

**Request for Authorization to Establish a
Bachelor of Arts in Biology
(BA, CIP 26.0101) at
East Carolina University**

I. Program Highlights

- East Carolina University's proposed Bachelor of Arts in Biology degree program would prepare students for careers in education, scientific research in industry, public and private health sectors, environmental monitoring and remediation, sustainable business development, marketing, engineering, informatics, or continued study in professional and graduate degree programs. The proposed BA degree curriculum would offer more career development options than ECU's current BS degree concentrations, delivering broad-based biological training with increased hands-on experience, and enough flexibility for students to tailor their coursework in key areas that facilitate specific career goals.
- The proposed degree program would require 120 total credit hours. The proposed curriculum would require general education courses (40 credit hours), foreign language proficiency (12 credit hours), cognate courses (11 credit hours), major core courses (28 credit hours), and a minor and electives (29 credit hours).
- The proposed degree program would be administered on campus.
- Twenty-five full-time students are projected in the first year. Two hundred full-time students are projected by the fourth year.
- No tuition differential will be sought to support the proposed degree program.
- Existing faculty are adequate to initiate the proposed program. As enrollment grows, ECU anticipates two additional fixed-term faculty will be needed to accommodate student needs in core courses.
- The library's resources are adequate to support the proposed degree program.
- Existing facilities are adequate to support the proposed degree program.

II. BOG Academic Program Planning Criteria (UNC Policy 400.1)

1. **Existing Programs (Number, Location, Mode of Delivery).** UNC System institutions offering the BA in biology program include Appalachian State University, North Carolina State University, University of North Carolina at Chapel Hill, The University of North Carolina at Greensboro, University of North Carolina at Charlotte, and University of North Carolina Wilmington. Each program is offered on campus.
2. **Relation to Campus Distinctiveness and Mission.** The proposed degree program would support ECU's mission to prepare students with knowledge, skills, and values to succeed. In addition, it would prepare students to discover new knowledge and innovations to support a thriving future for eastern North Carolina and beyond. The proposed degree program would also be consistent with the goals of ECU's strategic plan, *Capture Your Horizon*, to foster student success and regional transformation.
3. **Demand (local, regional, state).** An examination of the next decade's fastest growing industries in North Carolina (ncworks.gov), indicates that three of the top ten are areas where a degree in biology would strongly benefit the applicant. These three areas—ambulatory health care

APPENDIX F

services (#3), waste management and remediation services (#9) and professional, scientific, and technical services (#10)—have unique prerequisite skill sets that can rapidly change as technological advances influence development in these fields.

Consistent with state and national trends, regional biotechnology and pharmaceutical industries are shifting toward biologically based therapeutics or biologics, which will require skilled employees who understand the behavior and characteristics of biological molecules, such as proteins. Area industries estimate that within the next decade over 70% of their production will have shifted to these biologics as opposed to the traditional focus on small-molecule chemistry.

- 4. Potential for Unnecessary Duplication.** The proposed degree program should have little, if any, impact on programs at other UNC System institutions. BA programs in biology are present and popular at most larger institutions within the UNC System (Appalachian, NC State University, UNC Charlotte, UNC-Chapel Hill, UNC Greensboro, and UNC Wilmington) and at major universities more broadly. Given that growing sectors of the job market require a strong background in biology, more flexible BA programs are now a necessity, particularly at larger universities.
- 5. Employment Opportunities for Graduates.** According to the Bureau of Labor Statistics (BLS), several occupations related to biology have positive job prospects for graduates. Biological technicians have a median annual wage of \$44,500 and projected job growth of 7 percent from 2018 to 2028. Zoologists and wildlife ecologists have a median annual wage of \$63,420 and projected job growth of five percent from 2018 to 2028. Forensic Science Technicians have a median annual wage of \$58,230 and projected job growth of 14 percent from 2018 to 2028.
- 6. Faculty Quality and Number.** Existing faculty are adequate to initiate the proposed program. As enrollment grows, ECU anticipates two additional fixed-term faculty will be needed to accommodate student needs in core courses.
- 7. Availability of Campus Resources (library, space, etc.)** ECU's Joyner Library and the William E. Laupus Health Sciences Library have adequate resources to support the proposed degree program. Both libraries provide library orientations, instruction sessions, and research assistance to students using a variety of methods, including web conferencing, resources embedded in the course management system, pre-recorded video, and in-person meetings at the request of the teaching faculty member. The libraries offer a collection of online databases and collections, including eBooks, primary sources, and other resources. In addition, students may have contact with liaison librarians who partner with faculty to provide instruction, synchronously or asynchronously.

