



The Veteran Education to Workforce
Affinity and Success Study



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DATA REPORT

University of Wisconsin–Green
Bay Student Military Service
Members and Veterans: Phase
Two Research Findings from the
Veteran Education to Workforce
Affinity and Success Study

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Summary

This report contains University of Wisconsin (UW)–Green Bay findings from Phase Two of the Veteran Education to Workforce Affinity and Success Study (VETWAYS), a research project focused on undergraduate student military service members/veterans (SSM/Vs) who were enrolled in UW–Green Bay, UW–Madison, UW–Milwaukee, UW–Oshkosh, and UW–Stout in spring 2020. This National Science Foundation-supported study (#1920482) has two key objectives:

- (1) To better understand how SSM/V social support networks influence SSM/V college-to-career pathways, and
- (2) To provide data-supported insights to student service professionals and other stakeholders.

Phase One of this study took place in spring 2020. During Phase One, we surveyed 623 SSM/Vs; 54 of these students also took part in interviews.

During Phase Two of this study, which took part in fall 2021, we administered surveys and interviews to current or former SSM/Vs who participated during Phase One. In total, 375 members of the Phase One panel responded to online surveys and 35 current or former SSM/Vs participated in interviews. UW–Green Bay Phase Two participants included 59 survey respondents and 6 interview respondents.

Phase Two survey and interview questions focused on students' demographics; student pathways since spring 2020; deployments/activations; COVID-19 impacts; work volition; SSM/V cultural assets; social support networks; and relationships between these factors across time. Key findings are:

UW–Green Bay Sample Demographics

- The Phase Two survey sample is 71% male, 86% White, and 29% first-generation college students.
- About 51% of the Phase One UW–Green Bay SSM/V survey sample participated in Phase Two.
- Compared with the wider Phase Two survey sample of SSM/Vs participating in the other four peer institutions, the UW–Green Bay sample is proportionately made up of more discharged and retired veterans.

Student Pathways 2020–2021

- Of the 59 UW–Green Bay participants, 36 were still undergraduates in college (61% of the survey sample), 9 had graduated and were in graduate school (15%), and 6 had graduated and were employed (10%).
- Despite the widespread disruption due to the COVID-19 pandemic during 2020 and 2021, Phase Two UW–Green Bay trajectories show considerable levels of persistence among SSM/V participants.

Undergraduate Life: On average, SSM/Vs still enrolled in UW–Green Bay reported moderate academic integration, including social contact with faculty, advisors, and other students (1.7 on a 1 to 3-point scale), and a moderate sense of belonging on campus in fall 2021 (3.0 on a 1 to 5-point scale).

Graduate Life: Nine former UW–Green Bay SSM/Vs (15%) had attained an undergraduate degree and were attending graduate school. Four were enrolled in Master of Science programs and two were focusing on medical degrees. When asked how confident they were that their current graduate program was the right one for them, former UW–Green Bay students reported strong confidence (4.2 on a 1 to 5-point scale).

Career Life: Of the former UW–Green Bay students in full-time or near full-time work, a plurality (67%) were working in private-for-profit jobs. Of those working, 33% considered themselves to be in STEM occupations while 33% considered their occupation to be closely related to their university major. Workers made on average \$56,167 per year in their jobs and reported moderate job satisfaction (3.4 on a 1 to 5-point scale).

Deployments/Activations

- Eighty participants across the whole Phase Two sample reported being activated or deployed in 2020 and/or 2021. Eight UW–Green Bay participants reported being activated or deployed.
- Of the 8 UW–Green Bay participants who were deployed/activated, half served in homeland COVID-19 related testing, vaccination, and/or supply distribution, over a third served in homeland election-related poll work, and a quarter served in homeland civil disturbance response and/or security.
- UW–Green Bay participants were activated/deployed a median of 95 days, while participants from the four peer universities were activated/deployed a median of 60 days.

COVID-19 Impacts

- We asked survey participants whether they believed events surrounding COVID-19 during 2020 and 2021 had a negative impact on their “academic/career path,” or their trajectory into a professional life they found gratifying.
- Overall, survey respondents were more likely than not to indicate that the COVID-19 pandemic had negatively impacted their academic or career trajectories, with an overall mean of 3.2 on a scale from 1 (*least negative*) to 5 (*most negative*).

Work Volition

- Student and employee confidence that they control their own career decisions and success—called “work volition”—is important to career confidence, adaptability, and job satisfaction. The survey asked all respondents three established questions to measure their work volition.
- On a scale from 1 to 5, UW–Green Bay respondents averaged a 3.66, suggesting a solid sense of control over their future job choices and ability to do the work they want to do despite challenges.

SSM/V Cultural Assets

- Discussions on SSM/Vs typically center on student challenges. A focus on SSM/Vs’ unique cultural strengths, however, may better support these students as they make their way through university and into civilian careers.
- SSM/V interviewees (n=35) mentioned five major strengths they bring from the military to the university and workplace: service orientation, time on the job, interactional fluency, active fortitude, and systems for living.

Social Support Networks

- Research indicates that strong social support networks are linked to improved academic experiences for SSM/Vs. Our survey data on the social support networks of current and former UW–Green Bay SSM/Vs show respondents had, on average, about five to six people with whom they discussed personal matters and academic/career issues.
- Among these contacts, an average of two people were family members, none were university students, and one was a military service member or veteran.

Phase One Connections to Phase Two Outcomes

- Undergraduate students with larger networks during Phase One had significantly higher levels of university academic integration and campus belonging and were more likely to have persisted in college at Phase Two.
- Respondents with more fellow students in their networks at Phase One, however, were more likely to have reported being negatively affected by COVID-19.
- Respondents with more family members in their networks reported fewer negative COVID impacts on their career paths, while working respondents with more family members reported higher confidence in their future career choices.

Insights and Recommendations

- 1. SSM/Vs with deeper campus social ties felt the sting of campus closures.**
As pandemic-related effects subside on campuses, we suggest university educators focus on renewing and revitalizing SSM/V connections with fellow students, faculty, and student service providers on campus.
- 2. SSM/Vs bring myriad cultural assets to college and showed strength in the face of challenges in 2020 and 2021.**
Universities should capitalize on the unique assets of SSM/Vs by reframing SSM/V support and service through asset-oriented language and developing educational opportunities in which non-veteran students, staff, and faculty can learn from SSM/Vs.
- 3. Findings show various opportunities and constraints in SSM/V networks but suggest that it is important to build on SSM/V social engagement skills.**
Coordinating opportunities for SSM/Vs to socially engage on and off campus can foster belonging, increased confidence, and academic motivation.
- 4. Social and community-building services for SSM/Vs will require increased budgetary and administrative support.**
In addition to clear policies, well-trained staff, and greater support for veteran services, universities can implement tuition refunds and expedited re-enrollment for deployments, SSM/V priority registration, and transfer credit processes that recognize valuable military training.

Introduction and Background

Over the last 15 years, student military service members/veterans (SSM/Vs)—defined as undergraduate students who are on active U.S. military duty, in the Reserves or National Guard, or are retired/discharged military veterans (Barry et al., 2014)—have been one of the fastest growing groups of nontraditional students in U.S. colleges and universities (e.g., Student Veterans of America [SVA], 2020). This development will continue to both strengthen and diversify universities and the workforce in the United States. Aside from their advanced technical, problem-solving, and teamwork skills, SSM/Vs nationwide are proportionally older, more often African American, and more often first-generation students from low-income backgrounds than traditional college students (Borsari et al., 2017; Cate et al., 2017; SVA, 2020).

SSM/V enrollment expansion, however, comes with challenges. Transitions between military and civilian life, service-related impairments, alienation from students and staff, and the complicated administration associated with state and federal education benefits all present SSM/Vs with difficulties that many postsecondary educators still do not fully understand (Semer & Harmening, 2015). These issues are especially relevant in Wisconsin, a state without a large military presence, where service members and veterans have a somewhat lower college graduation rates than peers nationally (VA, 2017).

Still, greater levels of success for SSM/Vs are achievable. Research suggests that SSM/V experiences improve with strong *social support networks*—groups of relationships that provide assistance, advice, and camaraderie (e.g., Livingston et al., 2011). Little research has focused on such networks or how they could be a valuable leverage point for improving SSM/V experiences and outcomes. Despite calls for research that will follow these students over time to establish what factors in college predict success, few studies have used a multi-phased approach to trace SSM/V social support and persistence along college-to-career pathways.

Research suggests student military service members/veteran (SSM/V) experiences improve with strong *social support networks*—relationships that provide students with assistance, advice, and camaraderie.

Purpose

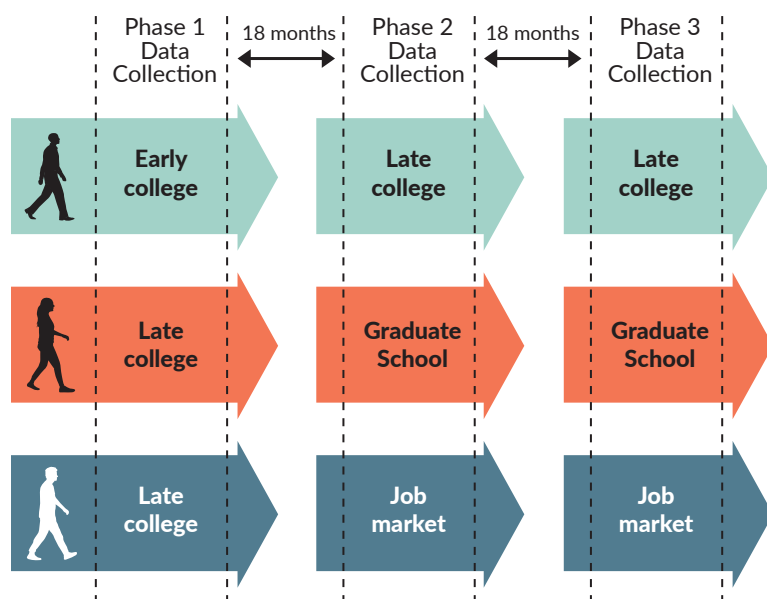
The **Veteran Education to Workforce Affinity and Success Study (VETWAYS)** is a National Science Foundation-funded research project focused on improving collegiate and early career experiences of SSM/Vs. Using two rounds of online surveys and interviews that followed SSM/Vs through University of Wisconsin (UW) System universities, the project explores the role social support plays in helping military-affiliated students finish college and enter gratifying careers. Our mission is twofold:

- (1) Better understand SSM/V social support networks as well as how these networks influence students as they move through college into careers, and
- (2) Provide data-supported insights for student service professionals, administrators, employers, and policymakers that strive to improve SSM/V academic experiences and workforce outcomes.

Methods

To meet these objectives, VETWAYS is conducting a mixed-methods study of SSM/Vs in five UW System universities chosen for their demographic and geographic diversity: UW–Green Bay, UW–Madison, UW–Milwaukee, UW–Oshkosh, and UW–Stout. A detailed description of our research methods is provided in Appendix I.

Figure 1. Example SSM/V career pathways



Through two study phases, the project followed undergraduate SSM/Vs in these institutions as they navigated various education-to-career pathways (Figure 1). During Phase One, between February and May 2020, the study team surveyed 623 SSM/Vs across all five universities. The team also conducted semi-structured interviews over Zoom with a subset of 54 SSM/V volunteers at this time. For Phase Two, reported here, we followed up with student respondents in fall 2021 to gather further survey and interview data on students' trajectories, experiences with

deployments/activations, impacts of COVID-19, and social support networks. Overall, 375 students returned to fill out Phase Two surveys (a 40% attrition rate) while 35 students participated in a second Zoom interview (a 35% attrition rate).

In this report, we use descriptive and correlational statistics as well as simple inductive coding to provide findings from Phase Two. We focus particularly on results from UW–Green Bay, where 59 current and former students returned to fill out surveys and 6 current or former students returned to conduct interviews. While this Phase Two sample is made up of self-selected volunteers and represents only about 21% of the total SSM/V undergraduate population at UW–Green Bay in 2020, these data are still useful for better understanding SSM/V trajectories, characteristics, and attitudes that are usually not available through institutional reporting.

To provide broader context for university-specific findings as well as inform readers of how UW–Green Bay respondents compare with respondents from the other Wisconsin universities that were a part of this study, many descriptive UW–Green Bay data

During Phase Two of this study, we surveyed 375 SSM/Vs who had participated in Phase One data collection at UW–Green Bay, UW–Madison, UW–Milwaukee, UW–Oshkosh, and UW–Stout. We also conducted interviews with a subset of 35 SSM/Vs.

are reported side-by-side with combined data from the four peer institutions. When there are statistically significant differences between UW–Green Bay findings and the findings from these other universities, we note these contrasts, sometimes using asterisks and other times in notes under displayed figures.¹

Report Organization

The two-phase survey data VETWAYS collected allow us to conduct both *cross-sectional* and *quasi-longitudinal* analysis.²

In this study, “cross-sectional” analysis refers to describing respondent attributes or experiences at Phase Two. The results below, which are mostly cross sectional and organized thematically, include **Sample Demographics, Student Pathways 2020–2021, Military Deployments/Activations Since Phase One, COVID-19 Impacts, Work Volition, SSM/V Cultural Assets, and Social Support Networks.**

“Quasi-longitudinal” analysis refers to calculating what important SSM/V Phase One factors, if any, relate to respondent Phase Two outcomes. This kind of analysis helps us better understand how, if at all, various respondent experiences, attitudes, or activities reported in spring 2020 link to respondent outcomes in fall 2021. The final section of this report, **Phase One Connections to Phase Two Outcomes**, uses this kind of analysis.

1. Asterisks represent the probability that the computed difference between the measures is due to a random occurrence:

* equals a 5% chance the difference is random, ** equals a 1% chance, and *** equals a 0.1% chance. In Chi-squared (χ^2), t-tests, and Mood's median tests, while an asterisk represents a significant difference between two measures, more asterisks indicate a stronger probability that the difference is not due to chance.

2. “Cross-sectional” analyses look at data collected from a group of individuals at a single point in time. “Longitudinal” analyses look at data collected from a single cohort of individuals across multiple time points. We designate this study “quasi-longitudinal,” however, because scholars generally agree that to be longitudinal, a study needs three or more data collection points (see, for instance, Ployhart & Vandenberg, 2010).

Findings

Sample Demographics

Surveys

Fifty-nine current or former SSM/Vs at UW–Green Bay participated in the Phase Two online survey, about 51% of those who participated in Phase One. Phase Two UW–Green Bay sample statistics and comparisons with the rest of the student sample are presented in Table 1.

Table 1. Phase Two UW–Green Bay survey sample (n=59) compared with four peer universities (n=316)

Measure	UW–Green Bay		Four Peer Universities	
	N	%	N	%
Gender				
Female	17	28.8	71	22.5
Male	42	71.2	242	76.9
Nonbinary	0	0	2	0.6
Race/Ethnicity ³				
American Indian or Alaska Native	2	3.4	9	2.8
Asian or Asian American	0	0	28	8.9
Black or African American	2	3.4	10	3.2
Hispanic or Latina/o	4	6.8	23	7.3
Native Hawaiian or Pacific Islander	0	0	5	1.6
White or Caucasian	53	89.8	260	82.3
<i>White Students</i>	51	86.4	245	77.5
<i>Students of Color</i>	8	13.6	71	22.5
Undergraduate Major				
Biological and Life Sciences	8	13.6	23	7.3
Business	10	16.9	27	8.5
Engineering	7	11.9	39	12.3
Health	7	11.9	33	10.4
Math and Computer Science	4	6.8	24	7.6
Physical Science	1	1.7	8	2.5
Social Science	7	11.9	36	11.4

3. "Race/Ethnicity," "Military Branch," and "Disability Status" all show the number of students identifying in each subgroup. Several students identified in multiple subgroups. "Students of Color" includes students identifying as Mixed Race or American Indian or Alaska Native, Black or African American, Hispanic or Latina/o, or Native Hawaiian of Pacific Islander.

