



September 2022

HIGHER EDUCATION VA Could Improve Support for Veterans Pursuing STEM Degrees

Accessible Version

GAO Highlight

Highlights of [GAO-22-105326](#), a report to congressional committees

Why GAO Did This Study

Veterans who received technical training in the military may be well-suited to pursuing degrees in STEM. To help pay for these degrees, veterans can use Post-9/11 GI Bill benefits and the Edith Nourse Rogers STEM Scholarship. The scholarship provides up to 9 months of education benefits (not to exceed \$30,000) to veterans who apply and qualify. Two laws included provisions for GAO to review how these programs support veterans pursuing STEM degrees.

This report examines (1) the extent to which veterans pursue STEM degrees using VA education benefits, (2) challenges these veterans face in obtaining a STEM degree, and (3) how VA administers the Rogers STEM scholarship. GAO analyzed VA administrative data and interviewed officials from VA and veterans service organizations, as well as officials and student veterans at selected colleges. GAO randomly selected five colleges for interviews from a list of 20 colleges with the highest numbers of Rogers STEM scholarship recipients. GAO also reviewed relevant literature and VA documents and processes.

What GAO Recommends

GAO is making five recommendations, including that VA provide clear information to veterans about their applications for the Rogers STEM scholarship and analyze and address, as needed, disparities in application denial rates. VA concurred with GAO's recommendations.

View [GAO-22-105326](#). For more information, contact Melissa Emrey-Arras at (617) 788-0534 or emreyarrasm@gao.gov.

September 2022

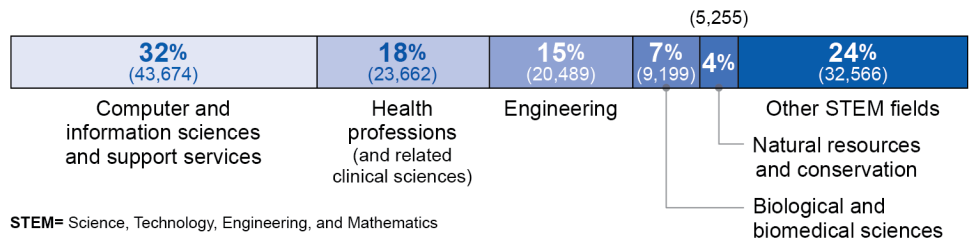
HIGHER EDUCATION

VA Could Improve Support for Veterans Pursuing STEM Degrees

What GAO Found

More than 130,000 veterans used the Post-9/11 GI Bill to pursue a degree in science, technology, engineering, or mathematics (STEM) from school years 2019 through 2021. About 3,500 veterans also used the Edith Nourse Rogers STEM Scholarship program to continue pursuing these degrees after exhausting their Post-9/11 GI Bill benefits. The majority of these veterans were pursuing degrees in computer sciences, health professions, or engineering (see figure).

STEM Degree Programs for Veterans Using Post-9/11 GI Bill or Edith Nourse Rogers STEM Scholarship, School Years 2018-19 through 2020-21



STEM= Science, Technology, Engineering, and Mathematics

Source: GAO analysis of Department of Veterans Affairs administrative data. | GAO-22-105326

Accessible Data Table for Highlight Figure

	Number	Percentage
Computer and information sciences and support services	43,674	32%
Health professions and related clinical sciences	23,662	18%
Engineering	20,489	15%
Biological and biomedical sciences	9,199	7%
Natural resources and conservation	5,255	4%
Other STEM fields	32,566	24%

Student veterans pursuing STEM degrees can face several challenges obtaining a degree, according to GAO's interviews and literature search. Some of these challenges are not unique to student veterans, such as the rigor and sequence of STEM coursework and balancing academics with work and family responsibilities. Other challenges are more specific to veterans. While veterans bring strengths, such as discipline, some also have physical or mental conditions from their military service that can affect their academic progress, according to college officials GAO interviewed.

The Department of Veterans Affairs (VA) does not clearly communicate with veterans about their Rogers STEM scholarship applications or collect and use data needed to understand application denial trends. Specifically:

- Some of VA's letters to veterans lack clear information about their applications and how to proceed. These letters can create confusion for veterans about how to obtain the scholarship, according to GAO's analysis of the letters and interviews with veterans. Without clearer

communication, veterans may not fully understand the program, whether they are eligible for it, or how to apply for funds.

- GAO's analysis of VA data shows that the agency denied 63 percent of applications during the first 3 fiscal years of the program. This analysis also shows that VA denied African American or Black applicants and female applicants at higher rates than White and male applicants. However, VA does not collect the data it needs to understand why it denies more than half of all applicants. Further, VA has not yet conducted any analyses to understand the disparities in denial rates. Without additional data collection and analysis, VA is unable to take informed steps to better manage the program and address, as needed, these disparities.

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Abbreviations

ACS	American Community Survey
B&B	Baccalaureate and Beyond Longitudinal Study

BPS	Beginning Postsecondary Longitudinal Study
CIP	Classification of Instructional Programs
Post-9/11 GI Bill	Post-9/11 Veterans Educational Assistance Act of 2008
Rogers STEM scholarship	Edith Nourse Rogers STEM Scholarship
STEM	science, technology, engineering, and mathematics
VA	Department of Veterans Affairs
VSO	veterans service organization

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September 29, 2022

The Honorable Jon Tester
Chairman
The Honorable Jerry Moran
Ranking Member
Committee on Veterans' Affairs
United States Senate

The Honorable Mark Takano
Chairman
The Honorable Mike Bost
Ranking Member
Committee on Veterans' Affairs
House of Representatives

Each year, thousands of United States military veterans pursue bachelor's degrees in science, technology, engineering, and mathematics (STEM) fields using education benefits administered by the Department of Veterans Affairs (VA).¹ Research has touted the benefits of a STEM degree. On average, people with degrees in STEM receive higher starting salaries, greater job security, and higher growth in earnings than other majors, according to this research.² Moreover, veterans who received training or experience in STEM-related fields during their time in the military may be well suited to pursuing a STEM degree and translating their military experience into a productive civilian career.³

¹For this report, we use VA's definition of STEM developed for the Edith Nourse Rogers STEM Scholarship. This definition includes degrees in biological or biomedical science, physical science, science technologies, computer and information science, math, statistics, engineering and related technologies, health professions, agriculture science, and natural resources science programs.

²Anthony P. Carnevale, Ban Cheah, and Andrew R. Hanson, *The Economic Value of College Majors* (Georgetown University Center on Education and the Workforce, 2015): 8-10.

³Rosalinda Maury, M.S., Brice Stone, PhD., and Nicholas Armstrong, PhD, *Enhancing Veterans' Access to STEM Education and Careers: A Labor Market Analysis of Veterans in the STEM Workforce* (Institute for Veterans and Military Families, Syracuse University, 2018): 3.

For veterans who served on active duty on, or after, September 11, 2001, and meet other criteria, the Post-9/11 Veterans Educational Assistance Act of 2008 (Post-9/11 GI Bill) may provide funds to pay for up to 4 years of college.⁴ Many college students take longer than the standard 4 years to complete their degree for a variety of reasons. Student veterans who use Post-9/11 GI Bill benefits to pursue a STEM bachelor's degree may also take longer than 4 years to complete their degree, and may run out of these benefits before completing the degree. In these cases, student veterans enrolled in a qualifying program may be able to use the Edith Nourse Rogers STEM Scholarship (Rogers STEM scholarship), which provides eligible students with additional funds to continue pursuing their STEM degrees.⁵

Both the Supporting Veterans in STEM Careers Act and the Harry W. Colmery Veterans Education Assistance Act of 2017 included provisions for GAO to report on issues related to veterans pursuing STEM degrees. First, the Supporting Veterans in STEM Careers Act included a provision for GAO to report on barriers faced by student veterans pursuing degrees in STEM.⁶ Second, the Harry W. Colmery Veterans Educational Assistance Act of 2017 included a provision for GAO to provide Congress with an interim assessment of the Rogers STEM scholarship program.⁷ This report (1) determines the extent to which veterans pursue STEM degrees using the Post 9/11 GI Bill or the Rogers STEM scholarship and what is known about their outcomes, (2) describes the challenges these veterans face in obtaining STEM degrees, and (3) evaluates how VA administers the Rogers STEM scholarship to support veterans' pursuit of STEM degrees.

To determine the extent to which veterans pursued STEM degrees, we analyzed VA administrative data over the past 3 school years (2018-19 through 2020-21) for veterans who used the Post-9/11 GI Bill to pursue a STEM degree and for veterans who used the Rogers STEM scholarship. In addition, to determine outcomes for veterans and other individuals who pursued STEM degrees, we analyzed data from the 2019 American

⁴The Post-9/11 GI Bill generally provides up to 36 months of benefits, which is equivalent to four 9-month academic years of college.

⁵The Edith Nourse Rogers STEM Scholarship was created as part of the Harry W. Colmery Veterans Educational Assistance Act of 2017, with an effective date of August 1, 2019. Pub. L. No. 115-48, tit. I, § 111, 131 Stat. 973, 981-84.

⁶Pub. L. No. 116-115, § 4, 134 Stat. 105, 108-09 (2020).

⁷Pub. L. No. 115-48, tit. I, § 111(d)(1), 131 Stat. 973, 983-84.

Community Survey, the 2017 follow-up to the 2012 Beginning Postsecondary Students Longitudinal Study, and the 2018 follow-up to the 2008 Baccalaureate and Beyond Longitudinal Study. We took steps to confirm the reliability of the data, including reviewing documentation and testing the data. We determined these data to be sufficiently reliable for the purposes of reporting the number and characteristics of veterans pursuing STEM degrees with selected VA education benefits and describing the outcomes of veterans and individuals with STEM bachelor degrees.

To describe challenges veterans pursuing STEM degrees face, we interviewed officials and veterans at five colleges and reviewed related literature. We randomly selected these colleges within categories of institution types (public, private nonprofit, and private for-profit) from a list provided by VA of the 20 colleges that received Post-9/11 GI Bill funds and had the largest number of recipients of the Rogers STEM scholarship. To select veterans to interview, we asked college officials to identify veterans who were pursuing a bachelor's degree in a STEM field using either Post-9/11 GI Bill benefits or the Rogers STEM scholarship. College officials then arranged for us to speak with a total of 10 veterans who met this criteria. We also spoke with representatives from three veterans service organizations (VSO) that serve student veterans or focus on veterans who served in the military during a time that made them eligible for the Post-9/11 GI Bill. The results of our interviews with selected colleges, veterans, and VSOs are not generalizable to all members of those groups. We also reviewed literature related to challenges veterans encounter in higher education, with a focus on veterans pursuing STEM degrees.

To evaluate how VA administers the Rogers STEM scholarship, we reviewed agency documentation and federal laws; interviewed VA officials responsible for overseeing and administering the program, and interviewed college officials, veterans, and VSOs about their experiences with the program. We also analyzed VA data related to processing applications for the Rogers STEM scholarship, including by race and sex. We compared this information with the goals and objectives in VA's 2018-24 strategic plan and with standards for internal control in the federal

government.⁸ For more information on our scope and methodology, see appendix I.

We conducted this performance audit from June 2021 to September 2022 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Post-9/11 GI Bill

The Post-9/11 Veterans Educational Assistance Act of 2008, commonly referred to as the Post-9/11 GI Bill, created what is now VA's largest educational program. Qualified veterans may use Post-9/11 GI Bill benefits for a range of learning opportunities including undergraduate and graduate degrees, non-college degree programs, apprenticeships, and on-the-job training.⁹ In general, full benefits are available to qualified

⁸GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: September 2014).