Existing facilities are adequate to support the proposed degree program. Existing office space for faculty would be sufficient and increased enrollment would be absorbed by current facilities.
- 8. Relevant Lower-level and Cognate Programs.** No other subject-matter fields will be necessary to support the proposed degree program.
- 9. Impact on Access and Affordability.** No tuition differential or enrollment increase funds will be sought to support the proposed degree program.

APPENDIX F

Tuition and fees for spring 2020 are as follows:

Full-Time Undergraduate Tuition and Fees Per Annum (In Dollars)

Category	Resident	Non-Resident
Tuition	4,452	20,729
Mandatory Fees (Activities, Athletics, Health, Debt Service, Campus Safety)	2,616	2,616
ASG	1	1
Special Fees (Program Specific)	N/A	N/A
Application Fee (Program Specific)	N/A	N/A
Total Tuition and Fees	7,069	23,346

10. Expected Quality. The success of the program will be judged by evaluating enrollment, student proficiency in learning outcomes, retention and graduation rates, job placement, and the satisfaction of graduates and employers.

11. Feasibility of Collaborative Program. Consistent with ECU's BS program, collaborations with other institutions offering related degrees would occur through presentations, conferences, speakers, and other events. It is expected that ECU students in the proposed degree program would enroll in relevant courses at other institutions and vice versa. Given the flexibility conferred by the BA curriculum, students may find relevant transfer courses in specialized areas of focus at other UNC System institutions.

12. Other Considerations. None.

III. Summary of Review Processes

Campus Review Process and Feedback. The proposal was reviewed by the ECU faculty, department and university curriculum committees, the provost, and chancellor. Approval was obtained at all levels.

UNC System Office Review Process and Feedback. Throughout the review process, ECU provided relevant information pertaining to program requirements and resources. The institution submitted appropriate documentation and research to support its statements. Reviewers evaluated the proposal and requests for information were provided by the institution.

IV. Recommendation

It is recommended that the Board of Governors approve ECU's request to establish a Bachelor of Arts in Biology degree program (CIP 26.0101) to enroll students starting Fall 2020.

**Request for Authorization to Establish a
Bachelor of Science in Business Administration in Supply Chain Management
(BS, CIP 52.0203) at
East Carolina University**

I. Program Highlights

- East Carolina University's proposed Bachelor of Science in Business Administration in Supply Chain Management degree program would prepare students for careers managing supply chain systems for industry, government, and organizations. Career options include positions as supply chain managers, supply chain analysts, supply chain directors, purchasing agents, purchasing directors, logistics directors, and quality managers.
- The proposed degree program would require 120 total credit hours. The proposed curriculum would require general education courses (40 credit hours), cognate courses (3 credit hours), entrepreneurship core courses (45 credit hours), leadership courses (9 hours), electives (5 credit hours), and a minor or specialty area as approved by the program director (18 credit hours).
- The proposed degree program would be administered on campus and online (100 percent).
- One hundred and fifteen full-time students and 45 part-time students are projected in the first year (130 are expected to enroll in courses on campus and 30 are expected to enroll in online courses). One hundred and forty-five full-time students and 105 part-time students are projected by the fourth year (155 are expected to enroll in courses on campus and 105 are expected to enroll in online courses).
- No tuition differential will be sought to support the proposed degree program.
- No new faculty are required for the proposed program at current levels of enrollment.
- The library's resources are adequate to support the proposed degree program.
- Existing facilities are adequate to support the proposed degree program.