Measure	UW–Green Bay		Four Peer Universities	
	N	%	N	%
Current Military Service Status *				
Discharged or Retired Veteran	44	74.6	171	54.1
In Reserves or National Guard	14	23.7	130	41.1
On Active Duty	1	1.7	15	4.7
First-Generation Student Status ⁴	17	28.8	112	35.4
Disability Status				
Cognitive Impairment	9	15.3	48	15.2
Mobility Impairment	12	20.3	61	19.3
Sensory Impairment	5	8.5	31	9.8
<i>Impaired Students</i>	17	28.8	94	29.7
Mean Age	33.6	SD = 9.7	31.1	SD = 8.9

Note. The distributions of service status are significantly different between UW–Madison SSM/Vs and SSM/Vs from the four peer universities ($p < .05$).

Notable findings from the UW–Green Bay survey sample:

- The Phase Two UW–Green Bay survey sample is not significantly different from the Phase One UW–Green Bay survey sample in terms of gender, race/ethnicity, first-generation status, impairment status, and age.
- Asterisks by a UW–Green Bay statistic or figure show that there is a statistically significant difference between the UW–Green Bay Phase Two sample and the study’s wider sample in that category. Here, the UW–Green Bay sample is proportionately more made up of discharged and retired veterans than the wider sample of SSM/Vs from the four peer institutions.

4. “First-Generation” are interviewees reporting that parental guardians have not obtained a bachelor’s level college degree.

Interviews

Six UW–Green Bay current and former SSM/Vs were interviewed for the Phase Two study, all science, technology, engineering, mathematics, or medical (STEMM) majors who completed interviews during Phase One. UW–Green Bay Phase Two interview sample statistics are presented in Table 2.

Table 2. Phase Two UW–Green Bay interview sample (n=6)

Measure	UW–Green Bay	
	N	%
Gender		
Female	3	50
Male	3	50
Nonbinary	0	0
Race/Ethnicity		
American Indian or Alaska Native	1	16.7
Asian or Asian American	0	0
Black or African American	1	16.7
Hispanic or Latina/o	0	0
Native Hawaiian or Pacific Islander	0	0
White or Caucasian	5	83.3
<i>White Students</i>	4	66.7
<i>Students of Color</i>	2	33.3
Undergraduate Major		
Biological and Life Sciences	1	16.7
Business	0	0
Engineering	2	33.3
Health	1	16.7
Math and Computer Science	1	16.7
Physical Science	1	16.7
Social Science	0	0
Current Military Service Status		
Discharged or Retired Veteran	6	100
In Reserves or National Guard	0	0
On Active Duty	0	0

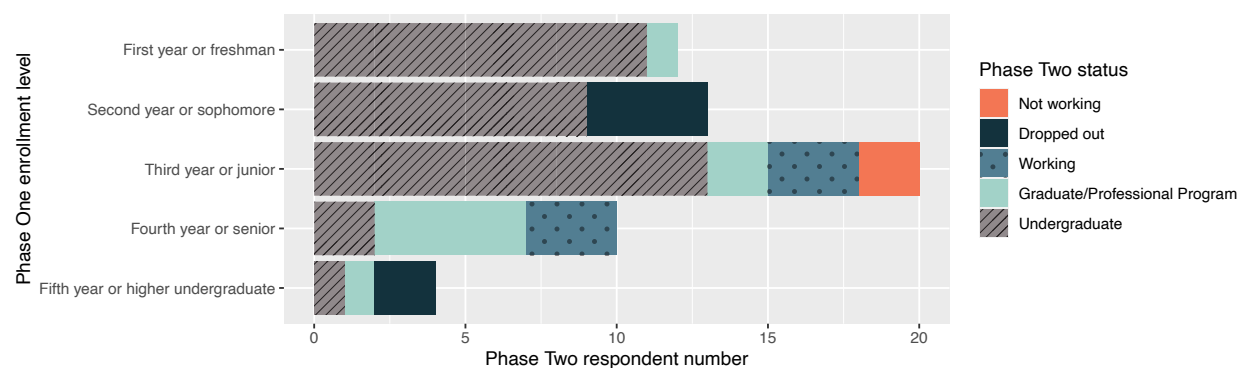
Measure	UW–Green Bay	
	N	%
Military Branch		
Air Force	0	0
Army	3	50
Marine Corps	1	16.7
Navy	2	33.3
First-Generation Student Status	3	50
Disability Status		
Cognitive Impairment	0	0
Mobility Impairment	1	16.7
Sensory Impairment	0	0
<i>Impaired Students</i>	1	16.7
Mean Age	35	(SD=12.98)

Student Pathways 2020–2021

SSM/Vs who first took part in this study in spring 2020 followed various trajectories between the study's first and second phases. By fall 2021, some participants had stopped or dropped out of college and some were still undergraduates. Others had finished their degrees and gone on to graduate school or full-time jobs.

SSM/V progress along these pathways, of course, is closely associated with Phase One enrollment level (freshman, sophomore, etc.). Figure 2 displays the Phase Two status of UW–Green Bay respondents according to their Phase One enrollment level.

Figure 2. Survey-reported UW–Green Bay participant Phase One versus Phase Two status (n=59)

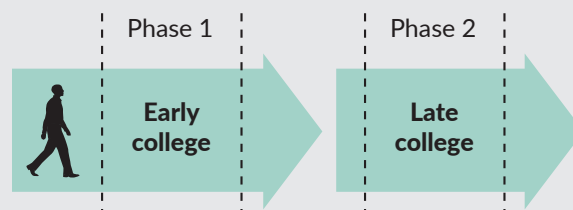


- Of the 59 UW–Green Bay Phase Two survey participants, 36 were still university undergraduates (61.0%), 9 had graduated and were in graduate school (15.3%), and 6 had graduated and were employed (10.2%).
- Despite the disruption of 2020 and 2021, Phase Two UW–Green Bay trajectories show considerable levels of persistence among SSM/V participants. Eighty percent of those who were freshmen and sophomores at Phase One reported being juniors or above at Phase Two, while 47.1% of those who were upperclassmen at Phase One reported having graduated.
- Only six UW–Green Bay survey participants stopped or dropped out of college between Phases One and Two. Two graduated with bachelor’s degrees but were not working when they completed Phase Two surveys.

Of the 59 UW–Green Bay Phase Two survey participants, 36 were still university undergraduates (61%), 9 had graduated and were in graduate school (15.3%), and 6 had graduated and were employed (10.2%).

With these trajectories in mind, we next present data points from the three major groups of Phase Two UW–Green Bay respondents: those still pursuing undergraduate degrees, bachelor’s graduates who had moved on to graduate school, and bachelor’s graduates who had entered the workforce. Each of these groups answered different Phase Two survey questions regarding their pathways.

Undergraduate Life: SSM/Vs Still Pursuing Undergraduate Degrees

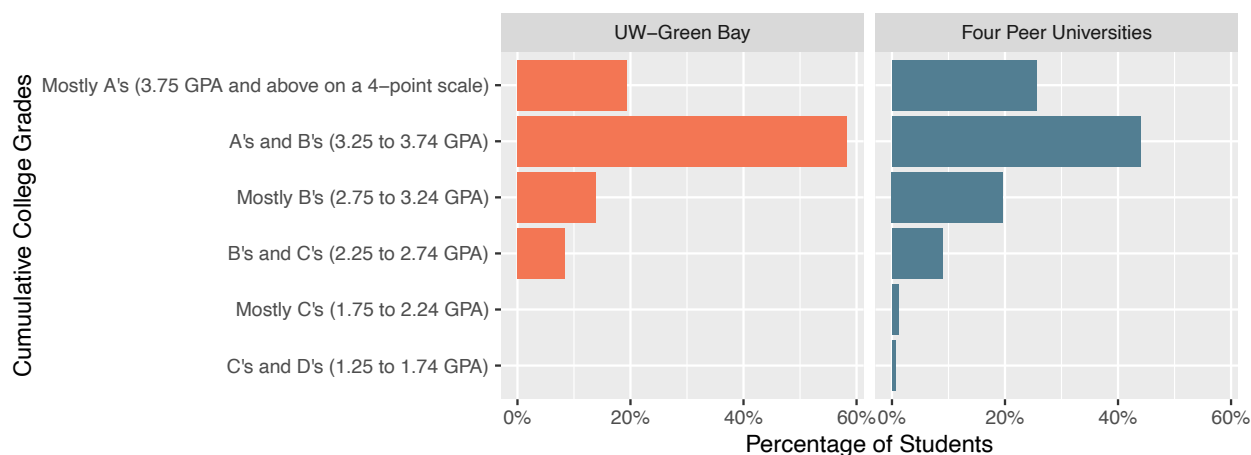


Surveys included several questions asking current undergraduate students about their grades, academic integration, and feelings of campus belonging.

Cumulative Grade Point Average (GPA). Phase Two surveys asked participants to report their **cumulative grades in college**, an indicator academic or workforce gatekeepers often consider when awarding internships, spots in graduate school, and employment opportunities (e.g., National Association of Colleges and Employers, 2018).

Figure 3 compares cumulative college grades between Phase Two SSM/V undergraduates at UW–Green Bay with those of SSM/V undergraduates at the other four universities. UW–Green Bay undergraduate respondents reported receiving mostly A’s (3.75 GPA or higher) or A’s and B’s. The distribution of UW–Green Bay SSM/V cumulative GPA in college is not significantly different from those of their peers from the other four UW universities.

Figure 3. Phase Two survey-reported cumulative college grades of SSM/Vs in UW–Green Bay (n=36) and four peer universities (n=168)

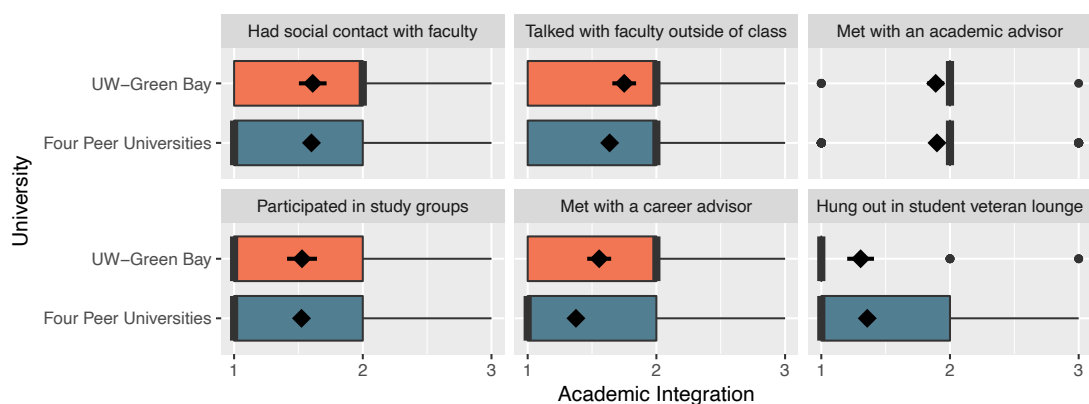


Academic Integration. “Academic integration,” including social contact with faculty, participation in student study groups, and meetings with academic and career counselors, has been shown to be an important predictor of student academic engagement and, ultimately, college persistence (e.g., Pascarella & Terenzini, 1991).

Like the Phase One survey, the Phase Two survey asked students to report on how often they engaged in these activities as well as how often they hung out at their college’s student veteran lounge, an important facet of SSM/V life.

Comparative results for each academic integration item are displayed in Figure 4. Overall, UW–Green Bay SSM/Vs reported moderate academic integration on campus (1.6 on a 1 to 3-point scale).

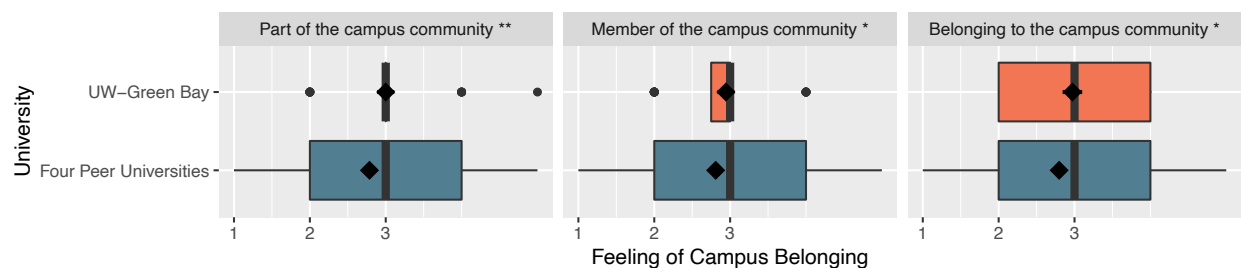
Figure 4. Survey-reported academic integration among UW–Green Bay and four peer university undergraduate Phase Two respondents



Note. Diamonds indicate the mean for each item and the thick black lines indicate the median (1 = “Never,” 2 = “Sometimes,” 3 = “Often”).

Feelings of Campus Belonging. A student's sense of campus belonging—or the feeling that they see themselves as a member of their campus community—is important to college success (e.g., Hurtado & Carter, 1997). The Phase Two survey asked students three established questions about SSM/V feelings of belonging on campus. Results for UW–Green Bay and peer university respondents are displayed in Figure 5.

Figure 5. Survey-reported feelings of campus belonging among UW–Green Bay and four peer university undergraduate Phase Two respondents



Note. Feelings of campus belonging are significantly different between UW–Green Bay SSM/Vs and SSM/Vs from the other four universities in regard to an overall sense of belonging ($p < .05$), feeling like part of the campus community ($p < .01$), feeling like a member of the campus community ($p < .05$), and feeling a sense of belonging to the campus community ($p < .05$).

- Figure 5 indicates that UW–Green Bay Phase Two SSM/Vs reported a moderate sense of belonging on campus (3.0 on a 1 to 5-point scale).
- In comparison with their Phase Two peers in the other four universities, members of the UW–Green Bay survey sample reported significantly higher feelings of campus belonging. UW–Green Bay SSM/Vs are significantly more likely to see themselves as part of the campus community, feel that they are members of the campus community, and feel a sense of belonging to the campus community.

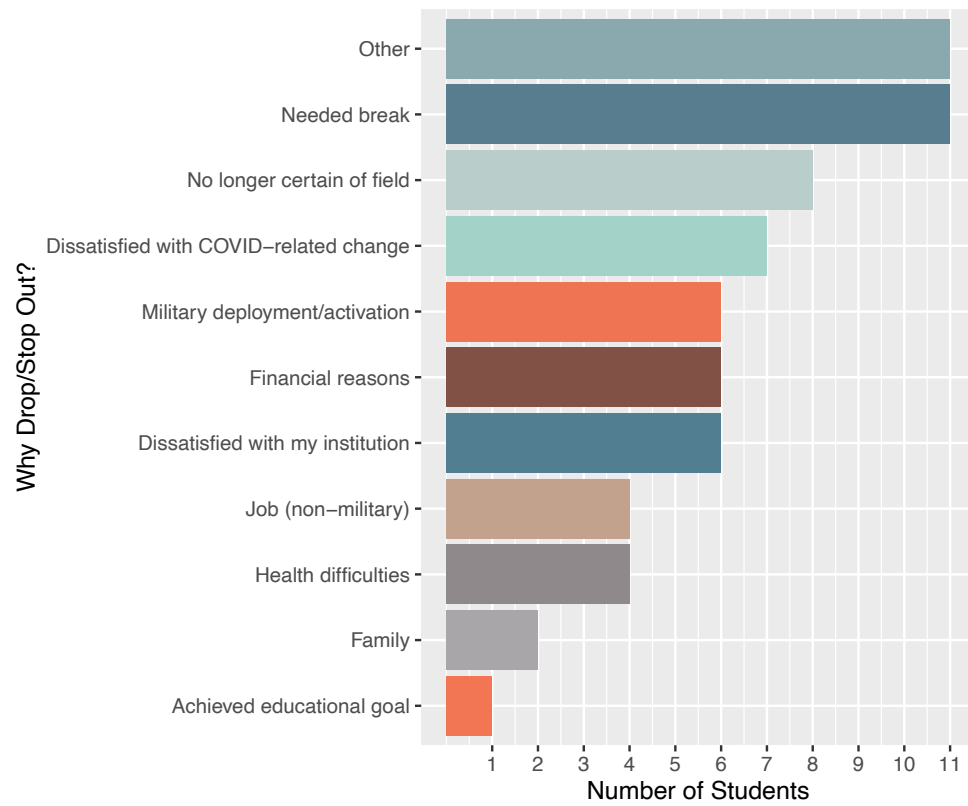
In comparison with their Phase Two peers in the other four universities, members of the UW–Green Bay survey sample reported significantly higher feelings of campus belonging.