⁹This program generally provides benefits to veterans who served on active duty for at least 90 days beginning on or after September 11, 2001. In general, veterans who serve on active duty between 90 days and 36 months beginning on or after September 11, 2001 are eligible for a portion of the maximum tuition amount based on their time served.

veterans who served on active duty for at least 36 months.¹⁰ For veterans receiving full benefits while in college, VA will pay the net cost for in-state tuition and fees at public schools and up to an annual maximum amount at private nonprofit, private for-profit, or foreign schools (\$26,381 for the 2022-23 school year). To receive education benefits through the Post-9/11 GI Bill, students must apply to VA, schools certify a student veteran's enrollment, and VA processes claims and payments. VA pays schools directly for tuition and fees and sends additional payments for housing and books directly to eligible veterans.

Edith Nourse Rogers STEM Scholarship

The Rogers STEM scholarship was created by the Harry W. Colmery Veterans Educational Assistance Act of 2017, with an effective date of August 1, 2019.¹¹ VA began accepting scholarship applications in fiscal year 2019 and granting awards in fiscal year 2020. This scholarship allows eligible veterans in STEM programs to receive up to 9 months in education benefits, not to exceed \$30,000, after exhausting their Post-9/11 GI Bill benefits, subject to the availability of funding.¹² For fiscal

¹⁰See 38 U.S.C. §§ 3311(b) and 3313(c). More specifically, full benefits are generally available to veterans who, beginning on or after September 11, 2001, served on active duty for at least 36 months, or, if discharged or released from active duty for a service-connected disability, for at least 30 continuous days, or were awarded the Purple Heart for such service. The amount of Post-9/11 GI Bill benefits that a veteran is eligible to receive varies based on the length of service. For example, a service member pursuing a degree on a full-time basis who served at least 36 months would receive full benefits, whereas a service member pursuing a degree on a full-time basis who served at least 90 days, but less than 6 months, would receive 50 percent of benefits. In general, service members with at least 30 continuous days of active duty and discharged with a service-connected disability are also eligible at the 100 percent level. Certain veterans attending participating schools may receive additional benefits to cover tuition and fees through the Yellow Ribbon G.I. Education Enhancement Program. Through this program, schools enter into voluntary agreements with VA to pay a portion of the tuition and fees that exceed an individual's Post-9/11 GI Bill benefit and VA matches the schools' contribution. See 38 U.S.C. § 3317 (c) and (d).

¹¹Both the Edith Nourse Rogers STEM Scholarship and the Post-9/11 GI Bill educational benefits are codified under 38 U.S.C. Chapter 33 – Post-9/11 Educational Assistance.

¹²Specifically, veterans are eligible if they have exhausted their Post-9/11 GI Bill benefits, or will exhaust them within 180 days of applying for the scholarship. Children and spouses of a veteran may be eligible for the Rogers STEM scholarship if they receive Post-9/11 GI Bill benefits known as the Marine Gunnery Sergeant John David Fry Scholarship. This scholarship provides education benefits for children and spouses of individuals who, on or after September 2001, died in the line of duty as a member of the Armed Forces, or who was a member of the Selected Reserve who died from a service-connected disability. 38 U.S.C. § 3311(b)(8)-(10) and (f).

years 2020 through 2022, the maximum amount VA could provide in benefits to all recipients annually was \$75,000,000. In fiscal years 2023 and later, the maximum amount is currently \$100,000,000.¹³ (See app. II for more information about Rogers STEM scholarship expenditures.)

The Rogers STEM scholarship can cover the additional coursework that is sometimes required in STEM fields, and provides further incentives for students to choose careers in these high-demand fields, according to VA. There are multiple eligibility criteria for the scholarship (see table 1).

Table 1: Key Eligibility Criteria for the Edith Nourse Rogers STEM Scholarship

Eligibility categories	Criteria
General eligibility	Applicants must have qualified for Post-9/11 GI Bill educational benefits, and Applicants must have exhausted their Post-9/11 GI Bill educational benefits, or be on track to exhaust their Post-9/11 GI Bill educational benefits within 6 months of applying for the scholarship ^a
Qualifying educational programs ^b	Applicants must be enrolled in an undergraduate STEM degree program or a qualifying dual degree program and have completed at least half of the credits for a degree that requires at least 120 semester (or 180 quarter) credit hours, or Applicants must have earned a postsecondary degree or a graduate degree in an approved STEM degree field and be enrolled in a covered clinical training program for health care professionals, or Applicants must have earned a postsecondary degree in an approved STEM degree field and be enrolled in a program of education leading to a teaching certification

Source: GAO analysis of Department of Veterans Affairs' documents and website. | GAO-22-105326

Notes: While applicants may meet all eligibility criteria, their receipt of the scholarship is also subject to the availability of funding. STEM is an abbreviation for science, technology, engineering, and mathematics.

^aUnder 38 U.S.C. § 3320(b)(2), veterans are eligible if they are on track to exhaust their Post-9/11 GI Bill benefits within 180 days of applying for the scholarship. VA approves applicants who have less than 6 months of their Post-9/11 GI Bill benefits remaining when they apply for the scholarship.

¹³38 U.S.C. § 3320(f).

^bAccording to VA, 38 U.S.C §3320(b)(4)(A) authorizes dual undergraduate degree programs; however, it does not authorize dual undergraduate and graduate degree programs. The Rogers STEM scholarship does not pay for enrollment in a graduate degree program; however, individuals may be eligible for the scholarship if they completed a graduate degree in an approved STEM field, and then enroll in a covered clinical training program for health care professionals.

To receive the Rogers STEM scholarship, applicants must submit an application online to VA. VA awards the scholarships on a monthly basis to all applicants who meet the eligibility criteria, if funding is available. VA allots \$30,000 for each approved applicant to cover the maximum benefit the individual can use. According to VA policy, recipients must begin using the scholarship within 6 months of the scholarship's effective date and they have 2 years to use the scholarship or forfeit whatever remains of the funds allotted for them.

Over 130,000 Veterans Used VA Education Benefits to Pursue a STEM Bachelor's Degree in School Years 2018-19 through 2020-21, and VA Is Beginning to Study Their Outcomes

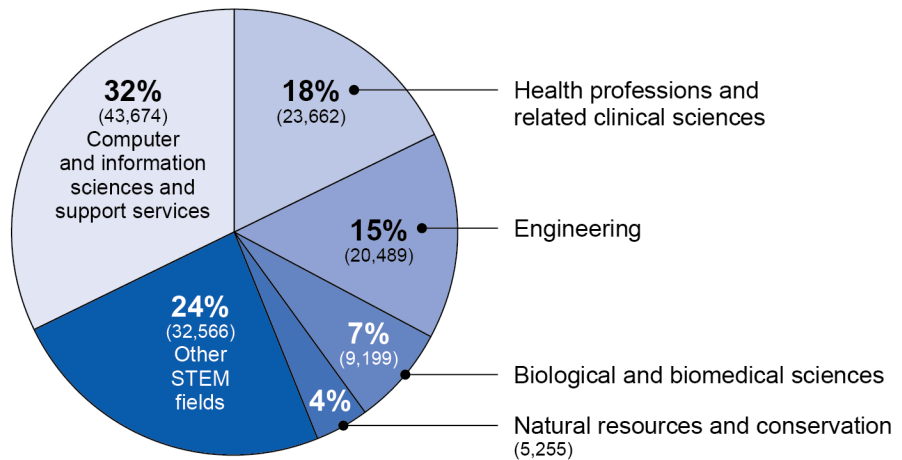
Most Veterans Who Pursued a STEM Bachelor's Degree Sought Degrees in Computer Sciences, Health Professions, or Engineering

Of the over 330,000 veterans who used the Post-9/11 GI Bill in school years 2018-19 through 2020-21 to pursue a bachelor's degree, 134,398 veterans (40 percent) pursued a STEM degree, as defined by VA. Further, 3,523 used the Rogers STEM scholarship to pursue a bachelor's degree during this same time period. (See app. III for more information about veterans' use of the Rogers STEM scholarship.)¹⁴ Most of these

¹⁴In addition to the 3,523 veterans who used the Rogers STEM scholarship to pursue a STEM bachelor's degree, seven individuals used the scholarship to participate in covered clinical training for health professionals and 10 used the funds to work towards a teaching certification. Generally, when reporting on Post-9/11 GI Bill recipients and Rogers STEM scholarship recipients, we only include recipients who are veterans. For example, the Post-9/11 GI Bill recipients noted in this report do not include children and spouses who used a veteran's Post-9/11 GI Bill benefits. Unless otherwise noted, the Rogers STEM scholarship recipients in this report do not include individuals who are eligible as recipients of Post-9/11 GI Bill benefits known as the Marine Gunnery Sergeant John David Fry Scholarship, which provides education benefits for qualifying children and spouses of certain deceased veterans.

student veterans were pursuing degrees in computer sciences, health professions, or engineering. (See fig. 1 and app. III for more details.)

Figure 1: Bachelor’s Degree Programs of Veterans Using Selected VA Education Benefits in Science, Technology, Engineering, and Mathematics (STEM), School Years 2018-19 through 2020-21



Source: GAO analysis of Department of Veterans Affairs administrative data. | GAO-22-105326

Accessible Data Table for Figure 1

	Number	Percentage
Computer and information sciences and support services	43,674	32%
Health professions and related clinical sciences	23,662	18%
Engineering	20,489	15%
Biological and biomedical sciences	9,199	7%
Natural resources and conservation	5,255	4%
Other STEM fields	32,566	24%

Notes: The programs included in this figure are the Post-9/11 GI Bill and the Edith Nourse Rogers STEM Scholarship. VA did not award any Rogers STEM scholarships in school year 2018-19 as the program did not begin until August 1, 2019. This figure does not include students who were eligible for the Rogers STEM scholarship as recipients of Post-9/11 GI Bill benefits known as the Marine Gunnery Sergeant John David Fry Scholarship, which provides education benefits for qualifying children and spouses of certain deceased veterans. Percentages do not add to 100 due to rounding.

VA Is Beginning to Study Outcomes of Veterans Receiving Education Benefits and Available Federal Data Indicate STEM Graduates Earn More on Average than Non-STEM Graduates

No data are currently available to track the graduation and employment outcomes for all veterans who received VA education benefits, but VA is exploring potential data sources. VA collects graduation data for veterans who complete their degrees while using VA education benefits, but does not collect data for veterans who graduate after they stop receiving benefits.¹⁵ VA also currently has no mechanisms to collect outcome data related to employment. Other federal data sources collect outcome data for veterans but do not identify what specific VA education benefits they received.

However, VA recently contracted with an organization to explore data sources to provide the agency with outcome information for veterans using VA educational benefits. According to VA's work statement for the contractor, this data may include degree attainment, employment status, and income. The contractor will seek data that will provide VA with quarterly updates of the identified outcome data. According to VA officials, the contractor will consider the use of data from several external sources, including the Internal Revenue Service and Bureau of Labor Statistics. VA officials expect the contractor to provide a completed outcome measure model by late calendar year 2022.