II. BOG Academic Program Planning Criteria (UNC Policy 400.1)

1. **Existing Programs (Number, Location, Mode of Delivery).** UNC System institutions offering a BS in business administration in supply chain management or similar programs include Appalachian State University, North Carolina Agricultural and Technical State University, and University of North Carolina at Charlotte. Each program is offered on campus.
2. **Relation to Campus Distinctiveness and Mission.** The proposed degree program would align with ECU's mission to prepare students with knowledge, skills, and values to succeed. It would also serve ECU's strategic plan, *Capture Your Horizon*, in the areas of student success and regional transformation.
3. **Demand (local, regional, state).** The Institute of Education Sciences rates supply chain-related occupations as having a 'bright outlook.' There are currently over 4,000 job openings advertised online in the state of North Carolina for occupations related to supply chain management, with 1,650 related specifically to the discipline.
4. **Potential for Unnecessary Duplication.** The proposed degree program would be the only BSBA in supply chain management in the eastern part of North Carolina. It would also be the only supply chain management program in the state authorized for online delivery.

APPENDIX F

ECU has offered a BSBA in marketing with a concentration in supply chain management for 12 years alongside other supply chain programs in the UNC System (Appalachian, North Carolina A&T State University, and UNC Charlotte). Each program has experienced enrollment growth, suggesting that all are needed in the UNC System. In addition, the proposed degree program at ECU would be unique because it concentrates on supply chain management strategy, logistics, and materials management purchasing. The curricular content would differ from existing programs to the extent that it would need a separate CIP code (52.0203). The UNC Charlotte program (CIP 52.0205) concentrates on operations management, analytics, and modelling, while North Carolina A&T State University's program (CIP 52.0209) is a BS in supply chain management that does not focus on the broader business administration aspect, including the related classes of a BSBA.

5. **Employment Opportunities for Graduates.** The Bureau of Labor Statistics (BLS), provides several job outlooks for occupations related supply chain management. The BLS projects an average job growth of 22 percent for these professions nationwide. RSI Logistics, a rail management company, *Fortune Magazine*, *U.S. News and World Report*, and other industry-related websites indicate that supply chain-related jobs are expected to grow 30 percent annually. The average annual salary (2016) for all supply chain management positions (with the BSBA) in the United States is \$116,925. The average entry level salary is \$50,000.
6. **Faculty Quality and Number.** No new faculty are required for the proposed degree program at current levels of enrollment. If enrollment increases over the next four years, the current faculty have the capacity to absorb new students because current class sizes are below the cut-off limits as determined by the ECU College of Business.
7. **Availability of Campus Resources (library, space, etc.).** ECU's Joyner Library has adequate resources to support the proposed degree program. The library offers an extensive collection of online databases and collections which include eBooks, abstract/indexing information, primary sources, business and statistical data appropriate to support the proposed curriculum. In addition, students enrolled through distance education are provided special services to ensure access to the library's physical and electronic collections. Many librarians and staff members work directly with distance students, offering library orientations, instruction sessions, and research assistance using a variety of methods, including web conferencing, resources embedded in the course management system, pre-recorded video, and in-person meetings (at the request of the teaching faculty member).

Existing facilities are adequate to support the proposed degree program. Given that the ECU College of Business currently supports the concentration in supply chain management, the proposed degree program, which will replace the concentration, will continue to use existing classrooms, facilities, and equipment for all courses.

8. **Relevant Lower-level and Cognate Programs.** Students must gain admittance to the College of Business and complete all prerequisites. No other subject-matter fields will be necessary to support the proposed degree program.
9. **Impact on Access and Affordability.** No tuition differential will be sought to support the proposed degree program.

APPENDIX F

Tuition and fees for spring 2020 are as follows:

Full-Time Undergraduate Tuition and Fees Per Annum (In Dollars)

Category	Resident	Non-Resident
Tuition	4,452	20,729
Mandatory Fees (Activities, Athletics, Health, Debt Service, Campus Safety, ASG)	2,616	2,616
Association of Student Govt	1	1
Special Fees (Program Specific)	N/A	N/A
Application Fee (Program Specific)	N/A	N/A
Total Tuition and Fees	7,069	23,346

10. Expected Quality. The success of the program will be judged by evaluating enrollment, student proficiency in learning outcomes, retention and graduation rates, job placement, and the satisfaction of graduates and employers.

11. Feasibility of Collaborative Program. ECU faculty meet with colleagues from other institutions with supply chain management programs during conferences of the Institute for Supply Management (ISM) and the Council for Supply Chain Management Professionals (CSCMP). The faculty regularly discuss opportunities for collaboration with other institutions. Current collaborations include research projects and pedagogical discussions. In addition, undergraduate students in supply chain management may attend events with students from other institutions.

