Engineering Educators Bringing the World Together
2025 ASEE Annual Conference & Exposition
Palais des congrès de Montréal, Montréal, QC • June 22–25, 2025 ASEE
Paper ID #47851

Washington Veterans to Technology (WaV2T): A Pathway for Military Personnel to IT Careers

Dr. Radana Dvorak, Saint Martin's University

Dr. Dvorak received her Ph.D. in computer science from the University of London, Queen Mary College and Master's in AI from the University of Sussex. Dr. Dvorak has been working in IT, higher education, academic industry and program development for over 25 years. As a member of Government and University strategic planning committees, task forces, and advisory boards; she has been a key architect of the Microsoft Software and System Academy, a public-private partnership between the Department of Defense, Microsoft, and Saint Martin's University. She is currently involved in two research projects. Artificial Intelligence and Cybersecurity Education. She is the Chair of the Computer Science Dept at Saint Martin's University and oversees the academic side of the WaV2T program under Dean Dave Olwell.

Adam W.K. Takata, Saint Martin's University
Dr. David H. Olwell, Saint Martin's University

Dr. Olwell is the dean of the Hal and Inge Marcus School of Engineering as Saint Martin's University.

Washington Veterans to Technology (WaV2T): A Pathway for Military Personnel to IT Careers

Adam Takata, Radana Dvorak Ph.D., Dave Olwell Ph.D.

Abstract

The Washington Veterans to Technology (WaV2T) program offers a 16-week certificate course providing military personnel and their spouses with a pathway to information technology careers. Building on the success of the Microsoft Software and Systems Academy (MSSA), WaV2T delivers three specialized tracks: Server & Cloud Application, Cloud Application Development, and Cybersecurity Administration. Through Saint Martin's University's accredited Computer Science Department, participants earn 18 transferable semester credits while receiving comprehensive technical training and professional development. Over 11 years, the program has achieved a 98% graduation rate and 94% overall success rate, with 74% of graduates securing IT employment and 24% pursuing further education at Saint Martin's University or other Regionally accredited institutions. This paper examines the program's curriculum, career development components, and long-term impact on transitioning military personnel into civilian IT careers. Program Structure and Academic Integration

Introduction

Veterans transitioning from military service to civilian careers face complex challenges, particularly in the rapidly evolving technology sector [5], [6], [8]. Federal initiatives such as The Vetrans Opportunity to Work Act (The VOW Act) [3] to Hire Heroes Act of 2011 [4] was passed by Congress to understand the importance of preparing transitioning service members for meaningful post-military employment, including access to education and career development opportunities. Building on the foundation of the Microsoft Software and Systems Academy (MSSA) [1], [2], designed, developed, and piloted at Saint Martin's University in partnership with Microsoft (2013–2020), the Washington Veterans to Technology (WaV2T) program advances these ACTS objectives through a comprehensive academic model that facilitates entry into high-demand technology careers. WaV2T integrates rigorous technical training with structured career development support, aligning with the VOW Act's objectives to enhance veteran employability [6], [7].

This program provides specialized certification pathways in Server & Cloud Application, Cloud Application Development, and Cybersecurity Administration. With a graduation rate of 98% and an IT career placement rate of 74%, WaV2T has proven highly effective in transitioning veterans, service members, and military spouses into civilian technology roles.
This paper examines the program's structure, curriculum alignment with industry demands, and outcomes. It also explores the critical role of WaV2T's Career Professional Development

component key to employment success. By analyzing detailed program, case studies and program data, this paper contributes to the discourse on veteran transition programs, offering insights for academic institutions, policymakers, and employers committed to supporting veterans' entry into the technology workforce.

As a scalable and wholistic replicable framework, analyzing case studies and program data, WaV2T offers valuable insights for policymakers, educators, and employers committed to enhancing veteran employability. This paper contributes to the discourse on veteran transition programs, emphasizing the importance of academic rigor, hands-on training, and tailored career support in equipping veterans for long-term success in the evolving technology landscape [7], [8]. The program's demonstrated impact serves as a testament to the transformative potential of well-structured veteran transition initiatives.