Using VA administrative data, we found that 21,830 veterans graduated with a STEM bachelor's degree in school years 2018-19 through 2020-21 while using Post-9/11 GI Bill benefits. This data undercounts the number of veterans who earn STEM degrees because it does not include veterans who earn degrees after they stop receiving VA benefits. For veterans graduating with a STEM degree, the average time from when they began using their Post-9/11 GI Bill benefits to when they graduated was 3.8 calendar years.¹⁶ Approximately two-thirds of veterans graduating

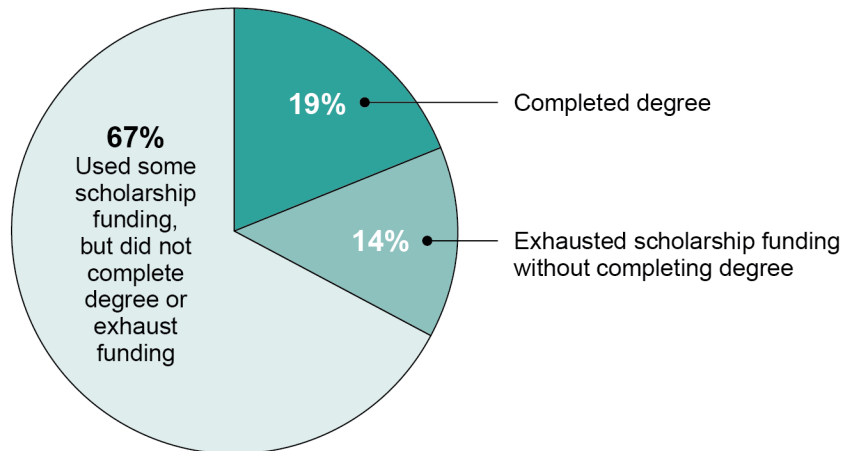
¹⁵When a veteran is receiving VA education benefits, colleges are required to provide VA with information about the veteran's enrollment status. Once a veteran stops receiving these benefits, VA has no easily available information about a veteran's college or employment outcomes.

¹⁶Some veterans may have started attending college prior to using VA benefits, so the exact amount of time it takes for veterans to earn their degree is unknown.

with STEM bachelor’s degrees (14,479) graduated within 4 years of beginning to use their Post-9/11 GI Bill benefits.

The funding provided by the Rogers STEM scholarship allowed additional veterans to complete their degrees. Of the 3,523 veterans who pursued a STEM degree using the Rogers STEM scholarship in school years 2019-20 through 2020-21, approximately 19 percent (676) graduated by the end of the 2020-21 school year. An additional 14 percent (499) had exhausted their funding without yet completing their degree.¹⁷ The number of graduating veterans will likely increase as some veterans had yet to exhaust their scholarship funding or complete their degrees (67 percent of recipients or 2,348 individuals) by the end of school year 2020-21 (see fig. 2).¹⁸

Figure 2: Program Outcomes for Veterans Who Used Rogers STEM Scholarship Funding in School Years 2019-20 through 2020-21, by End of School Year 2020-21



Source: GAO analysis of Department of Veterans Affairs administrative data. | GAO-22-105326

Accessible Data Table for Figure 2

	Percentage
Used some scholarship funding, but did not complete degree or exhaust funding	67
Completed degree	19
Exhausted scholarship funding without completing degree	14

¹⁷Individuals who had yet to complete their degree could complete their degree after the time period of our study.

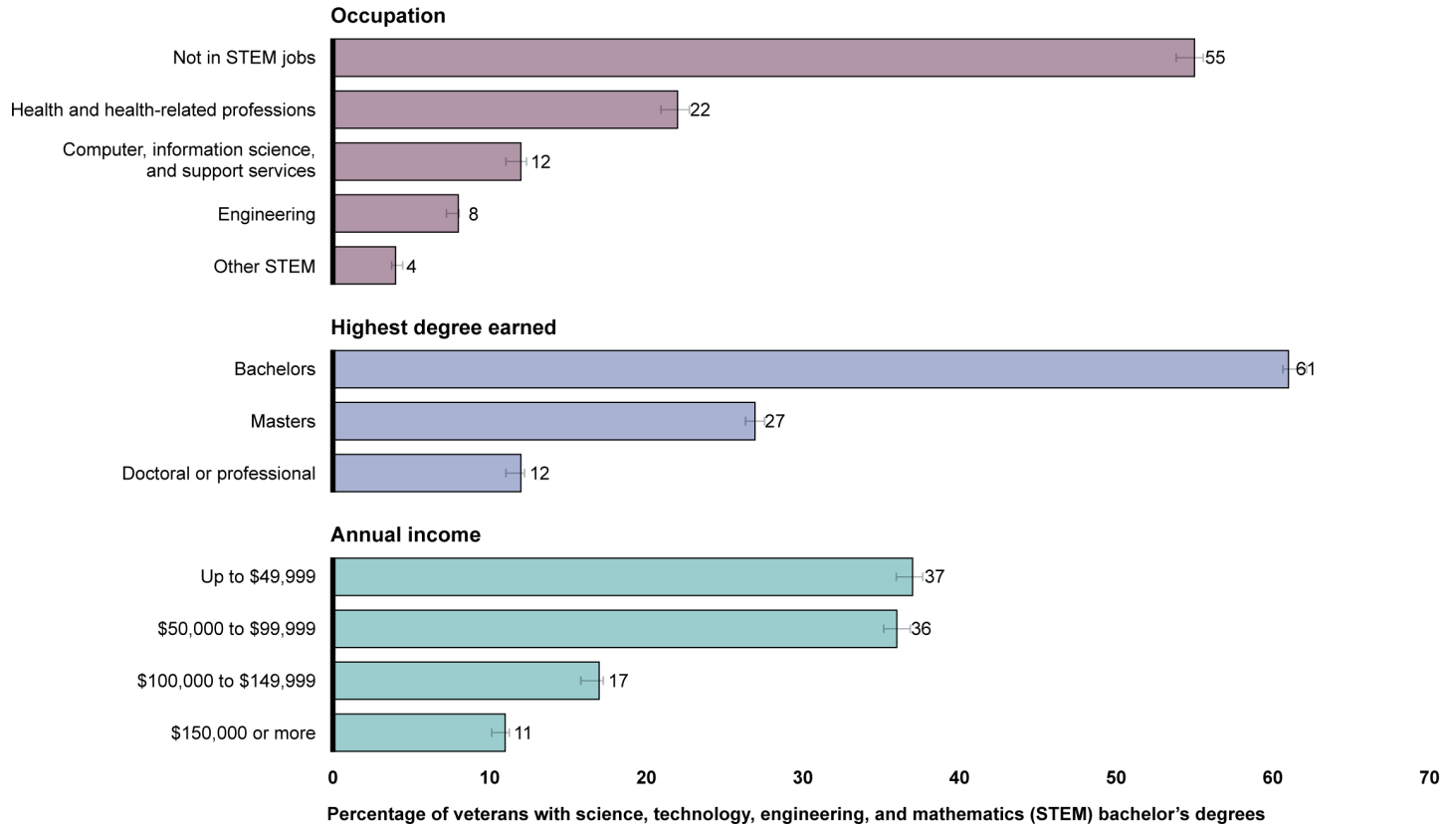
¹⁸An additional 3,275 veterans were approved for the Rogers STEM scholarship, but had not used any of their approved funding by the end of school year 2020-21.

Notes: Individuals who had yet to complete their degree could complete their degree after the time period of GAO's study. This figure does not include students who were eligible for the Rogers STEM scholarship as recipients of Post-9/11 GI Bill benefits known as the Marine Gunnery Sergeant John David Fry Scholarship, which provides education benefits for qualifying children and spouses of certain deceased veterans.

Given the current lack of employment and income data specific to veterans receiving VA education benefits, we used data from the U.S. Census Bureau's 2019 American Community Survey to identify outcomes for veterans with a STEM bachelor's degree generally. These data indicate that about one-half of these veterans were not employed in a STEM occupation. An estimated 39 percent of veterans with a STEM bachelor's degree continued their education and completed a higher degree, and an estimated 28 percent earned an annual income of \$100,000 or more (see fig. 3).¹⁹

¹⁹Veterans with a STEM bachelor's degree in a STEM occupation had an estimated median income of \$78,359 (\$76,014-\$80,704). Veterans with a STEM bachelor's degree in a non-STEM occupation had an estimated median income of \$52,629 (\$50,856-\$54,402).

Figure 3: Estimates for Education and Employment Outcomes for Veterans with STEM Bachelor’s Degrees, 2019 American Community Survey



Source: GAO analysis of 2019 American Community Survey 5 year estimate data. | GAO-22-105326

Accessible Data Table for Figure 3

Occupation	Estimate	Lower bound	Upper bound
Not in STEM jobs	55.0	53.8	55.6
Health and Health-related professions	22.0	20.9	22.8
Computer, Information Science, and support services	12.0	11.0	12.4
Engineering	8.0	7.2	8.1
Other STEM	4.0	3.7	4.5
Highest degree earned			
Bachelors	61.0	60.6	62.2
Masters	27.0	26.3	27.6
Doctoral or Professional	12.0	11.0	12.3
Annual income			

Occupation	Estimate	Lower bound	Upper bound
Up to \$49,999	37.0	35.9	37.7
\$50,000 to \$99,999	36.0	35.1	36.9
\$100,000 to \$149,999	17.0	15.8	17.3
\$150,000 or more	11.0	10.1	11.3

Note: Percentages may not add to 100 due to rounding.

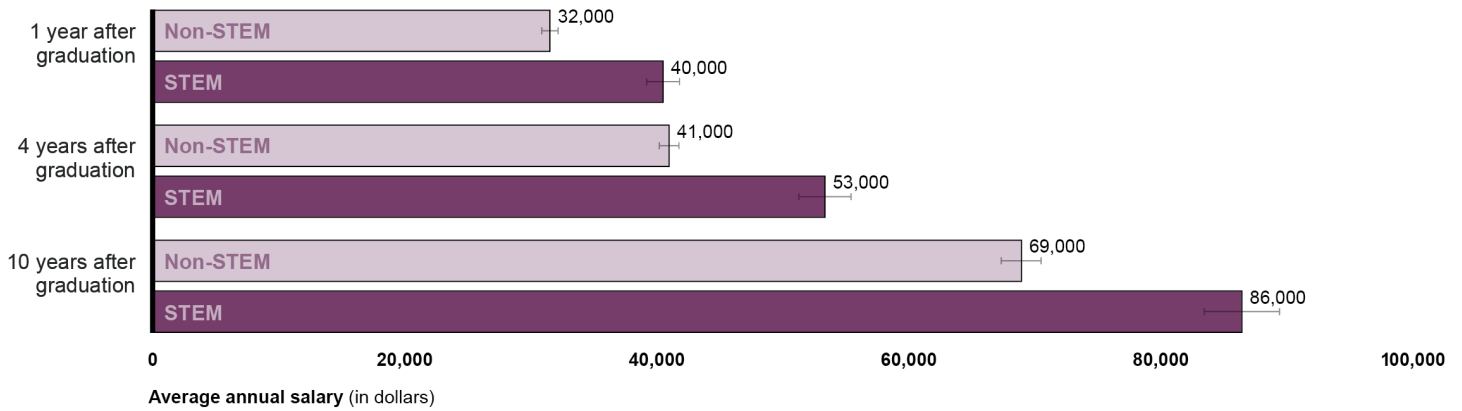
Given the limitations of available data on outcomes for veterans, we also reviewed outcome data for individuals pursuing STEM degrees, regardless of veteran status. For example, we analyzed data from the Beginning Postsecondary Students Longitudinal Study 2012-2017 and found that individuals ever enrolled in STEM—not specifically veterans—who completed their degree needed similar amounts of time to complete this degree when compared with individuals never enrolled in STEM.²⁰ Individuals who ever pursued a bachelor’s degree in STEM took an estimated 45 calendar months on average to complete their degree, compared with an estimated 43 calendar months for individuals never enrolled in STEM.²¹

To better understand the career outcomes of individuals with STEM degrees, we used the Baccalaureate and Beyond Longitudinal Study 2008-2018. Using this data source, we found that individuals with a STEM bachelor’s degree had higher starting salaries after college graduation than those with a non-STEM degree (see fig. 4). The estimated average starting salary for individuals with a STEM bachelor’s degree was \$8,000 higher than for individuals with a non-STEM bachelor’s degree. After 10 years, STEM graduates earned \$17,000 more per year than their non-STEM counterparts, on average.

²⁰BPS is a nationally representative study of first-time beginning postsecondary students, administered by the National Center for Education Statistics. Participants were surveyed at three points of time, in the base year (school year 2011-2012), and then 3 and 6 years later (ending in school year 2017-2018).

