

# Ensuring Success for Veterans with Disabilities in STEM Degree Programs: Recommendations from a Workshop and Case Study of an Evidence-Based Transition Program

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## I. Background and Literature Review

As of June 2013, over 50,000 have been wounded or injured in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) (Iraq and Afghanistan Veterans of America, 2013). After incurring injuries or illness, service members in military treatment facilities receive excellent medical care (Ainspan & Penk, 2008; Army Wounded Warrior Program, 2010). As service members transition to veteran status and move beyond medical rehabilitation to vocational rehabilitation, through the VA and the state Vocational Rehabilitation services, they could benefit from structured activities that encourage reintegration into civilian community.

The benefit of veterans' interest in pursuing degrees in STEM extends beyond the veterans themselves. Undergraduate engineering education in the United States is reaching a critical shortage with alarmingly low prospective enrollment rates. Currently, only 9% of high school SAT takers express an interest in the discipline (The College Board, 2012). Reports show that active duty service members and veterans returning to school may not follow the same trend. The General Technical scores, which are derived from the Armed Services Vocational Aptitude Battery and are used to assess qualifications for enlistment, reveal that 72% of active-duty enlisted recruits in 2011 scored at or above the median on the Armed Forces Qualification Test, a test of cognitive aptitude, compared to 51.1% of civilians (Office of the Under Secretary of Defense, Personnel and Readiness, 2011). This high score can be interpreted as an indicator of aptitude in STEM. In addition, as non-traditional students with a unique set of experiences and life perspectives, having more veterans on campus promotes cultural diversity within academia.

Through military service, veterans have learned teamwork, selfless sacrifice, accomplishing missions, and working through challenges. Thus, military experiences are a strong foundation for veterans wishing to pursue higher education for veterans with academic aspirations. The newest edition of the GI Bill (also known as the Post-9/11 GI Bill) provides 36-month coverage for higher education and is offering one of the most comprehensive benefits packages in history, thereby encouraging more active duty

members and veterans to pursue college degrees. The GI Bill also provides a Tutorial Assistance Program, which helps provide additional tutoring, up to \$1200 of services, if the student is enrolled at least half-time. It has been shown that college degree holders earn on average over 15 to 20 thousand dollars more than those with a high school diploma (National Center for Education Statistics, 2011). Educators can convey strategies how veterans can manage their resources to meet their future career goals. Veterans with disabilities (VWDs) may be eligible for services through the VA Vocational Rehabilitation & Employment Program and through the state vocational rehabilitation programs.

For VWDs, transition to an academic environment is filled with barriers. Navigating university bureaucracies, the uncertainty of credit transfer requirements, and understanding the GI Bill benefits may discourage them from pursuing and/or completing higher education (Madaus et al., 2009). Only 22% of colleges with services for veterans (which by definition include active-duty students) provide transition assistance, defined as linking together services that would otherwise be offered independently of each other; only two out of five provide training opportunities for faculty and staff (using materials such as those provided by Kognito, 2012) to better assist veterans with transition-related issues (Redden, 2009). However, there are many support systems that are suggested to have a positive impact on the retention of VWDs including mentors, involvement with student veteran cohorts, and rehabilitation support, all of which encourage their success as students. There are also strategies to support VWDs' involvement in STEM: among them are building early awareness of careers as engineering technicians, engineering technologists and engineers and the pathways that lead to them; ensuring academic recognition of service members' prior experience; defining and propagating supportive academic environments; and providing seamless support from government agencies, academic institutions and industry (ASEE, 2013).

## II. Methods and Case Study Description

In April 2010, two representatives from the National Science Foundation (NSF), fourteen administrators

and faculty (most of them NSF awardees in innovative practices in veterans education in STEM), and five representatives from the Department of Defense participated in a structured workshop to discuss academic opportunities for VWDs. The main objective of the workshop was to identify barriers that veterans encounter in transitioning to college and to draft recommendations for higher education administrators and faculty who work with this population of students. The discussion focused on supporting student veterans' success in STEM fields.