Transferring or Switching Majors. Nine UW–Green Bay survey participants (about 15.3% of all UW–Green Bay survey participants) changed majors between Phases One and Two. Six Phase Two UW–Green Bay student reported transferring to another institution.

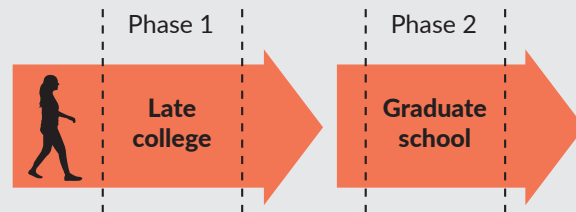
Dropping or Stopping Out. Only 34 survey respondents across the entire Phase Two sample of 623 reported that they had dropped or stopped out without obtaining a degree since spring 2020.⁵ When asked to indicate the reason or reasons they left college, a plurality indicated they needed a break, were no longer certain of their fields, and were dissatisfied with COVID-related change. A full list of reasons for dropping or stopping out is displayed in Figure 6.

5. While this is a comparatively low percentage, it is important to note that this finding may in part reflect survey non-response bias. In this instance, SSM/Vs who encountered obstacles or negative deviations on their academic/career pathways between the spring of 2020 and the fall of 2021 may have been less willing to fill out the Phase Two survey and report their difficulties.

Figure 6. Reasons for dropping or stopping out of university among Phase Two survey respondents



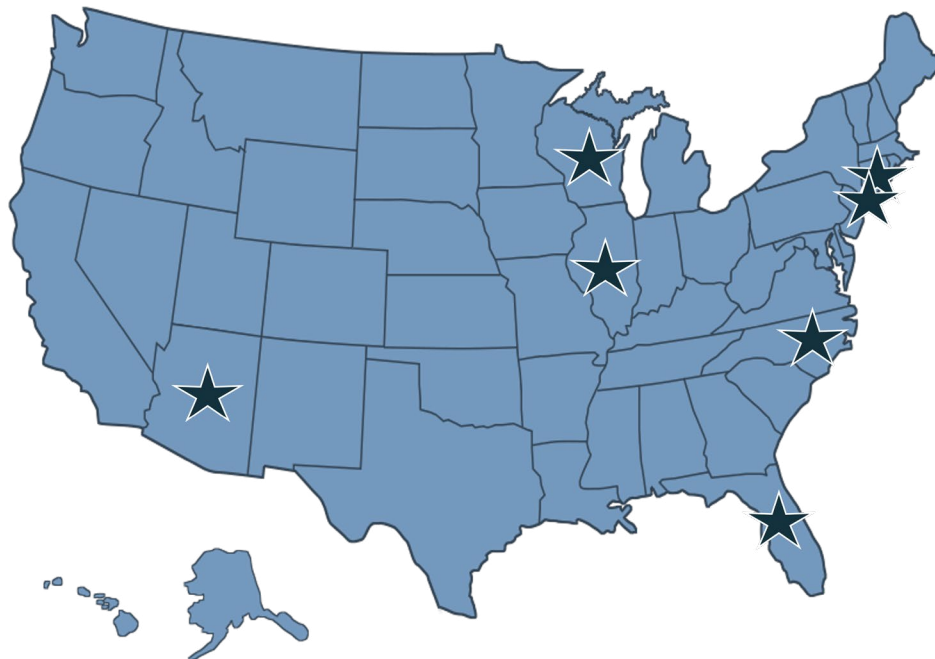
Graduate Life: Respondents Who Earned Degrees and Went on to Graduate or Post-Baccalaureate Education



Within the Phase Two survey sample, nine former UW–Green Bay SSM/Vs (15.3% of the UW–Green Bay Phase Two sample) had received their undergraduate degrees and were enrolled in post-baccalaureate studies or graduate school in one or two U.S. state(s) (one student did not specify their institution name). Among the entire Phase Two survey sample, 34 SSM/Vs had gone on to graduate school in total.

Figure 7 displays the states in which participants across the sample are attending graduate school.

Figure 7. U.S. states in which Phase Two survey participants are enrolled in graduate or post-baccalaureate studies



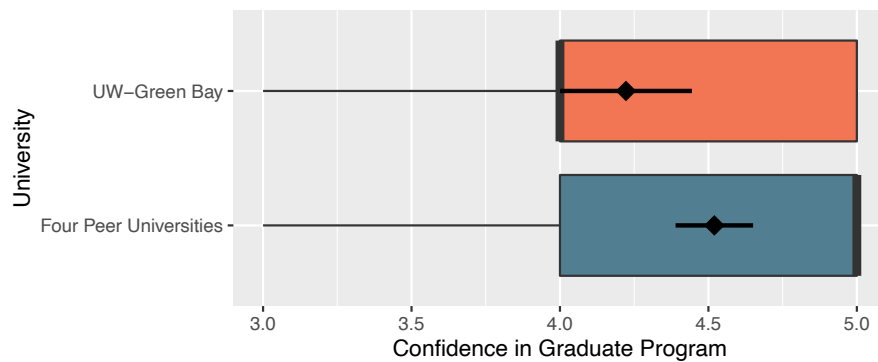
Of former UW–Green Bay students, four were enrolled in Master of Science degree programs and two were focusing on medical degrees.

When asked **how confident** they were that their current graduate program was the right one for them—a measure of the extent to which students are committed to their program selection, which has helped researchers better understand students' chances of persisting to graduation (e.g., Davidson et al., 2009)—these former UW–Green Bay student service members and veterans reported high levels of confidence (4.2 on a 1 to 5-point scale).

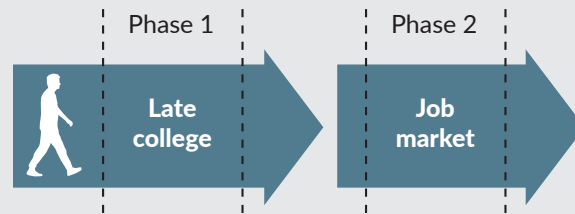
When asked **how confident** they were that their current graduate program was the right one for them, former UW–Green Bay student service members/veterans reported an average of 4.2 on a 1 to 5-point scale, showing high levels of confidence.

Figure 8 compares program confidence between UW–Green Bay Phase Two graduate students and graduate students from the peer universities. Results show no significant difference between UW–Green Bay respondents and respondents from the peer institutions.

Figure 8. Confidence in graduate program among UW–Green Bay and four peer university Phase Two respondents



Career Life: Respondents Who Earned Degrees and Went to Work



While a significant number of Phase Two respondents were in undergraduate or graduate school programs, 6 former UW–Green Bay SSM/Vs (10.2% of the sample) had received their undergraduate degrees and were working in full-time jobs. As can be seen from Figure 2, all of these respondents were juniors or seniors in university at the time of the Phase One survey.

Current Job Employer/Occupational Categories and Relation to University Major. When respondents indicated they were working in full-time jobs, the Phase Two survey asked a set of questions regarding the type of employer for which each respondent worked (displayed in Figure 9), their occupation (Figure 10), and how closely related their current job was to their undergraduate major (Figure 11).

Figure 9. Employer categories among UW–Green Bay and four peer universities’ Phase Two job market respondents

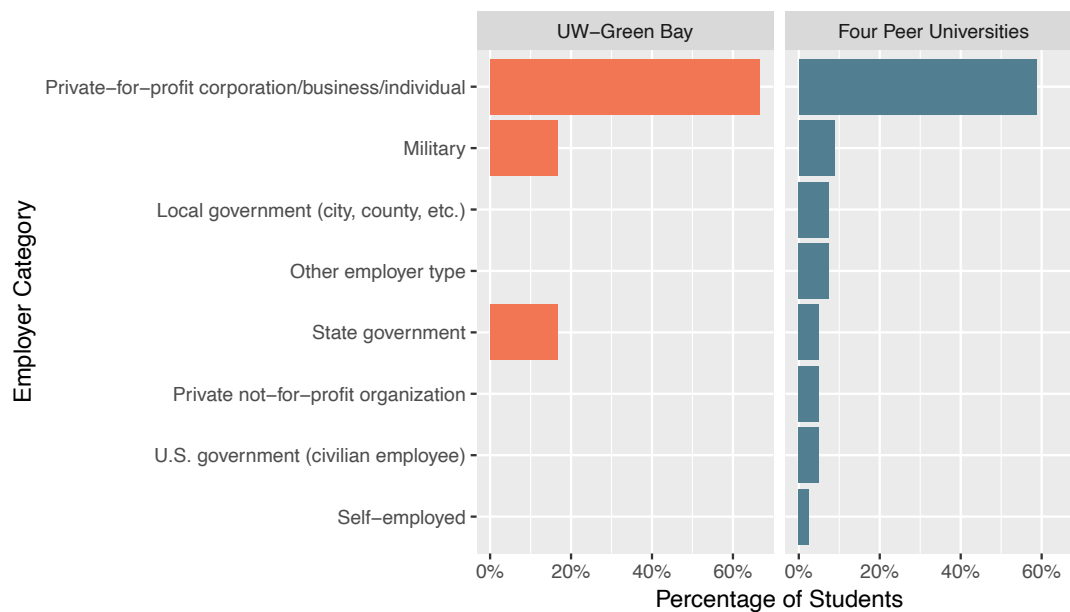


Figure 10. Occupation categories among UW–Green Bay and four peer universities’ Phase Two job market respondents

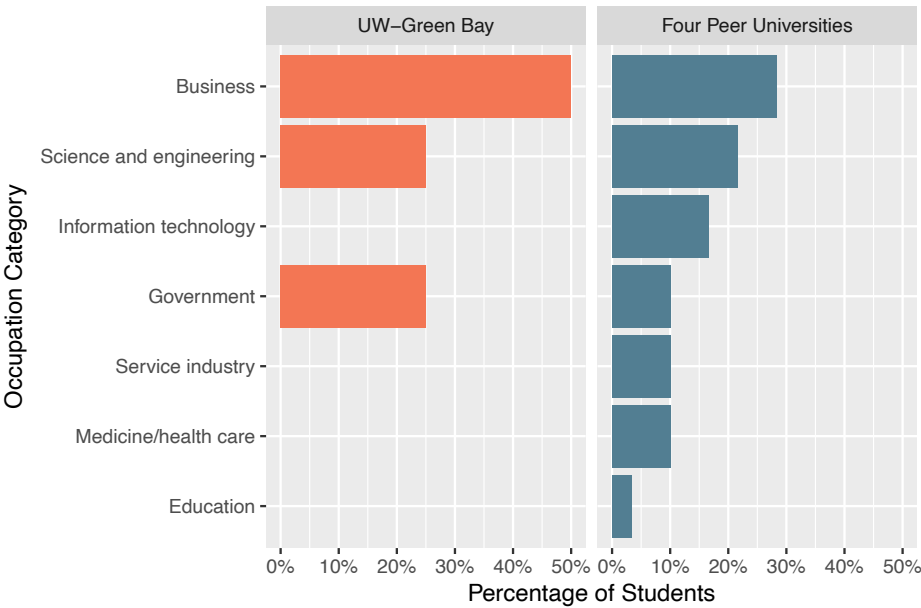
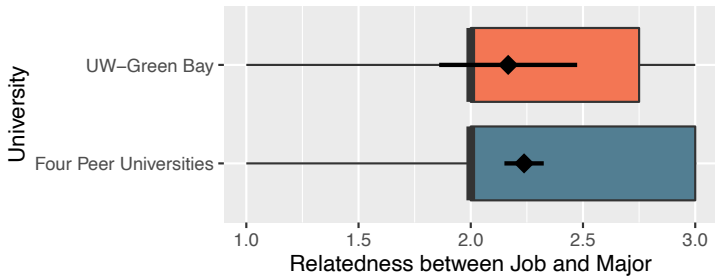


Figure 11. Relation between current job and undergraduate major among UW–Green Bay and four peer universities’ Phase Two working respondents



Findings include:

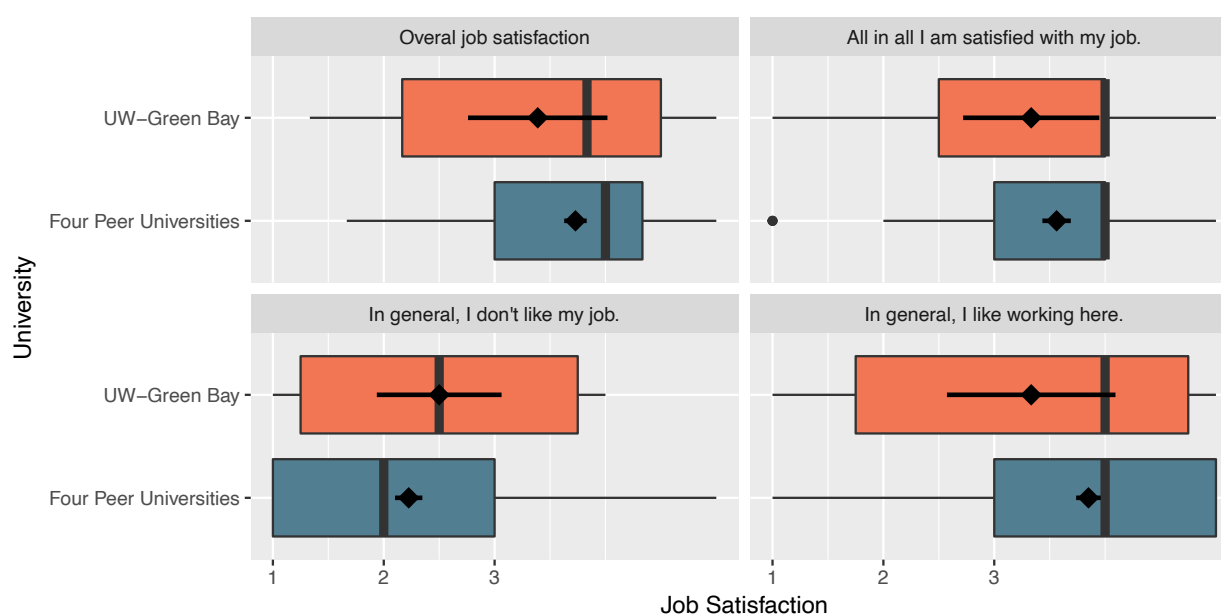
- Of former UW–Green Bay students who were in full-time or near full-time jobs at Phase Two, a plurality (66.7%) were working in private-for-profit jobs while 33.3% were working in either the military or state government.
- Thirty-three percent of these former UW–Green Bay students were working in business occupational categories while another 33.3% were working in either science and engineering industry or the government.
- Former UW–Green Bay SSM/Vs who were working reported that their jobs were moderately related to their undergraduate majors (2.2 on a 1 to 3-point scale).

Salary Level and Job Satisfaction. We also asked these survey respondents about their yearly salary and overall satisfaction with their jobs, oft-used measures of extrinsic and intrinsic career success (e.g., Seibert et al., 1999). UW–Green Bay working respondents reported an average salary of \$56,167 per year, compared with \$60,325 for working respondents from the other four universities. There is no significant difference between UW–Green Bay and peer university Phase Two working respondents.

