PROPOSAL – 1
NEW CERTIFICATE OR DEGREE PROGRAM

1. PROPOSED PROGRAM TITLE
   Ph.D. in Statistics and Analytics

2. CIP CODE REQUESTED
   27.0501

3. CONTACT PERSON
   Name: Dr. Sharon Gaber
   Name of Institution: University of Arkansas, Fayetteville
   E-mail Address: sgaber@uark.edu
   Phone Number: 479/575-2151

4. PROPOSED STARTING DATE
   Fall 2014

5. PROGRAM SUMMARY
   Provide a general description of the proposed program. Include overview of
   any curriculum additions or modifications; program costs; faculty resources,
   library resources, facilities and equipment; purpose of the program; and any
   information that will serve as introduction to the program.

   The Ph.D. in Statistics and Analytics will be a cross-college interdisciplinary
   program building on our current strengths in the Colleges of Agricultural,
   Food and Life Sciences; Arts and Sciences; Business; Education and Health
   Professions; and Engineering. It will build on our Master of Science degree in
   Statistics, which will be renamed Statistics and Analytics. Requirements for
   the Ph.D. will include a minimum of 72 hours of graduate coursework, 30 of
   which may be satisfied by the requirements for the M.S. degree, and a
   minimum of 18 hours of dissertation. The student will select one of six
   concentrations in Statistics; Business Analytics; Operations Analytics;
   Computational Analytics; Educational Statistics & Psychometrics; or
   Quantitative Social Sciences. In addition to four core courses that every
   student will be required to take (Regression I, Statistical methods,
   Multivariate Analyses, and Experimental Design), an advisory committee will
   help each student select course work which is most appropriate for his/her
   areas of research interest from courses currently taught on campus. We are
   not proposing to create new courses as we already have considerable
   strengths in each of the concentration areas across the colleges.

   Program costs will include those associated with compensating the program
   director, a half-time administrative assistant, a maintenance budget for the
   program, and GA stipends. We will not require additional facilities or equipment.
   Additional library resources will also be required, but the director of the University
   of Arkansas Libraries has indicated her interest in creating a data repository.
   According to Dean Allen, a "data repository can offer the opportunity for large-scale
   text and data mining in fields such as Statistics, Finance, Mathematics,

Economics, etc. by making all departmental large-scale data sets available campus-wide which could in turn be widely used for extensive research and teaching."

List degree programs or emphasis areas currently offered at the institution that support the proposed program.

Degree programs that are currently offered that will support this program include:
- Master of Science in Statistics, which will be renamed Statistics and Analytics
- Master of Science in Computer Engineering
- Ph.D. in Computer Science
- Ph.D. in Engineering with a concentration in Computer Engineering
- Master of Science in Industrial Engineering
- Ph.D. in Engineering with a concentration in Industrial Engineering
- M.S. and Ph.D. in Crop, Soil & Environmental Sciences
- M.A. and Ph.D. in Economics
- Master of Information Systems
- Ph.D. in Business Administration with a concentration in Information Systems
- M.S. and Ph.D. in Mathematics
- M.A. in Political Science
- M.A. and Ph.D. in Psychology
- M.A. in Sociology

6. NEED FOR THE PROGRAM (Submit Employer Needs Survey Forms) Provide survey data (number not percentage) on student interest (number of students planning to enroll), job availability, corporate demands and employment/wage projections. Focus mostly on state needs and less on regional and national needs, unless applicable to the program.

Survey data can be obtained by telephone, letters of interest, student inquiry, etc. Focus mostly on state needs for undergraduate programs; and state, regional and national needs for graduate programs.

Provide names/types of organizations/businesses surveyed.

Letters of support should address the following when relevant: the number of current/anticipated job vacancies, whether the degree is desired or required for advancement, the increase in wages projected based on additional education, etc.

Indicate if employer tuition assistance is provided or other enrollment incentives.

Describe what need the proposed program will address and how the institution became aware of this need.

Indicate the composition of the program advisory committee, including the number of members, professional background of members, topics to be considered

by the members, meeting schedule (annually, bi-annually, quarterly), institutional representative, etc.

Indicate the projected number of program graduates in 3-5 years.