²¹The difference between these estimates, while statistically significant, is not practically different. Individuals who ever pursued a bachelor’s degree in STEM took an estimated 44.20-45.97 months on average to complete their degree, while those who never pursued a bachelor’s degree in STEM took an estimated 42.72-44.16 months on average. The difference between the lower bound of one estimate and the higher bound of the other estimate is about one day. An individual who completes a degree in 4 school years that start in September and end in May would take approximately 45 calendar months to complete their degree.

Figure 4: Estimated Income of Individuals with STEM Bachelor Degrees Compared with Individuals with Non-STEM Bachelor's Degrees, 2008-2018



Source: GAO analysis of 2008/18 Baccalaureate and Beyond Longitudinal Study. | GAO-22-105326

STEM= science, technology, engineering, and mathematics

Accessible Data Table for Figure 4
Average annual salary (in thousands of dollars)

	Non-STEM estimate	Non-STEM Lower bound	Non-STEM Upper bound	STEM estimate	STEM Lower bound	STEM Upper bound
1 year after graduation	30.8	31.5	32.2	39.2	40.5	41.9
4 years after graduation	40.1	41.0	41.8	51.2	53.3	55.5
10 years after graduation	67.3	68.9	70.6	83.4	86.4	89.5

Note: 2008/18 Baccalaureate and Beyond is a longitudinal study administered by the National Center for Education Statistics. Individuals included in the study completed all bachelor's degree requirements in the 2007-08 school year and received a bachelor's degree no later than June 30, 2009. The survey collected data on outcomes over the 10 years following the individuals' bachelor's degree completion.

Veterans Pursuing STEM Degrees Can Face Challenges with the Sequence of Coursework, Nonacademic Responsibilities, and Experiences Related to Military Service

Veterans can face challenges in several areas when pursuing a STEM bachelor's degree. Some of these challenges are not unique to student veterans. For instance, the structure and content of STEM courses can be challenging for any student to complete within 4 years. In addition, as nontraditional college students who are generally older than traditional students, veterans face challenges balancing academics with their work and family responsibilities. Other challenges, however, are more specific to veterans and their experiences while in the military. While veterans bring strengths, such as discipline and maturity to college, some veterans may have disabilities or trauma from their military service that can impact their education.

Structure and Content of STEM Coursework Can Make It Challenging to Complete a Bachelor's Degree in 4 Years

According to most college officials we interviewed, the structure of STEM coursework can be challenging for any student, including student veterans, to complete within 4 years, as these degree programs generally require that courses be completed in a specific sequence with little flexibility. If a student has difficulty passing a course or varies from the specific order of courses, it may take additional time to get back on track. An official we spoke with at one university explained that if students fail a course, they are not able to move on to the next course required in the sequence, which could affect their ability to complete the degree in the planned 4 years. In addition, one college official told us that requirements for math prerequisites can also delay students. For instance, students may be required to complete upper level math courses before they can enroll in some science classes. Similarly, students may be delayed in completing their degree if they change majors. A representative at one VSO explained that if a veteran switches from a non-STEM major to a STEM major, it can be difficult to complete the sequence of classes before running out of Post-9/11 GI Bill benefits. Similarly, an official at one college noted that a student veteran who changes from a non-STEM degree, such as journalism, to a science degree,

such as biology or physics, might have to take additional math classes for the new major. (See textbox for a profile of a student veteran we interviewed.)

Student veteran profile: Changing majors can lengthen the time needed to graduate. After serving in the Navy for 5 years, one veteran began attending college, but then changed his major to computer science. This degree program required him to take additional science classes, which added a year to his time in college. He said he would exhaust his Post-9/11 GI Bill benefits in spring 2022 and would use the Rogers STEM scholarship to cover the remaining cost of his degree.

Source: GAO interview with a student veteran. | GAO-22-105326

In addition to the structured coursework, officials from four of the five colleges we contacted told us that some veterans may find the content of STEM courses challenging. Student veterans may have been out of school for several years while they served in the military and may need remedial math courses or tutoring before beginning their STEM degree program. Further, these officials noted that STEM degrees typically require math courses that are more rigorous than those for non-STEM degrees, and students may need to take additional math courses. (See textbox for a profile of a student veteran we interviewed.) For example, an official at one college said that the math prerequisites for STEM degrees are generally more difficult than for non-STEM degrees at their university.

Student veteran profile: Taking remedial math can add time needed to complete a STEM degree. After exiting the Army in 2013, one student veteran first attended community college and then transferred to a 4-year university to pursue a bachelor's in computer science. The 4-year university tested him for math placement and required him to take remedial math courses, which added to the time he needed to complete his degree. According to the veteran, he tested poorly because it had been so long since he had taken math classes. After exhausting his Post-9/11 GI Bill benefits, he began using the Rogers STEM scholarship, which he said will cover the remaining costs of his academic program.

Source: GAO interview with a student veteran. | GAO-22-105326

Student Veterans Face Challenges Balancing Academics with Work and Family Responsibilities

Student veterans commonly experience nonacademic challenges, such as competing work and family priorities, which can hinder their ability to successfully obtain STEM degrees, according to interviews with officials at all five colleges, all three VSOs, and seven of the 10 students we contacted, along with articles from our literature search. The college and VSO officials explained that student veterans generally face similar challenges as other nontraditional adult students, who do not enroll in college soon after graduating from high school. Student veterans and other nontraditional students are more likely to have added responsibilities, including taking care of a family, working a job, and balancing these responsibilities with academics. In some circumstances, these challenges can impact the time it takes student veterans to complete their degrees.

Student veterans and college officials we interviewed described how work responsibilities can affect students' academic pursuits. One student veteran we spoke with worked in a medical facility during the COVID-19 pandemic and said the stress from his job affected his ability to focus on his academics. A college official said she worked with a student veteran who struggled to financially support his family while pursuing his degree. In addition to having a work study job, the student had to take on an additional job to earn enough money to support his family. The college official said the student's circumstances could hinder his ability to complete his degree. (See textbox for a profile of a student veteran we interviewed.)

Student veteran profile: Working while attending college. After serving on active duty in the military from 2007 to 2009, one veteran joined the reserves and enrolled at a local community college in 2011. Over the next 11 years, his education was interrupted by work and periodically being deployed for active-duty service. He plans to graduate in 2022 with a bachelor's degree in computer information science, focused on cybersecurity. He exhausted his Post-9/11 GI Bill benefits at the end of 2021 and began using the Rogers STEM scholarship. He said that he will exhaust the scholarship benefits as well and will have to pay out of pocket to finish his degree.

Source: GAO interview with a student veteran. | GAO-22-105326

Student veterans, like other nontraditional students, may also face barriers balancing family responsibilities with their academics. For example, students who cannot find childcare may find it challenging to attend classes or complete their coursework, according to an article from our literature search.²² One veteran we spoke with said she had difficulty finding childcare for the evenings when her classes took place. Another student veteran we spoke with said she will graduate a year later than planned, due in part to challenges with balancing college and family responsibilities. She said that her husband was in the military and stationed out of state, so she had to coordinate her academic schedule with her daughter's schedule, which interfered with her academics at times. Another veteran explained he had difficulty balancing his academic and nonacademic responsibilities. (See textbox for a profile of a student veteran we interviewed.)

***Student veteran profile: Balancing work, college, and family.** One student veteran said that his biggest challenge is managing his time due to his multiple nonacademic responsibilities. He works a full-time job while attending college full time. He also takes care of his 3-year-old daughter, which puts further demands on the time he has available. He said he would exhaust his Post-9/11 GI Bill benefits in spring 2022 as a result of transferring to a new college and changing his major. He said he would begin using the Rogers STEM scholarship to continue his bachelor's degree in health information technology.*

Source: GAO interview with a student veteran. | GAO-22-105326

Challenges Related to Military Service Can Affect a Veteran's Pursuit of a Degree

According to interviews with officials at all five colleges and a VSO, student veterans have a number of strengths as students, but may also face complications related to their military experiences that can affect their pursuit of a degree. These officials noted that student veterans bring several strengths to college academics, such as discipline, maturity, and real world experience. However, some veterans may also have disabilities or trauma from their military service that can impact their education, according to these officials. An article from our literature

²²Alexis Petri, Ronda Jenson, Arden Day, and George Gotto, "Transition and the Troubled Giant: Opportunities for Colleges and Universities to Invest in Veterans," *Journal of Veteran Students*, issue 1 (2016): 20.

search noted that some veterans develop mental or physical health conditions or disabilities after their military service, such as post-traumatic stress disorder, manic-depressive disorder, or traumatic brain injuries.²³ As students, these veterans may face challenges with successfully completing their coursework. (See textbox for a profile of a student veteran we interviewed.)²⁴

***Student veteran profile: Experiencing trauma in the military.** During her 11 years in the Navy, one student veteran we interviewed experienced trauma that led to mental health struggles during her time in college. These struggles caused her to repeat courses that she either failed or did not complete, which prolonged her time in college. She withdrew from classes for one semester and said she had difficulty finding a counselor who understood her military experience. Despite these challenges, she obtained a bachelor's in occupational and technical studies with a concentration in math, science, and engineering using her Post-9/11 GI Bill benefits.*

Source: GAO interview with a student veteran. | GAO-22-105326

In addition, some veterans may take more time to adjust to differences between the military and college environments, according to college officials and student veterans we spoke with, as well as literature we reviewed. Student veterans have to readjust to civilian society and find a sense of community to be successful in college, according to one college official. However, some veterans may find it difficult to relate to younger college students. For example, one veteran we spoke to found it frustrating that her fellow students did not take college seriously. Similarly, one study attributed a veteran's frustrations in working with other students on a group project to the military's expectations for leadership and individual accountability.²⁵ In another study, a student

²³Sonya B. Norman, PhD; Jay Rosen, PhD; Sara Himmerich, MA; Ursula S. Myers, MS; Brittany Davis, PhD; Kendall C. Browne, PhD; Neill Piland, PhD, "Student Veteran Perceptions of Facilitators and Barriers to Achieving Academic Goals," *JRRD*, vol. 52, no. 6, (2015): 702.

²⁴See GAO, *Veterans with Disabilities: VA Could Better Inform Veterans with Disabilities about Their Education Benefit Options*, [GAO-21-450](#) (Washington D.C.: July 28, 2021) for information on VA's Vocational Readiness and Employment program, which can provide education benefits and other services to veterans with disabilities.

²⁵Jae Hoon Lim, Claudia G. Interiano, Caroline E. Nowell, Peter T. Tkacik, Jerry L. Dahlberg, "Invisible Cultural Barriers: Contrasting Perspectives on Student Veteran's Transition," *Journal of College Student Development*, vol. 59, no.3 (2018): 302.

veteran described how he had a tendency to give orders to his fellow college students, due to his military training, and he had to learn to adapt his behavior to successfully work with them.²⁶

To support veterans in making the transition to college culture, a 2016 study emphasized the need for a welcoming environment that supports veterans in accomplishing their academic goals.²⁷ Officials at all five of the colleges we interviewed emphasized the specific supports that they provided to veterans, such as veteran resource centers and access to counselors, to help student veterans with this transition. Several student veterans we interviewed described the supports they relied upon, including veteran-specific services provided by the college and assistance from their peers through student veteran groups. For example, one student veteran said her local student veteran group gave her a community to reach out to for help.