Program Structure and Academic Integration

The Washington Vets2Tech (WaV2T) program offers an intensive 16-week technical education framework comprising 18 semester credits, delivered through Saint Martin's University's ABET-accredited Computer Science Department. The curriculum is structured into two 8-week sessions, with coursework directly applicable toward Bachelor of Science degrees in Computer Science (BSCS) or Information Technology (BSIT). Many of the classes taken are offered in our degree program or have the equivalency of the degree classes. This credit transferability ensures academic mobility and continued educational opportunities for participants.

Curriculum Design and Delivery

The program maintains a rigorous academic schedule with classes conducted Monday through Friday, 9:00 AM to 5:00 PM in the classroom. Each student participates in three courses biweekly, with 3-hour sessions per course. The curriculum integrates:

- Theoretical foundations and applied practice
- Hands-on laboratory experiences
- Virtual laboratory environments, particularly emphasized in cybersecurity coursework
- Project-based learning components
- Instructor availability outside of class time
- Teaching Assistants

Technical Pathways

The program offers three specialized technical pathways:

- Server & Cloud Application
- Focus on networking fundamentals, operations, troubleshooting, security, cloud computing, hardware
- Cloud Application Development
- Focus on python, SQL, T-SQL, Java, JavaScript/ASP.NET; data structures and algorithms, developing cloud solutions

- Cybersecurity Administration
- Focus on advanced networking, ethical hacking, threat intelligence, web and app security

Each pathway is designed to align with industry-recognized certifications, such as Amazon Web Services (AWS) and CompTIA. The program includes two certification examination vouchers within the laboratory fees, subject to program modifications.

Admission Requirements and Academic Standards
The prescreening admission to the certificate program requires that candidates:

- Demonstrate proficiency in college-level algebra
- Successfully complete of a behavioral interview
- Demonstrate professional and academic Integration

The curriculum design serves dual purposes:
(1) Development of workforce-ready technical competencies
(2) Establishment of foundational knowledge for continued academic pursuit
The program's integration with an ABET-accredited Computer Science department ensures academic rigor while maintaining industry relevance. The transferability of credits to BSCS, BSIT, or our new BSCY Bachelor in Cybersecurity or other academic institutions provides participants with flexible educational pathways.

Laboratory and Applied Learning Components
The practical components include:

- Structured laboratory exercises
- Virtual environment simulations
- Industry-aligned project work
- Unstructured time for independent study and project development

This academic framework represents a comprehensive approach to technical education, combining academic rigor with practical skill development, while maintaining alignment with industry certification standards, and our NWCCU accredited computer science programs.
The curriculum and the learning objectives for each course in the three different certificate paths are outlined below (diagrams 1-3 below), and will be discussed in more detail during the presentation:

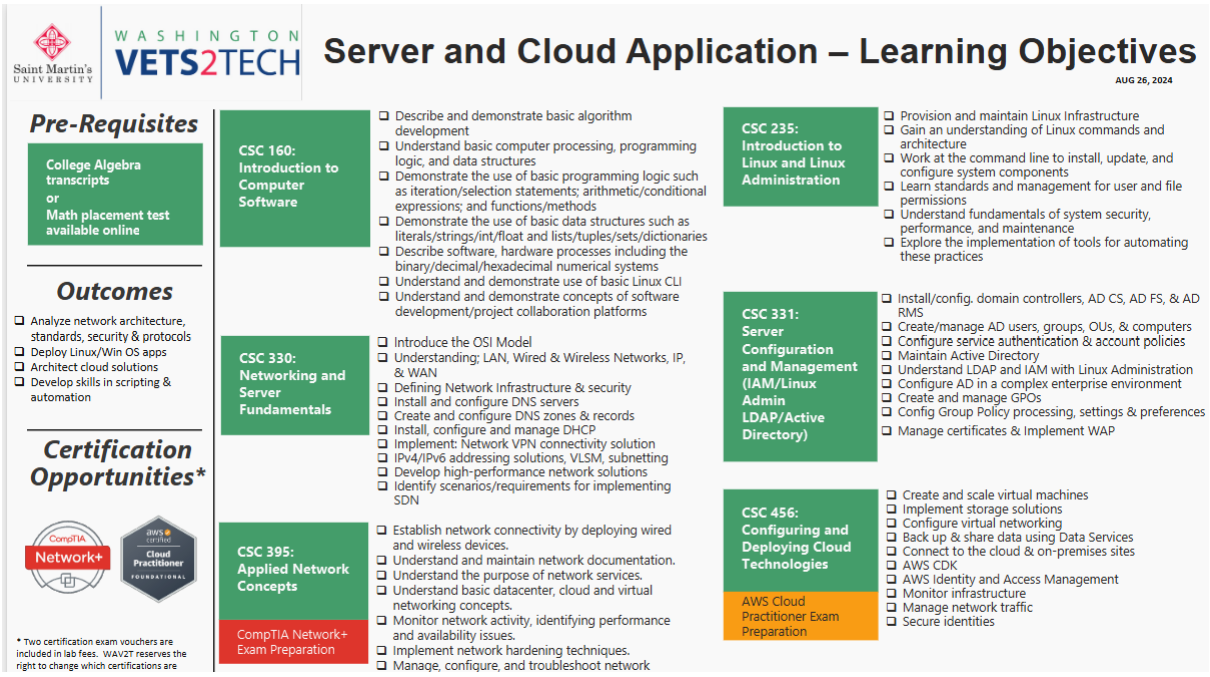

Diagram 1: Server and Cloud Application curriculum and learning objective

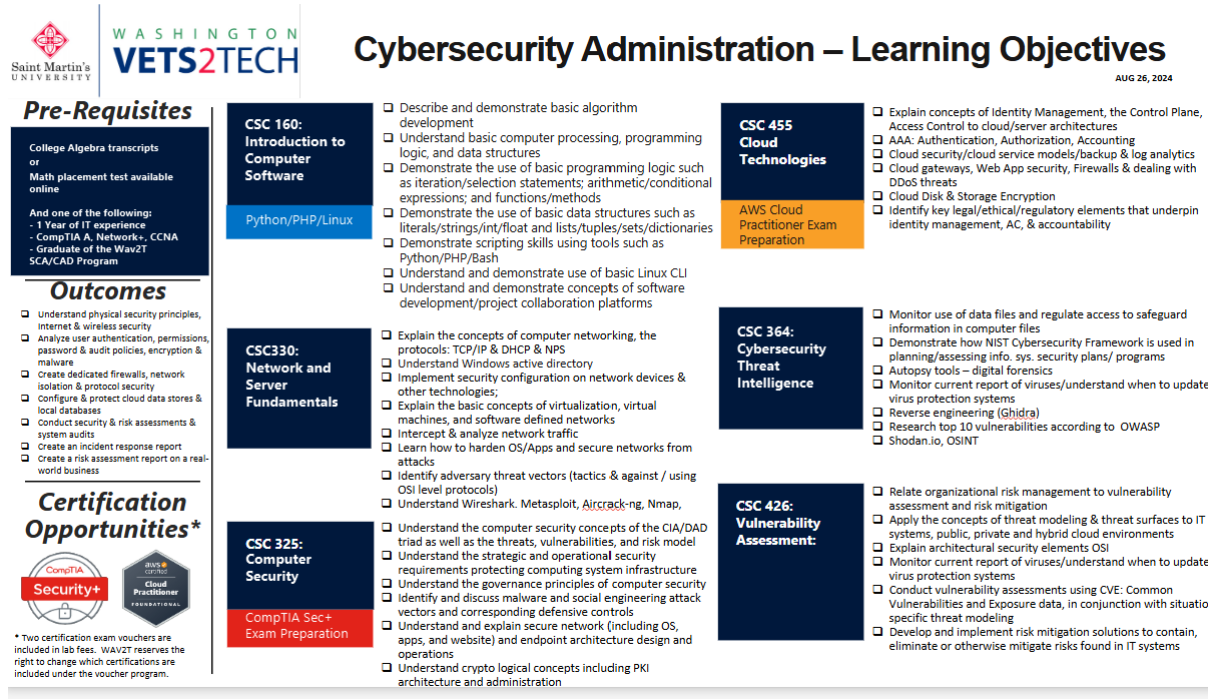

Diagram 2: Cybersecurity Administration curriculum and learning objectives

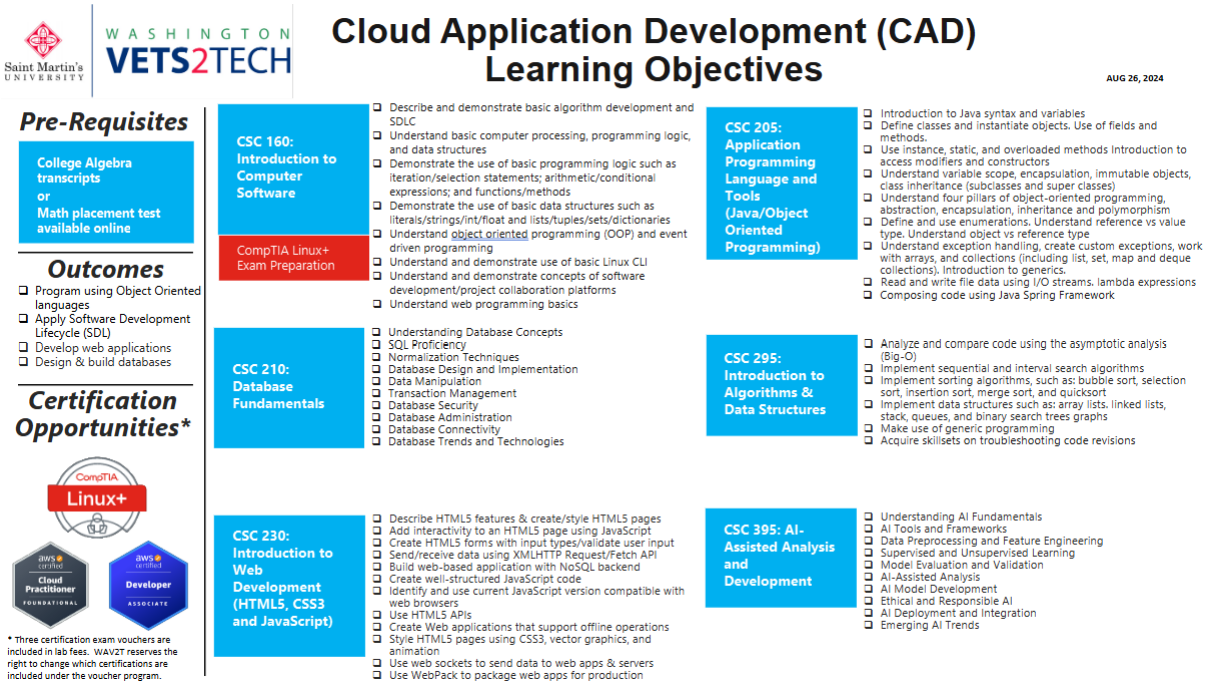

Diagram 3: Cloud application Development curriculum and learning objectives

Professional development program

The professional development program within the Washington Vets 2 Tech (WaV2T) initiative is designed to equip transitioning service members, veterans, and military spouses with the skills, resources, connections and ongoing support necessary to thrive in technology careers. This comprehensive program complements the academic training provided in the 16-week certificate course by emphasizing career readiness, industry alignment, and ongoing support needed discussed widely in the literature [9], [10], [11]. It is divided into six components described below:

1. Career Development Managers
    - Responsible for the day-to-day operations of the WaV2T program and consist of prior military members who have made the transition from the military. This allows for a better connection with the students and can relate life/career lessons.
    - Conduct one-on-one counseling sessions to help participants set realistic career goals.
    - Track participants' progress throughout the program and post-graduation.
    - Act as advocates for participants, ensuring they receive the necessary support to succeed.

2. Career Readiness Training:

- Translate students' military experience into tech-specific skills.
- Resume writing classes and assistance with tailoring resumes for tech roles.
- Effective networking strategies and LinkedIn optimization to increase visibility with recruiters.
- Interview preparation, including mock interviews in the classroom and with industry professionals.