The information collected during this workshop, along with the theoretical framework below, led to Experiential Learning for Veterans in Assistive Technology and Engineering (ELeVATE) program, an intensive academic transition program, offered through the Department of Rehabilitation Science and Technology (RST) at the University of Pittsburgh. Some preliminary conclusions can be drawn and recommendations made for future programs.

### *Theoretical Framework*

Engineering and technology degree programs are only effective if students persist and graduate from them and attain successful careers. There are a few key areas that have been documented in engineering education research that result in retention: experiential learning, self-efficacy enhancement, social-cognitive career theory exposure, and student engagement (Hoit & Ohland, 1998; Hutchison et al., 2006; Byars-Winston, 2010; Ohland et al., 2008). Table 1 demonstrates each phase of the program, corresponding theories, and activities:

ELeVATE ascribes to the 'learning-by-doing' philosophy, commonly known as 'experiential learning'. By completing engineering and technology-oriented tasks, participants see themselves achieving, resulting in greater engineering self-efficacy compared with their peers who are solely engaging in theory (Raelin et al., 2007). As a result of the experiential learning opportunity, participants self-identify areas of weakness related to math and science skills (or reciprocally, confirm their strengths in these areas) (Hunter, et al., 2007). This acknowledgement in itself serves as a motivator to engage in more active learning and a higher readiness

Months and Phase	1-3 Phase 1: Academic Preparation	4-6 Phase 2: University Transition	7→ Phase 3: Retention
Experiential learning (& resultant theories of self-efficacy and reflective learning)	-Research experience -Targeted skills training	-Research experience	-Research experience -Career exposure -Internships
Social cognitive career theory	-Vocational counseling	-Vocational counseling	-Vocational counseling
Student engagement theory	-Mentors --Faculty and graduate students --Peers --Community	-1-on-1 transition assistance -Study groups -Orientation -Student Veterans of America -Cohort involvement	-Continued involvement in activities established in Phases 1 & 2

Table 1: Program phases, theories, activities Experiential learning, self-efficacy, and reflective learning

to learn these subjects (a paradigm known as reflective learning) (Brown, 2004; Jiusto & DiBiasio, 2006). The combination of these theoretical frameworks allows participants to receive a primer in engineering from their experiential learning projects, gain self-efficacy in these domains, and execute reflective learning related to math and science coursework.

### Social cognitive career theory

The Social Cognitive Career Theory (SCCT) approach grew out of Albert Bandura's social cognitive theory (Bandura, 1986) and addresses issues of culture, gender, genetic endowment, social context and unexpected life events that may interact with and supersede the effects of career-related choices (Lent, 1994). The SCCT focuses on the connection of self-efficacy, outcome expectations and personal goals that influence career choice.

### Student engagement theory

Student engagement occurs when students make a psychological investment in learning; they take pride not simply in earning the formal indicators of success (grades), but in understanding the material and incorporating or internalizing it into their lives. Student engagement refers to a student's willingness and compulsion to participate in the learning process promoting a higher level thinking for enduring understanding (Kuh, et al., 2008).

## II.a. Program Description

The ELeVATE program incorporates multiple interventions derived from the developed needs assessment and the theoretical frameworks. Among them are mentoring, academic and professional development workshops, rehabilitation and

vocational counseling, as well as math and technical writing seminars. By interacting with mentors (peers, graduate students, and veterans in the community), who have encountered similar obstacles (transitioning from military to civilian life; adjusting to newly incurred disabilities) and have been successful in their academic and professional careers, participants see greater possibilities for themselves and adjust their own goals to reflect this sentiment. Rehabilitation and vocational counseling is a crucial component of ELeVATE. Regular individual and group meetings with a counselor provide a space for ELeVATE to address issues ranging from strategies for adjusting to new settings to navigating the bureaucracy of the veterans' benefits system to matching their interests and career goals to appropriate college majors. (For a sample ELeVATE weekly schedule, see Table 2)