VA Does Not Clearly Communicate Key Information about the Rogers STEM Scholarship or Analyze Data to Address Disparities in Denial Rates

VA's Communications Can Create Confusion about Differences between Post-9/11 GI Bill Benefits and the Rogers STEM Scholarship

Some of VA's communications can create confusion about the differences between Post-9/11 GI Bill benefits and the Rogers STEM scholarship, according to agency materials we reviewed and some college officials and veterans we interviewed. For example, VA's website refers to the Rogers STEM scholarship as the "[Post-9/11] GI Bill Extension," and an infographic created by VA states that individuals can receive up to 9 months of "additional benefits." These descriptions may mistakenly suggest to some applicants that the benefits for the scholarship and the Post-9/11 GI Bill are the same. However, there are multiple differences

²⁶Michelle M. Camacho, Susan M. Lord, Catherine Mobley, Joyce B. Main, and Catherine E. Brawner, "Transition of Student Military Veterans into Engineering Education," *Social Sciences*, vol. 10, no. 228 (2021): 7.

²⁷Petri, et al., "Transition and the Troubled Giant," 1.

between the Post-9/11 GI Bill and the Rogers STEM scholarship. For example, Rogers STEM scholarship benefits may not be transferred to dependent family members, while Post-9/11 GI Bill benefits may be transferred under certain circumstances (see table 2).

Table 2: Examples of Differences between Post-9/11 GI Bill Benefits and the Edith Nourse Rogers STEM Scholarship

Characteristics	Post-9/11 GI Bill	Rogers STEM scholarship
Eligible education and degree programs	Undergraduate and graduate degrees, non-college degree programs, apprenticeships, on-the-job training, and other programs. These programs can be in any field, as long as it is an approved program	Undergraduate degree program that requires at least 120 semester (or 180 quarter) credit hours (a typical bachelor's degree) in science, technology, engineering, and mathematics (STEM), as defined by VA and in accordance with statute Qualifying dual degree program that requires at least 120 semester (or 180 quarter) credit hours in STEM, as defined by VA Covered clinical training program, if veteran had earned a postsecondary degree or graduate degree in an approved STEM degree field Teaching certification program, if veteran had earned a postsecondary degree in an approved STEM degree field
Duration of benefits	Up to 36 months	Up to 9 months and may not exceed \$30,000
Potentially eligible for Yellow Ribbon program funds from VA^a	Yes	No
Limits on funding	Subject to appropriations, funding provided for all eligible veterans	Program funding limited to a maximum amount: \$75,000,000 per year for fiscal years 2020-2022 and \$100,000,000 per year for fiscal year 2023 and beyond ^b
Ability to transfer benefits to dependent child or spouse	Allowed, in some circumstances	Not allowed

Source: GAO analysis of Department of Veterans Affairs documents and website. | GAO-22-105326

^aThrough the Yellow Ribbon program, schools can enter into voluntary agreements with VA to pay a portion of the tuition and fees that exceed an individual's Post-9/11 GI Bill benefit and VA matches the schools' contribution. Under the Rogers STEM scholarship, schools can provide funds under the Yellow Ribbon program, but VA cannot match the contribution. The Yellow Ribbon program is available to individuals who qualify for full Post-9/11 GI Bill benefits and are either veterans who served in the military for at least 36 months; veterans who had 30 or more continuous days of military service but were discharged for service-related disability; individuals who qualify for Post-9/11 GI Bill benefits under the Fry Scholarship provisions; or veterans who qualify for Post-9/11 GI Bill benefits because they earned a Purple Heart.

^bAccording to VA, every eligible applicant has been approved to receive the scholarship to date, and the program has not been close to reaching its spending limit.

VA's lack of clarity in its communications could lead to veteran confusion about the programs. For example, some veterans can be confused about

the difference between the scholarship and Post-9/11 GI Bill benefits, according to several college officials and veterans we interviewed. Officials from one college, for example, stated they had to explain certain differences between the programs to students using the scholarship. Specifically, they said that some students who used Yellow Ribbon funding to supplement their Post-9/11 GI Bill benefits were surprised when they could not use Yellow Ribbon funding with the Rogers STEM scholarship, and ended up with large out-of-pocket costs. In addition, one veteran we spoke with was unsure about what was and was not included in the scholarship compared with the Post-9/11 GI Bill. He said that he called VA a few times to clarify the program details, but the VA representatives could not explain the differences to him. Another veteran, who interacted with other student veterans through her on-campus job, stated that she encountered students who struggled navigating the differences between the two benefits. According to VA officials, in the instances where veterans found outreach materials confusing, the veterans were not prevented from applying for the scholarship to determine their eligibility.

VA officials told us that the agency refers to the Rogers STEM scholarship as an extension of the Post-9/11 GI Bill because an individual must be using the Post-9/11 GI Bill to be eligible for the scholarship and because its payments are modeled on the Post-9/11 GI Bill. These statements correctly describe some elements of the scholarship program. However, there are also significant differences between the two benefit programs and referring to the scholarship as an extension of the Post-9/11 GI Bill can mask these differences for scholarship applicants. According to VA's 2018-2024 strategic plan, one of the agency's objectives is to ensure veterans are informed of, understand, and can get the benefits, care, and services they earned, in a timely manner.²⁸ In addition, federal internal control standards state that management should externally communicate the necessary quality information to achieve the entity's objectives.²⁹ VA's current messaging of the Rogers STEM scholarship as an extension of the Post-9/11 GI Bill can be confusing to veterans who might mistakenly think it provides the same benefits as the Post-9/11 GI Bill. By clarifying the agency's description of the Rogers STEM scholarship in its outreach materials and on its webpage, VA can

²⁸Department of Veterans Affairs, *FY2018-2024 Strategic Plan* (May 31, 2019).

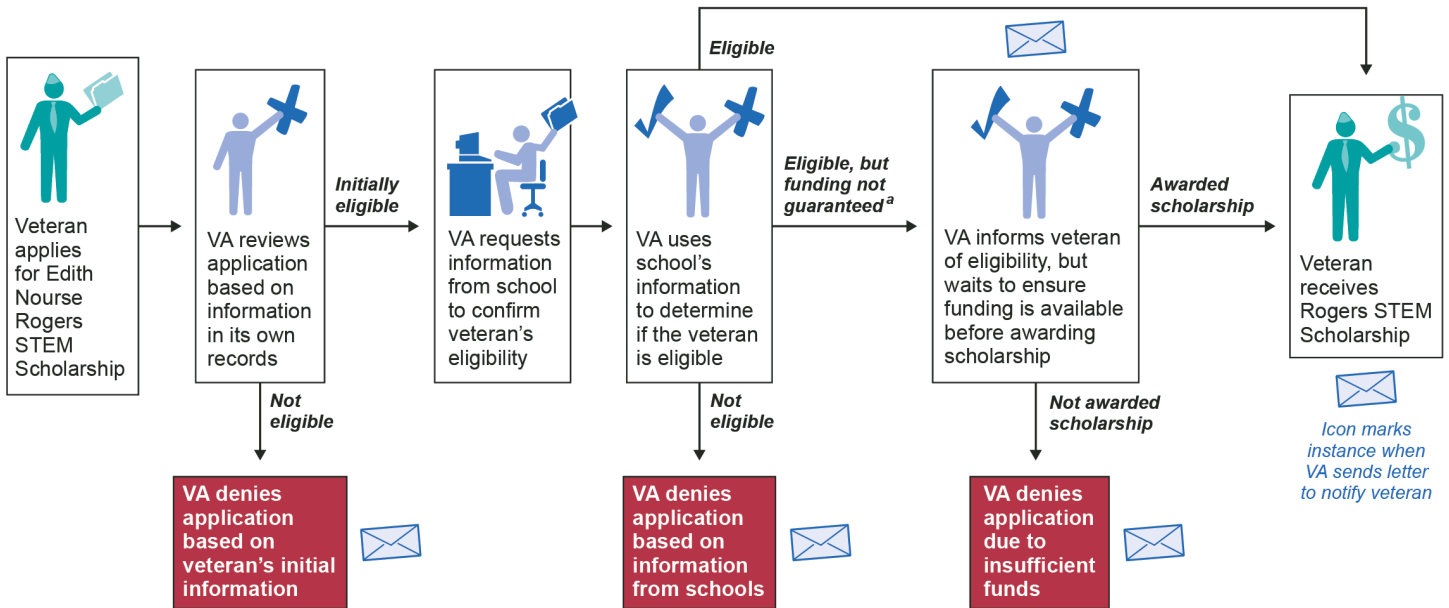
²⁹GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: Sept. 2014).

help ensure that veterans clearly understand the benefits provided by the scholarship and how they differ from the Post-9/11 GI Bill.

VA Does Not Clearly Communicate the Status of Rogers STEM Scholarship Applications to Veterans

VA’s current system for communicating the status of Rogers STEM scholarship applications to veterans can also leave veterans confused and unsure about how or whether to proceed with their application, according to our review of VA’s letters to veterans and veterans we interviewed. VA reviews a veteran’s application, and will send a denial letter if the veteran does not meet certain eligibility criteria that the agency can check using its own records. For example, if a veteran has more than 6 months of Post-9/11 GI Bill benefits remaining when applying, VA will deny the scholarship application. For applications that are initially eligible, VA then contacts the veteran’s college to verify that the veteran is in an eligible degree program and has earned enough credits to be eligible for the scholarship. At various points in this process, VA may send letters to veterans to communicate the status of the application (see fig. 5).

Figure 5: General Application and Approval Process for Rogers STEM Scholarship



Source: GAO analysis of Veterans Affairs (VA) application processing manuals and interviews with officials. | GAO-22-105326

STEM= science, technology, engineering, and math

Letter

^aAccording to VA officials, they wait to approve veterans for the scholarship until the end of each month, to ensure funds are available. If a veteran applies toward the beginning of the month, officials said they will generally send a letter informing the veteran of their eligibility for the scholarship prior to awarding the scholarship at the end of the month. According to VA, every eligible applicant has been approved to receive the scholarship to date, and the program has not been close to reaching its spending limit.

Some of these letters, however, do not clearly communicate key information that would help veterans make more informed decisions on how to move forward to finance or continue their education. Specifically:

- **Interim letters.** For some scholarship applicants, VA sends a letter that states that VA cannot make an official decision on awarding the scholarship, despite VA having all of the information it needs to make this decision. VA officials told us that the agency waits to make official decisions on applications until the end of the month to ensure that it has funds for all eligible applicants, due to the statutory cap on the program's annual expenditures. Officials explained that these interim letters are intended to update veterans in a timely manner on the status of their application until the official decision is made. However, the letter does not clearly communicate why VA cannot decide at that time whether the veteran will receive the scholarship or indicate timeframes for when the veteran may receive VA's final decision (see fig. 6).

Figure 6: Excerpts from VA Letter to Applicant

The image shows a screenshot of a letter from the Department of Veterans Affairs, Buffalo Regional Office, dated March 15, 2021. The letter is addressed to a veteran and discusses their application for the Edith Nourse Rogers STEM Scholarship. The letter includes a table with program information and several sections of text. Three callouts with red arrows point to specific parts of the letter:

- Callout 1:** Points to the first paragraph: "We have received your application (VA Form 22-10203) on March 4, 2021 for the Edith Nourse Rogers STEM Scholarship (STEM Scholarship). At this time, we cannot make a formal selection determination for the STEM Scholarship."
- Callout 2:** Points to the "What You Should Do" section: "What You Should Do: You do not need to act on your STEM Scholarship application until you receive your selection determination."
- Callout 3:** Points to the "Scholarship Effective Date" section: "You do not need to resubmit your application. You will receive separate correspondence regarding your selection."

The letter also includes a table with the following information:

Program Information	
School Name	PIMA MEDICAL INSTITUTE-TUCSON
STEM Program Name	BS Radiologic Sciences
Required Credit Hours for Program	120.0
Credit Hours Completed to Date	88.0

Source: Department of Veterans Affairs' letter. | GAO-22-105326

This lack of clarity on the status of the application and what the next steps are can cause issues for veterans, according to individuals we interviewed. For example, one veteran said that he did not receive any

communication for about 3 months after receiving the interim letter, and eventually he reapplied for the scholarship. VA then informed him that he had already been awarded the scholarship. In addition, officials from one college said that some students will delay their education until they find out if they are approved, after receiving these letters.

