



**CSW**

Corporation for a  
**Skilled Workforce**

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# **Idaho State University Energy Systems Technology and Education Center (ESTEC)**

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**Providing Opportunities for Women in Energy  
Related Careers**

**Findings from the POWER Careers Student Engagement Survey**

**Summer 2018**

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## Summary of Survey Findings

The survey was taken by nine (9) current students and five (5) recent graduates for a total of 14 respondents. Most respondents (10) had just finished their second semester, one their first, one their fourth, and two respondents had graduated more than a semester ago.

### Interactions with POWER Careers Staff

- Both current and recent graduates had interacted with POWER Careers staff more than once in the last year. The majority (10) met with staff more than eleven times.
- All respondents were satisfied with the level of interaction they had with POWER Careers staff.

### Participation in POWER Careers Activities

- Both current students and graduates attended POWER Careers activities with current students attending more, on average.
- Winter 2018 activities appeared more popular. Respondents were more likely to attend activities relating to career readiness or employer networking, than compared to social events.
- Respondents spoke favorably of POWER Career activities, however there was a common theme that many activities conflicted with class, work or personal schedules.

### Challenges Faced as Women in ESTEC

- About half of respondents felt they faced challenges that were not issues for their male counterparts. They included: intimidation and anxiety stemming from the male dominant culture of the program, concerns over physical strength and stature, and juggling family needs.
- Every respondent who said they spoke to POWER Career staff about these challenges felt helped and supported.

### Experience as a Woman in ESTEC

- The majority (10) of respondents felt it was valuable to have a space to interact with their female peers in the program.
- Respondents reported organizing study groups, sharing information and resources, and forming informal support networks among other women in the ESTEC program.
- While there was some concern that an emphasis on women in the field would exacerbate gendered differences, on the whole, respondents felt that it was important to have a support structure for women in the ESTEC program.

### Other Comments on the Program

- Across all respondents, there was a favorable view of POWER Careers, and in particular, the dedication and support from staff.
- There was a desire for more accessible activities and events throughout the academic year.



## Corporation for a Skilled Workforce

Corporation for a Skilled Workforce (CSW) serves as the external evaluator for this project. CSW is a 27-year-old national 501(c)3 organization that specializes in research and evaluation, planning and initiative development, and implementation and sustainability. CSW performs research, planning, evaluation and strategic advising, and has expertise in working closely with postsecondary institutions and workforce partners to develop a shared vision and roadmaps to success.

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### Purpose of the Report

This report was written by CSW to provide a summary of results from the student engagement survey conducted with student who attended ESTEC during the 2017-2018 School Year. This now includes both current and former students in the POWER Careers program. These results will be shared with key stakeholders to inform program development and next steps of the evaluation.

The surveys focused on measuring progress on the following program goals:

- Recruit and enroll women aged 25+ into ESTEC AAS programs;
- Retain students to graduation with a supportive student learning community;
- Promote a culture of mentorship to encourage women who pursue STEM technical careers.

The following topics were also explored in the engagement survey:

- How students engaged with staff and their level of satisfaction with their interaction
- The types of activities they engaged in
- The support they felt from other women in the program
- The support networks they created as a result



## POWER Careers Project Background

The POWER Careers project is housed in the Energy Systems Technology and Education Center (ESTEC) at Idaho State University (ISU). ISU's College of Technology is charged by the State of Idaho to provide technical education in eastern Idaho. The College primarily grants Associate in Applied Science (AAS) and technical certificates. In 2006, the ESTEC was formed following an Idaho National Laboratory study that identified a regional and national need for energy industry workers with leading edge technical skills. The study noted that the aging workforce and ongoing innovation in the energy industry required a transformation in new worker training.

ESTEC's mission is to cultivate the people, educational resources and applied research capabilities necessary to improve local, regional and national availability of trained workers in occupations that support the construction, operation and maintenance of current and future energy facilities. ESTEC's educational programs culminate in a two-year AAS degree that prepares students for entry-level professional technical positions. ESTEC's approach includes involvement of community organizations to communicate with, inform, and recruit non-traditional students including ethnic minorities, women, veterans, and other individuals and groups not currently well represented in the energy workforce.

In 2015, the National Science Foundation awarded \$796,639 to ESTEC for the Providing Opportunities for Women in Energy Related (POWER) Careers project. This project aims to address the issue of underrepresentation of women of all ages and ethnicities in ESTEC, as well as the significant underrepresentation of women across the engineering technology sector of the energy workforce. At the time of the grant proposal, women represented about 8% of students in ESTEC energy programs and had never exceeded 15%.