In a white paper prepared earlier this year, the UA deans wrote: "Analytics covers a broad spectrum, including data management, mathematical and statistical methods for data modeling, and techniques for data visualization in support of enterprise-wide decision making. Driving analytics is the unprecedented amount of data now available to organizations. There is a pressing need for professionals with strong quantitative skills coupled with an understanding of how analytics can be applied with speed and accuracy to the critical decisions facing organizations. Furthermore, understanding and using statistical methods is central to our research efforts across the university.

"Most major research universities house PhD-granting, research based statistics programs providing graduate level research, a large service mission, a statistics major, and statistical consulting. There is clear and growing demand for statistical training, at all levels, and nationally there is an increasing need for graduate level statisticians; these degrees have economic utility and generally are able to attract large numbers of students. Increasingly, statistics training is part of many professional programs, and statistics is beginning to be more prominent on tests such as the MCAT and GRE."

[add employer survey results]

We anticipate 12 new students/year in the Ph.D. program.

7. CURRICULUM

Provide curriculum outline by semester (course number/title).
(For bachelor's degree program, submit the 8-semester degree plan.)

Give total number of semester credit hours required for the program, including prerequisite courses.

Identify 35-hour state minimum general education core courses (in italics).

Identify required courses that meet institutional and program area/degree major requirements.

Identify new courses (with an underline) and provide course descriptions.
Identify courses currently offered by distance technology (with an asterisk).
Indicate the number of contact hours for internship/clinical courses.

For each program area/major course, provide the name of the faculty teaching the course.

State program admission requirements.

Describe specified learning outcomes and course examination procedures.

Include a copy of the course evaluation to be completed by the student. (Course evaluations should request student comments on textbook use (amount/level of use), and faculty communication (speak clearly, can be understood).

Include information received from potential employers about course content.

Provide institutional curriculum committee review/approval date for proposed program.

Requirements for the Ph.D. will include a minimum of 72 hours of graduate coursework, 30 of which may be satisfied by the requirements for the M.S. degree, and a minimum of 18 hours of dissertation. Individual students may also be required to complete up to 10 deficiency hours, depending on the concentration they select.

Students will be admitted to the Ph.D. program based on these minimum requirements:
- Minimum undergraduate GPA of 3.0 on the last 60 hours of baccalaureate work or successful completion of a master's degree
- Selection by admission committee
- Identification of program advisor/major professor
- Standardized test acceptable to the concentration area

Each Ph.D. student will be required to complete course work equivalent to Regression I, Statistical Methods, Multivariate Analyses, and Experimental Design. These will be completed in the student's first two semesters, if the requirements were not satisfied by master's-level work.

In the next two-four semesters, students will be expected to complete course work relevant to their research area, unless previously satisfied by their master's-level work. This course work includes the following along with appropriate electives selected in consultation with the student's advisory committee, to reach a total of 54 course hours and 18 hours of dissertation credit.
- Statistics: Theory of Statistics (probability); Statistical Inference; Analysis of Categorical Responses; Statistical Computation
- Business Analytics: Database Analysis; Data Mining
- Operations Analytics: Simulation; Optimization I; Data Mining
- Computational Analytics: Data Mining; Database
- Educational Statistics & Psychometrics: Measurement; Educational Assessment
- Quantitative Social Sciences: Generalized linear models and extensions; multivariate techniques; time series analysis; panel data analysis

Following approximately two years of doctoral-level course work, students will be expected to complete a candidacy exam in three steps: the student will a) propose an area of research; b) be tested by his/her dissertation committee in that area; and c) present a dissertation proposal.

No new course work is being proposed. Current courses exist that may be selected for each of the concentration areas, with the approval of the advisory committee. They are listed below, with current instructor identified. All University of Arkansas courses are evaluated using an on-line system. The inventory of survey items can be found in Appendix A. Course descriptions, methods of evaluating student progress, and specific learning objectives may be found in our on-line graduate catalog at catalog.uark.edu.