ELeVATE interns work on a research project under the

Day	Time	Activity	Tasks completed	Personal outcomes or skills gained
Monday	0800	Meet with rehab counselor	Weekly check-in	Accountability, stronger sense of self
	0930	Meet with mentor	Provide progress report on research	Responsibility, professional communication
	1030	Meet with research team	Provide updates to team on individual progress	Knowledge of research project goals-link to the bigger picture
Tuesday	1300	Work in lab	Assist in fabrication of wheelchair component	Technical/machining skills
	0800	Work in lab	Review research protocol for preparation of subject testing	Reading comprehension
	1000	Meet with graduate student mentor	Review procedures for subject testing	Professional communication
	1100	Assist mentor with testing in clinic	Communicate with subjects, set up tests, administer questionnaire	Interpersonal communication, how to act in professional manner in clinical setting
Wednesday	1400	Work in lab	Upload data from subject testing	Organizational skills, database management
	0800	Work in lab	Analyze data with statistical software with help from graduate student mentor	Math/statistics skills, increased analytical capacity
	1300	Work in lab	Incorporate results in to research paper	Writing skills, research skills
Thursday	0900	Weekly writing seminar	Provide others feedback on research papers, gain feedback from faculty instructor "results" section	Analytical skills, professional communication, writing skills, presentation skills
	1300	Work in lab	Incorporate feedback in to paper	Writing skills
	1500	Digital media design workshop	Learn fundamentals of design to enhance presentations and reports	Presentation skills
Friday	0900	Weekly program meeting	Discuss issues; complete transitional workbook module of week: "Matching a career/job to you" as group	Vocational rehabilitation, interpersonal communication, articulating and managing goals
	1300	Weekly math and statistics seminar	Complete module of week; present examples from paper for feedback	Math and statistics skills, problem solving

Table 2: ELeVATE weekly schedule

guidance of a mentoring team. At the end of the program, each student submits a research paper (completed through a technical writing seminar). Each student presents his/her work at the Research Symposium and Poster Session, an event that brings together faculty, graduate students, and participants of several undergraduate internship programs. Keeping with military tradition, participants are awarded a commemorative coin at the end of the program in recognition of their work as a student.

ELeVATE participants are guided by RST rehabilitation counseling faculty, graduate students, education specialists, and community professionals and mentors through weekly ELeVATE vocational counseling sessions. The weekly sessions follow the model developed by Dr. Steven Danish of Virginia Commonwealth University and outlined in the F.R.E.E. (Family, Relationships, Education, and Employment) 4 Vets guide. Designed for veterans returning from recent conflicts in Iraq and Afghanistan, F.R.E.E. 4 Vets provides educational assistance and training for veterans in transition. Representatives from organizations that provide services for veterans (e.g., VA Office of Vocational Rehabilitation and Employment, the Wounded Warrior project), and former ELeVATE students join the students for the seminars as guest speakers.

### III. Results and Discussion

The following results are derived from both the aforementioned workshop and initial cohorts of the case study program, ELeVATE.

#### III.a. Wounded Warrior and expert panel results

In April 2010, through a panel of Wounded Warriors, barriers were disclosed as examples that active duty soldiers and VWDs face in their transition to college. This small sample identified very specific challenges that may not be generalizable to all veterans as they transition into the college setting. However, it is important to note that these topics have also been identified by academic institutions and other veterans, with and without disabilities (Ackerman, DiRamio, & Garza Mitchell, 2009; Vance & Miller, 2009; Burnett & Segoria, 2009).

1. *The transfer process was cited as particularly problematic.* Part of the issue is that administrators involved in the transfer of these credits do not understand how to match academic degree programs to Military Occupational Specialty (MOS). Some panelists spoke to the benefits of their military credits transferring from training but there is minimal guidance when the service member can no longer engage in their MOS.
2. *The timeline is not always a smooth transition for veterans as many of them transition from active duty to veteran status while enrolled in classes.* This has

implications in terms of eligibility. One participant noted "In the Army they paid the school, once you get out, you're responsible to figure out the subtle nuances such as in state vs. out of state tuition. It's a complicated system to navigate."