12. Other Considerations. None.

III. Summary of Review Processes

Campus Review Process and Feedback. The proposal was reviewed by the ECU faculty, department and university curriculum committees, the provost, and chancellor. Approval was obtained at all levels.

UNC System Office Review Process and Feedback. Throughout the review process, ECU provided relevant information pertaining to program requirements and resources. The institution submitted appropriate documentation and research to support its statements. Reviewers evaluated the proposal and requests for information were provided by the institution.

IV. Recommendation

It is recommended that the Board of Governors approve ECU's request to establish a Bachelor of Science in Business Administration in Supply Chain Management degree program (CIP 52.0203) to enroll students starting Fall 2020.

**Request for Authorization to Establish a
Bachelor of Science in Professional Writing and Information Design
(BS, CIP 23.1303) at
East Carolina University**

I. Program Highlights

- East Carolina University's proposed Bachelor of Science in Professional Writing and Information Design degree program would prepare students for careers in scientific, technical, and health writing and editing; user experience and usability of information; information design; and documentation, content creation, and document management for industry, government, and organizations. Technical communicators and information designers bridge the gap between subject matter experts (e.g., scientists and engineers) and those who must understand or implement their ideas.
- The proposed degree program would require 120 total credit hours. The proposed curriculum would require general education courses (40 credit hours), major core courses (46 credit hours), electives (15 credit hours), and a minor or structured electives as necessary to complete credit hour requirements for graduation. In addition, students would be required to complete 6 credit hours in an internship and a senior portfolio.
- The proposed degree program would be administered on campus (75 percent) and online (25 percent).
- Ten full-time students and two part-time students are projected in the first year. Sixty full-time students and eight part-time students are projected by the fourth year.
- No tuition differential will be sought to support the proposed degree program.
- Based on enrollment projections by the fourth year, the proposed degree program would need two tenure-line faculty specializing in areas such as international professional communication; technical, scientific, and/or medical rhetoric and writing; information design and digital information development. In addition, a full-time fixed-term faculty would be needed to offer service courses. The funding required at year four is estimated to be \$190,000.
- The library's resources are adequate to support the proposed degree program.
- Existing facilities are adequate to initiate the proposed degree program. Given anticipated enrollment increases by year four, two additional dedicated, digitally equipped flexible classrooms may be needed, at an anticipated cost of \$275,000 for technology and furniture.

II. BOG Academic Program Planning Criteria (UNC Policy 400.1)

1. **Existing Programs (Number, Location, Mode of Delivery).** No other institution in the UNC System offers a BS in professional or technical writing and information design or similar program. None of the 36 private institutions in North Carolina offer a comparable program in professional or technical writing.
2. **Relation to Campus Distinctiveness and Mission.** The proposed degree program would align with ECU's mission to prepare students with knowledge, skills, and values to succeed. It further serves ECU's goals for public service and regional transformation by preparing students for careers in demand in the pharmaceutical, medical, financial, and software industries.

APPENDIX F

- 3. Demand (local, regional, state).** Information design and writing skills are sought by businesses, industries, and organizations. North Carolina employment projections suggest graduates with degrees that prepare professionals in technical writing, information design, and related emerging specialties will be positioned for opportunities over the next decade. Current state demand for graduates with these skills is high, with over 1,000 related jobs listed online as of December 4, 2017. Of note is projected growth in demand for technical writers of 22.6 percent by 2024 (median 2016 salary \$74,350), led by expanding software, hardware, consumer electronics, pharmaceutical, and financial services industries; user experience (UX) designers responsible for improving use of applications, documents, and information applications (19 percent projected national growth, North Carolina average salary of \$70,397), and document management professionals (10-year job growth 5-9 percent nationally, 4 percent in North Carolina, salary range \$46,190-118,900).
- 4. Potential for Unnecessary Duplication.** No other institution in the UNC System offers a BS in professional or technical writing and information design or similar program. Within the UNC System, eight schools offer minors, concentrations, or tracks within English BA programs that share some content and goals with the proposed degree program. These include Appalachian State University (concentration in professional writing); North Carolina Agricultural and Technical State University (concentration in technical writing); North Carolina State University (concentration in language, writing, and rhetoric); University of North Carolina at Chapel Hill (minor in composition, rhetoric, and digital literacy); University of North Carolina at Charlotte (concentration in language and digital technology); The University of North Carolina at Greensboro (concentration in language and digital technology); University of North Carolina Wilmington (track in professional writing); and Western Carolina University (concentration in professional writing). None of these options is offered completely online or onsite. None of the 36 private institutions in North Carolina offer a comparable program in professional or technical writing. However, 11 private institutions offer similar minors, certificates, or concentrations in English BA programs.
- 5. Employment Opportunities for Graduates.** According to the Bureau of Labor Statistics (BLS), projected nationwide growth for technical writers and information design specialists is 11 percent from 2016-2026; job growth is expected for professional services. The BLS reports, "Professional, scientific, and technical services firms are expected to continue to grow rapidly and should be a good source of new jobs." Many of these will be in STEM fields that require people trained in writing and designing information for technical and scientific products and communications.