### Project Goals and Objectives

The over-arching mission of POWER Careers is to achieve equity for women in energy technology career fields by increasing their successful participation in high quality, proven energy systems programs, using strategies that will help retain non-traditional women students through graduation and placement into professional positions. Project efforts will primarily target non-traditional aged women (and will include under-represented populations in southeast Idaho—Hispanics/Latinas, American Indians, and military veterans). Female students of all ages are welcome in the project.

POWER Careers aims to employ a continuum of supports and activities across the student experience, including mentors in the form of successful ESTEC graduates. The project has indicated that it will identify and address the recruitment challenges of a technical college serving a rural area, in part by working closely with community agencies that are in contact with potential students. The project also intends to engage industry in efforts to build a more diverse workforce and create workplace environments that are welcoming to female technicians.

The POWER Careers project has identified their grant and post-grant participant outcomes as:

- 50 women enroll in ESTEC over 3 years (these students will have met math and English entry requirements)
- 44 women begin coursework as planned
- 40 women will successfully complete the first semester of an ESTEC program
- 35 will successfully complete an AAS degree, 18 will complete during the grant period and an additional 17 will graduate with an AAS degree on-time but after the grant period (graduation date for these students will be Fall 19 through Fall 20)



- 33 women are placed in professional positions after graduation

To achieve these participant outcomes and overall project objectives, POWER Careers has outlined **five key goals**:

- Recruit and enroll women aged 25+ into ESTEC AAS programs;
- Retain students to graduation with a supportive student learning community;
- Place graduates into professional jobs;
- Strengthen ESTEC partnerships with energy employers to further careers for women; and
- Promote a culture of mentorship to encourage women who pursue STEM technical careers.



## Methodology

### Data Collection

A survey was conducted with ESTEC female students (POWER Careers Participants) enrolled in the 2017-2018 academic year to understand their level of engagement with the POWER Careers Project.

The survey was sent to all students (17) who attended during the previous school year. Some students have now graduated, making them former students. Nine (9) current and (5) former POWER Careers students responded for a total sample of 14, and a total response rate of 82%.

### Data Analysis

Quantitative data were entered and analyzed using Microsoft Excel. Descriptive statistics, such as frequencies, were utilized. Qualitative data were coded manually for themes. Quotes are provided without alteration in **grey** with the exception of minor spelling or grammar edits for clarity.



## Current and Former Student Survey, Detailed Findings

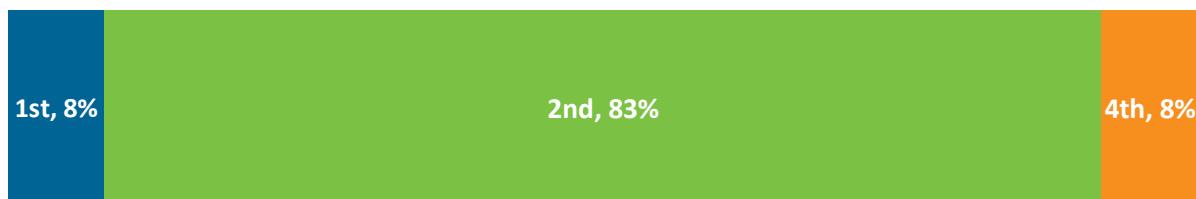
The findings of the surveys are organized in the following sections:

- Participant Backgrounds
- Interactions with POWER Careers Staff
- Participation in POWER Careers Activities
- Experience as a Woman in ESTEC
- Other Comments on the Program