3. *Students do not have the level of support as a veteran that they felt they received while still on active duty status, resulting in mental health issues.* After returning from deployment, mental health issues do not always come in to play right away. After midterms, one panelist spoke of how she developed manic-depressive disorder and was unable to finish and failed her courses. Other panelists spoke of their occurrences of PTSD which resulted in painful flashbacks, nightmares, and being unable to sit wherever they choose to in a room, with a fear of not being able to see what was going on behind them.
4. *Returning as nontraditional students is also an issue.* Only 15% of student veterans are of traditional college age between 18–23 years old. The greater majority of today's student veteran will be, on average, 5 years older than their classmates (VA, 2012). Even some of the older veterans who are returning and who already have advanced education including MS degrees, need to come back to school for new training.

In addition to discussing the self-assessment conducted while in a transition unit, the panelists offered the following suggestions on how to improve the college experience for veterans:

1. *Institutions should offer academic and career advising specific to veterans.* Academic advisors need to enlighten veterans about test-out options for their military careers. For example, many universities do not require SAT/ACT scores for veterans, but lower level admissions counselors are not always cognizant of some of these details, which may seem commonplace to them, but could serve as a deal breaker for a veteran who is debating their options to transition to higher education. There are considerable differences between active duty status and National Guard. However, this is often not clearly pointed out. Another resource that would be of value here is the Transfer guide: Understanding your military transcript publication created by the American Council on Education (ACE) in 2010. This resource provides pertinent guidance and steps for transcript processes for veterans, service members, and colleges and universities. (ACE, 2011) ACE has successfully outlined the process of receiving academic credit for formal courses taken outside of traditional classrooms (i.e., MOS training and other military technical training).
2. *Being aware of compensatory strategies for success in and out of the classroom.* One panelist suggested after going through what she did, she now knows the steps

she needs to take to be successful. "There is a way I can position myself in the classroom which doesn't push me to the back of the room which causes attention issues. I am understanding of my capabilities and what makes me tick. I know now that I need small classes and will find a university that matches my needs."

Additional accommodation strategies were offered by the workshop participants.

3. *The use of online classes and other technologies to engage the VWDs population while still in transition.* This mode of delivery may not be ideal for all participants. There are certainly advantages and disadvantages to online education. In any mode of delivery, classes should be modified to accommodate specific populations including amputees, those dealing with PTSD, traumatic brain injury, or visual or hearing impairments.
4. *Be aware of the three major areas of concern for success in the classroom: concentration, memory, and processing.* Service members often need decreased distractions, to sit in close proximity to a professor, and work with peers to get help as additional note-takers. A daily organizer helps to aid memory and knowing the student's best mode of learning can help to ensure the adequate support is in place. In terms of processing information, veteran students can review their peer's notes or taped materials to add missed information.
5. *Enroll in mentoring programs.* Eligible mentors include peer mentors (often referred to as "battle buddies"), faculty/staff who are veterans, and veterans working in the community.
6. *Collaboration between vets' services and services for students with disabilities offices.* VWDs should be aware of the state Offices of Vocational Rehabilitation and other support services that benefit all individuals with disabilities. The practices used for services for students with disabilities should become a focus of veterans' services such as, focusing on strategies for transition, matriculation, retention, and graduation.
7. *Develop a "Faculty Bootcamp".* The "bootcamp" is designed to educate faculty on how to best support veteran students, especially those with disabilities. As a result of a collaborative three-day discussion among veterans, service members, their families, and campus leaders organized by ACE in 2010, a series of resources were published to ensure the success of the transitioning veteran as well as the staff and faculty of colleges and universities. Included among these resources is "Accommodating student veterans with post-traumatic brain injury and post-traumatic stress disorder: Tips for campus faculty and staff" (ACE, 2011). Another relevant resource that would be helpful in educating faculty is "Strength after service: The

veteran perspective, the neurophysiological of stress, and the skills to transform” (ACE, 2011). A special track is recommended for those who are in STEM disciplines. When a veteran enters a STEM program, they would then be assigned a sponsor that has completed the bootcamp, who may also meet with the student and family to identify additional needs.