Continued growth of online and mobile services in various fields, information needs, and product support will further increase job prospects for graduates of the proposed degree program. Individuals with skills in content creation and curation, information design, user experience, and web development will be well positioned to serve businesses and organizations (particularly for those with some skills in HTML, CSS, JavaScript, and other mark-up tools).

- 6. Faculty Quality and Number.** Based on enrollment projections by the fourth year, the proposed degree program would need two tenure-line faculty specializing in areas such as international professional communication; technical, scientific, and/or medical rhetoric and writing; information design and digital information development. In addition, a full-time fixed-term faculty

APPENDIX F

would be needed to offer service courses. The funding required at year four is estimated to be \$190,000.

- 7. Availability of Campus Resources (library, space, etc.)** East Carolina University's Joyner Library has adequate resources to support the proposed degree program. Students would be able to access materials and services that have been routinely available to faculty. Faculty may request books periodically through the academic department's library committee.

Existing facilities are adequate to initiate the proposed degree program. Given anticipated enrollment increases by year four, two additional dedicated, digitally equipped flexible classrooms may be needed, at an anticipated cost of \$275,000 for technology and furniture.

- 8. Relevant Lower-level and Cognate Programs.** The proposed degree program may require students to add structured electives, minors, a second major, or certificates from a variety of disciplines, including communication, creative writing, linguistics, social sciences, or physical sciences, among others. For example, a student might consider the Multi-Disciplinary Composite Science Minor and the Business and Technical Communication certificate to prepare for a career in science writing. Another student may choose a minor or take structured electives in communication to add to their understanding of media culture.

- 9. Impact on Access and Affordability.** No tuition differential will be sought to support the proposed degree program.

Tuition and fees for spring 2020 are as follows:

Full-Time Undergraduate Tuition and Fees Per Semester (In Dollars)

Category	Resident	Non-Resident
Tuition	4,452	20,729
Mandatory Fees (Activities, Athletics, Health, Debt Service, Campus Safety)	2,616	2,616
Association of Student Govt	1	1
Special Fees (Program Specific)	N/A	N/A
Application Fee (Program Specific)	N/A	N/A
Total Tuition and Fees	7,069	23,346

- 10. Expected Quality.** The success of the program will be judged by evaluating enrollment, student proficiency in learning outcomes, retention and graduation rates, job placement, and the satisfaction of graduates and employers.

- 11. Feasibility of Collaborative Program.** NC State University is the closest institution that offers a concentration in a similar area. NC State University also offers a PhD program with affinities to ECU's PhD program in rhetoric, writing, and professional communication. Faculty and students at both ECU and NC State University participate in the Raleigh chapter of the professional organization, The Society for Technical Communication. ECU will actively pursue a closer,

reciprocal relationship with the programs at NC State University to assist students in developing peer and professional networks.

12. Other Considerations. None.

III. Summary of Review Processes

Campus Review Process and Feedback. The proposal was reviewed by the ECU faculty, department and university curriculum committees, the provost, and chancellor. Approval was obtained at all levels.

UNC System Office Review Process and Feedback. Throughout the review process, ECU provided relevant information pertaining to program requirements and resources. The institution submitted appropriate documentation and research to support its statements. Reviewers evaluated the proposal and requests for information were provided by the institution.

IV. Recommendation

It is recommended that the Board of Governors approve ECU's request to establish a Bachelor of Science in Professional Writing and Information Design degree program (CIP 23.1303) to enroll students starting Fall 2020.

