Alabama Commission on Higher Education

Accessibility. Affordability. Coordination.

Proposal for a New Degree Program

I. Information and Rationale

A. Primary Contact Information

Institution: University of South Alabama

Contact: Madhuri Mulekar

Title: Department Chair

Email: mmulekar@southalabama.edu

Telephone: 251-460-6391

B. Program Information

Date of Proposal Submission: 8/28/2024

Award Level: Master's Degree

Award Nomenclature (e.g., BS, MBA): MS

Field of Study/Program Title: Applied Statistics

CIP Code (6-digit): 27.0601

C. Administration of the Program

Name of Dean and College: Dr. Andrzej Wierzbicki

Name of Department/Division: Mathematics and Statistics

Name of Chairperson: Madhuri Mulekar

D. Implementation Information

Proposed Program Implementation Date: 1/6/2025

Anticipated Date of Approval from Institutional Governing Board: Click or tap to enter a date.

Anticipated Date of ACHE Meeting to Vote on Proposal: 12/13/2024

SACSCOC Sub Change Requirement (Notification, Approval, or NA): NA

Other Considerations for Timing and Approval (e.g., upcoming SACSCOC review):

E. Concise Program Description

Include general opportunities for work-based and/or experiential learning, if applicable.

N/A

F. Specific Rationale (Strengths) for the Program

List 3 – 5 strengths of the proposed program as specific rationale for recommending approval of this proposal.

1. A degree in applied statistics opens the door to a variety of careers in different industries, including but not limited to finance, healthcare, education, marketing, and government. It offers graduates a range of career paths to suit their skills and interests. Some common jobs for graduates include data scientist, statistician, analytics manager, data analyst, research scientist, predictive modeler, bioinformatics analyst, data mining manager, machine learning manager, etc.
2. The skills and knowledge gained in an applied statistics program, such as data analysis, problem-solving, and critical thinking, are highly sought after by employers and are also highly transferable, making it possible for graduates to switch careers and transition into new industries.
3. As these benefits show, a degree in applied statistics can lead to a rewarding and challenging career with excellent earning potential and the opportunity to make a difference in a number of different areas and industries.
4. Organizations are recognizing the value that statisticians can bring to their business in terms of improved decision-making, efficiency, and more. According to the U.S. Bureau of Labor Statistics the employment of statisticians, is projected to grow 32% from 2022 to 2032, making it one of the fastest-growing occupations in the country. With such high demand for these skills, graduates with a degree in applied statistics also have the potential to be well-paid, with many earning salaries that are well above the average for all occupations.

List external entities (more may be added) that may have supplied letters of support attesting to the program's strengths and attach letters with the proposal at the end of this document.

1. [Insert Text]
2. [Insert Text]
3. [Insert Text]

II. Background with Context

A. Student Learning Outcomes

List four (4) to seven (7) of the student learning outcomes of the program.

1. Students will demonstrate ability in computational methods---including basic statistical programming, data analysis, and reproducibility---necessary to do applied data analysis.
2. Students will demonstrate the ability to use appropriate statistical methodologies for real-world data analysis settings.
3. Students will evaluate the ethical implications of aspects related to statistical inquiry, including study design, data collection, and data analysis.
4. Students will develop skills in written communication and oral presentation of statistical findings.

B. Similar Programs at Other Alabama Public Institutions

List programs at other Alabama public institutions of the same degree level and the same (or similar) CIP codes. If no similar programs exist within Alabama, list similar programs offered within the 16 SREB states. If the proposed program duplicates, closely resembles, or is similar to any other offerings in the state, provide justification for any potential duplication.

CIP Code	Degree Title	Institution with Similar Program	Justification for Duplication
27.0601	MS in Applied Statistics	University of Alabama	It is more geared towards business management. Our program will allow flexibility of applications in marine sciences, toxicology, biology, and medical fields.
27.0501	MS in Statistics	Auburn University	This program is more theoretical whereas ours will be applied.
11.0802	MS of Data Science	Auburn University	This program is more concentrated in big data applications in engineering.
26.1102	MS in Biostatistics	University of Alabama-Birmingham	This program is geared only towards medical applications. Our program will allow flexibility of applications in different fields such as marine sciences, toxicology, engineering, biology, psychology, and some for medical fields.

C. Relationship to Existing Programs within the Institution

1. Is the proposed program associated with any existing offerings within the institution, including options within current degree programs? **Yes ☒ No ☐**

   (Note: Most new programs have some relationship to existing offerings, *e.g.*, through shared courses or resources). If yes, complete the following table. If this is a graduate program, list any existing undergraduate programs which are directly or indirectly related. If this is a doctoral program, also list related master's programs.

Related Degree Program Level	Related Degree Program Title	Explanation of the Relationship Between the Programs
BS	BS in Mathematics and Statistics	Students from this degree program will be recruited for a MS in applied statistics.
Post-Bacc Cert	Post-Bacc Certificate in Applied Statistics	Students from this program will be able to continue into the MS program and use credit for courses taken in the certificate program towards the MS degree.

2. Will this program replace any existing programs or specializations, options, or concentrations? **Yes ☐ No ☒**

   If yes, please explain.

3. Will the program compete with any current internal offerings? **Yes ☐ No ☒**

   If yes, please explain.

D. Collaboration

Have collaborations with other institutions or external entities been explored? **Yes ☒ No ☐**

If yes, provide a brief explanation indicating those collaboration plan(s) for the proposed program.

Currently negotiations are going on with Auburn University about sending some of their applicants to South Alabama to complete a masters degree and then continue Ph.D. at Auburn. Note that they receive more applications than they can financially support and we do not have a Ph.D. program.

Have any collaborations within your institution been explored? **Yes ☐ No ☒**

If yes, provide a brief explanation indicating those collaboration plan(s) for the proposed program.

E. Specialized Accreditation

1. Will this program have any external accreditation requirements in addition to the institution's SACSCOC program requirements? **Yes ☐ No ☒**

   If yes, list the name(s) of the specialized accrediting organization(s) and the anticipated timeframe of the application process.

2. Does your institution intend to pursue any other non-required accrediting organizations for the program?* **Yes ☐ No ☒**

   If yes, list the name(s) of the organization(s) and the purpose of the pursuit.

   If there are plans to pursue non-required external accreditation at a later date, list the name(s) and why the institution is not pursuing them at this time.

Note: Check *No* to indicate that non-required external accreditation will not be pursued, which requires no explanation.