Research has shown that overall job satisfaction is associated with happiness, positive affect, and life satisfaction (Bowling et al., 2010). Here, working UW–Green Bay Phase Two survey respondents reported moderate job satisfaction (3.4 on a 1 to 5-point scale), not significantly different from working respondents from the other four universities. Job satisfaction results are displayed in Figure 12.

Working UW–Green Bay Phase Two survey respondents reported moderately high job satisfaction (3.4 on a 1 to 5-point scale), not significantly different from working respondents from the other four universities.

Figure 12. Job satisfaction among UW–Green Bay and four peer universities' Phase Two working respondents



Military Deployments/Activations Since Phase One

While the number of U.S. military deployments overseas has been relatively consistent in recent years (Allen et al., 2022), National Guard domestic activations through 2020 and 2021 were the highest they had been since World War II (e.g., Horton, 2020). Service members across the country were called up for COVID-19-related support, election poll work, natural disaster relief, and duties associated with civil unrest during the George Floyd protests. In early 2021, Wisconsin National Guard troops were also among those mobilized to provide security in Washington, DC in the wake of the January 6 insurrection.

National Guard domestic activations through 2020 and 2021 were the highest since World War II. Service members were called up to perform COVID-19-related support, natural disaster relief, and security.

Previous research has pointed to the academic challenges university student service members face when they receive sudden orders to report to duty during the academic term (e.g., Barry et al., 2014; Bodrog et al., 2018; Livingston et al., 2011). With this research in mind, the Phase Two survey asked respondents to report on deployment/activation experiences they had through 2020 and 2021.

In total, 80 respondents across the entire Phase Two survey sample had been deployed and/or activated through 2020 or 2021, representing 45% of respondents who had reported being service members when they took the Phase One survey (Figure 13).

Figure 13. Deployment/activation among Phase Two survey respondents who were in the service at Phase One

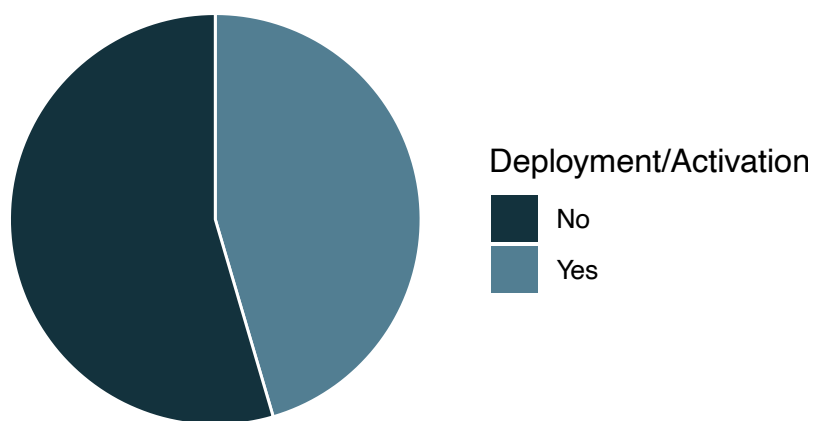
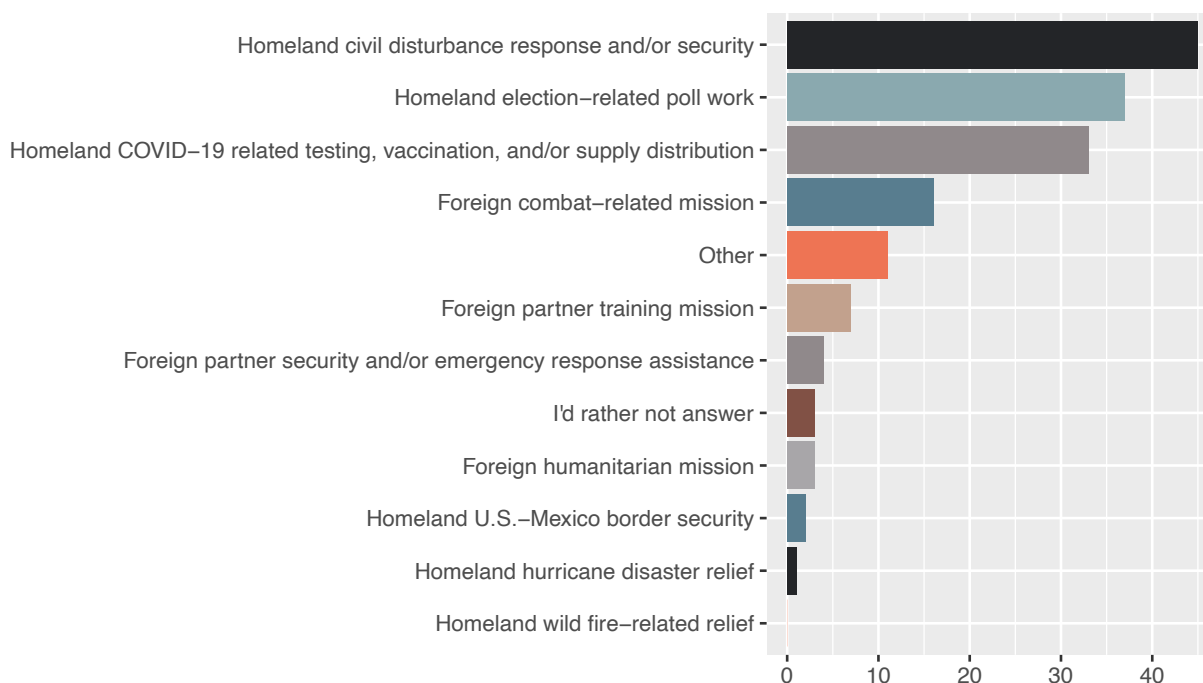


Figure 14 displays the various missions on which Phase Two respondents were deployed/activated. Sixteen students also reported that they had been deployed to combat-related missions overseas.

Figure 14. Reported missions among deployed/activated Phase Two respondents



Surveys also asked these respondents how long they had been deployed or activated. Table 3 reports the median length, in days, of deployments/activations for UW-Green Bay and peer university respondents. The high standard deviation (SD) scores indicate that these respondents listed a wide variety of time frames in which they were deployed or activated.

Table 3. Reported length of 2020–2021 missions among deployed/activated UW-Green Bay and four peer universities' Phase Two respondents

UW-Green Bay			Four Peer Universities		
Median Days Activated/ Deployed	SD	N	Median Days Activated/ Deployed	SD	N
95	106.95	8	60	113.96	74

COVID-19 Impacts

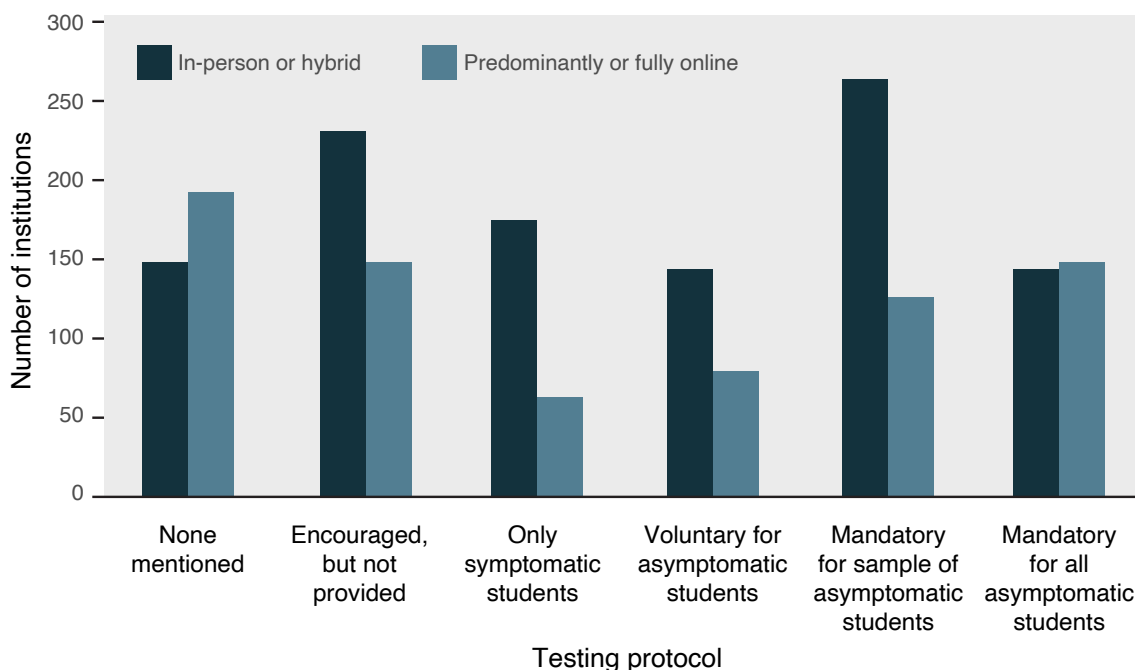
The two data collection phases from this study corresponded with the onset of the COVID-19 pandemic, one of the most disruptive periods in American higher education in the last half century.

Phase One surveys were completed as Wisconsin university campuses were being shut down and students were suddenly forced to complete their Spring 2020 courses online. Current and former SSM/Vs completed Phase Two surveys as life both on and off campus began to slowly reemerge with mask, quarantine, and testing restrictions during the Fall semester of 2021 (e.g., Jaschik & Redden, 2021). As of this writing, while classes are mostly being held in person, campus life has yet to fully return to the pre-pandemic “normal” (see, for example, Nadworny, 2022). Research suggests that many of the unique challenges SSM/Vs face in higher education were exacerbated by the COVID-19 pandemic (Canjar et al., 2022; Kirchner & Pepper, 2020).

The two data collection phases from this study corresponded with the COVID-19 pandemic. Phase One surveys were completed as campuses were being shut down while Phase Two surveys were completed as life both on- and off-campus began to reemerge in the fall of 2021.

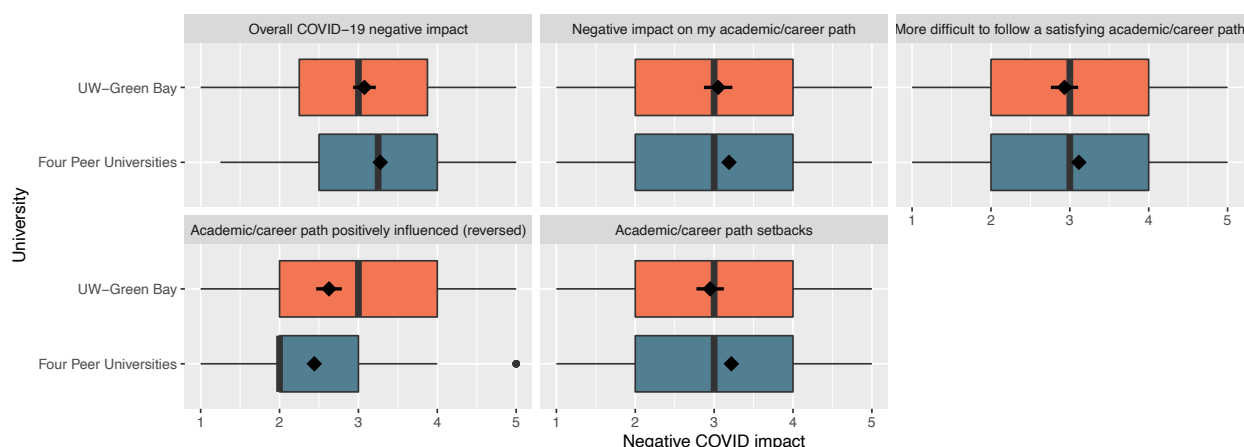
Figure 15 provides a sense of the tumult of this period. From the Centers for Disease Control and Prevention (2021), this graph displays various higher educational institution testing protocols by instruction type in Spring 2021.

Figure 15. Centers for Disease Control and Prevention Spring 2021 COVID-19 student testing protocols by mode of instruction, U.S. higher educational institutions (n=1,849)



Because of our interest in how COVID-19 may or may not have influenced Wisconsin SSM/Vs' sense of success, the Phase Two survey included four questions meant to better understand how the pandemic had impacted respondent career paths, or, as we put it in the survey, their "trajectory into a gratifying professional life." Figure 16 displays UW–Green Bay and peer university participant responses to these questions.

Figure 16. Negative COVID-19 impacts among UW–Green Bay and four peer universities' Phase Two respondents



Findings suggest:

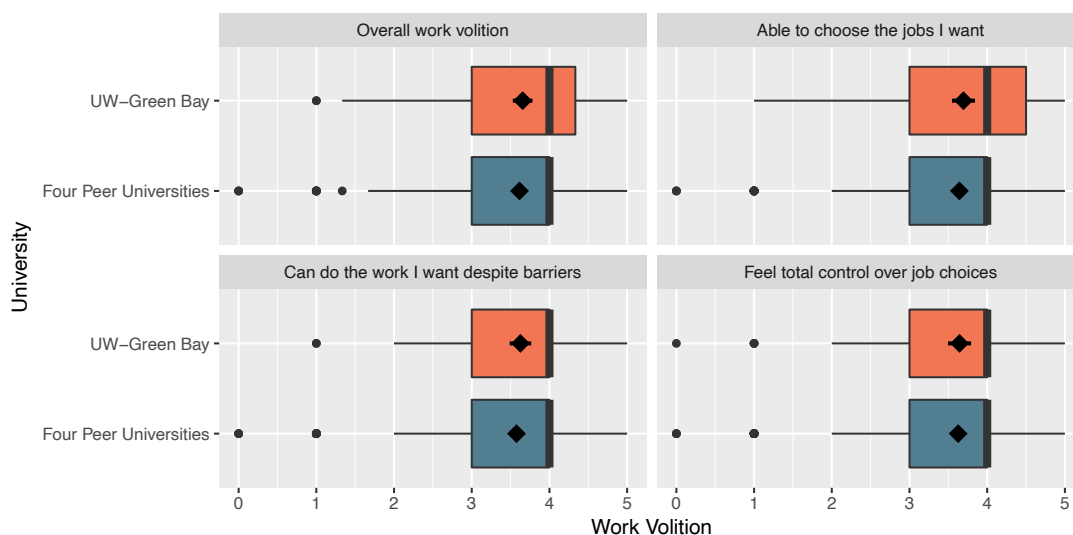
- Overall, survey respondents were more likely than not to indicate that the COVID-19 pandemic had negatively impacted their academic or career trajectories.
- In total, Phase Two survey respondents reported that COVID had had a moderately negative impact on their academic/career paths, with an overall mean of 3.2 on a scale from 1 (*least negative*) to 5 (*most negative*). A little over 15% of respondents indicated that COVID had positively impacted their academic/career paths.
- Initial results generally support recent research that shows the negative impact of the pandemic on nontraditional and marginalized student populations in higher education.

Work Volition

Research has found that student and employee confidence that they control their own career decisions and success—or “work volition”—is important to career confidence, adaptability, and job satisfaction (Duffy et al., 2013). The Phase Two survey included several questions meant to get a better sense of current and former SSM/Vs' career-oriented self-efficacy.

Work volition findings for respondents from UW–Green Bay and the other four universities in the study are displayed in Figure 17. On a scale from 1 to 5, UW–Green Bay respondents averaged 3.66, suggesting a solid sense of control over their future job choices and ability to do the work they want to do despite challenges. Peer university respondents indicated a similarly strong average work volition score of 3.61.

Figure 17. Work volition among UW–Green Bay and four peer universities’ Phase Two respondents



SSM/V Cultural Assets

Even when universities are operating normally, research shows that SSM/Vs face challenges as they make their way through college and into careers (Barry et al., 2014). Contemporary studies tend to focus on these obstacles, which include moral, physical, and psychological trauma, coping behaviors, and communicative and cultural discrepancies among SSM/Vs (Borsari et al., 2017).