**Request for Authorization to Establish a
Master of Science in Applied Statistics
(MS, CIP 27.0601) at
University of North Carolina at Greensboro**

I. Program Highlights

- The University of North Carolina at Greensboro's proposed Master of Science in Applied Statistics degree program would prepare students for careers in health and insurance sectors, government agencies, and business entities. The target student population for this program will be students with a bachelor's degree in a quantitative field. UNC Greensboro already provides the curriculum through a concentration in the MS in Mathematics. However, the curriculum closely resembles what most institutions call a statistics degree. Therefore, the existing degree title, "MA in Mathematics," does not fully convey what students learn within the applied statistics concentration. The proposed degree program would better represent graduates' proficiency in statistics to prospective employers.
- The proposed degree program would require 30 credit hours. The curriculum would include core courses (15 credit hours), elective courses (12 credit hours), and a capstone experience (3 credit hours).
- The proposed degree program would be administered on campus.
- Five full-time students and one part-time student are projected in the first year. Fourteen full-time students and six part-time students are projected by the fourth year.
- No tuition differential will be sought to support the proposed degree program.
- Existing faculty are adequate to support the proposed degree program. The proposed curricular content would continue the courses in an existing concentration within the MA in Mathematics.
- The library's resources are adequate to support the proposed degree program.
- Existing facilities are adequate to support the proposed degree program.

II. BOG Academic Program Planning Criteria (UNC Policy 400.1)

1. **Existing Programs (Number, Location, Mode of Delivery).** UNC System institutions offering programs similar to the proposed degree program include North Carolina State University (on campus and online), University of North Carolina at Chapel Hill (on campus), and University of North Carolina at Charlotte (on campus). In addition, Duke University offers a master's degree in statistical science (on campus).
2. **Relation to Campus Distinctiveness and Mission.** The proposed degree program would support UNC Greensboro's mission of "meeting social, economic, and environmental challenges in the Piedmont Triad, North Carolina, and beyond." The flexibility and accessibility of instruction would support the mission's goal to provide "learner-centered, accessible, and inclusive" programs that foster "intellectual inquiry to prepare students for meaningful lives and engaged citizenship."

The proposed degree program supports the mission of the UNC System to "impart the skills necessary for individuals to lead responsible, productive, and personally satisfying lives," and "address the needs of individuals and society" by training statistics professionals to meet the increasing demand to solve problems in a data-centric world.

APPENDIX F

- 3. Demand (local, regional, state).** According to EAB (formerly the Education Advisory Board), graduates from statistics programs find employment easily in government agencies, business, and industry. EAB profiled contacts at institutions who reported that graduates most commonly enter data- and business-related roles. Data-related roles (e.g., 'data scientist') comprise seven of the 20 most in-demand positions for master's-level applied statistics professionals during the past 12 months. Regional employers posted 332 roles with one of these seven titles, which account for 10 percent of all their postings for master's-level applied statistics professionals during the past 12 months (332 of 3,199 postings). The most common data titles posted by regional employers include 'data analyst' (113 postings), 'data scientist' (67 postings) and 'biostatistician' (60 postings).
- 4. Potential for Unnecessary Duplication.** The proposed degree program would be differentiated from existing programs because it would serve as a terminal degree that is not intended to prepare students for a PhD program. Students would be required to complete an applied project as the capstone of the degree, while most of the similar degrees offered by UNC System institutions allow students a thesis option. The proposed degree program would provide greater flexibility for students to choose applied statistics courses or courses from a discipline related to an area of application over theoretical statistics courses, broadening their technical expertise and enhancing their job readiness. This could make the program more attractive to industry professionals who want to tailor their program to meet the needs of their profession.
- 5. Employment Opportunities for Graduates.** A market research brief from EAB, *Market Viability of a Master's-Level Applied Statistics Program*, reported projections from the U.S. Bureau of Labor Statistics (BLS) of 33 percent growth in demand for "mathematicians and statisticians" between 2016 and 2026, significantly faster than the projected seven and a half percent across all occupations. The BLS attributes employment growth of "mathematicians and statisticians" to an increased utilization of statistical analysis to inform decision making across the government, for-profit, and non-profit sectors." EAB's report stated that "Nationally, employer demand for master's-level applied statistics professionals grew 32 percent between H2 2013 and H2 2017 (40,805 of 53,890 postings).
- 6. Faculty Quality and Number.** Existing faculty are adequate to support the proposed degree program. The proposed curricular content would continue the courses in an existing concentration within the MA in Mathematics.
- 7. Availability of Campus Resources (library, space, etc.).** UNC Greensboro's University Libraries provide access to adequate physical and online resources to students, faculty, and staff. The Libraries' collections consist of a variety of formats, including more than 1.2 million print monographs, over 620,500 federal and state documents, more than 300,000 microforms, and 49,000 audio units. The Libraries provide access to more than 50,000 serial titles, of which over 45,000 are electronic journals. In recent years, the number of electronic books (e-Books) has increased substantially, with over 370,000 accessible. UNC Greensboro users can access more than 650 electronic databases, including major social science data resources such as ICPSR and Roper Center. The Libraries have also helped faculty acquire publisher data for data mining projects and provided access to electronic journal or book databases from MathSciNet, AMS Primary Research Journal Archive, Project Euclid, Europaena Mathematics Digital Library, and zbMATH. The Libraries have supported study in statistics through access to papers published at JSTOR, ScienceDirect, Scopus, and Wiley Online Library.