- **Denial letters.** VA's denial letters to veterans are not always clear as to whether the applicant should apply for the scholarship again in the future. For some eligibility criteria, a veteran in their current degree program would never be eligible for the scholarship (e.g., veteran pursuing a non-STEM degree or a relative of a veteran using transferred Post-9/11 GI Bill benefits). However, for two eligibility criteria, veterans could be ineligible when they initially apply, but they could become eligible for the scholarship in the future. For example, VA would not approve scholarship applicants who were otherwise eligible if they had more than 6 months of Post-9/11 GI Bill benefits remaining at the time of their application or if they had yet to earn the minimum number of credits toward their STEM degree required to qualify for the scholarship. However, VA would approve subsequent applications once applicants (1) have fewer than 6 months of benefits remaining or (2) have completed the minimum number of required credits.

For veterans who have 6 months or more of their Post-9/11 GI Bill benefits remaining, VA states in its denial letters that the veteran should reapply in a future term. However, VA includes this statement even if the veteran is ineligible for the scholarship for other reasons. As a result, a veteran could receive a letter that contains contradictory instructions about whether to reapply in the future. For example, a letter could simultaneously tell a veteran that (1) they should reapply in a subsequent term once they are within 6 months of exhausting their Post-9/11 GI Bill benefits and (2) their current program is not eligible for the scholarship if they are pursuing a non-STEM undergraduate degree. In addition, when denying an application for veterans who have not yet completed 60 semester credit hours in an eligible degree program, VA's letter does not mention that veterans should reapply once they reach this threshold.

According to VA's 2018-2024 strategic plan, one of the agency's objectives is to ensure veterans are informed of, understand, and can get the benefits, care, and services they earned, in a timely manner.³⁰ In

³⁰VA, *Strategic Plan*.

addition, federal internal control standards state that management should externally communicate the necessary quality information to achieve the entity's objectives.³¹ VA's current letters to veterans at various stages of the application process do not always clearly describe what a veteran can expect and how to proceed. If VA does not clearly communicate important information, such as key dates for a veteran's next steps in the application process or whether a veteran can reapply for the scholarship, veterans may be confused regarding how to appropriately plan for the continuation of their degree and may fail to obtain resources they are eligible to receive.

VA Lacks Specific Data to Understand Why 63 Percent of Scholarship Applications Are Denied

VA has denied 63 percent of Rogers STEM scholarship applicants in the first 3 fiscal years of the program. However, the agency does not fully understand the reasons behind these denials because the denial categories it tracks are too general to be useful for detailed analysis. For example, our analysis of the denied applicants showed that VA denied 83 percent of them because their "program of study [was] not STEM eligible."³² According to an internal VA report, claims processors use this denial category as a "catch-all" for most denials. This category includes a wide variety of reasons for denial based on various eligibility requirements, such as an applicant pursuing an associates or graduate degree, using education benefits transferred from a parent, and pursuing a non-STEM major.³³ Because these varied reasons are included in one category, VA officials cannot determine how many applicants are denied for each of these specific reasons.

According to VA's 2018-2024 strategic plan, one of the agency's performance goals is that employees should have access to the information and data needed for effective decision-making.³⁴ However,

³¹[GAO-14-704G](#).

³²Of the remaining 17 percent of applicants denied, about 12 percent were in an "other" category, and about 5 percent were denied because the "program of study [was] not approved." According to VA officials, the agency no longer uses the "other" category. "Program of study not approved" refers to degree programs that have not been approved by VA to receive VA education benefits.

³³VA's website includes a spreadsheet that provides a list of eligible STEM degrees (<https://www.va.gov/education/other-va-education-benefits/stem-scholarship>).

³⁴VA, *Strategic Plan*.

VA's current application denial categories for the scholarship are too general for VA to fully understand why it denies more than half of all applicants. In a recent internal report on the scholarship program, VA recognized limitations in its application data and recommended collecting more detailed data on denials. More specific data on application denials could help VA improve its management of the scholarship by allowing the agency to identify and address the most common reasons for denying applications. For example, if VA determines that a large proportion of denials are for non-STEM programs, it can take steps to better communicate what degrees qualify as STEM and discourage veterans from spending time submitting ineligible applications. Collecting more information on application denials will allow VA to better assess why it is denying over half of scholarship applications and make any needed adjustments to improve program operations.

Disparities across Race and Sex Exist in Application Denial Rates, and VA Does Not Analyze Data to Identify and Address Such Disparities

According to our analysis of VA application data, disparities in denial rates exist across race and sex.³⁵ Specifically, in the first 3 fiscal years of the scholarship program, we found that African American or Black applicants were denied at a rate 15 percentage points higher than their White counterparts (73 percent compared with 58 percent). We also found that female applicants were denied at a rate 13 percentage points higher than their male counterparts (72 percent compared with 59 percent). VA officials stated that VA has not yet analyzed the Rogers STEM scholarship application data to identify discrepancies among groups. While VA has completed an internal report regarding the underutilization of the scholarship, it did not analyze application data by

³⁵The application for the Rogers STEM scholarship asks veterans to provide information on their sex, but not their race. To provide information about the race of Rogers STEM scholarship applicants for our analysis, VA officials told us that they conducted a data match with Department of Defense records from the veterans' time in the military. VA officials noted that they do not collect race information because it is not needed to determine a veteran's eligibility for the Rogers STEM scholarship.

race or sex.³⁶ VA has several agency-wide initiatives related to increasing diversity in the use of its programs and advancing educational equity for minority groups, which officials say will include the scholarship. However, these initiatives do not include specific plans to review the scholarship application data or review denials on a recurring basis to address any identified disparities and ensure a continual focus on equity in the program. As discussed above, VA's lack of detailed data on its scholarship denials also makes it difficult for VA to fully understand why it denies some applicants.

According to VA's 2018-2024 strategic plan, one of the agency's objectives is to institutionalize data-supported and performance-focused decision making that improves the quality of outcomes.³⁷ VA officials said they could review data on race or sex for Rogers STEM scholarship applicants in the future, but they have no current plans to do so. Without a plan for this type of analysis, VA will not have the information necessary to identify and address any potential bias in the application approval process and ensure that all eligible veterans can benefit from the scholarship.

Conclusions

While research has shown that degrees in STEM generally provide good careers with higher earnings growth, veterans, like other college students, may face challenges successfully obtaining a STEM degree because of the demanding coursework, as well as competing family and work responsibilities. Some veterans may also have physical or mental conditions from their military service, such as traumatic brain injuries or post-traumatic stress disorder that can affect their academic progress. These challenges may cause veterans to exhaust their Post-9/11 GI Bill benefits prior to completing their degree. Veterans who need additional time to complete a STEM degree may be able to use the Rogers STEM scholarship, but issues with VA's communications may hinder their efforts

³⁶VA completed an internal report entitled "STEM to Stern: Overcoming the Underutilization of the Edith Nourse Rogers STEM Scholarship" in December 2021. The report noted that substantial funds allocated for the scholarship go unused each year, identified potential reasons for the underutilization, and provided recommendations for VA to consider. These recommendations included actions to raise awareness of the scholarship, increase data collection on the applicant pool, and improve VA's capabilities for processing applications. According to the report, once VA decides which recommendations to pursue, it can develop action plans to implement them.

³⁷VA, *Strategic Plan*.

to use it. For example, some of VA's outreach materials and letters to veterans regarding the scholarship benefits and application process are not clear and may cause veterans to misunderstand the benefits available to them or hinder their access to the scholarship. Moreover, because VA does not collect specific data on applications, the agency cannot identify the most common reasons for denying applications. Nor does VA have the information it needs to assess and address, as needed, race and sex disparities in application denial rates. With improved communication, data collection, and data analysis, VA can better help veterans take advantage of the scholarship program to successfully pursue a STEM career.

Recommendations for Executive Action

We are making the following five recommendations to VA:

The Secretary of Veterans Affairs should clarify in its outreach materials and on its webpage that the Rogers STEM scholarship does not include all the benefits provided by the Post-9/11 GI Bill. (Recommendation 1)

The Secretary of Veterans Affairs should clearly communicate the status of the application, next steps, and timeframes for the final application decision in its interim letters to Rogers STEM scholarship applicants. (Recommendation 2)

The Secretary of Veterans Affairs should clearly communicate in its letter denying a Rogers STEM scholarship whether the applicant may be eligible in the future and how to proceed. (Recommendation 3)

The Secretary of Veterans Affairs should improve the application denial categories tracked by the agency to collect more precise data on the reasons for denying applications for the Rogers STEM scholarship. (Recommendation 4)

The Secretary of Veterans Affairs should develop a plan to analyze the Rogers STEM scholarship application data on a continual basis and address, as needed, identified disparities in denial rates by race or sex. (Recommendation 5)

Agency Comments and Our Evaluation

We provided a draft of this report to VA for review and comment. In its written comments, VA concurred with our recommendations and said it will, among other things, review its outreach materials, update its letters to applicants, and undertake a review of its denial rates. VA also commented that while our report noted instances where veterans found outreach materials confusing, these veterans were not prevented from applying for the Rogers STEM scholarship to determine their eligibility. We added this statement to our report. With regard to the report section that discusses how collecting more specific data could help VA address the most common reasons for denying applications, VA pointed out that its website includes a spreadsheet that provides a full list of eligible STEM degrees and is available to all potential beneficiaries. We added a note about this spreadsheet to our report. VA's comments are reproduced in appendix IV.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Veterans Affairs, and other interested parties. In addition, the report is available at no charge on the GAO website at <https://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (617) 788-0534 or emreyarrasm@gao.gov. GAO staff who made key contributions to this report are listed in appendix V.



Melissa Emrey-Arras
Director, Education, Workforce, and Income Security Issues

Appendix I: Objectives, Scope, and Methodology

The objectives of this report were to (1) determine the extent to which veterans pursue science, technology, engineering, and mathematics (STEM) degrees using the Post-9/11 GI Bill or the Edith Nourse Rogers STEM Scholarship (Rogers STEM scholarship) and what is known about their outcomes; (2) describe the challenges these veterans face in obtaining STEM degrees; and (3) evaluate how the Department of Veterans Affairs (VA) administers the Rogers STEM scholarship to support veterans' pursuit of STEM degrees.

Data Analysis

To determine the extent to which veterans pursue STEM degrees using these selected VA educational benefits, we obtained and analyzed VA administrative data. Specifically, we analyzed VA data for Post-9/11 GI Bill benefits and Rogers STEM scholarship benefits processed for school years 2018-19 through 2020-21.¹ The administrative data included individual level records for each veteran who received these benefits to pursue a bachelor's STEM degree or other eligible STEM programs. Unless otherwise indicated, when reporting on Post-9/11 GI Bill recipients and Rogers STEM scholarship recipients, we only include recipients who are veterans. For example, children and spouses who used transferred Post-9/11 GI Bill benefits are not included in the Post-9/11 benefits data. In addition, children and spouses who received Post-9/11 GI Bill benefits under the provisions known as the Marine Gunnery Sergeant John David Fry Scholarship are generally not included in the Rogers STEM scholarship data presented in the report. These data did not include any identifying information to protect the privacy of these veterans. We produced descriptive statistics regarding veterans who use these benefits.