F. Professional Licensure/Certification

Please explain if professional licensure or industry certification is required for graduates of the proposed program to gain entry-level employment in the occupations selected. Be sure to note which organization(s) grants licensure or certification.

None

G. Additional Education/Training

Please explain whether further education/training is required for graduates of the proposed program to gain entry-level employment in the occupations selected.

None

H. Admissions

Will this program have any additional admissions requirements beyond the institution's standard admissions process/policies for this degree level? **Yes ☐ No ☒**

If yes, describe any other special admissions or curricular requirements, including any prior education or work experience required for acceptance into the program.

I. Mode of Delivery

Provide the planned delivery format(s) (*i.e*., in-person, online, hybrid) of the program as defined in policy along with the planned location(s) at which the program will be delivered (*i.e*., on-campus and/or at specific off-campus instructional site(s)). Please also note whether any program requirements can be completed through competency-based assessment.

Hybrid

J. Projected Program Demand (Student Demand)

Briefly describe the primary method(s) used to determine the level of student demand for this program using evidence, such as enrollments in related coursework at the institution, or a survey of student interest conducted (indicate the survey instrument used), number and percentage of respondents, and summary of results.

There is a demand for such a program at South Alabama. The first course such students take is ST540 which typically has enrollment of 10-15 students. Marine Conservation and Marine Sciences are programs with over 50 students. They would like their graduate students including Ph.D. students to pursue a Masters in Applied Statistics concurrently so that they are able to design their experiments and learn to analyze collected data, as indicated by a letter of interest and support from Dr. Sean Powell, Angelia and Steven Stokes Endowed Chair in Environmental Resiliency; and Director and Professor, Stokes School of Marine and Environmental Sciences. Such practice of working parallel on two degrees exists

at other institutions of higher education. For example, graduate students in College of Education of Louisiana State University, Baton Rouge commonly pursue a masters degree in Statistics at the same time. Researchers from Medicine have also shown interest in the program for their graduate students. Also, biology graduate students and some Ph.D. students in Engineering need skills offered by these courses providing room for future expansions. As a result, enrollment in graduate-level statistics courses is expected to increase.

K. Standard Occupational Code System

Using the federal Standard Occupational Code (SOC) System, indicate the top three occupational codes related to post-graduation employment from the program. A full list of SOCs can be found at https://www.onetcodeconnector.org/find/family/title#17.

A list of Alabama's In-Demand Occupations is available at https://www.ache.edu/index.php/policy-guidance/.

SOC 1 (**required**): 15.2041

SOC 2 (optional): 15.2051

SOC 3 (optional): 13.1111

Briefly describe how the program fulfills a specific industry or employment need for the

State of Alabama. As appropriate, discuss alignment with Alabama's Statewide or Regional Lists of In-Demand Occupations (https://www.ache.edu/index.php/policy-guidance/) or with emerging industries as identified by Innovate Alabama or the Economic Development Partnership of Alabama (EDPA).

Statisticians are hired by different industries under different job titles for their data analysis skills. Some of the job examples from the Alabama Demand Occupations ACCCP 2022-2023 are as follows but note that this list is quite incomplete and does not include many in-demand jobs such as data analysts.

1) Management analysis 5,500 employed in 2020

2) Post-secondary teachers, college instructors, etc. 17,140 employed in 2020

3) Software developers and quality assurance analysts, 17,220 employed in 2020

4) database administrators, 2,910 employed in 2020

5) Marketing managers, 1,330 employed in 2020.

III. Curriculum Information for Proposed Degree Program

A. Program Completion Requirements: Enter the credit hour value for all applicable components (enter N/A if not applicable).

Curriculum Overview of Proposed Program	
Credit hours required in **general education**	
Credit hours required in **program courses**	6
Credit hours in **program electives/concentrations/tracks**	24/18
Credit hours in **free electives**	
Credit hours in **required research/thesis**	0/6
Total Credit Hours Required for Completion	**30**

Non-Thesis vs Thesis Option

Note: The above credit hours **MUST** match the credit hours in the *Curriculum Components of Proposed Program* table in Section V.G.

B. Maximum number of credits that can be transferred in from another institution and applied to the program:

12

C. Intended program duration in semesters for full-time students:

4

D. Intended program duration in semesters for part-time students:

5-10

E. Does the program require students to demonstrate industry-validated skills, specifically through an embedded industry-recognized certification, structured work-based learning with an employer partner, or alignment with nationally recognized industry standards? **Yes ☐ No ☒**

If yes, explain how these components fit with the required coursework.

F. Does the program include any concentrations? **Yes ☐ No ☒**

If yes, provide an overview and identify these courses in the *Electives/Concentrations/Tracks* section in the Curriculum Components of Proposed Program Table in Section V.G.

G. Please provide all course information as indicated in the following table. Indicate new courses with "Y" in the associated column. If the course includes a required work-based learning component, such as an internship or practicum course, please indicate with a "Y" in the WBL column.

Program Name:	**MS in Applied Statistics**			
Program Level:	**MS**			
Curriculum Components of Proposed Program				
Course Number	**Course Title**	**Credit Hours**	**New? (Y)**	**WBL? (Y)**
General Education Courses *(Undergraduate Only)*				
Program Courses				
ST 540	Statistics in Research I	3	N	
ST 545	Statistics in Research II	3	N	
	or			
MA 555	Statistical Analysis I	3	N	
MA 560	Statistical Analysis II	3	N	
Program Electives/Concentrations/Tracks				
	At least 24 cr hrs from the list below for a non-thesis option, OR 6 cr hrs of ST 599 and 18 cr hrs from the list below for a thesis option.			
MA 550	Probability	3	N	
MA 551	Theory of Statistics	3	N	
MA 567	Operations Research	3	N	
MA 568	Topics in Operations Research	3	N	
ST 525	Appl Stat for Clinical Trials	3	N	
ST 550	Environmental Statistic	3	N	
ST 555	Categorical Data Analysis	3	N	
ST 560	Appl Desgn & Analysis of Exper	3	N	
ST 570	Applied Multivariate Analysis	3	N	
ST 575	Stat Computing and Graphics	3	N	
ST 580	Stat Learning Tech in Data Sc	3	N	

ST 585	Nonparametric Modeling	3	N	
ST 590	Sp Topic	1-3	N	
ST 594	Directed Studies	3	Y	
Research/Thesis				
ST 599	Thesis	6	Y	
	***Total Credit Hours Required for Completion**	**30**		

***Note**: The total credit hours should equal the total credit hours in the Curriculum Overview table (V.B, p. 9).

IV. Program Resource Requirements

A. Proposed Program Faculty*

Current Faculty and Faculty to Be Hired

Complete the following **New Academic Degree Proposal Faculty Roster** to provide a brief summary and qualifications of current faculty and potential new hires specific to the program.