3. Mentorship and Networking:
    - One-on-one mentorship opportunities with tech industry veterans and alumni.
    - Networking events with tech companies, recruiters, and hiring managers.
    - Insight sessions featuring guest speakers from leading technology firms.

4. Soft Skill Development and Practical Training:
    - Students complete the Clifton Strengths Assessment to identify and cultivate their strongest talents, gaining access to personalized reports and resources that help them maximize their potential.
    - Hands-on training in programming, cloud computing, cybersecurity, and IT fundamentals.
    - Collaborative team projects that simulate real-world scenarios.
    - Guidance on emerging trends and technologies.

5. Job Placement Assistance:
    - Partnerships with top-tier technology companies and government agencies to assist with job placement with students.
    - Personalized career counseling and job search strategies to assist with employment.
    - Access to a curated job board on LinkedIn exclusively to WaV2T students and alumni.

6. Ongoing Alumni Support:
    - Regular professional development webinars and training opportunities.
    - Access to a vibrant alumni network for continued mentorship and support.
    - Invitations to exclusive events and job fairs.

The emphasis of this professional development framework ensures that WaV2T participants are not only technically proficient but also well-prepared to navigate and excel in the tech industry.

The success of the WaV2T program can be evaluated through a variety of outcomes and metrics that reflect its impact on participants, employers, and the broader tech industry. Below are examples of positive outcomes and corresponding metrics:

Table 1: Employment Outcomes

Student Type	IT Track	Completion Rate	Average Salary	Top Hiring Companies
Active Duty	Server and Cloud Application	100%	$72,636.87	Amazon, Boeing, Oracle
Active Duty	Cloud Application Development	94%	$81,779.19	Amazon, Boeing, General Dynamics, Microsoft
Active Duty	Cybersecurity	99%	$79,540.08	Amazon, Boeing, Leidos, Tek Systems
Veteran	Server and Cloud Application	97%	$63,051.09	General Dynamics, Lockhead Martin, Zachary Piper
Veteran	Cloud Application Development	90%	$81,262.25	Amazon, Oracle, Washington State
Veteran	Cybersecurity	100%	$72,688	Amazon, Booz Allen, General Dynamics
Military Spouse	Server and Cloud Application	100%	$57,500	Umpqua Bank, Beshenich Muir & Associate
Military Spouse	Cloud Application Development	100%	$70,333.33	Amazon, Multicare, Washington State
Military Spouse	Cybersecurity	100%	$87,000	Morgan Stanley

The Washington Vets 2 Tech (WaV2T) program continues to demonstrate exceptional success in transitioning veterans, active-duty service members, and military spouses into technology careers. To date, 137 graduates have secured employment with top-tier tech companies or government agencies, reflecting the program's strong industry partnerships and commitment to workforce readiness. Furthermore, the program boasts an impressive 95% retention rate for graduates remaining in tech roles after one year, underscoring the effectiveness of its training, mentorship, and professional development initiatives.

Table 2. Credential Attainment, Skills Development and Employer Engagement

Category	Positive Outcome	Metrics
Credential Attainment	Participants earn industry-recognized certifications that enhance their employability.	• 42% of participants pass certifications (e.g., CompTIA Security+, AWS Certified Cloud Practitioner) during the program • 18% of WaV2T students earn more than one certification during the 16-week period
Skills Development	Participants demonstrate improved technical and soft skills aligned with industry needs.	• 97% of participants complete the 16-week training program • 99% of WaV2T students receive interviews
Employer Engagement	Strong partnerships with employers lead to job placements and ongoing collaboration.	• Over 250 employers have hired WaV2T graduates • Employer feedback on the quality of WaV2T graduates

These outcomes highlight WaV2T's success in equipping transitioning service members, veterans, and military spouses with the skills and certifications needed for IT careers, while fostering strong employer partnerships that lead to job placements. Diagram 4 (below) highlights the responses the program receives from employers.