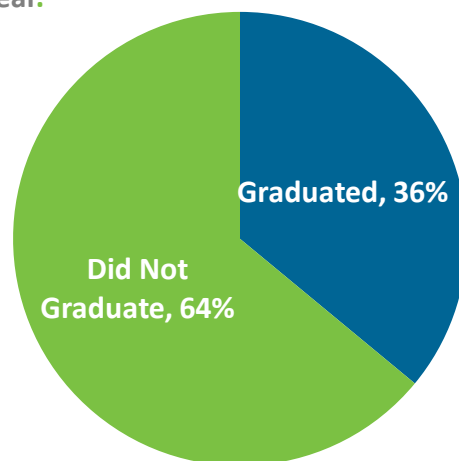
### Participant Backgrounds

**The majority of respondents just completed their second semester.**

12 Respondents Answered this Question



**The majority of respondents have not graduated, although 5 did during the 2017-2018 Academic Year.**



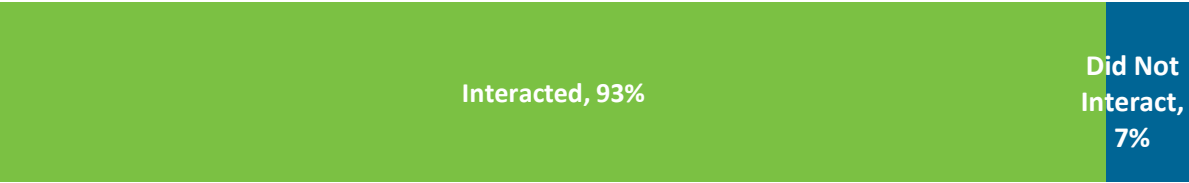
The majority of respondents (10) had recently completed their second semester. This is consistent with increased recruitment efforts as the Project has been further implemented. Two students did not answer but later indicated they were graduates of the program. Of the five (5) respondents who indicated they had graduated, one had just finished their fourth semester, two had finished their second semester, and two did not indicate their most recent semester completed.





Interactions with POWER Careers Staff

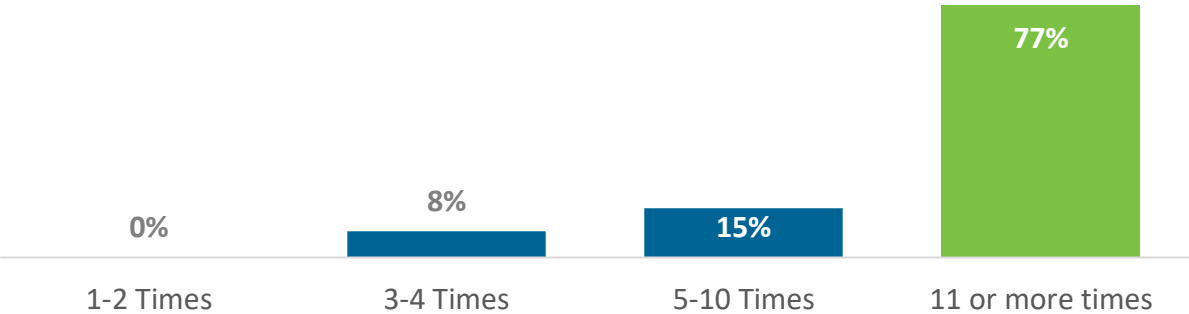
Nearly all respondents interacted with POWER Careers Staff within in the last academic year.



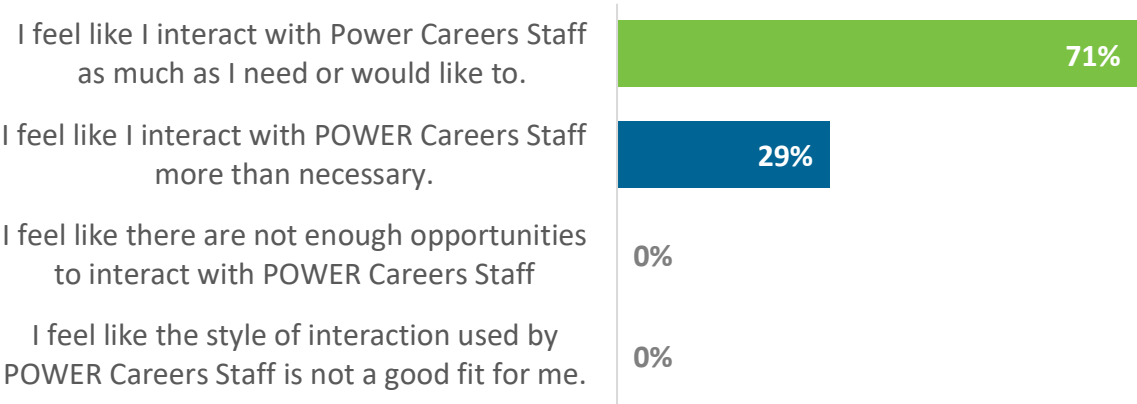
The one respondent who did not interact with POWER Careers Staff was a recent graduate who selected “I did not want or need to interact with POWER Careers Staff” as their reason for not interacting, not a lack of engagement on the part of the POWER Careers Staff.

For those who interacted with POWER Careers Staff, most interacted with them more than eleven times over the academic year.