***Note**: Institutions must maintain and have current as well as additional faculty curriculum vitae available upon ACHE request for as long as the program is active, but CVs are **not** to be submitted with this proposal.**Current Faculty**			
1	**2**	**3**	**4**
CURRENT FACULTY NAME (FT, PT)	**COURSES TAUGHT including Term, Course Number, Course Title, & Credit Hours (D, UN, UT, G, DU)**	**ACADEMIC DEGREES and COURSEWORK Relevant to Courses Taught, including Institution and Major; List Specific Graduate Coursework, if needed**	**OTHER QUALIFICATIONS and COMMENTS Related to Courses Taught and Modality(ies) (IP, OL, HY, OCIS)**

Madhuri Mulekar, FT	Graduate courses taught: 1. MA 506: Statistics for Teachers (3 cr) Fall 2004-2020, and Fall 2024 2. MA 567: Operations Research (3 cr) For about 10 years in Fall semesters prior to 2011. 3. ST 540: Statistics in Research I (3 cr) Fall 2019 4. ST545: Statistics in Research II (3 cr) Spring 2022, Spring 2023 5. ST 550: Environmental Statistics (3 cr) Fall 2001-2004, Spring 2006 till Spring 2021, and Spring 2024 6. BUS 622: Multivariate Analysis (3 cr) Summer 2014, and Fall 2015 7. BUS 628: Regression Analysis (3 cr) Spring 2015 Also taught the following undergraduate courses multiple times: 1. MA 110: Finite Mathematics (3 cr) 2. MA 458: Operations Research -W (3 cr) 3. ST 175: Basic Statistics (4 cr) 4. ST 210: Statistical Reasoning and Applications (3 cr) 5. ST 275: Statistical Methods (4 cr) 6. St 315: Statistical Analysis (5 cr) 7. ST 315: Applied Probability and Statistics (3 cr) 8. ST 335: Applied Regression Analysis (3 cr) ST 337: Applied Regression Analysis (4 cr) 9. ST 340: Design and Analysis of Experiments (3 cr) 10. ST 347: Applied Time Series Analysis (4 cr) 11. ST 355: Nonparametric Statistical Methods (3 cr)	Professor and Chair, Ph.D., Statistics, Experience of teaching graduate-level statistics courses in Math-Stat, Math Education, and for DBA program. Also experience of working with graduate students on statistical research projects, many of which have resulted in publications co-authored with students. Considerable experience in statistical data analysis as statistical consultant and collaborator on many meteorology and medicine-related research projects and federally funded grants. Over 125 research- and teaching-related publications including books and book-chapters.	

***Note**: Institutions must maintain and have current as well as additional faculty curriculum vitae available upon ACHE request for as long as the program is active, but CVs are **not** to be submitted with this proposal.**Current Faculty**			
1	**2**	**3**	**4**
CURRENT FACULTY NAME (FT, PT)	**COURSES TAUGHT including Term, Course Number, Course Title, & Credit Hours (D, UN, UT, G, DU)**	**ACADEMIC DEGREES and COURSEWORK Relevant to Courses Taught, including Institution and Major; List Specific Graduate Coursework, if needed**	**OTHER QUALIFICATIONS and COMMENTS Related to Courses Taught and Modality(ies) (IP, OL, HY, OCIS)**
	12: ST 356: Design and Analysis of Experiments I (4 cr) 13. ST361: Survival Data Analysis (4 cr) 14. ST 444: Statistical Quality Control (4 cr) 15. ST 448: Applied Reliability & Life Testing (4 cr) 16. ST 456: Design and Analysis of Experiments II (4 cr) 17. ST 467: Multivariate Statistical Analysis (4 cr) 18. ST 481: Statistics Practicum – W (2 cr) 19. ST 490: Special Topics (3 cr)		
Frazier Bindele, FT	<u>Graduate courses taught</u>: 1. MA 551: Theory of Statistics (3 cr) Spring 2020 and Spring 2021 2. MA 555: Statistical Analysis I (3 cr) Fall 2024 3. ST540: Statistics in Research I (3 cr) Fall 2021 and Fall 2022 4. ST 550: Environmental Statistics (3 cr) Spring 2022 <u>Also taught the following undergraduate courses multiple times</u>: 1. ST 210: Statistical Reasoning and Applications (3 cr) 2. ST 315: Applied Probability and Statistics (3 cr) ST 335: Applied Regression Analysis (3 cr)	Associate Professor, Ph.D., Statistics, Experience of teaching graduate-level statistics courses and research with graduate students. Published many co-authored research publications in collaboration with faculty from other institutions including Auburn. Currently directing research by a masters student.	

***Note**: Institutions must maintain and have current as well as additional faculty curriculum vitae available upon ACHE request for as long as the program is active, but CVs are **not** to be submitted with this proposal.**Current Faculty**			
1	**2**	**3**	**4**
CURRENT FACULTY NAME (FT, PT)	**COURSES TAUGHT including Term, Course Number, Course Title, & Credit Hours (D, UN, UT, G, DU)**	**ACADEMIC DEGREES and COURSEWORK Relevant to Courses Taught, including Institution and Major; List Specific Graduate Coursework, if needed**	**OTHER QUALIFICATIONS and COMMENTS Related to Courses Taught and Modality(ies) (IP, OL, HY, OCIS)**
Paramahansa Pramanik, FT	Graduate courses taught: 1. MA 551: Theory of Statistics (3 cr) Spring 2024 2. ST 550: Environmental Statistics (3 cr) Spring 2023 3. ST 570: Applied Multivariate Analysis (3 cr) Fall 2024 Also taught the following undergraduate courses multiple times: 1. ST 210: Statistical Reasoning and Applications (3 cr) 2. ST 315: Applied Probability and Statistics (3 cr) ST 335: Applied Regression Analysis (3 cr) ST 499: Honors Senior Project	Assistant Professor, Ph.D. Some experience of teaching graduate-level statistics courses in Math-Stat. Some experience in consulting projects with scientists from Mitchell Cancer Institute, collaborative NIH grant and over 15 peer-reviewed publications. Currently directing research by 3 masters students.	
Olivia Atutey, FT	Graduate courses taught: 1. ST 540: Statistics in Research I (3 cr) Fall 2023 and Fall 2024 2. ST 545: Statistics in Research II (3 hrs) scheduled for Spring 2025 Also taught the following undergraduate courses multiple times: 1. ST 210: Statistical Reasoning and Applications (3 cr) 2. ST 315: Applied Probability and Statistics (3 cr) ST 335: Applied Regression Analysis (3 cr)	Assistant Professor, Olivia Atutey, Ph.D. Started teaching graduate-level statistics courses in Math-Stat. Some research experiences.	