APPENDIX F

Existing facilities are adequate to support the proposed degree program. The Department of Mathematics and Statistics currently has a variety of facilities and equipment supporting its bachelor's, master's, and PhD programs. Courses are scheduled in classrooms equipped with modern instructional facilities, including teaching workstations, projectors and document cameras. Students in the department have access to both university-managed general-purpose computer labs (468 computers in 12 general-purpose labs) and an exclusive-access shared computer lab with the Computer Science department (22 computers), as well as cloud access to most software licensed by UNC Greensboro.

- 8. Relevant Lower-level and Cognate Programs.** UNC Greensboro's BS in Mathematics program is expected to be a source of students for the proposed degree program. There are also several undergraduate programs in mathematics and statistics in the region at institutions without graduate programs in statistics. In particular, the new program is likely to attract graduates of a recently developed undergraduate degree in statistics at Elon University.

Collaborative research between statistics and other disciplines demonstrates the value of fields that engage in quantitative research. Current and past departments that statistics faculty have collaborated with include Biology, Chemistry, Education, Geography, Information Systems, Kinesiology, Music, Psychology, and Public Health, all of which have active graduate programs. Each of these programs are established and do not require any improvement or expansion to support the proposed degree program.

- 9. Impact on Access and Affordability.** No tuition differential will be sought to support the proposed degree program.

Tuition and fees for spring 2020 are as follows:

Full-Time Graduate Tuition and Fees Per Annum (In Dollars)

Category	Resident	Non-Resident
Tuition	5,219	18,937
Mandatory Fees (Activities, Athletics, Health, Debt Service, Campus Safety)	2,865	2,865
Association of Student Govt	1	1
Special Fees (Program Specific)	N/A	N/A
Application Fee (Program Specific)	N/A	N/A
Total Tuition and Fees	8,085	21,803

- 10. Expected Quality.** The success of the program will be judged by evaluating enrollment, student proficiency in learning outcomes, retention and graduation rates, job placement, and the satisfaction of graduates and employers.

APPENDIX F

11. Feasibility of Collaborative Program. Opportunities for collaboration may occur through a sharing relationship for internships, practica, or other site-based capstone projects. This could take the form of an online colloquium that is common to all institutions as part of the experiential learning component. This colloquium would serve all institutions, avoiding unnecessary duplication of effort among the campuses.

12. Other Considerations. None.

III. Summary of Review Processes

Campus Review Process and Feedback. The proposal was reviewed by the UNC Greensboro faculty, department and university curriculum committees, the provost, and chancellor. Approval was obtained at all levels.

UNC System Office Review Process and Feedback. Throughout the review process, UNC Greensboro provided relevant information pertaining to program requirements and resources. The institution submitted appropriate documentation and research to support its statements. Reviewers evaluated the proposal and requests for information were provided by the institution.

IV. Recommendation

It is recommended that the Board of Governors approve UNC Greensboro's request to establish a Master of Science in Applied Statistics degree program (CIP 27.0601) to enroll students starting Fall 2021.