While institutions often valorize SSM/Vs, well-meaning university educators sometimes rely on deficit-minded ideas about SSM/Vs when making important decisions about student services.

These are significant challenges, and much of this research has helped practitioners better support SSM/Vs on campus. Still, **the persistent focus on perceived deficiencies** also promotes stereotypes that can exclude SSM/Vs and impede student confidence, performance, and satisfaction (Mastrocola & Flynn, 2017).

Importantly, while institutions often valorize SSM/Vs, there is also a tendency for well-meaning university faculty and staff to rely on these deficit-minded ideas when they make crucial decisions about support services (Blaauw-Hara, 2016). A focus on SSM/Vs’ **unique cultural strengths or assets**, we believe, creates a more supportive environment for SSM/Vs as they make their way through university and into civilian careers. With this in mind, VETWAYS asked current and former SSM/Vs during Phase Two interviews ($n=35$) how their military experience had helped them in college and/or the workplace.

Table 4 outlines the military-oriented cultural strengths that current and former Wisconsin SSM/Vs associate with their academic and early career success and how these strengths have been useful.

Table 4. SSM/V cultural asset themes from Phase Two interviews (n=35)

Theme	Definition	Representative Statement	N
Service orientation	A focus on volunteering one's time, energy, ability, knowledge, or safety for other people, important values, and/or common goals, including through the support of one's friends or family, colleagues, or patients/clients as well as to larger entities like the team, organization, community, state, country, or planet	"I think it's just something innate. I get some type of pleasure knowing that I can help somebody be their better self or I can help somebody... I think nursing gives you that chance to continue serving, to help others who cannot help themselves. I think it definitely gives you more opportunity as a service member." -Female service member, College 3	24
Time on the job	Work in a military occupation that has provided in-depth, hands-on educational and training experience; opportunities for professional collaboration, communication, and management; transferable technical competencies; and/or exposure to various career paths	"The military gave me an opportunity to realize that I was not a hardware person in IT. And that's why I geared towards IT software, is because when the military started teaching me programming languages, after me having a hardware job, I was like, 'I'm going over here.' This is way more up my alley." -Female service member, College 2	22
Interactional fluency	Verbal and dispositional ability and confidence to express oneself, ask questions, adjust to, and/or empathize and develop rapport with, a wide variety of people—including authority figures, coworkers, student peers, and others—in a wide range of situations	"[My military experience has helped with] just getting along with people. A lot of the people, at least at this workplace... there's a certain sense of humor to them. When they bust your chops and stuff, you don't get all offended. You know how to respond. You throw it right back at them and then all of a sudden they like it. So, the people skills still definitely help." -Male veteran, College 1	20
Active fortitude	The willingness to jump into and complete the task at hand despite (or, sometimes, because of) the challenges, using a mix of determination, initiative, patience, decisiveness, resilience, and the ability to stay cool under pressure	"The big thing for me is always moving forward. Don't stand still. Don't try to look back...You just have to find a rhythm and just keep driving forward and try different things. If they don't work, you abandon that plan. Basically, adapting and overcoming—the Marine Corps motto." -Male veteran, College 2	17
Systems for living	Deeply ingrained military-based principles, routines, methods, and/or organizational schemes that have become habits and encourage success in multiple areas of life, from reverse planning on assignments to physical fitness	"Time management's been a huge thing. I know a lot of the students struggle with it, but it's just finding priorities at work. You know what I mean? Like you have, 'This is most important, this is what I need to get done. This is the most immediate thing. This is deadlines coming up.' Priorities of work has helped." -Male veteran, College 3	14

As findings show, 24 SSM/Vs said they gained a *service orientation*, or a sense of self-sacrifice, volunteerism, and/or altruism from their time in the military that was important to their academic and professional lives.

SSM/Vs suggested, for instance, that their military experience had fostered in them a desire to enter careers focused on helping others. One UW–Oshkosh veteran told us that she had been in a non-service-oriented line of work initially but decided to pursue nursing instead to do work she considered more valuable.

Twenty-four interviewees said they gained a *service orientation*, or a sense of self-sacrifice and volunteerism that was important to their academic and professional lives.

There was just no sense of service [in my previous work]. I didn't feel like it mattered. That's really what pushed me to nursing school and to do the job that I do today... It was probably the same train of thought as the military. I wanted to do something that was very fulfilling and...that somehow helped other people.

Twenty SSM/Vs said they developed interaction skills in the military, what we call *interactional fluency*, that allowed them to better “read,” speak to, and develop rapport with different people in numerous contexts.

Several interviewees, for instance, told us their time in the military had taught them not to be intimidated when they spoke to people in positions of authority. Many of these exchanges were verbal, one UW–Madison veteran reported, requiring them to express their message clearly and professionally.

I had to have technical conversations with people all the time and with people who were superior to me on the chain of command, and I got really good at explaining to them something in such a way that it was a short, positive conversation...as an intern, all of that stuff was a huge advantage because other interns...haven't necessarily had a work experience before.

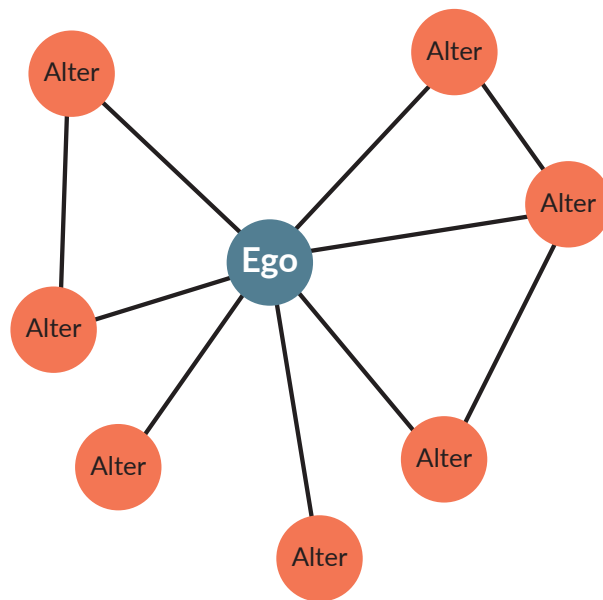
Social Support Networks

Because social support has been shown to be very important to SSM/Vs as they transition into college (e.g., Griffin & Gilbert, 2015; Romero et al., 2015), VETWAYS' main goal is to better understand SSM/V *social support networks*—or the relationship circles around students that provide assistance, advice, and camaraderie that help students succeed (e.g., Benbow & Lee, 2022). With this in mind, here we present survey-based data on the characteristics of SSM/V social support networks as they have changed between Phases One and Two of this study.

We study these groups of important relationships using “social network analysis,” research methods that precisely map individual social contacts (Wasserman & Faust, 1994). Social network analysis typically asks participants to list important people they talk to about specific topics, then to provide information on the listed people and relationships. Researchers then study the relationships to see how they might influence participants' attitudes, decisions, or behavior.

The social support network data that come from these kinds of questions are often represented in diagrams mapping the survey participant (called the “ego”) and their contacts (“alters”) as nodes. The listed relationships between the ego and their alters as well as among the alters are represented as lines between the nodes (Figure 18).

Figure 18. Example social support network diagram

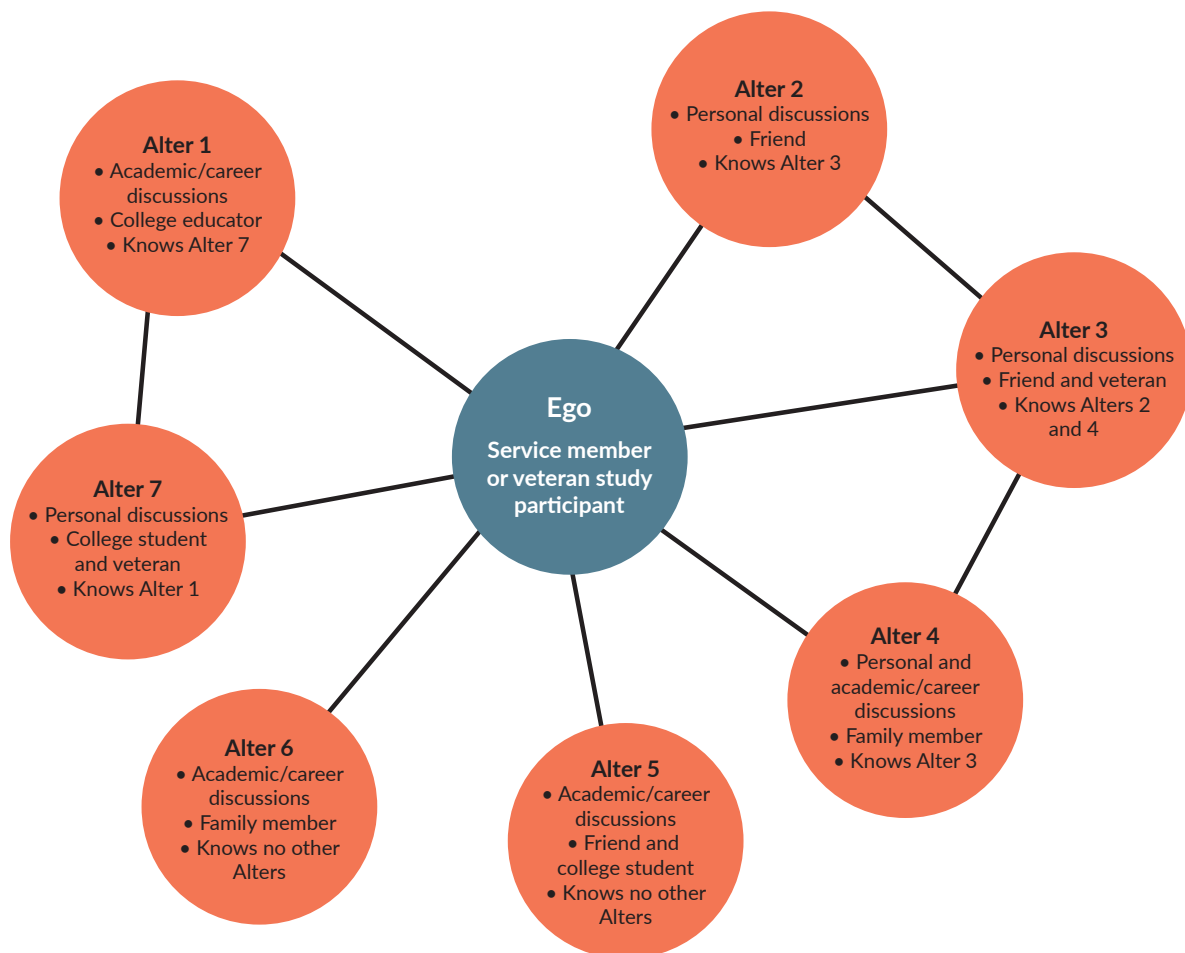


On both the Phase One and Phase Two surveys, we presented students with two questions asking them to provide data about alters they talked to about (1) important **personal matters** and (2) **academic/career-oriented matters**. Further survey questions asked SSM/Vs to describe their relationships with listed alters, the characteristics of these alters, as well as whether listed alters knew one another.

In turn, responses allowed us to develop profiles of each participant's social support network that included the number of alters with whom each participant discussed personal and academic/career matters; the role or position each alter played in the participant's life; how close the participant felt to each alter; the highest academic degree each alter had obtained; and which other people in the network, if any, each alter knew. Figure 19 provides an example of the social support network data VETWAYS collected on surveys.

Survey responses allowed us to develop profiles of each participant's personal and academic/career support network including several significant social characteristics shown to improve student experiences.

Figure 19. Example SSM/V social support network with relationship and alter characteristics



We then used these data to create measures of each SSM/V survey participant's social support network. These measures, which have been shown to be important in past studies of other student and non-student populations (Perry et al., 2018), include:

- *Network size* = total number of alters in each respondent's personal network, academic/career network, or personal matters and academic/career network combined
- *Density* = proportion of support network alters who know one another, from .00 (*no alters know one another*) to 1.0 (*all alters know one another*)
- *Family member ties* = network alters who are family members
- *College student ties* = network alters who are college or university students
- *Military service member/veteran ties* = network alters who are service members/veterans
- *Tie churn* = a measure of a social support network's turnover over time, including how many alters were dropped, added, or retained between Phases One and Two

Organizing results by whether Phase Two respondents are currently undergraduates, graduate students, or full-time workers, Table 5 describes these social support network measures for UW–Green Bay survey participants.

Table 5. Survey-reported Phase Two SSM/V social support network measures for UW–Green Bay respondents

Social Support Network Measure	Undergraduate students	Graduate/Post-Baccalaureate students	Current workers
Personal matters network size	3.91 (SD = 1.22)	4.00 (SD = 1.73)	3.50 (SD = 1.97)
Academic/career network size	5.50 (SD = 2.88)	5.56 (SD = 3.81)	3.50 (SD = 2.26)
Combined network size	5.91 (SD = 2.65)	6.22 (SD = 3.38)	4.33 (SD = 2.58)
Density	0.33 (SD = 0.32)	0.36 (SD = 0.34)	0.30 (SD = 0.09)
Family member ties	0.37 (SD = 0.3)	0.33 (SD = 0.26)	0.28 (SD = 0.33)
College student ties	0.08 (SD = 0.16)	0.06 (SD = 0.19)	0.08 (SD = 0.14)
Military service member/veteran ties	0.22 (SD = 0.21)	0.23 (SD = 0.21)	0.08 (SD = 0.14)
Tie churn	0.63 (SD = 0.23)	0.61 (SD = 0.38)	0.67 (SD = 0.31)

UW–Green Bay Phase Two social support network results reveal several findings:

- Current UW–Green Bay students had on average six close contacts in their social support networks. Among these contacts, an average of about two people were family members, zero to one were university students, and one was a military service member or veteran.
- UW–Green Bay respondents in graduate school at Phase Two reported having an average of about six contacts in their support networks. Two people were family members, none were university students, and one to two were military service members or veterans.
- UW–Green Bay respondents who had graduated and were working at Phase Two had about four contacts in their social networks: one was a family member, none were university students, and none were military service members or veterans.
- There were no significant differences between undergraduate student, graduate student, and worker social network measures in the UW-Green Bay sample.

Phase One Connections to Phase Two Outcomes

While the data reported up this point have been mainly cross sectional, this final section includes *quasi-longitudinal analyses*, or calculations of how SSM/V Phase One factors relate to Phase Two outcomes among current and former student service members or veterans. Here we used statistical regression to calculate these associations.⁶

Each group of Phase Two respondents are at a different stage in their academic/career trajectories, so the outcomes that are important for any given individual differ somewhat based on whether they were undergraduate students, graduate/post-baccalaureate students, and employed workers at the time they took the Phase Two survey.

With this in mind, we conducted several analyses for each respondent group. The first section looks at the association between respondent attributes and “university experience” measures and outcomes. The second section looks at associations between the social support network measures above and important outcomes.

Linking SSM/V Attributes, University Experiences, and Outcomes

Here we look at how several survey respondent attributes at Phase One—including gender, race/ethnicity, first-generation status, age, science or non-science undergraduate major, and whether or not respondents had dependents—relate to Phase Two outcomes among each respondent group. We also look at how several **university experiences** from Phase One relate to Phase Two outcomes.

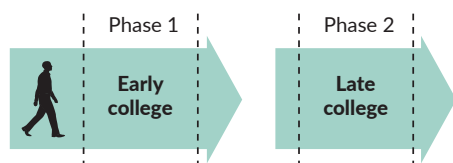
The “university experiences” we analyze include Phase One academic integration, campus belonging, and veteran lounge use. Important Phase Two outcome measures include:

- *Academic integration, campus belonging, and college persistence among undergraduates*
- *Persisting in one’s undergraduate major field as well as one’s confidence in one’s graduate program among graduate/post-baccalaureate students*
- *The relation between one’s job and undergraduate major among respondents who have graduated and are working*
- *Cumulative GPA, negative academic/career path impacts of COVID-19, and work volition among all respondent groups*

Tables 6, 7, and 8 display significant associations for each respondent group. Full regression results are displayed in Appendix II.