To produce these descriptive statistics, we converted the codes VA uses to identify a program of study for Post-9/11 GI Bill recipients into the codes VA uses to identify programs of study for the Rogers STEM scholarship. For individuals who used the Post-9/11 GI Bill during this

¹For the purposes of this report, we defined school year as August 1 to July 31.

time, VA identified the type of degree and major for each record using its Institutions of Higher Learning (IHL) program codes. These codes are used by colleges to inform VA about the programs veterans use their educational benefits to pursue. VA provided us with data for all veterans pursuing a degree in a STEM field, according to the IHL program code associated with the veteran's program of study. This included data for veterans pursuing a degree with an IHL program code of 194, which is the code for "other." To identify veterans with STEM degrees with this IHL program code, we analyzed the name of the student's program of study the college provided to VA and categorized degrees as STEM degrees when they matched degrees in VA's list of STEM-approved degrees for the Rogers STEM scholarship. For all records provided by VA, we matched the IHL program code to the Classification of Instructional Programs (CIP) code that best matched the IHL code description. While VA uses its IHL codes to classify educational programs for Post-9/11 GI Bill recipients, it uses the CIP code system to classify STEM degrees for the Rogers STEM scholarship. We report on students' majors while using the Post-9/11 GI Bill by CIP code to make it comparable to the data provided by VA for the Rogers STEM scholarship.

We also analyzed VA administrative data for Rogers STEM scholarship applications from fiscal years 2019 through 2021, the first 3 fiscal years in which VA accepted applications for the scholarship. The administrative data included non-personally identifiable information on any individual who applied for the Rogers STEM scholarship in these years. We produced descriptive statistics looking at applicants, awards, and denials across a variety of demographic and other variables such as major of study, sex, race, and branch of the armed forces.

To determine the reliability of these data, we spoke with VA officials knowledgeable about the data and the system where they are housed, reviewed data dictionaries and other documentation, and tested the data for missing data and inconsistencies. We found the data sufficiently reliable for the purposes of describing veterans who used these benefits during our selected timeframe.

To determine what is known about outcomes for these veterans, we analyzed data from the 2019 American Community Survey's (ACS) 5-year estimates. ACS is a nationally representative survey of about 3.5 million addresses that occurs over a 12-month period and is administered by the U.S. Census Bureau. We used ACS data to describe the occupation, income, and educational attainment of veterans who served in the military after September 11, 2001 with STEM bachelor's degrees.

To define bachelor degree majors as STEM, we matched the majors listed in the ACS to the majors approved by VA for the Rogers STEM scholarship. Majors that could not be matched to approved majors were not considered STEM for the purposes of this report. To determine whether occupations in ACS were STEM, an analyst coded these occupations as STEM or not STEM, based on knowledge of the majors approved by VA for the Rogers STEM scholarship. A second analyst reviewed the coding for accuracy. We used the majors approved by VA for the Rogers STEM scholarship, and determined the occupation to be STEM if there was a related major. We limited our analysis to the veterans who served in the military after September 11, 2001 since they would be potentially eligible for the Post-9/11 GI Bill.

In addition, we analyzed data from the most recent Beginning Postsecondary Student Longitudinal Study (BPS), a nationally representative study of first-time beginning postsecondary students, administered by the National Center for Education Statistics. BPS participants were surveyed at three points of time, in the base year (school year 2011-12), and then 3 and 6 years later (ending in school year 2017-18). We defined the field of study in BPS as STEM or not-STEM by comparing the BPS fields of study to the degrees approved for the Rogers STEM scholarship. We produced descriptive statistics comparing the length of time it took individuals who ever pursued a STEM degree to obtain their degree, compared with those who never pursued a STEM degree.

Further, we analyzed data from the Baccalaureate and Beyond Longitudinal Study (B&B), a nationally representative survey of students who completed all bachelor's degree requirements in the 2007-08 school year and received a bachelor's degree no later than June 30, 2009. The most recent iteration of this study ran from 2008-18, collected data on outcomes over the 10 years following degree completion, and is supplemented by administrative data. We defined the field of study in B&B as STEM or not-STEM by comparing the B&B fields of study to the degrees approved for the Rogers STEM scholarship. We analyzed these data to produce descriptive statistics comparing income for individuals who earned a STEM bachelor's degree 1-10 years after degree completion to individuals who earned a non-STEM bachelor's degree over the same time period.

To determine the reliability of ACS, BPS, and B&B data used in our report, we reviewed data documentation, tested the data, and determined the data to be sufficiently reliable for the purposes of describing the

educational and occupational outcomes for veterans and other individuals with STEM bachelor degrees.

Interviews with College Officials, Veterans Service Organizations, and Student Veterans

We interviewed officials at five colleges and veterans at four of these colleges. We randomly selected these colleges within categories of institution types (public, private nonprofit, and private for-profit) from a list VA provided of the 20 colleges that received Post-9/11 GI Bill funds and had the largest number of Rogers STEM scholarship recipients. We selected colleges from each strata proportional to the number of each type of college on the list. Of the five colleges, three were public, one was private nonprofit, and one was private for-profit.

College officials arranged for us to speak with a total of 10 veterans who pursued or obtained a bachelor's degree in a STEM field using either the Post-9/11 GI Bill or Rogers STEM scholarship. Of these 10 veterans, six applied for and received approval to use the Rogers STEM scholarship. These 10 veterans attended four of the five colleges included in our study. We were unable to schedule interviews with veterans suggested by one college. We used a semi-structured interview to speak with each veteran individually. We held one interview with two veterans simultaneously.

We also spoke with representatives from three veterans service organizations (VSO) that serve student veterans or focus on veterans who served during a time that makes them eligible for the Post-9/11 GI Bill. We reached out to five VSOs, but two declined to be interviewed. We selected these VSOs based on their work to support veterans most likely to use these benefits or their focus on veterans' education.

Literature Search

For additional information on the experiences of veterans pursuing STEM degrees, we conducted a literature search. We searched several databases, including ProQuest, EBSCO, and Scopus, for academic material, government reports, work papers, and think tank and nonprofit studies published from 2015 through 2021 that met our search criteria. We also asked VSOs for any additional literature or research relevant to this topic. Each of the selected studies were reviewed to determine they were methodologically sufficient for our review. We used these studies to

provide further information on the challenges student veterans face in pursuing and obtaining undergraduate STEM degrees.

Review of Federal Laws and VA Policies and Procedures

To evaluate how VA administers the Rogers STEM scholarship, we reviewed agency documentation and the federal law that established the scholarship, the Harry W. Colmery Veterans Educational Assistance Act of 2017. Specifically, we reviewed agency policies and procedures related to reviewing applications, promoting the scholarship, and responding to veteran questions about it. We also reviewed template letters VA sends to veterans regarding the status of their scholarship application. In addition, we interviewed VA officials responsible for overseeing and administering the program.

We compared the information and data we analyzed with the goals and objectives in VA's 2018-24 strategic plan and with federal standards for internal control. We assessed VA's procedures for processing applications to determine whether they were capable of achieving VA's objectives as stated in VA's 2018-24 strategic plan.

We conducted this performance audit from June 2021 to September 2022 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Expenditure Information for the Edith Nourse Rogers STEM Scholarship

Expenditures for the Edith Nourse Rogers STEM Scholarship (Rogers STEM scholarship) increased each year for the first 3 years of the program and were below the maximum allowed. In fiscal year 2020, the first full year of implementation of the program, 25 percent of the maximum allowed funding was spent. In the second year of the program, spending increased to 52 percent of the maximum allowed. (See table 3 for more information.) According to VA, every eligible applicant has been approved to receive the scholarship to date, and the program has not been close to reaching its spending limit.

Table 3: Expenditures for Edith Nourse Rogers STEM Scholarship, Fiscal Years 2019-2021

	Fiscal year 2019	Fiscal year 2020	Fiscal year 2021	Total
Expended funding	0 ^a	\$18,398,914	\$39,042,184	\$57,441,098
Maximum allowed expenditure ^b	\$25,000,000	\$75,000,000	\$75,000,000	\$175,000,000

Source: GAO analysis of Department of Veterans Affairs data. | GAO-22-105326

Note: STEM is an abbreviation for science, technology, engineering, and mathematics.

^aAccording to VA officials, VA did not expend funds until fiscal year 2020. The statutory provision establishing the program was effective August 1, 2019, which left two months of fiscal year 2019 for the program to operate.

^bUnder 38 U.S.C. § 3320(f), the total amount of Rogers STEM scholarship benefits paid to all eligible individuals may not exceed the maximum amount specified, which was set at \$25 million for fiscal year 2019, \$75 million for fiscal year 2020-22, and \$100 million for fiscal year 2023 and each subsequent fiscal year. According to VA, every eligible applicant has been approved to receive the scholarship to date, and the program has not been close to reaching its spending limit.

Appendix III: Additional Information Regarding Use of the Edith Nourse Rogers STEM Scholarship and Post-9/11 GI Bill Benefits for the Pursuit of Science, Technology, Engineering, and Mathematics (STEM) Degrees

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Use of Edith Nourse Rogers STEM Scholarship and Post-9/11 GI Bill Benefits

Table 4: Status of Applications for Rogers STEM Scholarship, Fiscal Years 2019-2021

Application status	Fiscal year 2019	Fiscal year 2020	Fiscal year 2021	Total
Awarded	738 (55%)	2,449 (30%)	3,611 (40%)	6,798 (37%)
Denied	603 (45%)	5,627 (70%)	5,324 (60%)	11,554 (63%)
Total	1,341	8,076	8,935	18,352

Source: GAO analysis of Department of Veterans Affairs data for Edith Nourse Rogers STEM Scholarship. | GAO-22-105326

Notes: This table includes veterans who were awarded the scholarship but had not begun using it. STEM is an abbreviation for science, technology, engineering, and mathematics.

Table 5: Types of Colleges Where Recipients Used Rogers STEM Scholarship, School Years 2019-20 and 2020-21

Type of colleges	Percent of institutions (number)	Percent of scholarship tuition payments received (dollars) ^a
Private nonprofit	32 (315)	27 (\$7.1 million)
Private, for-profit	16 (157)	25 (\$6.4 million)
Public	53 (525)	48 (\$12.4 million)
Total	100 (997)	100 (\$25.9 million)

Source: GAO analysis of Department of Veterans Affairs data for Edith Nourse Rogers STEM Scholarship. | GAO-22-105326

Notes: The Department of Veterans Affairs accepted applications for the Rogers STEM scholarship in fiscal year 2019, which includes part of school year 2018-19. However, the agency did not expend funds until fiscal year 2020, according to VA officials. STEM is an abbreviation for science, technology, engineering, and mathematics. This table includes payments to colleges for all students

Appendix III: Additional Information Regarding Use of the Edith Nourse Rogers STEM Scholarship and Post-9/11 GI Bill Benefits for the Pursuit of Science, Technology, Engineering, and Mathematics (STEM) Degrees

who were eligible for the Rogers STEM scholarship, including payments for recipients of Post-9/11 GI Bill benefits known as the Marine Gunnery Sergeant John David Fry Scholarship, which provides education benefits for qualifying children and spouses of certain deceased veterans. Percentages do not add to 100 due to rounding.

^aThis column includes only tuition payments under the Rogers STEM scholarship and does not include housing or book stipends paid to the veteran.

Table 6: Average and Median Age of Veterans Who Received the Rogers STEM Scholarship, School Years 2019-20 through 2020-21

Reason for using Rogers STEM scholarship	Average age (years)	Median age (years)
Bachelor's science, technology, engineering, and mathematics (STEM) degree	33.8	32.6
Teaching certificate	37.1	33.7
Clinical training	35.1	35.9

Source: GAO analysis of Department of Veterans Affairs data for Edith Nourse Rogers STEM Scholarship. | [GAO-22-105326](#)

Note: This table does not include students who were eligible for the Rogers STEM scholarship as recipients of Post-9/11 GI Bill benefits known as the Marine Gunnery Sergeant John David Fry Scholarship, which provides education benefits for qualifying children and spouses of certain deceased veterans.