8. *Help veterans identify their diverse skill sets as a match for an engineering pathway via practical applications.* Veterans may need applications to understand what they learn vs. the traditional thinking of theoretical concepts first, then application. Research experiences may be a concrete way to convey concepts through practical application. Connecting to future career pathways is also a way to interest and motivate veterans to pursue engineering; for example, this population is highly employable by defense industries as they understand military culture and are often eligible to obtain the necessary clearances.

### III.b. Case study results

The evaluation of veterans’ education programs may include both a process and an outcome evaluation with both yearly (pre-post data collection) and longitudinal (multiple years data collection) cohorts. Activity evaluation surveys completed by participants at the end of each activity and program surveys administered to participants and mentors at the end of the summer program assist in determining which components of the program are beneficial and which ones should be revised or omitted. A post-survey determines the impact of the activities on participants in terms of changes in participants’ levels of knowledge, skill, attitudes, behaviors, and status. A triangulation of methods and sources ensures the data collected are complete and accurate. An evaluator interviews participants at the beginning, middle, and end of year to measure defined program outcomes. A follow-up survey tracks participants’ graduation and employment status. The logic model Appendix A is an example from the ELeVATE program that demonstrates how the various short, mid, and long-term outcomes are monitored.

To date, three cohorts comprised of seven, four, and six veterans respectively have completed the ELeVATE program. Pre/post surveys were administered to the ELeVATE participants. There was a 100% satisfaction with the program among participants. Upon completion of the summer part of ELeVATE, 88% of participants enrolled in higher education, with 87% percent of those participants enrolled in Science, Technology, Engineering and Math (STEM) disciplines. 100% stated that the program increased their knowledge, met expectations, and that they would recommend ELeVATE to other students. The post-survey showed that all ELeVATE participants felt ‘Strong’ when working effectively with others, understanding people with disabilities, solving complex

real-world problems, and had confidence in succeeding in college. To measure student growth through participation in the ELeVATE program, a follow-up interview is conducted at the end of the academic year.

As part of the program evaluation, feedback was also obtained from faculty and graduate student mentors. Mentors’ comments were very positive and included such statements as (1) *“I enjoyed the involvement of the veterans in this summer’s programs. The maturity level and dedication they provide to the team was noticeable and positively affected the other research team members including both undergrads and grad students”* (2) *“The opportunity you afford these folks is outstanding. They will be well prepared to navigate the universities’ bureaucracies which will facilitate a better transition to their college career”*.

Though positive feedback was received from both the students and faculty, there is always room for improvement. The following changes will be incorporated:

1. *Modify vocational counseling sessions to include additional guest speakers and activities.* Some interns felt some of the transition workshops provided in the military mirrored what occurred in ELeVATE. The Warrior Transition Command’s Comprehensive Transition Plan guidance packet will be used to shape the program as a next step building off of the veterans’ separation activities as to expand or replicate any of those previously completed.
2. *Add more structure to the program: coordinators will provide suggested pockets of time each week to work on that particular week’s milestone to ensure they remain on target (e.g. analyzing, drafting research paper outline, creating poster structure).* Overall, participants requested more structure to the program to guide their weekly activities. This finding is congruent with the behaviors common to the military including, tight schedules, frequent check-in points, and chain of command procedures.

As more veterans complete ELeVATE and data becomes available, an in-depth assessment of the program will be performed. Results of the longitudinal study focusing on participants’ transition to college will be compared to those from other case studies of veterans transition programs.