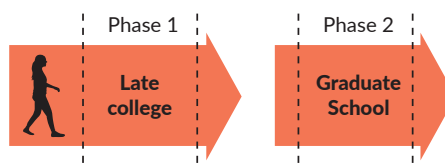
6. Regression analyses mathematically estimate the relationship between measures of participant attributes, behaviors, or attitudes. When testing finds that changes in one survey measure across participants—campus belonging, for instance—predict an increase or decrease of another measure across participants—college GPA, to use another example—the measures are said to be “significantly correlated” or “significantly associated” with one another if it is calculated that there is a low probability (usually 5% or less) the association is due to chance. Multiple regressions, which we use here, allow one to test whether focal measures relate to an outcome variable even when gender, race, age, academic major, and other respondent characteristics are considered.

Table 6. Survey-reported significant associations for undergraduate students



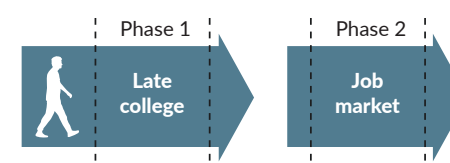
Phase Two Undergraduate Student Outcome	Associations with Phase One Factors
Academic integration	SSM/V women were significantly more academically integrated than men
Belonging	SSM/Vs with dependents had significantly lower feelings of campus belonging than those without dependents
College persistence	- SSM/Vs of color were overrepresented among Phase One respondents who stopped or dropped out of college by Phase Two - SSM/Vs with a greater sense of campus belonging at Phase One were less likely to drop or stop out of college by Phase Two
COVID-19 impact	- First-generation SSM/Vs were less likely to report negative COVID impacts - SSM/Vs who reported more veteran lounge use during Phase One reported more negative COVID impacts during Phase Two

Table 7. Survey-reported associations for graduate students



Phase Two Graduate Student Outcome	Associations with Phase One Factors
Persistence in undergraduate major field	First-generation SSM/Vs were more likely to continue studying in their undergraduate major field in graduate school
Confidence in graduate program	Being in a science, technology, engineering, mathematics, or medical field typically associated with lower confidence in one's graduate program
Cumulative undergraduate GPA	Being an older graduate student often associated with a higher cumulative undergraduate GPA
COVID-19 impact	Graduate students who were more academically integrated at their university during Phase One were more likely to report that COVID negatively impacted their academic/career paths
Work volition	- Male graduate students tended to have higher work volition - Graduate students who were more academically integrated at their university during Phase One had significantly higher work volition at Phase Two

Table 8. Survey-reported associations for working respondents



Phase Two Working Respondent Outcome	Associations with Phase One Factors
Cumulative undergraduate GPA	Being older associated with a higher cumulative undergraduate GPA
COVID-19 impact	- Workers who were older were less likely to report that COVID negatively impacted their academic/career paths - Workers who had a higher sense of belonging at their university campus at Phase One were more likely to report negative COVID impacts on their academic/career paths
Work volition	Working respondents who were White were more likely to have higher work volition than respondents of color

Social Support Network Links to Outcomes

Student service member and veteran social support networks, as we note above, are a primary focus of this study. Here we look specifically at how respondent **social network measures** from the Phase One survey relate to Phase Two outcomes among the three respondent groups as well as among the whole survey sample. Statistically significant associations are highlighted in Table 9.

Table 9. Survey-reported significant associations for all respondent social support networks

Phase One Social Network Measure	Association with Phase Two Outcomes
Network size	• All else being equal, larger personal networks at Phase One predicted a higher cumulative GPA (*) across all respondent groups at Phase Two • Undergraduate students with larger networks during Phase One had significantly higher levels of university academic integration (*) and campus belonging (*) and were more likely to have persisted in college (*) at Phase Two
Density	• Undergraduate students with higher proportions of interrelationships among their academic/career discussants had significantly lower cumulative GPAs (*) • Workers with higher density personal and academic/career networks reported significantly fewer COVID-related negative impacts on their career paths (**); workers with higher density combined networks also reported higher job satisfaction (**)
Family member ties	• Respondents across all groups with family members in their social support networks had significantly higher levels of work volition (*) • Undergraduates whose combined networks had higher proportions of family members reported fewer negative COVID impacts on their career paths (**) • Working respondents with family members in their combined networks at Phase One, however, were more likely to report lower college GPAs (*) at Phase Two
College student ties	• While ties to university students have been shown to associate with SSM/V belonging and academic integration (Benbow & Lee, 2022), respondents across all groups with higher proportions of student ties at Phase One reported more negative COVID-related impacts (***) • Workers with university students in their networks at Phase One were more likely to experience a number of adverse outcomes, including more negative COVID impacts (**), lower salaries (*), and lower work volition (**)
Military service member/veteran ties	• Among continuing undergraduates, those reporting a veteran/service member in their network at Phase One had higher levels of academic integration (*) • Workers with higher proportions of veterans or service members in their Phase One networks were less likely to think that their jobs were closely related to their undergraduate majors (*)
Tie churn	• Across all respondent groups, higher rates of social support network turnover between Phase One and Phase Two associated with lower cumulative GPAs (*) and more negative COVID career impacts (**) • More academic/career network change among undergraduate students significantly correlated with leaving college (**)

Insights and Recommendations

The survey and interview data VETWAYS collected support many findings from previous studies on SSM/Vs in colleges and universities. They also extend previous research in their focus on SSM/V college-to-career transitions, social support networks, and pathways through the COVID pandemic, civic unrest, and widespread National Guard deployments of 2020 and 2021.

What implications, however, do these results have for educators and leaders hoping to better support SSM/Vs? Here, we collect several takeaways and attendant recommendations meant to improve the collegiate and early career experiences of SSM/Vs. These focus on recovering from pandemic-related challenges, building on SSM/V academic, cultural, and social strengths, and enhancing funding for SSM/V services and support professionals.

1. Revitalize university SSM/V support and connection after COVID.

Key Takeaways

Findings suggest that the pandemic turned typical college social strengths into liabilities. Phase One research showed that SSM/V relationships with other college students associated with increased belonging and academic integration. In the pandemic's wake, however, Phase Two respondents with higher proportions of Phase One student ties reported *more negative* COVID-related impacts. Those who more often used their colleges' student veteran lounges at Phase One also reported more negative impacts from the pandemic. As helpful as these relationships can be in normal times, results indicate that those who were supported in college by fellow students and educators felt the sting of campus closures more than others.

As pandemic-related effects continue to subside on campuses, we suggest university educators focus on renewing and revitalizing SSM/V connections with one another, fellow students, faculty, and student service providers on campus. This is not a simple task, as we know many SSM/Vs' time on campus is limited due to off-campus work or family responsibilities. Still, educators can work toward this goal by:

- Increasing multipronged efforts to directly reach out to SSM/Vs—through social media, electronic messages, online meetings, and phone calls—to re-establish contact and show students that they still have a real, authentic support system on campus. This kind of outreach will be particularly important for SSM/Vs who are newly enrolled.

- Instituting exit surveys and/or assessment protocols focused on graduating student military service members and veterans, both to obtain feedback and advice for possible changes to campus service and to show students their input is valuable.
- Incorporating more flexible advising options that deviate from the 9am–5pm, in-person support campus educators and staff traditionally provide. Alternatives could include offering student advising, SSM/V-specific tutoring, or orientations on evenings or during the weekend and through virtual platforms (e.g., Morris et al., 2017).
- Helping local student veteran organizations rebuild by helping get out the word about leadership openings, online, in-person, or hybrid meetings, and other re-development efforts.
- Organizing formal and informal SSM/V-focused community-building events like campus academic or career fairs, lunch or dinner get-togethers, and other activities in which students on and off campus can meet in person and reorient themselves to student military-affiliated social circles.
- Establishing or reinvigorating student veteran and service member lounge spaces, which give SSM/Vs a safe space on campus to spend time between classes, study, and interact with other military-affiliated students
- Using lessons from the pandemic to develop communication and workflow plans in case future events again force higher education and services online

2. Accentuate SSM/V academic- and career-related drive and success.

Key Takeaways

SSM/Vs showed significant strength in the face of challenges in 2020 and 2021. Eighty-six percent of those surveyed had either continued in college or graduated and successfully pursued graduate studies or careers between Phase One and Phase Two. Findings also suggest that specific SSM/V characteristics—even some that often lead to feelings of marginalization in college—correlated with positive outcomes. Older SSM/Vs, for example, had higher GPAs, while first-generation students were more likely to have better weathered the pandemic. SSM/Vs also spoke to the myriad benefits that come with military experience, including public service orientation, communication skill, and time on the job.

Universities should capitalize on the unique backgrounds and assets of SSM/Vs. Not only do many SSM/Vs bring diverse perspectives to campus as older, first-generation, working, or commuting students, but their time in the military has given them a wealth of skills and experiences that translate well to academic

SSM/Vs bring many cultural assets to college and showed particular strength in the face of 2020 and 2021's challenges. In part, universities can capitalize on these assets by developing opportunities in which non-veteran students, staff, and faculty learn from SSM/Vs.

and professional spheres. University educators can work to accentuate and build on SSM/V sociocultural strengths in several different ways:

- Educators can change perceptions of SSM/Vs by reframing SSM/V support and service through asset-oriented language. The veteran services office at the University of Wisconsin–Madison, for instance, recently changed its name from the Veteran Services and Military Assistance Center to University Veteran Services, in part to de-emphasize SSM/V assistance needs and accentuate SSM/V community support and independence.
- Educators can seek to utilize the knowledge, skills, and experiences of SSM/Vs by developing cocurricular opportunities in which non-veteran students can learn from SSM/V experiences. In the classroom, SSM/Vs who are comfortable with the opportunity may want to lead group activities or speak as “experts” on various subjects that touch on the expertise they have gained in the military, such as working in diverse institutions, engaging internationally, or communicating efficiently with authority figures (e.g., Sullivan & Yoon, 2020).
- Educators can provide expanded “Green Zone” professional development trainings to campus faculty and staff that focus on instilling knowledge of military culture and SSM/V transitions.
- Advisors and educators should also remind SSM/Vs of the wealth of knowledge and skills they take from their time in the military and, if necessary, help them better articulate these strengths on graduate school applications and in interviews with prospective employers.

3. Build on the unique value and diversity of SSM/V social support networks.

Key Takeaways

Findings show rich variation across SSM/V networks. They also point to the costs and benefits of different social support characteristics depending on one’s stage in life. In general, larger networks were consistently helpful to respondents across groups, as were ties with fellow veterans/service members. Tighter, denser networks, however, associated both with higher job satisfaction among workers and decreased academic performance among students. Respondents across all groups with family connections had more confidence in their career prospects, but workers with more family ties reported lower salaries.

Reports have suggested that veterans and service members are more likely than civilians without military experience to show civic engagement, assume leadership in community-oriented activities, and talk with their neighbors (Tivald, 2016). It is key to build on SSM/Vs’ propensity toward social involvement. While camaraderie with fellow SSM/Vs can significantly improve students’ academic experiences, brokering greater SSM/V social integration locally—whether on or off campus—is a helpful way to foster a feeling of belonging and increased confidence and academic motivation. Strategies include:

- Work with veterans and their family members to coordinate campus events that bring SSM/Vs together with non-veteran students and faculty, affinity organizations, and others interested in supporting members of the SSM/V community. Incorporating an academic-oriented element in such events will help increase attendance, as SSM/Vs, like other nontraditional students whose lives are focused off campus, are often less interested in purely social events (see, for instance, Deil-Amen, 2011).
- Develop peer mentorship programs that pair SSM/Vs with fellow service member/veteran guides. Model programs include the University of Michigan's Peer Advisors for Veteran Education ([PAVE](#)) program, which is available to campuses across the country, or the University of Colorado–Colorado Spring's [Boots to Suits](#) program, which matches student veterans with community members in their chosen career fields.
- Foster SSM/V participation in curricular or extra-curricular programs in the local community—for example, charitable drives or benefit events. Veteran service staff and other college educators can harness the service orientation of SSM/Vs through activities that allow SSM/Vs to further develop networks on and off campus (e.g., Albright et al., 2020).
- Point SSM/Vs to a local community-based peer support group for veterans and service members, which can offer SSM/Vs opportunities to replenish or expand social ties after military service, engage in prosocial behavior, and obtain pragmatic information on their transitions into civilian life (e.g., Drebing et al., 2018).
- Encourage purposeful “networking,” which may benefit some students. Educators can also remind SSM/Vs that their existing social ties—including spouses, other college students, family members, or fellow veterans or service members—offer important emotional and practical resources they can tap into for academic or career support, advice, and assistance.

4. Increase budgetary support for SSM/V services.

Key Takeaways

Carrying out many of these recommendations would require institutions to increase their budgetary support for campus veteran service staff and their centers. On many campuses, educators are not only responsible for “certification” duties that allow SSM/Vs to receive state and federal education benefits on time, but also outreach, community-building, brokerage, and student advocacy tasks that help SSM/Vs academically and socially integrate on campus.

Because GI benefit certification is a critical service that directly influences SSM/V financial viability from semester to semester, carving out more resources for SSM/V social and community-building programming will necessitate additional paid time for planning and coordination activities among university veteran services staff and educators. It will also require continued investment in student veteran offices. These offices are usually the center of SSM/V campus communities, and are also critical to building awareness of

SSM/Vs among the wider staff and the student body (e.g., Lang & O'Donnell, 2017). With this in mind, we offer several recommendations:

- Social and community-building initiatives—like the PAVE program, student veteran organization support, or veteran-oriented events—are a true benefit to SSM/Vs. However, such efforts require considerable time from veteran service staff for guidance and coordination. Staff should be given the resources they need. Universities may not be able to fund additional full-time staff but can still make a difference by adding part-time employees or hiring graduate students.
- If they have not already, university leaders may consider moving veteran support personnel, who have traditionally been located in university finance or academic affairs departments, to student life-oriented centers. This change will not only allow more space for SSM/V community-building activities, but also send the message that SSM/Vs are an important affinity group and their perspectives and concerns deserve to be recognized.
- Though certification and community-building require different work duties and areas of expertise, both positions are foundational to comprehensive, veteran-friendly SSM/V support. Co-location of these services in one veteran resource space, in this regard, can be beneficial.
- Veteran services can also be strengthened by being granted access to campus administrative information systems that allow them to more effectively track military-affiliated students from admission to graduation, particularly those who may be on campus who do not use GI benefits.
- Universities can further develop institutional administrative systems and clear policies to better support SSM/Vs. This includes well-trained staff who are ready to execute tuition refunds and expedited re-enrollment for sudden mid-term deployments; SSM/V priority class registration; and better facilitation of transfer credit for military experiences (e.g., Hodges et al., 2022).

Improved SSM/V support can come through tuition refunds and expedited re-enrollment for deployments, priority registration, and transfer credit processes that recognize valuable military training.