***Note**: Institutions must maintain and have current as well as additional faculty curriculum vitae available upon ACHE request for as long as the program is active, but CVs are **not** to be submitted with this proposal.**Current Faculty**			
1	**2**	**3**	**4**
CURRENT FACULTY NAME (FT, PT)	**COURSES TAUGHT including Term, Course Number, Course Title, & Credit Hours (D, UN, UT, G, DU)**	**ACADEMIC DEGREES and COURSEWORK Relevant to Courses Taught, including Institution and Major; List Specific Graduate Coursework, if needed**	**OTHER QUALIFICATIONS and COMMENTS Related to Courses Taught and Modality(ies) (IP, OL, HY, OCIS)**
Vasiliy Prokhorov, FT	Graduate courses taught: 1. MA 550: Probability (3 hrs, G) every Fall semester for past 10+ years List of some of graduate and undergraduate courses taught multiple times: 1. MA 311: Number Theory (3 cr) 2. MA 437: Complex Variables (3 cr) 3. MA 451: Probability (3 cr) 4. MA 452: Financial Mathematics (3 cr) 5. MA 490: Financial Mathematics II (3 cr) 6. MA 494: Directed Study (3 cr) 7. MA 537: Complex Analysis (3 cr) 8. MA594: Directed Study (3 cr)	Professor, Ph.D., Experienced teacher and recognized researcher.	
Gayan Abeynanda, FT	Graduate courses taught: 1. MA 567: Operations Research (3 cr, G) Summer 2017, Summer 2019, Summer 2020, and Summer 2022 List of some undergraduate courses taught multiple times: 1. MA 125: Calculus I (4 cr) 2. MA 126: Calculus II (4 cr) 3. MA 238: Differential Equations I (3 cr) 4. MA 458: Operations Research -W (3 cr)	Assistant Professor, Ph.D. Known among students as a very good teacher	

***Note**: Institutions must maintain and have current as well as additional faculty curriculum vitae available upon ACHE request for as long as the program is active, but CVs are **not** to be submitted with this proposal.**Current Faculty**			
1	**2**	**3**	**4**
CURRENT FACULTY NAME (FT, PT)	**COURSES TAUGHT including Term, Course Number, Course Title, & Credit Hours (D, UN, UT, G, DU)**	**ACADEMIC DEGREES and COURSEWORK Relevant to Courses Taught, including Institution and Major; List Specific Graduate Coursework, if needed**	**OTHER QUALIFICATIONS and COMMENTS Related to Courses Taught and Modality(ies) (IP, OL, HY, OCIS)**
Chase Holcomb, FT	Undergraduate courses: 1. ST 210: Statistical Reasoning and Applications (3 cr)	Assistant Professor, Ph.D. (First semester)	
Mathias Muia, FT	Undergraduate courses: 1. ST 210: Statistical Reasoning and Applications (3 cr)	Assistant Professor, Ph.D. (First semester)	

Abbreviations: (FT, PT): Full-Time, Part-Time; (D, UN, UT, G, DU): Developmental, Undergraduate Nontransferable, Undergraduate Transferable, Graduate, Dual: High School Dual Enrollment
Course Modality: (IP, OL, HY, OCIS): In-Person, Online, Hybrid, Off-Campus Instructional Site
Courses Taught/To be Taught – For a substantive change prospectus/application, list the courses *to be taught*, not historical teaching assignments.

B. All Proposed Program Personnel

Provide all personnel counts for the proposed program.

Employment Status of Program Personnel		Personnel Information		
		Count from Proposed Program Department	Count from Other Departments	Subtotal of Personnel
Current	Full-Time Faculty	6		
	Part-Time Faculty			
	Administration			
	Support Staff	2		
**New To Be Hired	Full-Time Faculty			
	Part-Time Faculty			
	Administration			
	Support Staff			
		Personnel Total		

****Note**: **Any new funds** designated for compensation costs (Faculty (FT/PT), Administration, and/or Support Staff to be Hired) **should be included** in the **New Academic Degree Program Business Plan Excel file**. Current personnel salary/benefits (Faculty (FT/PT), Administration, and/or Support Staff) **should not be included** in the **Business Plan**.

Provide justification that the institution has proposed a sufficient number of faculty (full-time and part-time) for the proposed program to ensure curriculum and program quality, integrity, and review.

C. Equipment

Will any special equipment be needed specifically for this program? **Yes ☐ No ☒**

If *yes*, list the special equipment. Special equipment cost should be included in the **New Academic Degree Program Business Plan Excel file.**

D. Facilities

Will any new facilities be required specifically for the program? **Yes ☐ No ☒**

If *yes*, list only **new** facilities. New facilities cost should be included in the **New Academic Degree Program Business Plan Excel file.**

Will any renovations to any existing infrastructure be required specifically for the program? **Yes ☐ No ☒**

If *yes*, list the renovations. Renovation costs should be included in the **New Academic Degree Program Business Plan Excel file.**

E. Assistantships/Fellowships

Will the institution offer any assistantships specifically for this program? **Yes ☒ No ☐**

If *yes*, how many assistantships will be offered? 2

The expenses associated with any *new* assistantships should be included in the **New Academic Degree Program Business Plan Excel file.**

F. Library

Provide a brief summarization (one to two paragraphs) describing the current status of the library collections supporting the proposed program.