13 Respondents Answered this Question



The majority of respondents were satisfied with the level of interaction with POWER Careers Staff. None felt they interacted too little.



Respondents' overall feelings towards their interactions with POWER Careers Staff was overwhelmingly positive. Eleven of the fourteen respondents provided more details of their interactions with staff. Common themes included feeling that staff was supportive, helpful and encouraging, and that staff was always available to meet. Students responded:

I felt like they were very **supportive** and easy to approach.

The **staff was always available** whenever I needed them, but I didn't have a lot of time for more interaction.

These ladies were **always available** and willing to help. They were a key to my success here at ESTEC.

My interaction was **helpful**, not overbearing

POWER Careers Advocates are **helpful** to a woman student like me in the program I am in because they provide support and are **always available** and willing to help in the best possible way they know with everything and anything, I feel that I am going to be successful in the program I am in because of people like [Power Career Staff].

I know that [Power Career Staff's] **door is open** whenever I need to talk to her and she lets me know if it is not a good time and we set a time to later meet.

The staff is very friendly, and they want to get to know you personally. **They care about your success** and will do anything in their power to **help** you succeed.

Anytime I have a question, I usually contact [Power Career Staff].

I stopped in even when I just needed some **encouragement**.

I was in Idaho Falls so I didn't get as many opportunities as I would have liked but it was enough!!

The staff has always been **extremely accommodating** in a timely fashion

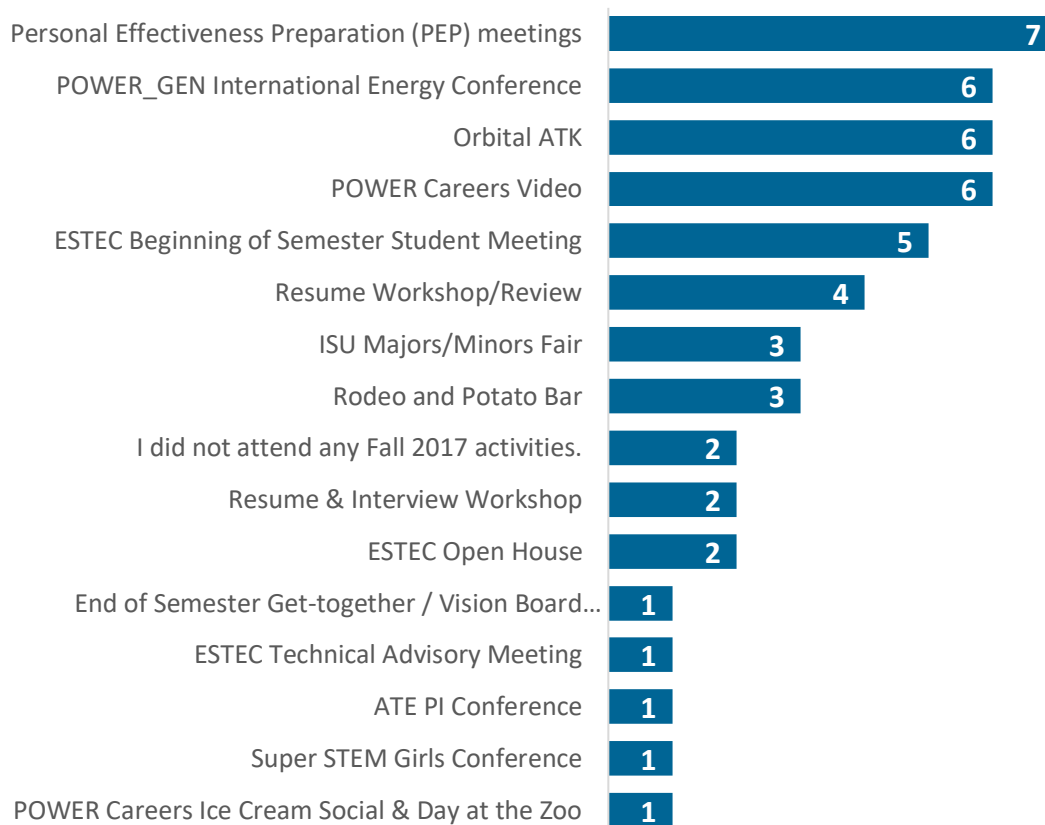
## Participation in POWER Careers Activities