- AGST 4011 Intro to SAS Programming (E. Gbur; A. Mauromoustakos)
- AGST 4023 Principle of Experimentation (E. Gbur; A. Mauromoustakos)
- AGST 5014 Experimental Design (E. Gbur; A. Mauromoustakos)
- AGST 5713 Applied Regression Analysis for Agricultural Science (E. Gbur; A. Mauromoustakos)

- CSCE 4253 Concurrent Computing (G. Beavers)
- CSCE 4433 Cryptography (G. Beavers)
- CSCE 5013 Special Topics: Machine Learning (M. Gashler)
- CSCE 5013 Special Topics: Statistical Natural Language Processing (S. Gauch)
- CSCE 5203 Advanced Database Management Systems (B. Panda)
- CSCE 5213 Bioinformatics (faculty replacement)
- CSCE 5323 Computer Security (B. Panda)
- CSCE 5333 Computer Forensics (B. Panda)
- CSCE 5283 Graph Algorithms (W. Li)
- CSCE 5433 Advanced Cryptography (G. Beavers)
- CSCE 5653 Network Security (D. Thompson)
- CSCE 5703 Computer Vision (J. Gauch)

- ESRM 5013 Research Methods in Education (C. Stegman)
- ESRM 5393 Statistics in Education & Health Professions (to be hired)
- ESRM 5653 Educational Assessment (S. Mulvenon)
- EDRE 6213 Program Evaluation and Research Design (P. Wolf)
- ESRM 6403 Educational Statistics and Data Processing (C.Stegman; WJ Lo)
- ESRM 6413 Experimental Design in Education (WJ Lo)
- ESRM 6423 Multiple Regression Techniques for Education (S. Mulvenon)
- ESRM 6453 Applied Multivariate Statistics (J. Khojasteh)
- ESRM 6513 Advanced Experimental Design (WJ Lo)
- ESRM 6523 Advanced Multiple Regression (WJ Lo)
- ESRM 6553 Advanced Multivariate Statistics (WJ Lo)
- ESRM 6653 Measurement and Evaluation (R. Turner)
- ESRM 6753 Advanced Measurement (R. Turner)

- INEG 4323 Quality Engineering and Management (S. Zhang, J. Chimka)
- INEG 4383/5383* Risk Analysis for Transportation and Logistics Systems (E. Pohl)
- INEG 5313* Engineering Applications of Probability Theory and Stochastic Processes (R. Cassady)
- INEG 5323* Reliability (R. Cassady, E. Pohl)

- INEG 5333 Design of Industrial Experiments (E. Pohl)
- INEG 5343 Advanced Quality Control (J. Chimka)
- INEG 5363 Generalized Linear Models (J.Chimka)
- INEG 5373 Repairable Systems Modeling (R. Cassady, E. Pohl)
- INEG 5393 Applied Regression Analysis for Engineers (J. Chimka)
- INEG 5433* Cost Estimation Model (H. Nachtmann, E. Pohl)
- INEG 5443* Decision Models (H. Nachtmann, G. Parnell)
- INEG 5613 - Optimization 1 (K.Sullivan, S. Root)
- INEG 5683* Nonlinear Programming (E. Pohl)
- INEG 5693 Heuristic Optimization (E. Pohl)
- INEG 5803* Simulation (M. Rossetti)
- INEG 5823 System Simulation (M. Rossetti)
- INEG 6823 System Simulation II (M. Rossetti)
- INEG 5323* Reliability (E. Pohl, R. Cassady)
- INEG 4383/5383* - Risk Analysis for Transportation and Logistics Systems (E. Pohl)
- INEG 6113 Linear Optimization (Rainwater, Sullivan)
- INEG 6313 Network Optimization (Sullivan, Rainwater)
- INEG 6613 Operations Research Applications (S. Root, R. Cassady)

- ISYS 5113* – IT Toolkit (P. Cronan)
- ISYS 5203: Experimental Design (T. Jones)
- ISYS 5503* – Business Analytics & Decision Support (J. Aloysius)
- ISYS 5623: Multivariate Analysis (F. Davis)
- ISYS 5723: Advanced Multivariate Analysis (V. Venkatesh)
- ISYS 5843* – Data Mining and Business Intelligence (D. Douglas)
- ISYS 5883* – Database

- MATH 4353 Numerical Linear Algebra (M. Arnold)
- MATH 4363 Numerical Analysis (M. Arnold)
- MATH/PHYS 5363 Scientific Computation (M. Arnold)

- PADM 5803 Quantitative Methods Analysis (J. Mitchell)
- PADM 5863 Policy Analysis: Theory and Practice (G. Song)
- PLSC 5913 Research Methods in Political Science (G. Song)
- PLSC 5943 Advanced Research Methods in Political Science (G. Song)
- PLSC 5983 Mixed Methods Research Design (J. Gaber)

- PSYC 5133. Inferential Statistics for Psychology (W. Levine)
- PSYC 5143. Advanced Descriptive Statistics for Psychology (W. Levine)