## IV. Recommendations and Suggested Resources

### IV.a. Designing a transition assistance program for veterans

First, it is important to identify programmatic objectives and outcomes to ensure that the needs of the population are being met effectively. For example, ELeVATE’s objectives are to engage VWDs in rehabilitation engineering research, excite them about the associated

academic fields, provide rehabilitation and other support, and prepare them to transition to college. The outcomes are to enroll more VWDs in engineering and technology degree programs and provide them with a support network that would help them succeed in college and beyond.

- It is crucial to educate faculty, staff, and others (e.g., college administrators, graduate student mentors) involved in the transition process of the participating veterans. They must be educated on common adjustment issues related to the prevalent disabilities of returning Wounded Warriors, as well as services and benefits that veterans are eligible for so as to provide appropriate referrals to the student. Research has shown that today’s student veterans do not readily identify themselves as having a disability, nor will they seek out services from services for students with disabilities programs, making the awareness of involved faculty and staff all the more important (Burnett & Segoria, 2009). Recommended seminars include overviews of TBI, PTSD, and military culture, and strategies for establishing a positive working relationship with a veteran. Recommended resources include Mayo Clinic’s guide for understanding brain injury (2008), the VA’s National PTSD Center website, and the VA VAntage Point blog. (see Appendix B for more resources)
- Partner with other veterans’ services organizations. Many veterans may relocate to attend college and therefore need a support network that they could reach out to regarding benefits, family issues, employment opportunities, etc. Once a network of partnering organizations is in place, appropriate personnel need to be recruited to assist with program implementation and to ensure that communication between partnering organizations is ongoing.
- It is important to identify individuals among mentors, program directors, or community mentors, who could serve as role models for the participants. An example is the American Corporate Partners, which matches veterans to corporate community mentors.

### IV.b. Practices for facilitation

Tapping into the right network of people, organizations, and resources can make recruitment for veterans’ programs can be relatively easy. Though military medical transition programs (Warrior Transition Units (Army) and Wounded Warrior Brigades (Marines)) cannot officially endorse non-military programs, creating relationships with military transition and career coordinators can be beneficial in the early identification of participants who are preparing for transition. It is also beneficial to reach out to several national veteran organizations (especially those that have local chapters), including Student Veterans of America (SVA), Iraqi and

Afghanistan Veterans of America (IAVA), the Wounded Warrior Project (WWP), and Disabled American Veterans (DAV), and Paralyzed Veterans of America (PVA), which now offers vocational rehabilitation services. Local support services such as Offices of Vocational Rehabilitation at the state level are also recruitment sources. Social networking should be used to connect with individual veterans and veteran organizations on LinkedIn, Facebook, and Twitter. Providing rehabilitation and counseling support are of utmost importance. While participants are improving their self-efficacy through other activities like experiential learning, a comprehensive rehabilitation plan should be implemented for each participant to prepare them to manage the stress of academic life. This should involve functional, neuropsychological, interest and aptitude and assistive technology assessments designed to identify an academic goal as well as the service, support and accommodation needs of the participant. In 2008, the RAND Corporation compiled data indicating that 2 million OIF/OEF veterans were enrolled in postsecondary education. Of that number, it is estimated that 20% are diagnosed with PTSD and 19% experienced a traumatic brain injury (Madaus et al., 2009). This support program should include necessary and desired accommodations, compensatory strategies, program modifications and assistive and learning technologies designed to ensure the participant's success.

#### IV.c. Identifying resources

There are three main areas for funding in veterans' education: 1) program development, 2) research related to educational outcomes, and 3) additional funding for students in the form of scholarships. An example of a solicitation for the first two domains is the National Science Foundation (NSF) Research in Engineering Education (REE). Non-profit organizations such as Disabled American Veterans (DAV) and Paralyzed Veterans of America (PVA) also have funding opportunities for organizations that support veterans' employment initiatives.