Will additional library resources be required to support the program? **Yes ☐ No ☒**

If *yes*, briefly describe how any deficiencies will be remedied, and include the cost in the **New Academic Degree Program Business Plan Excel file.**

G. Accreditation Expenses

Will the proposed program require accreditation expenses? **Yes ☐ No ☒**

If *yes*, briefly describe the estimated cost and funding source(s) and include cost in the **New Academic Degree Program Business Plan Excel file.**

H. Other Costs

Please explain any other costs to be incurred with program implementation, such as marketing or recruitment costs. Be sure to note these in the **New Academic Degree Program Business Plan Excel file.**

I. Revenues for Program Support

Will the proposed program require budget reallocation? **Yes ☐ No ☒**

If *yes*, briefly describe how any deficiencies will be remedied and include the revenue in the **New Academic Degree Program Business Plan Excel file.**

Will the proposed program require external funding (*e.g.*, Perkins, Foundation, Federal Grants, Sponsored Research, etc.)? **Yes ☐ No ☒**

If *yes*, list the sources of external funding and include the revenue in the **New Academic Degree Program Business Plan Excel file.**

Please describe how you calculated the tuition revenue that appears in the **New Academic Degree Program Business Plan Excel file.** Specifically, did you calculate using cost per credit hour or per term? Did you factor in differences between resident and non-resident tuition rates?

New Academic Degree Program Summary/Business Plan

Use the Excel form from ACHE's Academic Program webpage located at https://www.ache.edu/index.php/forms/, named **New Academic Degree Program Business Plan**, to complete the New Academic Program Degree Proposal.

Instructions and definitions are provided in the Excel file. **The New Academic Degree Program Business Plan should be uploaded as an Excel file (.xlsx) in the Academic Program Review (APR) Portal.**

Steps for Submitting the New Academic Degree Proposal

1. Complete the **New Academic Degree Proposal** document.
2. Attach the letters of support from external entities listed in *Section I.D.* at the end of the **New Academic Degree Proposal** document.
3. Save the **New Academic Degree Proposal** document as a **.pdf file**.
4. Complete the **New Academic Degree Program Business Plan** and save as an **.xlsx file.**
5. Login to the Academic Program Review (APR) Portal at apr.ache.edu using your ACHE-provided login information. If you are not a designated user for your institution, contact your designated user.
6. Provide responses to questions in the APR Portal.
7. Upload the **New Academic Degree Proposal .pdf file** in the APR Portal.
8. Upload the **New Academic Degree Program Business Plan .xlsx file** in the APR Portal.
9. Click to "Validate" the proposal and then address any issues with your submission.
10. Once validation is clear, click "Review" to check your responses before submitting. If all looks good, click "Submit" at the bottom of the review screen.
11. The system will then prompt you to "Lock" the submission. Your proposal is considered submitted only once it has been locked within the APR Portal.

NOTE: Proposals that have not been locked by the deadline will not be reviewed for consideration of inclusion on the next Commission agenda.

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

INSTITUTION: University of South Alabama

PROGRAM: MS in Applied Statistics *Select Level:* *Master's*

ESTIMATED *NEW* EXPENSES TO IMPLEMENT PROPOSED PROGRAM

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	**TOTAL**
FACULTY								0
STAFF								0
EQUIPMENT								0
FACILITIES								0
LIBRARY								0
ASSISTANTSHIPS	54272	54272	54272	54272	54272	54272	54272	379904
OTHER	5500	5500	5500	3000	3000	3000	3000	28500
TOTAL	**59772**	**59772**	**59772**	**57272**	**57272**	**57272**	**57272**	**408404**

***NEW* REVENUES AVAILABLE FOR PROGRAM SUPPORT**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	**TOTAL**
REALLOCATIONS								0
EXTRAMURAL								0
TUITION	31360	62720	81536	106624	125440	156800	181888	746368
TOTAL	**31360**	**62720**	**81536**	**106624**	**125440**	**156800**	**181888**	**746368**

ENROLLMENT PROJECTIONS

Note: "New Enrollment Headcount" is defined as unduplicated counts across years.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	**AVERAGE**
FULL-TIME HEADCOUNT	Year 1 - No data reporting required	10	13	17	20	25	29	19
PART-TIME HEADCOUNT	Year 1 - No data reporting required	0	0	0	0	0	0	0
TOTAL HEADCOUNT	Year 1 - No data reporting required	10	13	17	20	25	29	19
NEW ENROLLMENT HEADCOUNT	Year 1 - No data reporting required	5	7	10	12	14	15	10.5

DEGREE COMPLETION PROJECTIONS

Note: Do not count Lead "0"s and Lead 0 years in computing the average annual degree completions.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	**AVERAGE**
DEGREE COMPLETION PROJECTIONS	Year 1 - No data reporting required	4	6	7	9	11	12	10

CIP: 27.0601 Applied Statistics, General | Market: National | Award Level: Masters | Select Program

CIP: 27.0601 Applied Statistics, General | Market: National | Total Score: 5 | Percentile: 82

Student Demand
Score: 6 Percentile: 85

Categ...	Pctl	Criterion	Value	Score
Size	38	Google Search Volume (3 Months)*	2,850	0
	0	International Page Views (12 Months)	0	0
	79	New Student Enrollment Volume (12 Mo.)	390	0
	82	On-ground Completions at In-Market Institutions	252	0
	79	Online Completions by In-Market Students	60	0
	80	Sum of On-ground and Online Completions	312	NS
Growth	49	Google Search YoY Change (Units)*	-70	0
	97	New Student Enrollment Vol. YoY Change (Units)	199	1
	96	Completion Volume YoY Change (Units)	183	2
	50	Google Search YoY Change (%)*	-2%	1
	95	New Student Enrollment Vol. YoY Change (%)	104%	1
	97	Completion Volume YoY Change (%)	142%	1

Competitive Intensity
Score: 2 Percentile: 20

Category	Pctl	Criterion	Value	Score
Volume of In-Market Competition	77	Campuses with Graduates**	17	6
	98	Campuses with Grads YoY Change (Units)**	7	-3
	0	Institutions with Online In-Market Students**	0	-2
In-Market Program Sizes	79	Average Program Completions	15	0
	77	Median Program Completions	9	0
	70	YoY Median Prog. Compl. Change (Units)	0	0
	70	YoY Median Prog. Compl. Change (%)	0	0
In-Market Saturation	70	Google Search * Cost per Click**	$7	0
	84	Google Competition Index**	0.56	0
National Online Competition	84	National Online Institutions (Units)**	6	1
	82	Nat'l Online % of Institutions	35%	NS
	58	Nat'l Online % of Completions	19%	NS

Total Percentile	0	20+	40+	70+	90+	95+	98+	100
Total Score	**-54**	**-16**	**-10**	**2**	**10**	**17**	**30**	**61**

