RESOLUTION TO DISCONTINUE MASTER OF ARTS IN DATA ANALYSIS AND APPLIED STATISTICS IN THE COLLEGE OF SCIENCE

WHEREAS, Virginia Tech strives to offer innovative and relevant curriculum to all students, and

WHEREAS, the College of Science continues to evaluate and revise its curriculum to remain fresh and relevant; and

WHEREAS, plans for the degree have been reviewed and approved by faculty members at the department, school, college, and university levels; and

WHEREAS, the State Council of Higher Education for Virginia (SCHEV) has been consulted and is aware of the university's interest in discontinuing the degree contingent upon the SCHEV approval of a proposed M.S. in Data Science degree program by all parties; and

WHEREAS, the teach out plan for the degree will begin in the fall of 2025, pending appropriate approvals;

NOW, THEREFORE, **BE IT RESOLVED**, that the Master of Arts in Data Analysis and Applied Statistics be discontinued with a teach out plan to begin in the fall of 2025.

RECOMMENDATION:

That the Board of Visitors approve the discontinuation of Master of Arts in Data Analysis and Applied Statistics.

April 9, 2024

Summary Information – M.A. in Data Analysis and Applied Statistics

Discontinue: Master of Arts (M.A.) in Data Analysis and Applied Statistics (CIP Code: 27.0601)
(***contingent*** on approval of new M.S. in Data Science degree program)
Effective/Teach-out Plan to begin in Fall 2025

Action:
1. Contingent Discontinuation: Seek approval for a ***contingent*** discontinuation of the existing Master of Arts (M.A.) in Data Analysis and Applied Statistics (CIP Code: 27.0601). The discontinuation of the existing degree is contingent upon the SCHEV approval of the proposed new M.S. in Data Science (CIP Code: 30.7001).

*Please note: *This action is tentative and dependent on completion of internal governance in time for BOV.*

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Proposed Intent to Discontinue
Virginia Polytechnic Institute and State University (Virginia Tech) requests to discontinue the Master of Arts (M.A.) degree program in Data Analysis and Applied Statistics (27.0601). The degree program is located in the College of Science, Department of Statistics.

Background
Since 2016, Virginia Tech has offered the Master of Arts (M.A.) in Data Analysis and Applied Statistics in the College of Science, Department of Statistics. The purpose of the program was and remains to train students in data analysis, interpretation, and communication of results. The program was designed to teach students how to apply statistical methods to analyze data.

During mid-October and early November 2023, the program director and faculty members held four (4) meetings with the department chairperson to discuss the future of the M.A. in Data Analysis and Applied Statistics degree program. The group discussed the evolution of the field of data analytics and applied statistics. The group also discussed the enrollment trends in the degree program and the current curriculum. As a part of the meetings, the faculty, director, and department chairperson examined the benefits and challenges of maintaining the existing degree program, modifying the curriculum, or closing the degree program.

On November 8, 2023, the program director met with the Dean of the College of Science to inform the Dean of the ongoing discussions concerning the program. Further, the group also discussed the plans of the college to seek approval from the State Council of Higher Education for Virginia (SCHEV) for a new Master of Science (M.S.) in Data Science degree program. The impact of the potential new degree program on the existing M.A. in Data Analysis and Applied Statistics, faculty, space, and resources within the college were examined. The program director and the dean discussed the benefits and challenges of modifying the M.A. in Data Analysis and Applied Statistics degree program and the possibility of closing the program.

On December 6, 2023, the program director, the Department of Statistics chairperson, the Associate Dean for Graduate Students, and the Dean met to determine the best path forward for the students, faculty, degree program, and the department and college. The group discussed the information obtained at the prior meetings and determined that the degree program no longer met the needs of the students. The group unanimously determined that the degree program should be closed if the new Master of Science (M.S.) in Data Science were to be approved by SCHEV. The group recommended discussing all of the information with the Department of Statistics faculty.