### Participation in Fall 2017 Activities

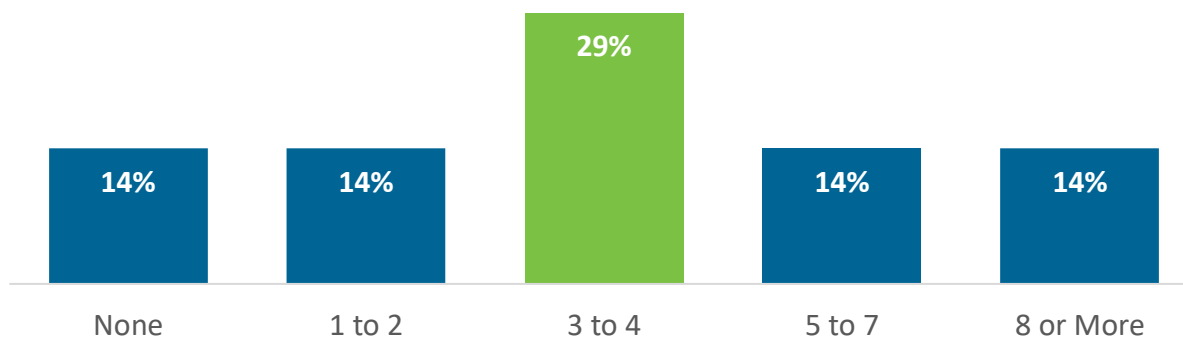
Respondents were asked whether they participated in 22 activities over the course of the Fall 2017 term. The activities attended by participants are included below. Activities that were not attended by respondents include: ISU Homecoming Parade, Brake for Breakfast, Tour with ON Semiconductor, Vision Board Get-together 1, CND Advisory meeting, and ISU Family Skate Night.



### Number of Respondents at Fall 2017 Events



Students were divided in how many activities they attended in Fall 2017. However, 4 attended 3 to 4 activities.



Current students participated in a minimum of three events in Fall 2017, with an average of five. The maximum number of activities attended by a current student was nine. Recent graduates' attendance in activities ranged from none (two graduates) to six (one graduate).

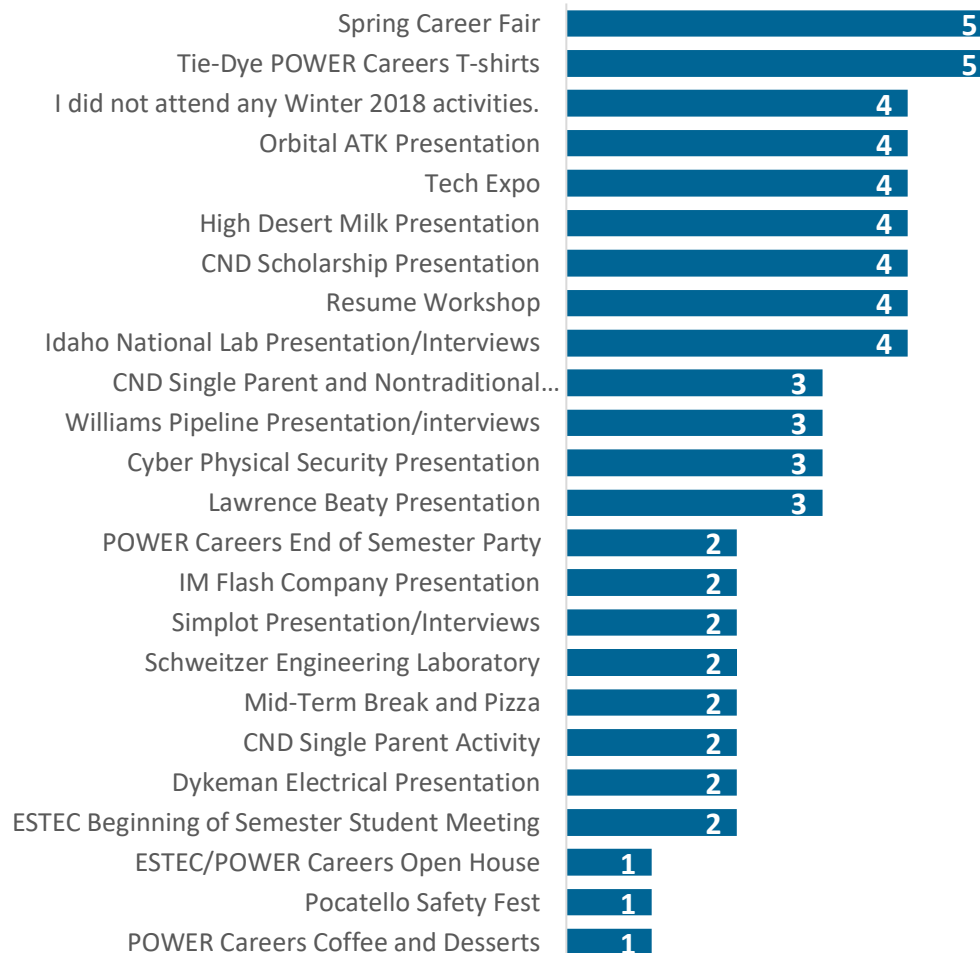
### Participation in Winter 2018 Activities