Employment*
Score: -3 Percentile: 50

Category	Pctl	Criterion	Value	Score
Size: Direct Prep	38	Job Postings Total (12 Months)*	916	-2
	35	BLS Current Employment*	1,863	-4
	37	BLS Annual Job Openings*	193	NS
Size: ACS Bach. Outcomes	42	Job Postings Total (12 Months)*	933	NS
		BLS Current Employment*	NA	NS
Growth (Direct Prep)	98	BLS 1-Year Historical Growth*	18.5%	2
	99	BLS 3-Year Historic Growth (CAGR)*	14.6%	2
	92	BLS 10-Year Future Growth (CAGR)*	1.8%	NS
Saturation (Direct Prep)	47	Job Postings per Graduate*	2.0	-1
	47	BLS Job Openings per Graduate*	0.4	-1
Wages (Direct Prep)	65	BLS 10th-Percentile Wages*	$44,395	1
	67	BLS Mean Wages*	$75,545	NS
National American Community Survey Bachelor's Degree Outcomes		Wages (Age < 30)	NA	NS
		Wages (Age 30-60)	NA	NS
		% with Any Graduate Degree	NA	NS
		% with Masters	NA	NS
		% with Doct/Prof Degree	NA	NS
		% Unemp. (Age <30)**	NA	NS
		% Unemp. (Age 30-60)**	NA	NS
		% in Direct Prep Jobs	NA	NS

CIP Description:
A program that focuses on the application of statistics to the solution of functional problems in fields such as business, engineering, medicine, and the applied sciences. Includes instruction in the principles in inference, probability theory, regression analysis, descriptive statistics, stochastic processes, Monte Carlo method, Bayesian statistics, non-parametric statistics, sampling theory, statistical computing, and statistical techniques.

** Color Scale in Reverse

Percentile (Reverse)	<02	02+	05+	10+	30+	60+

Degree Fit:
Score: 0 Percentile: 50

Category	Pctl	Criterion	Value	Score
NHEBI Natl 2 Year		Cost Index**	NA	NS
		Student: Faculty Index	NA	NS

National Completions by Level
Score: 0

Award Level	Completions (National)	Completions (Market)	Enrollment (Market)
Certificate	0%	0%	0%
Associates	0%	0%	0%
Bachelors	16%	16%	14%
Postbaccalaureate Certificate	14%	14%	1%
Masters	67%	67%	70%
Post-masters Certificate	0%	0%	10%
Doctoral	2%	2%	5%
Unknown	0%	0%	0%

National Workforce Ed. Attainment
Score: 0

Award Level	BLS Educational Attainment
No College	6%
Some College	11%
Associates	5%
Bachelors	41%
Masters	29%
Doctoral	8%

* - Google search, employment data and Jobs Per Grad Ratio do not filter by award level.
** - Color scale in reverse.
NA - No data available/not currently tracked.
NS - Not Scored in Rubrics (values = 0).
2-Yr - Associates & certificate programs only.
PCTL - Percentile

GRAY ASSOCIATES

CIP: 27.0601 Applied Statistics, General | Market: Southeast Region | Award Level: Masters | Select Program

CIP: 27.0601 Applied Statistics, General | Market: Southeast Region | Total Score: 8 | Percentile: 88

Student Demand
Score: 0 Percentile: 50

Categ...	Pctl	Criterion	Value	Score
Size	34	Google Search Volume (3 Months)*	200	0
	0	International Page Views (12 Months)	0	0
	69	New Student Enrollment Volume (12 Mo.)	20	0
	0	On-ground Completions at In-Market Institutions	0	0
	72	Online Completions by In-Market Students	1	0
	61	Sum of On-ground and Online Completions	1	NS
Growth	39	Google Search YoY Change (Units)*	-50	0
	94	New Student Enrollment Vol. YoY Change (Units)	15	0
	78	Completion Volume YoY Change (Units)	0	0
	24	Google Search YoY Change (%)*	-20%	0
	97	New Student Enrollment Vol. YoY Change (%)	3	1
	37	Completion Volume YoY Change (%)	-5%	-1

Competitive Intensity
Score: 7 Percentile: 75

Category	Pctl	Criterion	Value	Score
Volume of In-Market Competition	0	Campuses with Graduates**	0	6
	92	Campuses with Grads YoY Change (Units)**	0	-1
	0	Institutions with Online In-Market Students**	0	-2
In-Market Program Sizes		Average Program Completions	NA	NS
		Median Program Completions	NA	NS
		YoY Median Prog. Compl. Change (Units)	NA	NS
		YoY Median Prog. Compl. Change (%)	NA	NS
In-Market Saturation	34	Google Search * Cost per Click**	$2	3
	61	Google Competition Index**	0.33	0
National Online Competition	84	National Online Institutions (Units)**	6	1
	82	Nat'l Online % of Institutions	35%	NS
	58	Nat'l Online % of Completions	19%	NS

Total Percentile	0	20+	40+	70+	90+	95+	98+	100
Total Score	**-47**	**-15**	**-9**	**2**	**10**	**16**	**25**	**51**

Employment*
Score: 1 Percentile: 90

Category	Pctl	Criterion	Value	Score
Size: Direct Prep	36	Job Postings Total (12 Months)*	78	-2
	27	BLS Current Employment*	67	-4
	28	BLS Annual Job Openings*	7	NS
Size: ACS Bach. Outcomes		Job Postings Total (12 Months)*	NA	NS
		BLS Current Employment*	NA	NS
Growth (Direct Prep)	92	BLS 1-Year Historical Growth*	32.5%	2
	93	BLS 3-Year Historic Growth (CAGR)*	23.2%	2
	97	BLS 10-Year Future Growth (CAGR)*	2.2%	NS
Saturation (Direct Prep)	93	Job Postings per Graduate*	65.8	1
	86	BLS Job Openings per Graduate*	6.0	0
Wages (Direct Prep)	74	BLS 10th-Percentile Wages*	$43,577	2
	73	BLS Mean Wages*	$76,379	NS
National American Community Survey Bachelor's Degree Outcomes		Wages (Age < 30)	NA	NS
		Wages (Age 30-60)	NA	NS
		% with Any Graduate Degree	NA	NS
		% with Masters	NA	NS
		% with Doct/Prof Degree	NA	NS
		% Unemp. (Age <30)**	NA	NS
		% Unemp. (Age 30-60)**	NA	NS
		% in Direct Prep Jobs	NA	NS

CIP Description:
A program that focuses on the application of statistics to the solution of functional problems in fields such as business, engineering, medicine, and the applied sciences. Includes instruction in the principles in inference, probability theory, regression analysis, descriptive statistics, stochastic processes, Monte Carlo method, Bayesian statistics, non-parametric statistics, sampling theory, statistical computing, and statistical techniques.