On January 30, 2024, the Department of Statistics chairperson and program director met with the department faculty to discuss all information from the meetings held throughout the fall 2023 semester. After discussing the benefits and challenges of the degree program and the input from the Dean and the Associate Dean for Graduate Students, the department faculty voted unanimously to recommend discontinuation of the degree program contingent on the approval of the new Master of Science (M.S.) in Data Science. On January 31, 2024, the Dean and Associate Dean for Graduate Studies of the College of Science approved the recommendation of the statistics faculty and made the decision to discontinue the degree program.

On March 22, 2024, the College of Science Curriculum Committee voted unanimously to discontinue the degree program contingent on the approval of the new Master of Science (M.S.) in Data Science.

Rationale for Intent to Discontinue
The Master of Arts (M.A.) in Data Analysis and Applied Statistics is no longer a degree program that should be offered by Virginia Tech. There are three (3) reasons why the degree program should be discontinued at this time: 1) lack of enrollment, 2) productivity standards, and 3) the evolution of the data analytics field.

Enrollment
Enrollment in the M.A. in Data Analysis and Applied Statistics has not met institutional expectations. Records show enrollment has not consistently increased over time. New enrollment has also been consistently low since the program's initiation.

	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Enrollment	2	0	4	16	16	12	11
New Enrollment	0	0	6	8	4	4	6

It is apparent that the degree program is not desirable for students at Virginia Tech. It has become increasingly difficult to recruit new students into the program. The lack of enrollment supports the need to discontinue the degree program at this time.

Productivity
Enrollment and graduation data indicate that the degree program will not meet the State Council of Higher Education for Virginia (SCHEV)'s productivity and viability standards when reviewed during the next review cycle. The current SCHEV Productivity report lists the 5-year average data for FTEs at 4.5 and graduates at 3.0, well below the threshold requirements of 20 FTEs and 7 graduates. The institution has decided not to pursue efforts to maintain the degree program. Thus, discontinuing the degree program at this time is needed.

Evolution of the Field
At the time the degree program was developed and launched, there was an industry need for data analyst professionals to collect, manage, and analyze large data sets. Although data analysts remain needed, the field has evolved. This evolution requires individuals pursuing careers in data analysis to have knowledge and skills beyond those taught in the current degree program. To respond to these changes and provide students with the skills needed to pursue such a career path, the current program would need to undergo a change in its core curriculum.

Over the course of the last decade, data science has emerged as the discipline to take the lead in creating and using advanced computational techniques for large and very complex data projects. For example, the use of predictive algorithms, high-performance computing with big data, machine learning, and artificial intelligence are core knowledge and skillsets for professionals trained as data scientists. Based on this information, the institution has made the decision not to

modify the degree program at this time and, instead, pursue the approval of a new degree in data science. Therefore, the degree program should be discontinued.

Critical Shortage Area
The Master of Arts (M.A.) in Data Analysis and Applied Statistics is not in a critical shortage area. The curriculum will not be offered as a sub area in any other existing degree program offered by Virginia Tech.

Teach-out Plan
A total of 13 students are currently enrolled in the Master of Arts (M.A.) in Data Analysis and Applied Statistics degree program. Six (6) students are expected to graduate in Spring 2024. One (1) student is expected to graduate in the Summer 2024. Six (6) students are expected to graduate in Spring 2025.

The last semester that students will be able to complete the M.A. in Data Analysis and Applied Statistics is Spring of 2028. This plan will allow for three (3) full years for students to complete the degree program. To ensure that students with challenges can meet the deadline, the discontinuation of the degree program has been extended three (3) years beyond the expected date for all students to graduate.

All faculty have been made aware of the impending closure. No faculty positions will be lost as a result of the discontinuance of the degree program. Faculty teaching core and required courses in the M.A. in Data Analysis and Applied Statistics degree program will teach coursework in other degree programs.

<u>"Stopped Out" Students</u>
The three (3) students that have "stopped out" since 2020 have been considered. One (1) student last enrolled in 2020. One (1) student last enrolled in 2021. One (1) student last enrolled in 2022. This group of students will be notified in writing about the discontinuation of the degree program.

A five (5) year period exists in which students may return and complete the M.A. in Data Analysis and Applied Statistics degree program. The Department of Statistics faculty will offer "stopped-out" students the opportunity to complete the M.A. in Data Analysis and Applied Statistics or work with students to pursue another degree within the university.