Of the 29 activities available to POWER students in Winter 2018, the most well-attended by the respondents centered around job searching and employer presentations. The events attended by respondents are included in the graph below. Events with zero attendance: START presentation to

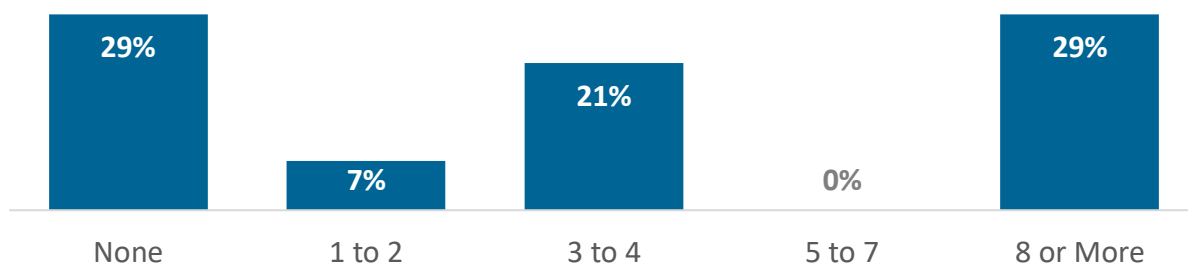


incoming students, FBI Presentation, Nammo Tallee Presentation/Interviews, Women's Business Symposium, Consolidated Electrical Dist. (CED) Presentation.

### Number of Respondents at Winter 2018 Events



Students were divided in how many activities they attended in Winter 2018. However, 50% attended 3 or more activities.



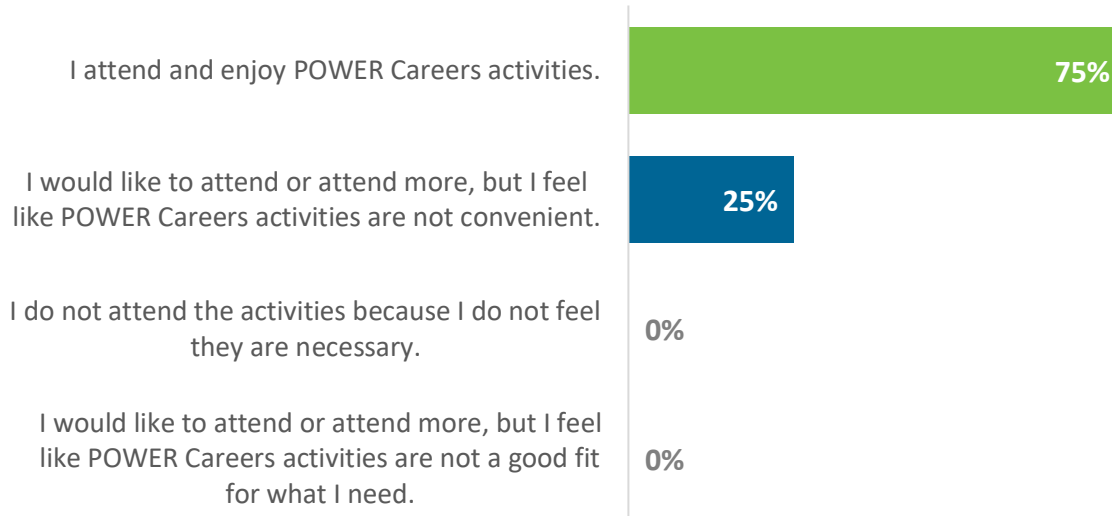
While there was a substantial uptick in students participating in zero events (3 graduates and 1 current student), the number of events attended per respondent also increased. The average number of events attended for current students and graduates was 6.8 and 4.8, respectively. Averages are skewed



high because of one current student who participated in 17 activities and one recent graduate who participated in 20.