- SOCI 5313. Applied Data Analysis (and 1hr lab)(S. Yang)

- STAT 4003 Statistical Methods (L. Meaux)
- STAT 4033 Nonparametric Statistical Methods (G. Petris)
- STAT 4373 Experimental Design (L. Meaux)
- STAT 5103 Introduction to Probability Theory (G. Petris)
- STAT 5113 Statistical Inference (G. Petris)

- STAT 5313 Regression Analysis (J. Han)
- STAT 5333 Analysis of Categorical Responses (J. Han)
- STAT 5343 Stochastic Processes (G. Petris)
- STAT 5353 Methods of Multivariate Analysis (J. Han)
- STAT 5383 Time Series Analysis (G. Petris)
- STAT 5413 Spatial Statistics (G. Petris)

8. FACULTY

List the names and credentials (college/university awarding degree; degree level; degree field) of all faculty teaching courses in the proposed program. *(For associate degrees and above: A minimum of one full-time faculty member with appropriate academic credentials is required.)*

Total number of faculty required for program implementation, including the number of existing faculty and number of new faculty. For new faculty provide the expected academic credentials/professional experience and expected hire date.

For proposed graduate programs: Provide the curriculum vita for faculty teaching in the program, and the expected credentials for new faculty and expected hire date. Provide the projected startup costs for faculty research laboratories, and the projected number of and costs for graduate teaching and research assistants.

Names and credentials of faculty participating in the program:

Arnold, Mark, Ph.D., Northern Illinois University, Associate Professor, Department of Mathematical Sciences, Fulbright College of Arts & Sciences, Program Director

Beavers, M. Gordon, Ph.D., Indiana University at Bloomington, Associate Professor, Department of Computer Science & Computer Engineering, College of Engineering

Cronan, Paul, Ph.D., Louisiana Tech University, Professor, Department of Information Systems, Walton College of Business

Gauch, Susan, Ph.D., University of North Carolina, Professor, Department of Computer Science & Computer Engineering, College of Engineering

Madison, Bernard, Ph.D., University of Kentucky, Professor, Department of Mathematical Sciences, Fulbright College of Arts & Sciences

Mauromoustakos, Andy, Ph.D. Oklahoma State University, Professor, Department of Crop, Soil, & Environmental Sciences, Bumpers College of Agricultural, Food, and Life Sciences

Meaux, Laurie, Ph.D., University of Louisiana at Lafayette, Associate

Professor, Department of Mathematical Sciences (program in Statistics), Fulbright College of Arts & Sciences

Petris, Giovanni, Ph.D., Duke University, Associate Professor, Department of Mathematical Sciences (program in Statistics), Fulbright College of Arts & Sciences

Pohl, Ed, Ph.D., University of Arizona, Professor, Department of Industrial Engineering, College of Engineering

Song, Geoboo, Ph.D., University of Oklahoma, Assistant Professor, Department of Political Science, Fulbright College of Arts and Sciences

Turner, Ronna, Ph.D., University of Illinois, Professor, Department of Rehabilitation, Human Resources and Communication Disorders (program in Educational Statistics and Research Methods), College of Education & Health Professions

Existing faculty (listed above) are sufficient for offering the Ph.D. program, except that there are currently two vacant faculty lines in the Department of Mathematical Sciences (program in Statistics) which must be filled. The interim Dean of Fulbright College has committed to filling these positions over the next two years. The faculty hired for these positions will have Ph.D. degrees in Statistics or a closely related field and will be expected to teach some of the core statistics courses for this program. Start-up costs for new faculty in the Fulbright College are typically $20,000 for areas such as this, and will be part of the compensation package. We also anticipate that additional sections of existing courses in the Bumpers College of Agricultural, Food and Life Sciences, College of Engineering, and Walton College of Business will be needed.

We anticipate needing twelve new doctoral-level 12-month GA lines, which will be discussed under the section on budgetary needs, below.

9. DESCRIPTION OF RESOURCES

    Current library resources in the field
    Current instructional facilities including classrooms, instructional
    equipment and technology, laboratories (if applicable)
    New instructional resources required, including costs and acquisition plan – No
    new instructional resources are needed

10. NEW PROGRAM COSTS – Expenditures for the first 3 years

    New administrative costs (number and position titles of new
    administrators) Number of new faculty (full-time and part-time) and
    costs
    New library resources and costs
    New/renovated facilities and costs
    New instructional equipment and costs
    Distance delivery costs (if applicable)

    Other new costs (graduate assistants, secretarial support, supplies,
    faculty development, faculty/students research, program accreditation,
    etc.)

