LETTER OF INTENT – 1

(New Certificate or Degree Program)

1. Institution submitting request: University of Arkansas Fayetteville
2. Education Program Contact person/title: Dr. Terry Martin, Vice Provost for Academic Affairs
3. Telephone number/e-mail address: (479) 575-2151/tmartin@uark.edu
4. Proposed Name of Certificate or Degree Program: Master of Science in Economic Analytics
5. Proposed Effective Date: Fall 2020
6. Requested CIP Code: 45.0603 - Econometrics and Quantitative Economics
7. Program Description:

The Master of Science in Economic Analytics is an intensive program that will guide students through economic modeling and theory to computational practice and cutting-edge tools, providing a thorough training in descriptive, predictive, and prescriptive analytics. Students will be armed with a solid knowledge of econometric and machine learning methods, optimization, and computing. These “big-data” skills, combined with knowledge of economic modeling, will enable them to identify, assess, and seize the opportunity for data-driven value creation in the private and public sector.

Upon successful completion of the program, students will be eligible to receive an Enterprise Systems (Business Analytics Concentration) Graduate Certificate in addition to the MS in Economic Analytics degree.

1. Mode of Delivery (mark all that apply):

 **\_\_X\_\_\_On-Campus**

 **\_\_\_\_\_\_Off-Campus Location**

 Provide address of off-campus location:

 Provide a copy of the e-mail notification to other institutions in the state notifying them of the proposed program. Please inform institutions not to send the response to **“Reply All”**. If you receive an objection/concern(s) from an institution, reply to the institution and copy ADHE on the email. That institution should respond and copy ADHE. If the objection/concern(s) cannot be resolved, ADHE may intervene.

 Submit copy of written notification to Higher Learning Commission (HLC) if notification required by HLC for a program offered at an off-campus location.

 \_\_\_\_\_\_Indicate distance of proposed site from main campus.

 **\_\_X\_\_\_\_Distance Technology** (50% of program offered by distance technology)

 Submit copy of written notification to HLC if notification is required by HLC for a program offered by distance technology.

1. List existing certificate or degree programs that support the proposed program:

Enterprise Systems Graduate Certificate (Business Analytics Concentration)
Economics, Master of Arts
Information Systems, Master of Information Systems

1. President/Chancellor Approval Date:
2. Academic Affairs Officer: Date:

###

### PROPOSAL – 1

### NEW DEGREE PROGRAM

 1. **PROPOSED PROGRAM TITLE:** Economic Analytics, Master of Science

 2. **CIP CODE REQUESTED:** 45.0603 - Econometrics and Quantitative Economics

Link for CIP Codes:  <http://nces.ed.gov/ipeds/cipcode/resources.aspx?y=55>.

 3. **PROPOSED STARTING DATE:** Fall 2020

 4. **CONTACT PERSON**

 Name (Provost/Academic Affairs Officer): Dr. Terry Martin

 Title Vice Provost for Academic Affairs

 Name of Institution: University of Arkansas

 E-mail Address: tmartin@uark.edu

 Phone Number: 479-575-2151

 Name (Program Contact Person) Raja Kali

 Title Professor and Department Chair, Economics

 E-mail Address kali@uark.edu

 Phone Number 479-575-6219

 5. **PROGRAM SUMMARY**

 The Master of Science in Economic Analytics is an intensive program that will guide students through economic modeling and theory to computational practice and cutting-edge tools, providing a thorough training in descriptive, predictive, and prescriptive analytics. Students will be armed with a solid knowledge of econometric and machine learning methods, optimization, and computing. These “big-data” skills, combined with knowledge of economic modeling, will enable them to identify, assess, and seize the opportunity for data-driven value creation in the private and public sector.

 The program will share three courses that are already offered in the Master’s in Information Systems (MIS) degree of the Walton College. These courses are:

 ISYS 5103: Data Analytics Fundamentals

 ISYS 5843: Seminar in Business Intelligence and Knowledge Management

 ISYS 5833: Data Management Systems

 Upon successful completion of the program, students will be eligible to apply for an Enterprise Systems (Business Analytics Concentration) Graduate Certificate in addition to the MS in Economic Analytics degree.

 List degree programs or emphasis areas currently offered at the institution that support the proposed program.
Enterprise Systems Graduate Certificate (Business Analytics Concentration)
Master of Arts in Economics (ECONMA)
Master of Information Systems (INSYMI)

 6. **NEED FOR THE PROGRAM**

 (Submit Employer Needs Survey Forms)

 Provide survey data. Submit numbers that show job availability, corporate demands and employment/wage projections, not student interest and anticipated enrollment. 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; for graduate programs, focus on state, regional and national needs.

 Provide names and types of organizations/businesses surveyed.

 The employer needs survey form was sent to several individuals working in prominent positions in the corporate sector. The individuals who responded come from the following firms:

|  |  |  |
| --- | --- | --- |
| **Firm** | **Individual** | **Designation** |
| AmazonIndustry: Retail, Logistics, Entertainment, Cloud Services | Salar Jahedi, PhD | Senior EconomistCore AI / Central Economics |
| VisaIndustry: Financial Services | Michael Brown | Principal U.S. Economist,Visa Business and Economic Insights |
| IRI WorldwideIndustry: Information Services, Data Analytics, Retail | Fernando Salido | EVP, Shopper Analytics, Consumer and Shopper Marketing  |
| Duke HealthIndustry: Healthcare | Jordan McInvale | Management Engineer, Performance Services |
| RichContextIndustry: Digital Shopping Solutions, Retail, Data Analytics | Justin LeBlanc | Director of Data Science |
| J.B. HuntIndustry: Logistics, Supply Chain | Ningning Zhuang | Senior Logistic Engineer, Engineering & Technology |
| Green Street EnergyIndustry: Solar Energy | Michael Cawthon | Chief Information Officer (CIO) |
| Toyota Financial ServicesIndustry: Automobiles, Financial Services | Jared Reber, PhD | Manager of Data Science |

 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.