**Most respondents (75%) attend and enjoy POWER Careers activities.**  
**However, some respondents would like to attend more but feel activities are not convenient.**

12 Respondents Answered this Question



Open ended responses further exemplify that while respondents enjoyed events, time constraints and conflicts with their busy schedules prevented them from attending more events. Nine participants responded:

Even though **timing of meetings clash** with other obligations at times. When I am available to attend the meeting are both **educational and enjoyable**.

**Good people**, good food, **good networking**.

I did not attend because I was a spring 2017 graduate.

I enjoy POWER Careers activities and **attend as much as I can**, I was not able to participate with some activities in the past due to **conflicts with class schedules**.

I have so much stuff going on in my personal life that I have a **hard time finding the time** to add more to my schedule.

I wanted to attend more but **didn't have time!**

Next year I hope to be able to attend more!

Some **schedule conflicts** didn't allow my attendance at some things during the regular "work" week. Some activities did not apply to me, like the single parent activities. My spouse works nights and Saturday mornings, we have four children so sometimes I was **not able to attend due to childcare** needs. Lastly, **sometimes I was just too tired** between everything I have going on!"

Sometimes they **interfere with other activities**.



## Experience as a Woman in ESTEC

### Program Experiences in Comparison to Male Counterparts

When asked if respondents felt they faced challenges in the ESTEC program that their male counterparts did not, the responses were mixed. Six felt that they did face certain challenges, which included intimidation and anxiety stemming from the male dominant culture of the program, concerns over physical strength and stature, and juggling family needs with the program. Five respondents did not face challenges, however two indicated this was because they felt ESTEC was very supportive of women in the program. One respondent felt that there was too much emphasis on being a woman in the program, which detracted from her experience.

#### Respondents who faced challenges:

I did experience some **major anxiety** relating to behavior of some of the males in my classes. I am the **only female** in my semester in my particular program.

I **do not possess the prior intel** that my male counter parts already have in concerns to electrical gar-gen etc.

#### Juggling family needs

Personally, at first, I had **trouble with learning hand tools** and the use of them.

The fact that I am a woman I was **not taken seriously** by my male counterparts.

The **whole program** is **male dominant**. So, it can be **intimidating** just entering the building. Meeting other women helps with that tension, and nervousness.

#### Respondents who did not face challenges:

I do not feel that I had any different challenges than any of the males except maybe that I'm not as physically strong or tall. I occasionally have to ask for help with that. I understand that other women do not feel the same way I do. **My confidence tells me I can do the same job**, so I don't see the other challenges there may be.

No, I did not experience any challenges that the guys did not.

No, the program is **extremely supportive toward women**. I feel very comfortable at ESTEC. However, if **it was not for the POWER careers** staff I **would not have applied**.

I myself did not feel like I had any difficulties in my classes as there was **enough recruitment** to have a couple girls in my class. However, the **knowledge I gained** from participating has **opened my eyes** up to how others may take different situations in a negative light unlike me. This has helped me when dealing with being the only girl in my internship.

I felt like there was **too much pressure** on the part of **being a woman in this field**. They made a big deal about it and I think that made me have negative feelings about it. I think that if you want to be in a stem field and you are female, that's great, but just leave it at that. They don't make huge deals about men being nurses or chefs or family councilors.

For those who faced challenges not faced by their male counterparts, they described if and how POWER Careers staffed aided them in these challenges. The common theme among their responses is the feeling of support and encouragement from POWER Careers staff. While most respondents felt comfortable asking for help, one respondent indicated the difficulty in asking for help without feeling inadequate.



Being a single mother, the POWER careers staff aided in any **financial, personal and education** related issues

I didn't realize these challenges until just recently. This is something POWER careers could help with. How to ask for help without feeling inadequate because you need help.

I spent a few different occasions with [Power Career Staff] **talking through issues** and trying to come up with solutions.

No but I'm sure that if I asked for help they would have helped me.

Yes, **constant encouragement**, and pushing us to be better and know that we could do it. Asking if they could help with anything.

Yes, they have been **very supportive**. They have helped me find the resources I needed.

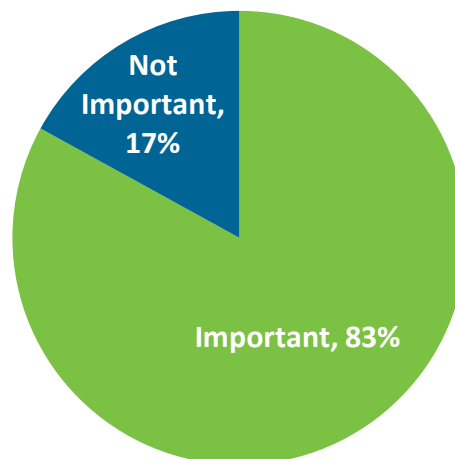
Yes, they reached out to me and **made me feel like I could achieve this degree** and excel in the program despite my lack of experience in industry.