Table 7: Bachelor's Degree Programs of Veterans Using Selected VA Education Benefits in Science, Technology, Engineering, and Mathematics (STEM), School Years 2018-19 through 2020-21

Program category	Post-9/11 GI Bill	Rogers STEM scholarship ^a	Total (non-duplicative) ^b
Computer and Information Sciences and Support Services	43,573	1,108	43,674
Health Professions and Related Clinical Sciences	23,508	703	23,662
Engineering	20,635	661	20,489
Biological and Biomedical Sciences	9,139	231	9,199
Natural Resources and Conservation	5,263	81	5,255
Physical Sciences	4,763	90	4,753
Veteran had majors across more than one STEM program category in a school year	1,811	^c	1,765
Mathematics and Statistics	1,716	53	1,720
Agriculture, Agriculture Operations and Related Sciences	271	33	300
Engineering Technologies/Technicians	^d	231	231
Science Technologies/Technicians	^d	8	8
Other STEM fields	23,719	323	23,789
Total	134,398	3,523	134,851

Source: GAO analysis of Department of Veterans Affairs' administrative data. | [GAO-22-105326](#)

Note: This table does not include students who were eligible for the Rogers STEM scholarship as recipients of Post-9/11 GI Bill benefits known as the Marine Gunnery Sergeant John David Fry

Appendix III: Additional Information Regarding Use of the Edith Nourse Rogers STEM Scholarship and Post-9/11 GI Bill Benefits for the Pursuit of Science, Technology, Engineering, and Mathematics (STEM) Degrees

Scholarship, which provides education benefits for qualifying children and spouses of certain deceased veterans.

^aThere were no Rogers STEM scholarships in school year 2018-19.

^bIndividuals who received the Post-9/11 GI Bill benefits and the Rogers STEM scholarship are categorized by their degree program in the Rogers STEM scholarship in this column.

^cData provided by VA identified only one major per Rogers STEM scholarship recipient.

^dData provided by VA do not identify any Post-9/11 GI Bill benefit recipients in these categories.

Table 8: Comparison of Veterans Who Were Potentially Eligible to Use the Rogers STEM Scholarship and Those Who Did Use the Rogers STEM Scholarship

	Veterans who used Post-9/11 GI Bill benefits for bachelor's degree in STEM, who exhausted their Post-9/11 GI Bill benefits without graduating, and did not receive Rogers STEM scholarship (percentage)	Veterans using the Rogers STEM scholarship for STEM bachelor's degree (percentage)
Total	7,652	3,523
Program of study		
Agriculture, Agriculture Operations, and Related Sciences	21 (<1%)	33 (1%)
Natural Resources and Conservation	233 (3%)	81 (2%)
Computer and Information Sciences and Support Services	2,264 (30%)	1,108 (32%)
Engineering	1,105 (14%)	661 (19%)
Engineering Technologies/Technicians	^b	231 (7%)
Biological and Biomedical Sciences	406 (5%)	231 (7%)
Mathematics and Statistics	96 (1%)	53 (2%)
Physical Sciences	278 (4%)	90 (3%)
Science Technologies/Technicians	^b	8 (<1%)
Health Professions and Related Clinical Sciences	1,824 (24%)	703 (20%)
Other	1,425 (19%)	323 (9%)
Race^a		
America Indian/Alaskan Native	174 (2%)	76 (2%)
African American or Black	1,355 (18%)	648 (18%)
Other ^b	460 (6%)	254 (7%)
White	5,267 (68%)	2,356 (67%)
Unknown	396 (5%)	189 (5%)
Sex		
Male	5,689 (74%)	2,786 (79%)

Appendix III: Additional Information Regarding Use of the Edith Nourse Rogers STEM Scholarship and Post-9/11 GI Bill Benefits for the Pursuit of Science, Technology, Engineering, and Mathematics (STEM) Degrees

Female	1,963 (26%)	737 (21%)
Branch of Service		
Air Force	1,316 (17%)	582 (17%)
Army	3,136 (41%)	1,209 (34%)
Coast Guard	92 (1%)	58 (2%)
Marine Corps	1,357 (18%)	722 (21%)
Navy	1,750 (23%)	952 (27%)
Other	1 (<1%)	0

Source: GAO analysis of Department of Veterans Affairs administrative data. | GAO-22-105326

Notes: Not all eligibility criteria are available in VA data, so these individuals are potentially eligible for the Rogers STEM scholarship based on the available data. For example, VA data do not identify whether applicants have enough credits in their science, engineering, technology, and mathematics (STEM) degree programs to be eligible for the scholarship. This table does not include students who were eligible for the Rogers STEM scholarship as recipients of Post-9/11 GI Bill benefits known as the Marine Gunnery Sergeant John David Fry Scholarship, which provides education benefits for qualifying children and spouses of certain deceased veterans. Percentages may not add to 100 due to rounding.

^aData on ethnicity were not available, according to VA.

^bThe other categories are Asian, Native Hawaiian/Pacific Islander, Asian or Pacific Islander unspecified, and other.

Changes and Additions to STEM Programs at Selected Colleges

Officials from four of the five colleges we selected for this review said that their college had made changes to STEM programs since 2017.¹ For example, officials from one college told us that the college had increased the rigor of its cybersecurity and engineering degrees to meet accreditation and other standards. Officials from another college stated they changed their STEM programs to ensure students are prepared for what they will face in the workplace. They tried to ensure that courses in these degrees match industry certification requirements, so students are able to pass certification tests. A third college changed its bachelor of science degree requirements by decreasing the number of credits required in certain courses to provide flexibility for transfer students, according to officials.² Two colleges reported creating new STEM bachelor degree programs since 2017, including degrees in engineering, physics, and data science.

¹Officials from one college did not respond to requests for this information.

²While officials from a fourth college reported adding STEM degree programs since 2017, they did not provide an explanation for why they added these programs.

Appendix IV: Comments from the Department of Veterans Affairs



DEPARTMENT OF VETERANS AFFAIRS
WASHINGTON

September 1, 2022

Melissa Emrey-Arras
Director
Education, Workforce, and Income Security
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Ms. Emrey-Arras:

The Department of Veterans Affairs (VA) has reviewed the Government Accountability Office (GAO) draft report, Higher Education: VA Could Improve Support for Veterans Pursuing STEM Degrees (GAO-22-105326).

The enclosure contains general comments and the action plan to implement the draft report recommendations. VA appreciates the opportunity to comment on your draft report.

Sincerely,

A handwritten signature in black ink, appearing to read "Tanya J. Bradsher".

Tanya J. Bradsher
Chief of Staff

Enclosure

Enclosure

Department of Veterans Affairs (VA)
Comments to Government Accountability Office (GAO) Draft Report
**Higher Education: VA Could Improve Support for Veterans
Pursuing STEM Degrees**
(GAO-22-105326)

Recommendation 1: The Secretary of Veterans Affairs should clarify in its outreach materials and on its webpage that the Rogers STEM scholarship does not include all the benefits provided by the Post-9/11 GI Bill.

VA Response: Concur. The Veterans Benefits Administration (VBA) Education Service (ES) will review existing and new outreach material including websites with information on the Rogers STEM scholarship, to better distinguish and inform students and schools of the differences between it and the Post-9/11 GI Bill.

Target Completion Date: March 31, 2023.

Recommendation 2: The Secretary of Veterans Affairs should clearly communicate the status of the application, next steps, and timeframes for the final application decision in its interim letters to Rogers STEM scholarship applicants.

VA Response: Concur. ES will update its interim letters to provide specific information explaining why there is a delay based on our application decision cycle necessitated by the statutory requirement to prioritize certain applications over others. ES will include the date on which it will close the current cycle and make the next round of eligibility determinations.

Target Completion Date: December 31, 2022.

Recommendation 3: The Secretary of Veterans Affairs should clearly communicate in its letter denying a Rogers STEM scholarship whether the applicant may be eligible in the future and how to proceed.

VA Response: Concur. ES will provide claimants with a complete list of all of the eligibility criteria the claimant has failed to satisfy resulting in the denial. ES will include specific language stating the claimant may reapply after they believe they have satisfied all criteria.

Target Completion Date: December 31, 2022.

Recommendation 4: The Secretary of Veterans Affairs should improve the application denial categories tracked by the agency to collect more precise data on the reasons for denying applications for the Rogers STEM scholarship.

Appendix IV: Comments from the Department
of Veterans Affairs

Enclosure

Department of Veterans Affairs (VA)
Comments to Government Accountability Office (GAO) Draft Report
**Higher Education: VA Could Improve Support for Veterans
Pursuing STEM Degrees**
(GAO-22-105326)

VA Response: Concur. The data requirements for Digital GI Bill (DGIB) have been updated to include more precise data points in areas such as STEM denial categories. A timeline for an automated solution is anticipated for fiscal year (FY) 2024. In the interim, ES will explore options to manually collect these data points. This process will be contingent on workload implications. The target completion date for the interim manual tracking process is December 31, 2022.

Target Completion Date for system changes: FY 2024.

Recommendation 5: The Secretary of Veterans Affairs should develop a plan to analyze the Rogers STEM scholarship application data on a continual basis and address as needed identified disparities in denial rates by race or sex.

VA Response: Concur. The Rogers STEM Scholarship criteria for denial are not based on gender or race, but on specific factors including exhaustion of Post-9/11 GI Bill benefits, enrolling in a STEM degree program and completing at least half of the credits for a degree that requires 120 semester or 180 quarter credit hours.

ES will implement a Special Focus Review based on a statistically valid sample of STEM Scholarship applicants. The review will include data on gender and race and identify any potential disparities. The review will include a brief summary analyzing if the data identifies disparities in denial rates by gender or race in a higher propensity.

Target Completion Date: January 31, 2023.

Page 2 of 3

Appendix IV: Comments from the Department
of Veterans Affairs

Enclosure

Department of Veterans Affairs (VA)
Comments to Government Accountability Office (GAO) Draft Report
**Higher Education: VA Could Improve Support for Veterans
Pursuing STEM Degrees**
(GAO-22-105326)

General Comment:

Page 18, Last Paragraph and Page 19, Paragraphs 1 and 2:

VA Comment: The Veteran Benefits Administration (VBA) notes that while GAO identified instances where Veterans or school officials found outreach materials confusing, none of those instances prevented the Veteran from applying to VA for an eligibility decision for the Rogers STEM Scholarship.

Page 23 Paragraph 2, End of Line 8:

For example, if VA determines that a large proportion of denials are for non-STEM programs, it can take steps to better communicate what degrees qualify as STEM and discourage veterans from spending time submitting ineligible applications.

VA Comment: VBA would like to point out the Edith Nourse Rogers STEM Scholarship Veterans Affairs website section (<https://www.va.gov/education/other-va-education-benefits/stem-scholarship>) has a spreadsheet that provides a full list of eligible STEM degrees (Attachment A). This information is available to all potential beneficiaries.

**Department of Veterans Affairs
August 2022**

Page 3 of 3

Text of Appendix IV: Comments from the Department of Veterans Affairs

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Education, Workforce, and Income Security
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Chief of Staff

Enclosure

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(GAO-22-105326)

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Department of Veterans Affairs (VA)

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Higher Education: VA Could Improve Support for Veterans Pursuing
STEM Degrees

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Department of Veterans Affairs August 2022

Appendix V: GAO Contact and Staff Acknowledgments

GAO Contact

Melissa Emrey-Arras at (617) 788-0534 or emreyarrasm@gao.gov

Staff Acknowledgments

In addition to the contact named above, Michelle St. Pierre (Assistant Director), Paul Schearf (Analyst in Charge), Kelsey Kestenbaum, and Kelsey Kreider made key contributions to this report. Additional assistance was provided by James Bennett, Will Colvin, Joseph Cook, Grant Mallie, Jean McSween, John Mingus, Aaron Olszewski, Tracie Sanchez, Brian Schwartz, Joy Solmonson, Almeta Spencer, and Adam Wendel.

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