Resources

- Ackerman, R., DiRamio, D., & Mitchell, R. L. G. (2009). Transitions: Combat veterans as college students. *New Directions for Student Services*, 2009(126), 5–14.
- Albright, D. L., McDaniel, J. T., Godfrey, K., Thomas, K. H., Fletcher, K. L., & Rosen, G. (2020). Civic engagement among student veterans. *Journal of American College Health*, 68(4), 387–394.
- Allen, M. A., Martinez Machain, C., & Flynn, M. (2022, January 5). After Afghanistan, US military presence abroad faces domestic and foreign opposition in 2022. *The Conversation*. <https://theconversation.com/after-afghanistan-us-military-presence-abroad-faces-domestic-and-foreign-opposition-in-2022-172360>
- Barry, A. E., Whiteman, S. D., & Wadsworth, S. M. (2014). Student service members/veterans in higher education: A systematic review. *Journal of Student Affairs Research and Practice*, 51(1), 30–42.
- Barry, A. E., Whiteman, S. D., Wadsworth, S. M., & Hitt, S. F. (2012). The alcohol use and associated mental health problems of student service members/veterans in higher education. *Drugs: Education, Prevention and Policy*, 19(5), 415–425.
- Benbow, R. J. & Lee, Y. G. (2022). Exploring student service member/veteran social support and campus belonging in university STEM fields. *Journal of College Student Development*, 63(6), 593–610.
- Bernard, H. R. (2011). *Research methods in anthropology: Qualitative and quantitative approaches*. AltaMira Press.
- Blaauw-Hara, M. (2016). “The military taught me how to study, how to work hard”: Helping student-veterans transition by building on their strengths. *Community College Journal of Research and Practice*, 40(10), 809–823.
- Bodrog, B., Gloria, A., & Brockberg, D. (2018). The effects of mattering and combat deployment on student service members/veterans’ college adjustment: A psycho-sociocultural approach. *Journal of Veterans Studies*, 3(2), 109–125.
- Borsari, B., Yurasek, A., Miller, M. B., Murphy, J. G., McDevitt-Murphy, M. E., Martens, M. P., Darcy, M. G., & Carey, K. B. (2017). Student service members/veterans on campus: Challenges for reintegration. *American Journal of Orthopsychiatry*, 87(2), 166–175.
- Bowling, N. A., Eschleman, K. J., & Wang, Q. (2010). A meta-analytic examination of the relationship between job satisfaction and subjective well-being. *Journal of Occupational and Organizational Psychology*, 83(4), 915–934.
- Braun, M. T., & Oswald, F. L. (2011). Exploratory regression analysis: A tool for selecting models and determining predictor importance. *Behavior Research Methods*, 43(2), 331–339.
- Burt, R. S. (1984). Network items and the general social survey. *Social Networks*, 6(4), 293–339.

- Burt, R. S., Meltzer, D. O., Seid, M., Borgert, A., Chung, J. W., Colletti, R. B., Dellal, G., Kaplan, H., Peterson, L., & Margolis, P. (2012). What's in a name generator? Choosing the right name generators for social network surveys in healthcare quality and safety research. *BMJ Quality Safety*, 21(12), 992–1000.
- Canjar, M. R., Richard, D. L., & Kappus, R. M. (2022). The impact of COVID-19 on cardiovascular health behaviors in student veterans. *Nutrition, Metabolism and Cardiovascular Diseases*, 32(3), 727–733.
- Cate, C. A., Lyon, J. S., Schmeling, J., & Bogue, B. Y. (2017). *National veteran education success tracker: A report on the academic success of student veterans using the post-9/11 GI bill*. Student Veterans of America.
- Centers for Disease Control and Prevention (2021). COVID-19 stats: College and university student testing protocols, by mode of instruction (n=1,849). *Morbidity and Mortality Weekly Report*, 70(535). <https://www.cdc.gov/mmwr/volumes/70/wr/mm7014a5.htm#suggestedcitation>
- Charmaz, K. (2014). *Constructing grounded theory*. Sage.
- Creswell, J. W. & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research*. Sage.
- Davidson, W. B., Beck, H. P., & Milligan, M. (2009). The college persistence questionnaire: Development and validation of an instrument that predicts student attrition. *Journal of College Student Development*, 50(4), 373–390.
- DeBerard, M. S., Spielmans, G. I., & Julka, D. L. (2004). Predictors of academic achievement and retention among college freshmen: A longitudinal study. *College Student Journal*, 38(1), 66–81.
- Deil-Amen, R. (2011). Socio-academic integrative moments: Rethinking academic and social integration among two-year college students in career-related programs. *The Journal of Higher Education*, 82(1), 54–91.
- Drebing, C. E., Reilly, E., Henze, K. T., Kelly, M., Russo, A., Smolinsky, Gorman, J., & Penk, W. E. (2018). Using peer support groups to enhance community integration of veterans in transition. *Psychological Services*, 15(2), 135–145.
- Halgin, D. S., & Borgatti, S. P. (2012). An introduction to personal network analysis and tie churn statistics using E-NET. *Connections*, 32(1), 37–48.
- Hodges, T. J., Gomes, K. D., Foral, G. C., Collette, T. L., & Moore, B. A. (2022). Unlocking SSM/V success: Welcoming student service members and veterans and supporting SSM/V experiences. *Journal of College Student Retention: Research, Theory & Practice*, 15210251221086851.
- Horton, A. (2020, December 24). Pandemic and unrest fuel the biggest National Guard mobilization since World War II. *Washington Post*. <https://www.washingtonpost.com/national-security/2020/12/24/national-guard-response/>
- Jaschik, S. & Redden, E. (2021, October 29). Live updates archive: August 2020 to October 2021 COVID-19 and higher education. *Inside Higher Ed*. <https://www.insidehighered.com/news/2021/10/29/live-updates-archive-aug-2020-oct-2021-covid-19-and-higher-education>

- Kirchner, M. J., & Pepper, S. (2020). Student veteran engagement in online education. *New Directions for Adult and Continuing Education*, 2020(166), 95–109.
- Lang, W. A., & O'Donnell, T. (2017). Completing the mission II: A study of veteran students' progress toward degree attainment in the post-9/11 era. In D. DiRamio (Ed.), *What's next for student veterans? Moving from transition to academic success* (pp. 117–133). University of South Carolina.
- Livingston, W. G., Havice, P. A., Cawthon, T. W., & Fleming, D. S. (2011). Coming home: Student veterans' articulation of college re-enrollment. *Journal of Student Affairs Research and Practice*, 48(3), 315–331.
- Marin, A., & Hampton, K. N. (2007). Simplifying the personal network name generator: Alternatives to traditional multiple and single name generators. *Field Methods*, 19(2), 163–193.
- Mastrocola, S. S., & Flynn, D. P. (2017). Peer emotional support, perceived self-efficacy, and mental health morbidities among student-veterans at a public university. *The Journal of Continuing Higher Education*, 65(3), 187–198.
- Mishra, P., Pandey, C. M., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive statistics and normality tests for statistical data. *Annals of Cardiac Anaesthesia*, 22(1), 67–72.
- Molina, D., & Morse, A. (2015, April). *Military-connected undergraduates: The current state of research and future work*. American Council on Education, NASPA-Student Affairs Administrators in Higher Education, and RTI International. <https://www.acenet.edu/news-room/Pages/Research-ConveningSummary.aspx>
- Mood, A. M. (1954). On the asymptotic efficiency of certain nonparametric two-sample tests. *The Annals of Mathematical Statistics*, 514–522.
- Morris, P. A., Barker, L., & Monar, A. (2022). Applying the social ecological framework to enhance wellness for student veterans. *Journal of American College Health*, 70(7), 2099–2107.
- Nadworny, E. (2022, August 16). Colleges ease COVID-19 restrictions as fall semester begins for millions of students. NPR. <https://www.npr.org/2022/08/16/1117588455/colleges-ease-covid-19-restrictions-as-fall-semester-begins>
- National Association of Colleges and Employers (2018). *Job outlook 2019*. <https://www.odu.edu/content/dam/odu/offices/cmc/docs/nace/2019-nace-job-outlook-survey.pdf>
- National Science Board (2018). *Our nation's future competitiveness relies on building a STEM-capable U.S. workforce: A policy companion statement to science and engineering indicators 2018*. National Science Foundation.
- Pearson, K. (1900). On the criterion that a given system of deviations from the probable in the case of a correlated system of variables is such that it can reasonably supposed to have risen from random sampling. *The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science*, 50(302), 157–175.
- Perry, B. L., Pescosolido, B. A., & Borgatti, S. P. (2018). *Egocentric network analysis: Foundations, methods, and models*. Cambridge University Press.

- Ployhart, R. E., & Vandenberg, R. J. (2010). Longitudinal research: The theory, design, and analysis of change. *Journal of Management*, 36(1), 94–120.
- QSR International. (2018). NVivo 12. <https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home>
- Ryan, G. W., & Bernard, H. R. (2003). Techniques to identify themes. *Field Methods*, 15(1), 85–109.
- Ryan, L., Mulholland, J., & Agoston, A. (2014). Talking ties: Reflecting on network visualisation and qualitative interviewing. *Sociological Research Online*, 19(2), 1–12.
- Seibert, S. E., Crant, J. M., & Kraimer, M. L. (1999). Proactive personality and career success. *Journal of Applied Psychology*, 84, 416–427.
- Semer, C., & Harmening, D. S. (2015). Exploring significant factors that impact the academic success of student veterans in higher education. *Journal of Higher Education Theory & Practice*, 15(7), 31–43.
- StataCorp. (2019). *Stata statistical software: Release 16*. StataCorp LLC.
- Student Veterans of America (2020). *The 2020 SVA census survey: Student veteran general breakdowns*. <https://studentveterans.org/research/sva-census/>
- Sullivan, K., & Yoon, K. (2020). Student veterans' strengths: Exploring student veterans' perceptions of their strengths and how to harness them in higher education. *The Journal of Continuing Higher Education*, 68(3), 164–180.
- Tivald, J. (2016). *America's greatest assets: How military veterans can lead a resurgence of community across the country*. <https://www.ncoc.org/wp-content/uploads/2016/10/2016-Veterans-CHI-2017.pdf>
- Welch, B. L. (1938). The significance of the difference between two means when the population variances are unequal. *Biometrika*, 29(3/4), 350–362.
- Welch, B. L. (1947). The generalization of 'student's' problem when several different population variances are involved. *Biometrika*, 34(1/2), 28–35.

Appendix I: Research Methods

Approach

The data in this report were gathered for a National Science Foundation-funded two-phase study that began in 2019 called, “Exploring STEM Career Pathway Persistence Among Student Service Members and Veterans: A Mixed-Methods Study of Social Support Networks” (#1920482). This study is focused on the connections between personal social support networks and science, technology, engineering, mathematics, or medical (STEMM) college-to-career pathways among student service members/veterans (SSM/Vs) in Wisconsin public universities.

We use a longitudinal, convergent mixed-methods case study approach (Creswell & Plano Clark, 2018). Through this approach, a bounded issue or phenomenon is explored over time using quantitative and qualitative data. Survey and interview data were gathered simultaneously across two data collection waves, 18 months apart, and then analyzed separately. Ultimately, quantitative and qualitative results are meant to be interpreted together to provide a triangulated interpretation of the central phenomenon. Study methods and approaches are displayed in Table 10.

Sampling

The data in this report represent two phases of survey and interview responses from SSM/Vs enrolled in five Wisconsin public universities in spring 2020. In preparation for data collection, these institutions were chosen for their institutional and geographic diversity. For Phase One, which took place February through May 2020, the researchers used a purposeful, nonprobability procedure to recruit SSM/Vs, defined as currently enrolled undergraduate students in the National Guard or Reserves or who had completed military service (Barry et al., 2014). We asked veteran service coordinators in each of the five universities to email all identified SSM/Vs study information and an online survey link with subsequent email reminders to nonresponders. These emails elicited 623 Phase One SSM/V survey responses across the institutions (31% response rate), with each respondent receiving a \$20 electronic Amazon gift credit for their participation.

At the Phase One survey’s end, SSM/V respondents who had listed a STEMM major in Biological or Life Science, Engineering, Health, Mathematics or Computer Science, Physical Science, or Social Science (National Science Board, 2018) were asked if they were interested in qualitative participation. Those who volunteered were asked to provide contact information for interview scheduling. Fifty-four SSM/Vs in total participated in these Phase One interviews, each of whom received \$30 for their time.

Phase Two, which took place fall 2021, involved the research team emailing study information and a second online survey link to all Phase One participants who had volunteered to continue in the study, which entailed 592 of the original 623 respondents. After they filled out this Phase Two survey, those who had participated in interviews at Phase One were contacted again to schedule a second interview. Overall, 375 respondents filled out these Phase Two surveys (a 40% attrition rate) while 35 respondents participated in a second Zoom interview (a 35% attrition rate).

Because these response and attrition rates limit our ability to generalize beyond the sample, readers should interpret overall survey results with caution.

Table 10. Study methods

Study methods	
Approaches	Convergent mixed methods / Case study / Longitudinal / Personal social network analysis
Sites	UW–Green Bay / UW–Madison / UW–Milwaukee / UW–Oshkosh / UW–Stout
Participants	Student military service members and veterans (surveys) / Student military service members and veterans in STEMM majors (interviews)
Instruments	Online surveys / Zoom semi-structured interviews
Analysis	Descriptive and correlational statistics (surveys) / Segmentation and inductive coding (interviews)

Instruments

Surveys

Phase One and Phase Two SSM/V online surveys were designed primarily to gather social support network measures using “ego network” techniques in which questions elicit the details of core social ties around each individual (Perry et al., 2018). Other items were meant to gather multiple measures on respondent educational and military experience and, in Phase Two, respondents’ trajectories through college or from college into graduate school or the workforce. The research team conducted several cognitive tests of the Qualtrics instruments for both Phase One and Phase Two, asking volunteer SSM/Vs and veteran coordinators at participating institutions to complete the surveys with researchers present to whom they could ask questions and comment as they went through the survey (e.g., Bernard, 2011). With feedback and results from testing and, in the case of the Phase One survey, a national pilot sample ($n=54$), the research team finalized instruments for administration.

Phase One and Phase Two surveys each took about 15 minutes to complete. Following methods described in Marin and Hampton (2007), the instruments each included two “name generator” questions designed to elicit alters whom respondents talk to about personal and academic/career matters (Burt, 1984; Burt et al., 2012; Marin & Hampton, 2007). The questions read as follows:

Personal network: *Please list people with whom you have discussed matters important to you—like good or bad things that happen to you, problems you are having, or important concerns you may have—during the last 6 months.*

Academic/career network: *Please list people with whom you have discussed academic or career matters—like your major area of study, academic or career goals, or job opportunities—during the last 6 months.*

After respondents listed as many as 10 unique alters in answer to these name generators, we asked them to characterize every alter and alter relationship by factors shown to be important to academic and professional networks in previous research, including the role of each alter (college student, college

educator, family member, etc.); how close participants felt to them (distant, less than close, close, etc.); whether alters were veterans or service members; and whether alters knew one another (Ackerman et al., 2009; Barry et al., 2012; DeBerard et al., 2004; Molina & Morse, 2015). To allow comparative analysis and the calculation of tie churn between respondent personal support networks in Phase One and Phase Two, the name generators were exactly similar across the two surveys.

While the Phase One survey asked questions about student high school, military, and demographic characteristics, the Phase Two survey included questions asking respondents details about their academic and career pathways and attitudes since the last survey (whether they had graduated from college and/or stayed in their Phase One major, what graduate program or job they were now in, how satisfied they were with their jobs, etc.).

Interviews

In Phase One and Phase Two, semi-structured interview protocols were designed by the research team to elicit student perspectives and experiences regarding SSM/V education and career pathways and social support networks. Initial versions of both protocols were tested with the help of several SSM/Vs and veteran coordinators at participating institutions. After mock interviews, researchers talked through different items on the protocol with these participants. Using participant suggestions and feedback, researchers edited the instruments, retested with more participants, and finalized.

Phase Two student interviews, which are analyzed for this report, took place November 2021 through February 2022 over Zoom because of public health conditions. Each interview lasted about an hour and was audio recorded. Interviews began with questions about each respondent's trajectory since spring 2020. We then moved to questions about SSM/V academic and career experiences, identified support networks from Phase Two surveys and changes in these networks since Phase One, and other significant educational and career issues in the interviewees' lives. Interview participants were shown sociograms with their Phase One and Phase Two social support network responses to elicit views about how these networks had supported them and how any changes had influenced interviewee trajectories (Ryan et al., 2014). After interviews were completed, audio recordings of the interviews were transcribed and uploaded to NVivo 12 (QSR International, 2018).