    --No new costs required for program implementation (Provide explanation)

    New program costs include the following:
    Administrative costs:
- 10% increase in 9-month salary for Program Director, plus fringe: $7,810.
- Program director salary for two summer months, plus fringe: $17,354
- 50% Administrative Specialist III, plus fringe: $16,058
- Maintenance Budget, $250/student: Estimated $2500 first year; $5,000 second year; $7500 third year; $10,000 fourth and following years

    New instructional costs:
- Clinical Assistant Professor (9-month), to offer additional sections of four courses in the Walton College of Business, plus fringe: $114,390
- Tenure-track Assistant Professor (9-month) to offer additional sections of four courses in the College of Engineering (Industrial Engineering), plus fringe: $108,035
- Tenure Track Assistant Professor to offer additional sections of 4 courses in Bumpers College, plus fringe: $105,260

    Graduate Assistantships:
- Twelve new Ph.D. stipends, 9 month, plus fringe @ $15,000/12 months: $185,580
- Tuition payment per stipend, 18 hours enrollment/12 months: $78,093

New library resources and costs:

As all of the courses listed in the degree program proposal are courses currently offered for degree programs across the campus, additional library resources proposed will be to enhance the interdisciplinary research needs of current and new faculty and graduate students, and graduate assistants.

An estimated $4000 will be needed to purchase the required reading and current imprints for all courses in the degree programs. The average cost of these texts is

$150.68. Statistical data management is not an area the Libraries have been purchasing in routinely, requiring additional materials in this and related areas to support the new graduate program. $5000 in one-time funding is needed to purchase monographic materials to fill in gaps in the Libraries' collections.

While the Libraries provide access to current issues of 10 of the 15 American Statistical Association journals (including some open access journals), access is needed to archival issues of two ASA journals of particular relevance to the proposed degree programs: *Statistical Analysis and Data Mining* and the *Journal of Educational and Behavioral Statistics.* Adding subscriptions to all ASA journals not already owned would cost approximately $2,960. Other journals that will be needed are: *Journal of the Royal Statistical Society. Series B, Statistical methodology* and *Econometrica.*

Additional resources that may be needed in the future include software to support data analysis (such as Data Zoa, currently in use in the Walton College of Business) and other data mining software coming on the market.

New Journals	2013	2014	2015
Statistical Analysis and Data Mining (current subscription)	$1,055	$1,161	$1,277
Journal of Educational and Behavioral Statistics (current subscription)	$509	$560	$616
Journal of Educational and Behavioral Statistics (back file lease)	n/a	$566	$566
Journal of the Royal Statistical Society. Series B, Statistical methodology	$553	$608	$669
Econometrica (current subscrition)	$700	$770	$847
Econometrica (back file lease)	$598	$598	$598
New ASA journals	$2,960	$3,256	$3,582
Monographs - one time	$5,000		
Monographs - on-going	$4,000	$4,400	$4,840
Library materials needs Totals	$15,375	$11,919	$12,994

11. SOURCES OF PROGRAM FUNDING – Income for the first 3 years of program operation

   If there will be a reallocation of funds, indicate from which department, program, etc. Indicate the projected annual student enrollment and expected annual tuition/fees for the proposed program (Provide the amount of student tuition per credit hour)

   Indicate the projected annual state general revenues for the proposed program (Provide the amount of state general revenue per student)

   Other (grants, employers, special tuition rates, mandatory technology fees, program specific fees, etc.)