** Color Scale in Reverse

Percentile (Reverse)	<02	02+	05+	10+	30+	60+

Degree Fit:
Score: 0 Percentile: 50

Category	Pctl	Criterion	Value	Score
NHEBI Natl 2 Year		Cost Index**	NA	NS
		Student: Faculty Index	NA	NS

National Completions by Level
Score: 0

Award Level	Completions (National)	Completions (Market)	Enrollment (Market)
Certificate	0%	0%	0%
Associates	0%	0%	0%
Bachelors	16%	100%	9%
Postbaccalaureate Certificate	14%	0%	0%
Masters	67%	100%	91%
Post-masters Certificate	0%	0%	0%
Doctoral	2%	0%	0%
Unknown	0%	0%	0%

National Workforce Ed. Attainment
Score: 0

Award Level	BLS Educational Attainment
No College	6%
Some College	11%
Associates	5%
Bachelors	41%
Masters	29%
Doctoral	8%

* - Google search, employment data and Jobs Per Grad Ratio do not filter by award level.
** - Color scale in reverse.
NA - No data available/not currently tracked.
NS - Not Scored in Rubrics (values = 0).
2-Yr - Associates & certificate programs only.
PCTL - Percentile

GRAY ASSOCIATES

CIP: 27.0601 Applied Statistics, General | Market: 180-Mile and all AL | Award Level: Masters | Select Program

CIP: 27.0601 Applied Statistics, General | Market: 180-Mile and all AL | Total Score: -8 | Percentile: 43

Student Demand
Score: -1 Percentile: 4

Categ...	Pctl	Criterion	Value	Score
Size	23	Google Search Volume (3 Months)*	39	0
	0	International Page Views (12 Months)	0	0
	74	New Student Enrollment Volume (12 Mo.)	6	0
	89	On-ground Completions at In-Market Institutions	9	0
	0	Online Completions by In-Market Students	0	0
	85	Sum of On-ground and Online Completions	9	NS
Growth	32	Google Search YoY Change (Units)*	-27	0
	92	New Student Enrollment Vol. YoY Change (Units)	6	0
	86	Completion Volume YoY Change (Units)	0	0
	11	Google Search YoY Change (%)*	-41%	-1
		New Student Enrollment Vol. YoY Change (%)	NA	NS
	49	Completion Volume YoY Change (%)	0	0

Competitive Intensity
Score: -3 Percentile: 7

Category	Pctl	Criterion	Value	Score
Volume of In-Market Competition	91	Campuses with Graduates**	1	2
	96	Campuses with Grads YoY Change (Units)**	0	-2
	0	Institutions with Online In-Market Students**	0	-2
In-Market Program Sizes	62	Average Program Completions	9	0
	66	Median Program Completions	9	0
	66	YoY Median Prog. Compl. Change (Units)	0	0
	66	YoY Median Prog. Compl. Change (%)	0	0
In-Market Saturation	82	Google Search * Cost per Click**	$10	0
	96	Google Competition Index**	0.95	-2
National Online Competition	84	National Online Institutions (Units)**	6	1
	82	Nat'l Online % of Institutions	35%	NS
	58	Nat'l Online % of Completions	19%	NS

Total Percentile	0	20+	40+	70+	90+	95+	98+	100
Total Score	**-47**	**-16**	**-10**	**2**	**9**	**15**	**25**	**57**

Employment*
Score: -4 Percentile: 42

Category	Pctl	Criterion	Value	Score
Size: Direct Prep	34	Job Postings Total (12 Months)*	13	-2
	23	BLS Current Employment*	8	-4
	29	BLS Annual Job Openings*	1	NS
Size: ACS Bach. Outcomes		Job Postings Total (12 Months)*	NA	NS
		BLS Current Employment*	NA	NS
Growth (Direct Prep)	73	BLS 1-Year Historical Growth*	11.8%	2
	87	BLS 3-Year Historic Growth (CAGR)*	12.2%	1
	92	BLS 10-Year Future Growth (CAGR)*	1.4%	NS
Saturation (Direct Prep)	28	Job Postings per Graduate*	1.1	-1
	22	BLS Job Openings per Graduate*	0.1	-1
Wages (Direct Prep)	67	BLS 10th-Percentile Wages*	$42,585	1
	75	BLS Mean Wages*	$75,152	NS
National American Community Survey Bachelor's Degree Outcomes		Wages (Age < 30)	NA	NS
		Wages (Age 30-60)	NA	NS
		% with Any Graduate Degree	NA	NS
		% with Masters	NA	NS
		% with Doct/Prof Degree	NA	NS
		% Unemp. (Age <30)**	NA	NS
		% Unemp. (Age 30-60)**	NA	NS
		% in Direct Prep Jobs	NA	NS

CIP Description:
A program that focuses on the application of statistics to the solution of functional problems in fields such as business, engineering, medicine, and the applied sciences. Includes instruction in the principles in inference, probability theory, regression analysis, descriptive statistics, stochastic processes, Monte Carlo method, Bayesian statistics, non-parametric statistics, sampling theory, statistical computing, and statistical techniques.