Analysis

Quantitative

Survey data presented in this report were analyzed in stages after the initial data cleaning was performed in R (R Core Team, 2019). First, we organized the data from the personal network section of the Phase One and Phase Two surveys in Stata (StataCorp, 2019). Then, we analyzed data in R to generate a series of social support network measures representing important network characteristics from the literature (see, for example, Benbow & Lee, 2022). Second, we calculated basic descriptive statistics measuring the central tendency, frequency, variability, and connectedness, and/or change of the participating SSM/Vs' personal information and social network measures presented in the report's tables (Mishra et al., 2019; Perry et al., 2018). We measured the change in SSM/V social networks between Phase One and Phase Two in R using "tie churn," a proportional measure of instability as a function of total network size (Halgin & Borgatti, 2012).

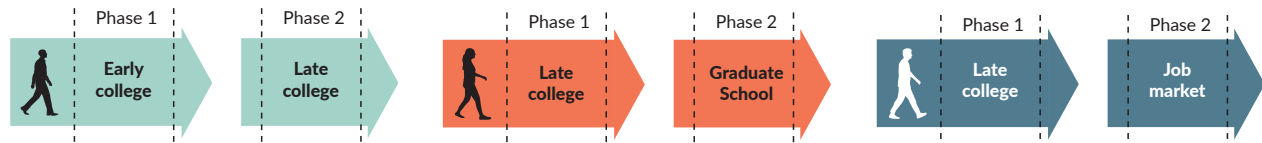
To help readers from each institution better understand how SSM/Vs from their university compare with SSM/Vs from the other participating universities, we performed Welch's unequal variance t-tests (Welch, 1938; Welch, 1947), Pearson's Chi-squared tests (Pearson, 1900), or Mood's median tests (Mood, 1954) on selected personal and social network measures. We conducted exploratory regression analyses (Braun & Oswald, 2011) to identify important predictors while exploring the relationships among SSM/Vs' personal characteristics, social support network measures, and selected outcome measures. The important predictors we identified in our analyses are presented and discussed.

Qualitative

To speak to student perspectives on cultural strengths in this report, Phase Two interviews were coded and analyzed in NVivo 12, a qualitative analysis software program. Here, the first author first segmented all interviews by topic (belonging, social support, military cultural strengths, etc.). The first author then analyzed attendant transcript segments to detail prominent ideas mentioned in answer to cultural strengths questions among interviewees, grouping similar statements together into discrete themes. Here, the author chose student quotations to represent more often-mentioned ideas and in a few instances developed subthemes from interviews to form cohesive, subthematic definitions (Charmaz, 2014; Ryan & Bernard, 2003).

Appendix II: Regression Tables

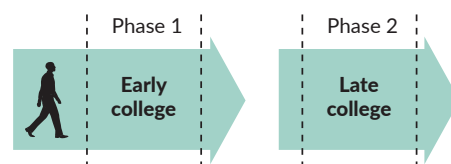
Table 11. Regression of Phase Two outcome variables on demographics and Phase One social network characteristics of whole sample (n=375)



Phase One Measure	Phase Two Outcome Measures			
	Cumulative GPA	College Persistence	Work Volition	Negative COVID Impacts
Gender	-0.159 (0.134)	0.019 (0.448)	0.087 (0.125)	0.142 (0.126)
Race/ethnicity	0.082 (0.140)	0.832+ (0.445)	0.057 (0.132)	-0.047 (0.133)
Age	0.008 (0.008)	0.832 (0.445)	0.0001 (0.007)	-0.007 (0.007)
Dependent status	0.167 (0.160)	0.832 (0.445)	-0.155 (0.150)	-0.122 (0.150)
First-generation status	-0.239+ (0.124)	0.832 (0.445)	0.062 (0.116)	-0.036 (0.117)
STEMM or non-STEMM major	0.129 (0.115)	0.832 (0.445)	-0.018 (0.108)	0.065 (0.109)
Personal matters network size	0.104* (0.047)	0.290* (0.145)	0.007 (0.043)	0.059 (0.045)
Academic/career network size	0.044* (0.021)	0.190* (0.083)	0.012 (0.020)	0.003 (0.020)
Combined network size	0.044+ (0.023)	0.184* (0.086)	0.027 (0.021)	0.020 (0.022)
Density	0.276 (0.214)	0.450 (0.782)	-0.107 (0.194)	-0.258 (0.201)
Family member ties	0.284 (0.231)	0.230 (0.849)	0.458* (0.209)	-0.170 (0.217)
College student ties	0.605 (0.436)	0.739 (1.574)	-0.430 (0.398)	1.621*** (0.407)
Military service member/ veteran ties percentage	-0.026 (0.248)	0.644 (0.895)	-0.217 (0.226)	0.077 (0.236)
Military service member/ veteran ties (yes or no)	0.031 (0.122)	0.674+ (0.399)	0.014 (0.111)	0.063 (0.115)
Tie churn	-0.555* (0.233)	-1.123 (0.877)	-0.195 (0.221)	0.672** (0.220)

*Note: Each demographic measure association with each outcome was tested with all other demographic measures as covariates. Each social support network measure association with each outcome was tested with variables representing gender (male and female/non-binary; males are the reference category), race/ethnicity (White and Students of Color; White students are the reference category), age, dependent status, first-generation status, and STEMM or non-STEMM major as covariates. Results for these covariates are not reported. + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$*

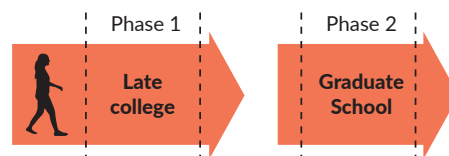
Table 12. Regression of Phase Two outcome variables on demographics and Phase One social network characteristics of undergraduate students (n=204)



Phase One Measure	Phase Two Undergraduate Student Outcome Measures					
	Cumulative GPA	Academic Integration	Belonging	Major Persistence	Work Volition	Negative COVID Impacts
Gender	0.086 (0.162)	0.154* (0.067)	-0.096 (0.172)	0.272 (0.481)	0.055 (0.154)	0.263 (0.169)
Race/ethnicity	0.309 (0.199)	0.209* (0.082)	-0.175 (0.212)	0.188 (0.599)	-0.275 (0.189)	0.125 (0.209)
Age	-0.00003 (0.009)	-0.005 (0.004)	-0.004 (0.010)	-0.040 (0.036)	-0.003 (0.009)	-0.002 (0.010)
Dependent status	0.076 (0.212)	-0.013 (0.087)	-0.376+ (0.225)	0.286 (0.692)	0.045 (0.201)	-0.080 (0.219)
First-generation status	-0.250 (0.155)	-0.072 (0.064)	-0.129 (0.165)	-0.413 (0.484)	0.024 (0.147)	-0.324* (0.161)
STEMM or non-STEMM major	0.204 (0.140)	0.039 (0.058)	-0.020 (0.149)	0.189 (0.408)	0.167 (0.133)	0.0001 (0.146)
Personal matters network size	0.126* (0.059)	0.052* (0.025)	0.095 (0.063)	0.109 (0.181)	-0.076 (0.054)	0.079 (0.064)
Academic/career network size	0.126* (0.059)	0.025* (0.011)	0.046+ (0.028)	0.001 (0.075)	0.001 (0.024)	-0.001 (0.028)
Combined network size	0.035 (0.029)	0.033** (0.012)	0.067* (0.031)	0.048 (0.085)	0.003 (0.027)	0.022 (0.031)
Density	-0.558* (0.266)	0.063 (0.114)	0.199 (0.286)	-0.731 (0.848)	-0.025 (0.249)	0.014 (0.288)
Family member ties	0.384 (0.296)	-0.090 (0.125)	-0.103 (0.318)	-0.609 (0.875)	0.305 (0.272)	-0.846** (0.308)
College student ties	0.063 (0.511)	0.159 (0.215)	0.478 (0.546)	-1.408 (1.677)	0.033 (0.470)	0.893 (0.566)
Military service member/veteran ties percentage	-0.150 (0.308)	0.046 (0.130)	-0.439 (0.328)	0.161 (0.912)	-0.334 (0.282)	-0.115 (0.333)
Military service member/veteran ties (yes or no)	0.025 (0.149)	0.135* (0.062)	0.169 (0.159)	0.266 (0.445)	-0.078 (0.136)	-0.078 (0.157)
Tie churn	-0.254 (0.304)	0.096 (0.129)	0.423 (0.329)	-0.121 (0.874)	-0.134 (0.289)	0.765* (0.318)

Note: Each demographic measure association with each outcome was tested with all other demographic measures as covariates. Each social support network measure association with each outcome was tested with variables representing gender (male and female/non-binary; males are the reference category), race/ethnicity (White and Students of Color; White students are the reference category), age, dependent status, first-generation status, and STEMM or non-STEMM major as covariates. Results for these covariates are not reported. + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

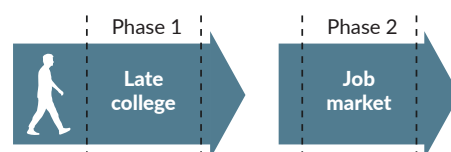
Table 13. Regression of Phase Two outcome variables on demographics and Phase One social network characteristics of graduate students (n=34)



Phase One Measure	Phase Two Graduate Student Outcome Measures				
	Cumulative GPA	Major Persistence	Confidence in Graduate Program	Work Volition	Negative COVID Impacts
Gender	-0.352 (0.298)	-0.669 (0.927)	0.110 (0.240)	0.692+ (0.337)	0.070 (0.371)
Race/ethnicity	0.177 (0.319)	-0.398 (0.899)	-0.207 (0.257)	-0.056 (0.358)	-0.142 (0.401)
Age	0.042+ (0.022)	0.134 (0.123)	-0.015 (0.018)	0.006 (0.024)	-0.028 (0.027)
Dependent status	0.116 (0.402)	-1.953 (1.647)	0.353 (0.324)	-0.061 (0.443)	0.102 (0.518)
First-generation status	-0.008 (0.335)	1.856+ (1.013)	-0.429 (0.269)	0.065 (0.370)	-0.002 (0.430)
STEMM or non-STEMM major	-0.187 (0.320)	1.452 (0.979)	-0.448+ (0.257)	-0.198 (0.355)	-0.196 (0.412)
Personal matters network size	-0.102 (0.123)	-0.043 (0.311)	0.018 (0.100)	-0.007 (0.134)	-0.038 (0.152)
Academic/career network size	0.013 (0.049)	0.023 (0.133)	0.047 (0.040)	-0.020 (0.056)	-0.001 (0.062)
Combined network size	0.002 (0.052)	0.001 (0.134)	0.039 (0.042)	-0.011 (0.056)	-0.002 (0.064)
Density	0.245 (0.700)	4.856+ (2.573)	0.049 (0.568)	-1.027 (0.635)	-0.119 (0.801)
Family member ties	0.742 (0.613)	2.246 (1.773)	-1.055* (0.462)	-0.461 (0.707)	0.489 (0.738)
College student ties	-0.685 (2.383)	3.534 (6.115)	-3.119+ (1.821)	2.643 (2.516)	5.834* (2.579)
Military service member/ veteran ties percentage	1.108+ (0.571)	0.812 (1.556)	-0.138 (0.493)	-0.290 (0.662)	0.664 (0.718)
Military service member/ veteran ties (yes or no)	0.917* (0.413)	-0.358 (1.150)	-0.039 (0.364)	-0.076 (0.485)	0.877+ (0.502)
Tie churn	-0.202 (0.552)	1.916 (1.519)	1.266** (0.370)	0.711 (0.614)	0.853 (0.656)

*Note: Each demographic measure association with each outcome was tested with all other demographic measures as covariates. Each social support network measure association with each outcome was tested with variables representing gender (male and female/non-binary; males are the reference category), race/ethnicity (White and Students of Color; White students are the reference category), age, dependent status, first-generation status, and STEMM or non-STEMM major as covariates. Results for these covariates are not reported. + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$*

Table 14. Regression of Phase Two outcome variables on demographics and Phase One social network characteristics of working respondents (n=86)



Phase One Measure	Phase Two Current Working Respondent Outcome Measures					
	Cumulative GPA	Job Satisfaction	Job Relation to Major	Job Salary	Work Volition	Negative COVID Impacts
Gender	-0.325 (0.226)	0.065 (0.271)	-0.020 (0.217)	10,359.74 (5,944.652)	0.099 (0.253)	-0.032 (0.284)
Race/ethnicity	-0.034 (0.217)	0.171 (0.260)	0.139 (0.209)	6,197.07 (5,714.501)	0.566* (0.243)	-0.184 (0.273)
Age	0.033* (0.013)	0.009 (0.016)	-0.005 (0.012)	900.49** (340.830)	0.014 (0.014)	-0.033* (0.016)
Dependent status	0.122 (0.224)	0.085 (0.269)	0.415+ (0.215)	3,283.26 (5,902.123)	0.118 (0.251)	-0.332 (0.288)
First-generation status	-0.052 (0.197)	0.277 (0.235)	0.060 (0.189)	-2,401.11 (5,171.187)	-0.010 (0.220)	0.712** (0.252)
STEMM or non-STEMM major	-0.091 (0.180)	-0.071 (0.215)	-0.218 (0.173)	-3,369.63 (4,731.801)	-0.316 (0.201)	0.237 (0.230)
Personal matters network size	0.038 (0.093)	-0.034 (0.112)	-0.111 (0.085)	-1,651.09 (2,490.697)	-0.066 (0.103)	0.092 (0.118)
Academic/career network size	0.004 (0.039)	-0.026 (0.047)	-0.059 (0.036)	441.37 (1,083.783)	-0.035 (0.045)	0.060 (0.050)
Combined network size	0.026 (0.043)	0.003 (0.052)	-0.048 (0.040)	5,344.00 (1,161.562)	0.019 (0.048)	0.075 (0.055)
Density	-0.034 (0.336)	1.056** (0.382)	0.259 (0.309)	11,508.79 (8,874.562)	0.269 (0.370)	-1.133** (0.401)
Family member ties	-0.792* (0.328)	0.320 (0.406)	0.025 (0.315)	-7,377.53 (9,069.702)	0.410 (0.373)	0.557 (0.426)
College student ties	0.958 (0.606)	-1.089 (0.726)	0.151 (0.569)	-33,067.55* (16,016.860)	-1.749** (0.649)	2.279** (0.730)
Military service member/veteran ties percentage	-0.024 (0.388)	-0.531 (0.459)	-0.771* (0.347)	14,357.23 (10,228.340)	0.179 (0.428)	-0.278 (0.495)
Military service member/veteran ties (yes or no)	-0.129 (0.186)	-0.340 (0.219)	-0.309+ (0.169)	3,126.44 (4,975.48)	0.010 (0.206)	0.040 (0.238)
Tie churn	0.200 (0.382)	0.695 (0.457)	-0.272 (0.362)	-9,637.835 (10,193.980)	0.553 (0.433)	0.790 (0.483)

Note: Each demographic measure association with each outcome was tested with all other demographic measures as covariates. Each social support network measure association with each outcome was tested with variables representing gender (male and female/non-binary; males are the reference category), race/ethnicity (White and Students of Color; White students are the reference category), age, dependent status, first-generation status, and STEMM or non-STEMM major as covariates. Results for these covariates are not reported. Job salary results are rounded to two digits instead of three. + $p < .10$; * $p < .05$;

** $p < .01$; *** $p < .001$



The Veteran Education to Workforce
Affinity and Success Study

About

The Veteran Education to Workforce Affinity and Success Study (VETWAYS) is a National Science Foundation-funded project focused on the social support networks and career pathways of an increasingly important segment of the U.S. college student population: military service members and veterans.

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