   - Director compensation (increase in base salary and costs

- associated with course reduction) will be covered by Fulbright College of Arts and Sciences
- Director compensation (two summer months) will be shared between Fulbright College of Arts and Sciences and the Graduate School
- Maintenance budget for program will be covered by the Graduate School
- Filling two existing but vacant positions in the Program in Statistics, Department of Mathematical Sciences, will be covered by Fulbright College of Arts and Sciences
- Adding additional sections of courses in the Bumpers College of Agricultural, Food and Life Sciences will be covered by the Bumpers College
- Adding additional sections of courses in the College of Engineering will be covered by the College of Engineering
- Adding additional sections of courses in the Walton College of Business will be covered by the Walton College
- Colleges will not decrease the current number of faculty positions which are assigned to teaching statistics
- The costs of the administrative assistant and graduate assistant stipends/fringe will be jointly covered by the Provost, Colleges of Agricultural, Food & Life Sciences, Arts & Sciences, Education & Health Professions, Engineering, Walton College of Business, and the Graduate School, for an estimated cost of $201,638 or $28,805 unit/year.
- The cost of graduate assistant tuition (assuming 18 credit hours per 12 months for 12 students/year at current in-state tuition rates), will be covered by the Vice Chancellor for Finance and Administration, for an estimated cost of $78,093/year.
- For every 35th self-paying student enrolled in the statistics programs (masters and Ph.D.) as of the Fall 11th day census, a new GA position line will be assigned to the program. To be clear, the 35th self-paying student will be regardless of the actual census of the program on the 11th day and will be counted from the beginning enrollment in the program.
- Similarly, for every 50th self-paying student enrolled in the statistics programs (masters and Ph.D.) as of the Fall 11th day, a new faculty line will be assigned to the program, to be housed within one of the units supporting the program.

We anticipate 12 new students/year, taking a minimum of 18 credit hours per 12 months with current tuition at $362 (in-state) per credit hour, for a minimum of $78,093/cohort. However, we are requesting that these students be placed in GA positions that pay the tuition. In the GA positions, these students will play important roles in teaching and research, as well as participating in a statistics consulting lab. Fees may be associated with using the services of the lab.

In addition, the University will be exploring the possibility of creating an Institute of Data Analytics. College and University development efforts will be directed toward resources for both the Institute and the degree programs.

12. ORGANIZATIONAL CHART REFLECTING NEW PROGRAM
    Proposed program will be housed in (department/college)

The program will be housed in the Graduate School, which reports directly to the Provost/Vice Chancellor for Academic Affairs.

13. SPECIALIZED REQUIREMENTS

Describe specialized accreditation requirements for program (name of accrediting agency): **None**

Licensure/certification requirements for student entry into the field (name of program licensure/approving agencies): **None**

Provide documentation of Agency/Board approvals (education, nursing--initial approval required, health-professions, counseling, etc.): **N/A**

14. BOARD OF TRUSTEES APPROVAL
Provide the date that the Board approved the proposed program

15. SIMILAR PROGRAMS

List institutions offering program
    Proposed undergraduate program – list institutions in Arkansas
    Proposed master's program – list institutions in Arkansas and region
    Proposed doctoral program – list institutions in Arkansas, region, and nation

Why is proposed program needed if offered at other institutions in Arkansas or region?

List institutions offering a similar program that the institution used a model to develop the proposed program.

Provide a copy of the e-mail notification to other institutions in the state of the proposed program and their responses; include your reply to the institutional responses.

No other universities in Arkansas offer an M.S. or Ph.D. degree in Statistics or Analytics.

Most major research universities offer a master's or Ph.D. degree in Statistics or related field, such as bioinformatics. Analytics is developing as an area of interest but is not as well established. Regionally:
- Oklahoma State University has M.S. and Ph.D. degrees in Statistics; analytics is included in a Business Analytics Certificate in the MBA degree
- University of Oklahoma offers an accelerated BS/MS in Mathematics & Biostatistics
- University of Missouri offers an M.A. degree in Statistics, a dual M.A. in Statistics & Economics, and a Ph.D. in Statistics

The programs are needed at the U of A to increase our competitiveness with other universities and to provide needed training for Arkansas businesses.

16. DESEGREGATION

By program area, provide the total number of students, number of black

students, and number of other minority students enrolled in related certificate and/or degree programs (if applicable)

In Fall 2012, there were:
- 19 students enrolled in the M.S. degree in Mathematics at the U of A; of those, zero were African American, two were Hispanic and 1 was listed as 2+ races

- 34 students enrolled in the Ph.D. degree in Mathematics; of those, one was African American and one was Hispanic

- 17 students enrolled in the M.S. degree in Statistics; of those, one was African American (5.9%)

17. INSTITUTIONAL AGREEMENTS/MEMORANDUM OF UNDERSTANDING (MOU)

If the courses or academic support services will be provided by other institutions or organizations, include a copy of the signed MOU that outlines the responsibilities of each party and the effective dates of the agreement.

18. PROVIDE ADDITIONAL INFORMATION IF REQUESTED BY ADHE STAFF