** Color Scale in Reverse

Percentile (Reverse)	<02	02+	05+	10+	30+	60+

Degree Fit:
Score: 0 Percentile: 50

Category	Pctl	Criterion	Value	Score
NHEBI Natl 2 Year		Cost Index**	NA	NS
		Student: Faculty Index	NA	NS

National Completions by Level
Score: 0

Award Level	Completions (National)	Completions (Market)	Enrollment (Market)
Certificate	0%	0%	0%
Associates	0%	0%	0%
Bachelors	16%	0%	0%
Postbaccalaureate Certificate	14%	0%	0%
Masters	67%	75%	55%
Post-masters Certificate	0%	0%	0%
Doctoral	2%	25%	45%
Unknown	0%	0%	0%

National Workforce Ed. Attainment
Score: 0

Award Level	BLS Educational Attainment
No College	6%
Some College	11%
Associates	5%
Bachelors	41%
Masters	29%
Doctoral	8%

* - Google search, employment data and Jobs Per Grad Ratio do not filter by award level.
** - Color scale in reverse.
NA - No data available/not currently tracked.
NS - Not Scored in Rubrics (values = 0).
2-Yr - Associates & certificate programs only.
PCTL - Percentile

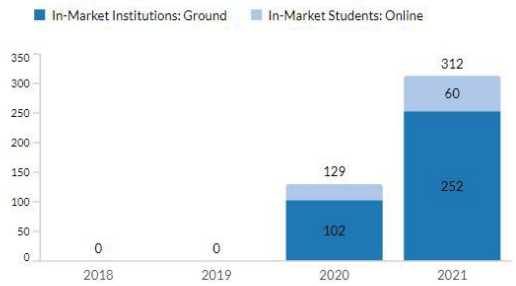
GRAY ASSOCIATES

Current Selections:
Company: 17 of 4513
Market: National
Award Level: Masters
CIP Name: 27.0601 Applied Statistics, General

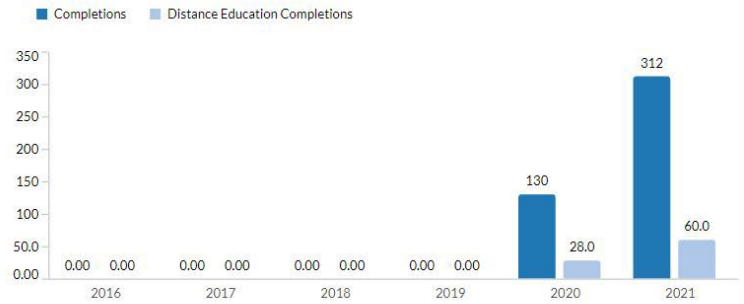
CIP | Market | Award Level | Current Programs | 2 Digit CIP | 4 Digit CIP

Total Completions by In-Market Students

Current Year and Previous Year



Total Completions by In-Market Institutions



Instructions: Select At Least One Dimension And One Metric. Market Dimensions Is Shown If More Than 1 Market Selected.

Dimensions

Dimensions

Metrics

Completions

Demographics

Institutional Data

US News

Table Selections

Campus

Institution

Institution	2019 On-Ground Completions	2019 Online Completions	2020 On-Ground Completions	2020 Online Completions	2021 On-Ground Completions	2021 Online Completions
University of Michigan	0	0	0	0	86	0
Villanova University	0	0	20	0	26	0
DePaul University	0	0	23	0	19	0
Rochester Institute of Technology	0	0	0	0	16	14
Michigan Technological University	0	0	0	0	15	7
Kansas State University System	0	0	14	20	14	19
Colorado State University System	0	0	0	0	13	13
Bowling Green State University-Main Campus	0	0	16	0	10	0
The University of Alabama System	0	0	9	0	9	0

Support

Current Selections:
Market: National
Award Level: Masters
CIP Name: 27.0601 Applied Statistics, General

CIP | Market | Award Level | Current Programs | 2 Digit CIP | 4 Digit CIP

Instructions

Use Filters on left to add/drop more Dimensions and Metrics. Dimensions and Metrics will clear when a new Scoring Rubric Bookmark is created.

Dimensions

Dimensions

Metrics

Student Demand

Employment Opportunity

Degree Fit

Competitive Intensity

Population

Score

CIP	Google Search Volume (3 Months)	Google Search YoY Change (%)	Google Search YoY Change (Units)	Sum of On-ground and Online	Job Postings: Total (12 months)	Job Postings: Job Postings per Graduate	Google Searches: Cost per Click
27.0601 Applied Statistics, General	2,850	-2%	-70	312	916	2.0	$6.56

UNIVERSITY OF SOUTH ALABAMA

Professor and Chair
Department of Math and Statistics
College of Arts and Sciences
University of South Alabama

Dear Madhuri,

On behalf of the faculty in the Stokes School of Marine and Environmental Sciences, I would like to give my strongest endorsement for your proposal for an MS in Applied Statistics. I believe the program will be an asset to the University. Many of our current Ph.D. students would be very interested in enrolling in the program. Students with fisheries or environmental assessment interests require a rigorous background in statistics. Earning and MS during their Ph.D. program will allow these students to be highly competitive for jobs.

Employers want to see clear demonstration of quantitative analysis skills. As detailed, the MS in Applied Statistics program will provide these students these skills and give them unquestioned documentation of those skills. I anticipate 2-3 students wishing to enroll in your proposed program each year.

I look forward in continuing our collaboration and look forward to the launch of your program.

Regards,

Sean P. Powers, Ph.D.
Professor and Director, Stokes School of Marine and Environmental Sciences

STOKES SCHOOL OF MARINE AND ENVIRONMENTAL SCIENCES
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Fastest Growing Occupations

PRINTER-FRIENDLY

Fastest growing occupations: 20 occupations with the highest projected percent change of employment between 2022-32.

Click on an occupation name to see the full occupational profile.

OCCUPATION	GROWTH RATE, 2022-32	2022 MEDIAN PAY
Wind turbine service technicians	45%	$57,320 per year
Nurse practitioners	45%	$121,610 per year
Data scientists	35%	$103,500 per year
Statisticians	32%	$98,920 per year
Information security analysts	32%	$112,000 per year
Medical and health services managers	28%	$104,830 per year
Epidemiologists	27%	$78,520 per year
Physician assistants	27%	$126,010 per year
Physical therapist assistants	26%	$62,770 per year
Software developers	26%	$127,260 per year
Occupational therapy assistants	24%	$64,250 per year
Actuaries	23%	$113,990 per year
Computer and information research scientists	23%	$136,620 per year
Operations research analysts	23%	$85,720 per year
Solar photovoltaic installers	22%	$45,230 per year
Home health and personal care aides	22%	$30,180 per year
Taxi drivers	21%	$30,670 per year
Personal care and service workers, all other	21%	$34,670 per year
Veterinary technologists and technicians	21%	$38,240 per year
Veterinary assistants and laboratory animal caretakers	20%	$34,740 per year

Last Modified Date: Wednesday, September 6, 2023

U.S. BUREAU OF LABOR STATISTICS Office of Occupational Statistics and Employment Projections PSB Suite 2135 2 Massachusetts Avenue NE Washington, DC 20212-0001

Telephone:1-202-691-5700_ www.bls.gov/ooh Contact OOH