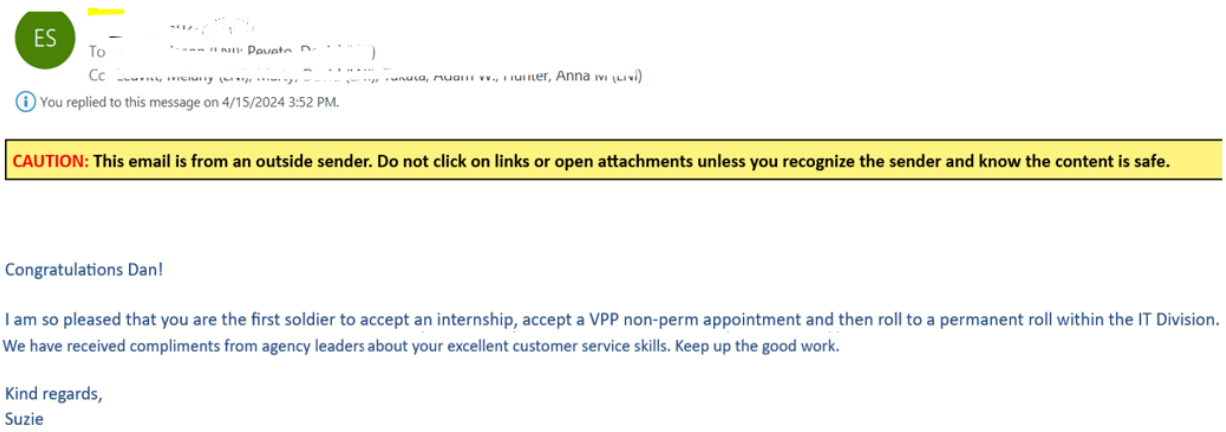

Diagram 4: Example of employer feedback

By tracking and reporting these outcomes and metrics to employers and the VA, the WaV2T program can demonstrate its value, identify areas for improvement, and strengthen its reputation as a premier initiative for transitioning veterans and military spouses entering the tech industry.

Table 3. Student success

Category	Data
Graduates Above Average Salary (2024: $62,027)	70%
Graduates Earning Over $75,000 Annually	50%+
Student Breakdown (Last 3 Years)	**Percentage**
Active Duty	71.46%
Veterans	25.89%
Military Spouses	2.65%

This data underscores the WaV2T program's ability to help graduates secure well-paying jobs, with a strong focus on active-duty service members while also supporting veterans and military spouses (see Table 3 above).

Student success stories

Saint Martin's University has graduated over 1000 students from the initial MSSA and the WaVets2Tech program. Many of the students from the program are currently enrolled in our BSCS or BSIT, ABET approved degree programs, and have jobs or internships with companies such as AWS, or State of Washington. Below is one example of one of the graduates and their path from being an Air Force Tech Sergeant.

Rodney Guyant, an Air Force Tech Sergeant, is a proud graduate of the Washington Vets 2 Tech program. During his time in the program, Rodney achieved significant milestones, earning both the CompTIA Security+ certification and the Google Cloud Digital Leader certification. His dedication and accomplishments led to his selection as an intern with the Washington State Department of Labor and Industries, where he joined the Information Services Core Tech Support team. Just three months into his internship, Rodney's exceptional performance earned him a full-time position within the department through the Veteran Placement Program (VPP). Rodney's journey exemplifies the success and opportunities available through the Washington Vets 2 Tech program, serving as an inspiration to other students and veterans transitioning into the tech industry.

There are hundreds of similar success stories and testimonials from Veterans working for Microsoft, AWS, Accenture, Goldman Sachs, Barclays, etc. A sample will be shared at the presentation.

Conclusion

The Washington Veterans to Technology (WaV2T) program demonstrates the efficacy of a comprehensive, academically integrated approach to transitioning military personnel into civilian technology careers. With its 98% graduation rate and 94% overall success rate, the program has established itself as a viable model for addressing both the technical skills gap in the IT sector and the employment challenges faced by transitioning service members and their spouses.