Yes. After meeting some of the other women I felt **more confident** and the support of all the women

#### Perceived Value of Interacting with Women in ESTEC

**Nearly all respondents felt it was important to have the opportunity to interact with other women in ESTEC.**

12 Respondents Answered this Question



When asked "Did you provide resources or support to other female students in the program? If so, please describe", nine respondents described a variety of ways they supported their female peers. Examples include, organizing study groups, sharing resources, planning a "girl's night," connecting over social media, and simply being a listening ear.

I always tried to encourage the women who were in ESTEC with me. Helped with any questions, or just be a **listening ear**.

I have a few of their phone numbers or are **friends on Facebook** with other women in the other programs. I would encourage them or we **studied together** for classes we had in common. I organized and **hosted a girl's night** for all of the women who went to PowerGen in Las Vegas.



I often tried to support my other females by telling them about different **resources that are available** and trying to get extra study time together or work time together.

I worked and didn't have a lot of time, but I did befriend fellow classmates and we always supported each other through **offering help**.

N/A

We talk to each other and have a **study group**.

Yea, I give and get **support by being friends** with some of the other ladies.

Yes during meetings we **shared ideas and resources** with each other.

Yes. Anytime we had tours I was able to provide support and **ideas on how to succeed** in the program.

Yes. I was able to meet up with new individuals and help them get through **studying for test** by talking about techniques that could be helpful.

### Remaining thoughts on respondents' experiences as women in ESTEC

Respondents were next asked to reflect more generally on their experience as a woman in ESTEC. Responses were personal, but generally felt that having space for women was a positive experience.

One respondent felt the emphasis on women in the program exacerbated gender differences:

I feel like the more we emphasize differences the more segregated it gets. **I want to be recognized on the same level as men** but I don't want the emphasis to be because I am a woman. I am currently working as the only female at my job. I am being recognized because I have the degree where as they do not. As it should be.

Three respondents felt like the emphasis on women in the field was important:

Knowing that I have the aide and support of other **woman facing the same struggle** that I do in a male dominated field, it fills me with the confidence and self esteem I need to know that **I am not alone**, and have the means to be successful in any field, no matter the circumstance

I think ESTEC is a great program and a wonderful opportunity for women. [Power Career Staff] introduced me to a couple of the past women from NucOps, who I can reach out to if needed. Seems like there are rarely more than one female in NucOps at a time. Sometimes you need that person of the same gender to **understand what you are going through**.

It is **important in this moment** to try to recruit women in the engineering fields as there is primarily men only. The chance to focus on changing thought processes to include that women have a part in these types of careers would be great for a more equal world. In the meantime, before we have a more diverse workforce this program is here to help ladies see that this field is unequal and that can bring with it some stresses not felt before. This program helps to give you the skills or resources to overcome these issues. I know that this **program has had a major impact on my life** and I can see how it would be for others!

Other responses included generally positive outlook on POWERS Careers:

I think it would be great if there were **more women** in the program because we would all have a larger support group.





Sometimes I feel like I have **a lot of support** (which I am grateful for, I am not complaining at all) and I think about other students that are not scholars or in POWER Careers, **I wish that they have access** to resources much as I do.

I love this program and power careers, but I did feel bad turning down some activities.

Nothing I would like to add.

### Other Comments on the Program

Finally, six respondents gave parting comments on their thoughts about their interactions, activities offered, or other things they would like to see from POWER Careers Staff. The responses were overall positive, with a few suggestions for more events.

#### Activity related response:

I like that they have **fun activities for families**, but it would be nice if there were more this coming semester.

I think the staff are great, all of them are very supportive. I also think the **activities are meaningful**, it would be nice if they were better attended. I'm sure it is not easy to plan something for such a diverse group of women.

Maybe have **more active activities**, such as a BBQ at a park or a water balloon fight for tech students. (Then again I am young, maybe others wouldn't find a balloon fight appealing)

#### General responses:

Everything is great, the **advocates are amazing** at what they do! More POWER to them :)

I love it!

**Keep doing what you all are doing.** I do not believe I would have made it this far, considering my situation, without the POWER Career Staff.

