn about yourself by your participation?
14. Why would you encourage a peer to participate in the program / training?

Table 1. Questions Asked of Mentor TA Participants During Focus Group Sessions Run at the End of the Semester.

Student Feedback from the Course

In addition to the feedback from the Mentor TAs throughout the training process as well as at the end of their first semester, the authors also gathered feedback from the students taking the course, focusing on the effectiveness of the TAs as both learning facilitators and as mentors. Surveys were developed based on questions from both the Longitudinal Assessment of Engineering Self-Efficacy Survey and the Undergraduate Engineering Mentor and Mentee Surveys; both developed by Pennsylvania State University (PSU) and the University of Missouri (UM) [Marra, 2009]. This data was also collected from students who took the course in 2015-2016, when the TAs had not received this formal training, and was disseminated at the 46th Annual Frontiers in Education Conference in Erie, Pennsylvania [Kunberger and Geiger, 2016]. The data from these surveys are currently being compiled by a third party at the University to ensure confidentiality of the respondents, and the responses of the two cohorts will be compared.

Program Evolution and Future Directions

The development, implementation, and execution of this training program was a direct result of an internal research award from the FGCU Office of Research and Sponsored Programs. This grant also allowed the authors to pay the students a stipend to compensate them for their time

over the summer in addition to their TA hours in the fall. This funding mechanism will not be available in the future; as such, the authors will not be able to financially compensate the students for their participation during the in-person meetings. Therefore, the authors are exploring the option of conducting a single day retreat toward the beginning of the fall semester for all new TAs, shifting the delivery of a portion of the material covered to an asynchronous online format. Much of the material currently covered will still be delivered in the revised workshop, however, based on the recommendations of the Mentor TAs, additional effort will be made to provide more content regarding feedback and normalization of grading.

Looking beyond the current introductory course, the authors would like to extend this program to all TAs within the College of Engineering. Providing students with a foundational understanding of what is expected of a TA, and how to be an effective TA can only improve the experience for the TA, the faculty member teaching the course, as well as the students taking the course. Furthermore, given the recent concerns about cross-listed courses within the University's LMS² with respect to privacy laws, similar issues could ultimately limit what activities in which a student TA can participate. Training programs such as this one might mitigate these concerns, potentially limiting the impact these type of federal rulings have on course administration.

Conclusions

As previously described by the authors [Kunberger and Geiger, 2015], the evolution of this introductory course was in part due to a maturation of our young engineering program, and part in response to ensure the course was presented in a cohesive fashion with clear, defined deliverables that were appropriate for a 1-credit hour course. The course also aimed to engage students in a way prescribed by the University's Quality Enhancement Plan (QEP), which is a campus-wide initiative taken on in part as fulfillment of the University's reaccreditation efforts [Kunberger, Geiger, and Reycraft, 2016]. Mentor TAs were introduced to the course in 2015 in an effort to better serve the student population by providing a learning environment that championed near-peer mentorship. In 2016, to better prepare the Mentor TAs for their job, a summer workshop was developed to arm them with additional information and tools to better prepare them for their jobs as Mentor TAs. Based on the feedback provided by the Mentor TAs, both in their surveys as well as their focus groups, additional activities focusing on meaningful, constructive feedback, and grading normalization exercises will be emphasized. Beyond Fall 2017, the authors strongly feel that this type of training is important for TAs in any course within the College of Engineering, and would like to see a version of this workshop adopted for all student TAs within the College. To do so, a more generic workshop will need to be created that would be suitable for a variety of courses. As the authors are already looking at the possibility of delivering this content in a more asynchronous fashion online for the next iteration of this workshop, scaling from a single class to the entire College should be feasible without a significant amount of additional resources.

² <http://www.aacrao.org/resources/resources-detail-view/ask-the-ferpa-professor-6-28-2016>

Bibliography

Beichner, R.J., J.M. Saul, R.J. Allain, D.L. Deardorff, and D.S. Abbott. "Promoting collaborative groups in large enrollment courses," *Proceedings of the 2000 ASEE Annual Conference and Exposition*, Saint Louis, Missouri, June 2000. <https://peer.asee.org/8646>.