#### U. Next Steps and Conclusion

The workshop with academic professionals and military leaders and the case study of a veterans transition program described here serve as a resource for identifying best practices for programs for VWDs in STEM. STEM careers should be promoted among the VWDs, and best practices for recruitment of student veterans must be shared among institutions. Disability and veterans services offices should work together to foster a campus environment that accommodates VWDs' academic and rehabilitation needs. Best practices on how to make this population college-ready through preparatory coursework and transition programs, as the enlisted service-members make up 85% of the military (the remaining 15% enter

the military through the service academies and R.O.T.C. programs).

Acknowledging this last point related to college readiness, creating alternative pathways may be the solution to filling the STEM pipeline. For example, engineering technology preparatory programs, such as the new AIM (Advancing Inclusive Manufacturing) program, a 12-week machining training at the University of Pittsburgh, offer VWDs an initial certification to either pursue employment or lay a foundation for STEM coursework. Such STEM immersion programs can build VWDs' confidence while encouraging them to apply to an associate's or 4-year degree program, depending on their previous experience and/or aptitude. Further research should be conducted on EleVATE and other transition programs to determine their effectiveness in providing veterans with knowledge and supports necessary for successful transition to and completion of baccalaureate STEM programs.

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## Appendix A: Program logic model

TABLE 3: INPUTS	
RESOURCES	CONSTRAINTS
<ul style="list-style-type: none"> <li>-Multi-institutional expertise in assistive technology research and services</li> <li>-Connections with engineering degree programs</li> <li>-Veterans' support organizations and centers</li> </ul>	<ul style="list-style-type: none"> <li>-Disability itself</li> <li>-Stigma from peers and faculty</li> <li>-Lack of preparation for academic transition</li> <li>-Faculty lack of knowledge in veteran &amp; disability issues and accommodations</li> </ul>

  

TABLE 4: ACTIVITY & INTERVENTION
<p><i>Rehabilitation</i></p> <ul style="list-style-type: none"> <li>-Assessments</li> <li>-Rehab planning</li> <li>-Counseling</li> <li>-Coordination and case management</li> <li>-Identification of supports, accommodations, and assistive technology</li> <li>-Assistance in employment transition</li> </ul> <p><i>Experiential Learning</i></p> <ul style="list-style-type: none"> <li>-Mentoring</li> <li>-Technical skills workshops</li> </ul> <p><i>Academic Preparation</i></p> <ul style="list-style-type: none"> <li>-Standardized test prep</li> <li>-What to expect on campus</li> <li>-Financial aid assistance</li> </ul> <p><i>Support</i></p> <ul style="list-style-type: none"> <li>-Veteran mentors</li> <li>-Involvement in veterans' organizations</li> <li>-Housing and familial support</li> </ul> <p><i>Cohort Experience</i></p> <ul style="list-style-type: none"> <li>-Involvement in Student Veterans of America</li> <li>-Study groups</li> </ul>

TABLE 5: OUTPUTS & OUTCOMES			
OUTPUTS	OUTCOMES		
	SHORT	MID	LONG
<ul style="list-style-type: none"> <li>-Participation rates across activities</li> <li>-Activity satisfaction surveys</li> <li>-Hours spent with mentors</li> <li>-Veteran academic preparation and disability accommodation best practice manuals</li> <li>-Archived workshops and training modules</li> </ul>	<ul style="list-style-type: none"> <li>-Change in knowledge, skills, and self-efficacy towards engineering education and careers</li> <li>-Aware of assistive technology and support services and how to access them</li> <li>-Close mentored relationships with veteran professional and faculty</li> <li>-Aware of financial aid procedures and how to apply for scholarships</li> <li>-Increased body of educated faculty in veterans' issues</li> </ul>	<p><i>Change in behavior</i></p> <ul style="list-style-type: none"> <li>-Enroll in classes</li> <li>-Apply for research opportunities</li> <li>-Apply for engineering degree programs</li> </ul>	<p><i>Change in status and condition</i></p> <ul style="list-style-type: none"> <li>-Enroll in engineering degree programs</li> <li>-Earn engineering degree</li> <li>-Enroll in post-secondary education or full-time employment</li> </ul>



## Appendix B: References for Staff and Faculty Training

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