The program's success is driven by several key factors. First, the integration with Saint Martin's University's ABET-accredited Computer Science Department ensures academic rigor while providing participants with transferable credits toward further education. Second, the three specialized tracks—Server & Cloud Application, Cloud Application Development, and Cybersecurity Administration—align closely with current industry demands, as evidenced by the strong employment outcomes and competitive starting salaries ranging from $71,157 to $83,221. Third, many instructors are Veterans or have extensive experience teaching Veteran students providing personalized support as they navigate academia and transition into the workforce. Finally, the comprehensive professional development framework, including dedicated Career Development Managers with military backgrounds, has proven instrumental in achieving the 74% IT employment rate and 24% continued education rate among graduates.

The program's outcomes suggest important implications for both academic institutions and policymakers. The high retention rate of graduates in tech roles after one year (95%) indicates that the program's approach to technical education and career preparation effectively bridges the military civilian transition gap. Furthermore, the strong employer engagement, with over 250 companies hiring WaV2T graduates, demonstrates the program's success in meeting industry needs while fulfilling the objectives of initiatives like the VOW to Hire Heroes Act of 2011 [3], [4].

Future research opportunities exist in examining the long-term career trajectories of program graduates, the scalability of the WaV2T model to other institutions, and the potential for expanding the program's reach to address emerging technology sectors which the WaVets2Tech team is currently engaged with. As the technology industry continues to evolve and the demand for skilled IT professionals grows, programs like WaV2T offer a proven framework for empowering military personnel with the skills, credentials, and professional networks and support necessary for successful civilian careers in technology.

References

[1] R. Dvorak and M. Zantua, “Transitioning service members: Lessons learned climbing the career ladder military style – from pipefitting to IT careers and on to cybersecurity,”

presented at the Council of College and Military Educators (CCME) Conference, San Antonio, TX, USA, Feb. 15–18, 2016.

[2] R. Dvorak and M. Ady, “Boots to flip flops: A partnership between colleges, military installations, and the IT industry,” presented at the Council of College and Military Educators (CCME) Conference, Feb. 2015.

[3] The Veterans Opportunity to Work (VOW Act); [Online]. Available: https://veterans.house.gov/legislation/the-veterans-opportunity-to-work-act.htm

[4] The VOW to Hire Heroes Act; [Online]. Available: https://veterans.house.gov/legislation/vow-to-hire-heroes-act-of-2011.htm?

[5] C. Ziencik**, “**Transitioning from the Military to Higher Education: A Case Study of the Transition Assistance Program”, Journal of Veteran Studies, vol. 6, no 2, Oct.2020

[6] Careers for the Transitioning Military. Transition assistance program (TAP), [Online]. Available: https://www.taonline.com/TAPOffice/

[7] V. M. Jovanovic et al., "Pilot Programs for Veterans Transition to Engineering Fields," in 2016 ASEE Annual Conference & Exposition, New Orleans, LA, USA, Jun. 2016, doi: 10.18260/p.25901.

[8] D. L. Soldan, D. Gruenbacher, N. N. Schulz, B. A. Vogt, and W. B. Hageman, "From Defense to Degree: Accelerating Degree Opportunities for Military Veterans," in 2013 ASEE Annual Conference & Exposition, Atlanta, GA, USA, Jun. 2013, doi: 10.18260/1-2--19634.

[9] American Council on Education, "Serving those who serve: Higher education and American's veterans," ACE, Washington, DC, USA, 2018. [Online]. Available: http://www.acenet.edu/news-room/Documents/Serving-Those-Who-Serve-Making-Your-Institution-Veteran-Friendly.pdf

[10] C. Janeiro, T. RyS. Shue, M. S. Matthias, D. P. Watson, K. K. Miller, and N. Munk, "The career transition experiences of military Veterans: A qualitative study," Military Psychology, vol. 33, no. 6, pp. 359-371, 2021, doi: 10.1080/08995605.2021.1962175.

[11] C. Janeiro, T. Ryan, J. Foeller, and M. A. Hall, "Supporting Veteran Students Transitioning to Engineering," in 2018 ASEE Annual Conference & Exposition, Salt Lake City, UT, USA, Jun. 2018, doi: 10.18260/1-2--31037.