Brainard, S.G., and L. Carlin, "A Six-Year Longitudinal Study of Undergraduate Women in Engineering and Science," *Journal of Engineering Education*, vol. 87, I 4, p 369 – 375, October 1998.

Farver, D., and C. Gattis, "Development and Implementation of a Peer Mentoring Program for Women in Engineering Students," *Proceedings of the 2006 ASEE Annual Conference and Exposition*, Chicago, Illinois, June 2006. <https://peer.asee.org/984>.

Ghazali, R. and H.A. Diefes-Dux, "Graduate Teaching Assistant Written Feedback on Student Responses to Problem Identification Questions within an Authentic Engineering Problem," *Proceedings of the 2012 ASEE Annual Conference and Exposition*, San Antonio, Texas, June 2012. <https://peer.asee.org/21437>.

Good, J.M., G. Halpin, and G. Halpin, "A Promising Prospect for Minority Retention: Students Becoming Peer Mentors," *The Journal of Negro Education*, vol. 69, I 4, p 375 – 383, Fall 2000.

Karim, F., "The Development of a Teaching Assistant Training Program in Applied Science: Design and Implementation," *Proceedings of the 2011 ASEE Annual Conference and Exposition*, Vancouver, Canada, June 2011. <https://peer.asee.org/18915>.

Kuh, G., *High Impact Educational Practices: What They Are, Who Has Access to Them, and Why They Matter*. Association of American Colleges and Universities, 2008.

Kunberger, T. and C. Geiger, "From Catch-all to Clarity: Revising a First-year, Multidisciplinary Introductory Course," *Proceedings of the 2015 ASEE Annual Conference and Exposition*, Seattle, Washington, June 2015. 10.18260/p.24136.

Kunberger, T. and C. Geiger, "The Impact of Near-Peer Mentoring on Self-Efficacy in an Introductory Engineering Course," *Proceedings of the 2016 IEEE Frontiers in Education Conference*, Erie, Pennsylvania, October 2016.

Kunberger, T., C. Geiger, and K. Reycraft, "Structured Introduction to Information Literacy Using a Scaffold Project in an Introductory Engineering Course," *Proceedings of the 2016 ASEE Annual Conference and Exposition*, New Orleans, Louisiana, June 2016. 10.18260/p.25894.

Marable, T.D., "The Roles of Student Mentors in a Precollege Engineering Program," *Peabody Journal of Education*, vol. 74, I 2, p 44 – 54, 1999.

Marikunte, S., F. Harackiewicz, J. Nicklow, and L. Chevalier, "Benefits and Challenges of

Training Teaching Assistants,” *Proceedings of the 2006 ASEE Annual Conference and Exposition*, Chicago, Illinois, June 2006. <https://peer.asee.org/798>.

Marra, R., K.A. Rogers, D. Shen, and B. Bogue, “A multi-year, multi- institution study of women engineering student self-efficacy,” *Journal of Engineering Education*, vol. 98, I 1, p 27 – 38, January 2009.

Packard, B., *Successful STEM Mentoring Initiatives for Underrepresented Students*. Stylus Publishing, 2015.

Roberts, S.C., K.A. Hollar, and V.M. Carlson, “Looking Back: Lessons Learned from Ten Years of Training Teaching Assistants,” *Proceedings of the 1997 ASEE Annual Conference and Exposition*, Milwaukee, Wisconsin, June 1997. <https://peer.asee.org/6670>.

Verleger, M.A., and H.A. Diefes-Dux, “A Teaching Assistant Training Protocol for Improving Feedback on Open-Ended Engineering Problems in Large Classes,” *Proceedings of the 2013 ASEE Annual Conference and Exposition*, Atlanta, Georgia, June 2013. <https://peer.asee.org/19135>.