 Please see attached Summary of Letters of Support and Employer Needs Survey.

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

 Not currently. Some firms have employer tuition assistance programs, on a case-by-case basis.

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

 The digital revolution ignited an explosion of data. The availability of data is no longer a constraint to answering important questions. The critical constraint is now the ability to analyze, digest, visualize, and ultimately harness the data to drive decision making in business, science, and society. The Master of Science in Economic Analytics program will guide students through economic modeling and theory to computational practice and cutting-edge tools, providing a thorough training in descriptive, predictive, and prescriptive analytics. Students will be armed with a solid knowledge of econometric and machine learning methods, optimization, and computing. These “big-data” skills, combined with knowledge of economic modeling, will enable them to identify, assess, and seize the opportunity for data-driven value creation in the private and public sector.

 Several alumni from the current Economics MA and PhD programs currently work in Data Analytics in the corporate sector have communicated the need for the skills and training this program will provide. In addition, we have had meetings with executives from a number of firms, such as Arkansas Blue Cross Blue Shield who have an urgent need for employees with this training.

 Indicate which employers contacted the institution about offering the proposed program.

Arkansas Blue Cross Blue Shield, Wells Fargo, Visa, Duke Health, Amazon

 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.

 We plan to constitute an advisory committee of 10 members from potential employers to provide feedback and suggestions on the content of the program and career services. The advisory committee will meet bi-annually.

 Indicate the projected number of program enrollments for Years 1 - 3.

 10 students

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

 We expect enrollment to grow to 25 students in 5 years.

7. **CURRICULUM**

#  Provide curriculum outline by semester (include course number and title).

#  (For bachelor’s degree program, submit the 8-semester degree plan.)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **August** |  | Credit Hours |
| 1 | ECON 5743 | Introduction to Econometrics | 3 |
|  |  |  |  |
|  | **Fall** |  |  |
| 2 | ECON 5243 | Managerial Economics | 3 |
| 3 | *ECON 5783* | *Applied Microeconometrics* | 3 |
| 4 | ECON 636V | Special Problems in Economics (3 1-credit hour each) | 3 |
| 5 | ISYS 5103 | Data Analytics Fundamentals | 3 |
|  |  |  |  |
|  | **Spring** |  |  |
| 6 | *ECON 5263* | *Applied Microeconomics* | 3 |
| 7 | ECON 5753 | Forecasting | 3 |
| 8 | *ECON 5763* | *Economic Analytics (tools and project)* | 3 |
| 9 | ISYS 5843 | Seminar in Bus Intelligence & Knowledge Mgmt | 3 |
| 10 | ISYS 5833 | Data Management Systems | 3 |
|  |  |  | **30** |

 ISYS 5103 Data Analytics Fundamentals

 Faculty Member: Jeff Mullins
ECON 5243 Managerial Economics

 Faculty Member: Raja Kali
ECON 5263 Applied Microeconomics

 Faculty Member: Gary Ferrier
ECON 5783 Applied Microeconometrics

 Faculty Member: Arya Gaduh
ECON 5743 Introduction to Econometrics

 Faculty Member: Hyunseok Jung
ECON 5753 Forecasting

 Faculty Member: Jingping Gu
ECON 5763 Economics Analytics (Tools and Projects)

 Faculty Member: Hyunseok Jung
ECON 5833 Data Management Systems

 Faculty Member: Jeff Mullins
ECON 5843 Seminar in Business Intelligence and Knowledge Management

 Faculty Member: Elizabeth Kieffer
ECON 636V Special Problems in Economics (3 courses, 1 credit hour each)

 Faculty Members: Gary Ferrier, Don Koh, Raja Kali, Ryan Sheets and Industry Professionals

 Give total number of semester credit hours required for the program, including prerequisite courses. 30 hours

Identify new courses *(in italics)* and provide course descriptions.
***ECON 5263: Applied Microeconomics***The framework for this course is the economic way of thinking. Both the theory and application of important economics questions are presented, showing students the applicability of various economic methodologies in a number of different contexts. To gain competence in the applied side of economic analysis, students will use MS Excel or other software to apply class concepts to solve concrete problems. Prerequisite(s): ECON 5743 or AGEC 5613 and ECON 5243

**ECON 5783: Applied Microeconometrics**This course covers the principles of causal inference. Methods include panel data models, instrumental variables, regression discontinuity designs, difference-in-differences, and matching. Emphasis on developing a solid understanding of the underlying econometric principles of the methods taught as well as on their empirical application. Prerequisite(s): ECON 5743 or AGEC 5613

**ECON 5763: Economic Analytics (tools and project)**This course provides students with a good overview of modern big data methods, including Machine Learning, along with hands-on experience of in-depth analytics projects using real data. After 3 weeks of introductory lectures on the big data methods by the instructor, students will form groups and propose research projects they will develop over the semester. Knowledge of some statistical software is recommended, including Python, R and MATLAB. Prerequisite(s): ECON 5743 or AGEC 5613 and ECON 5783 (New Course)

 Identify required general education courses, core courses and major courses.

 None

 For each program major/specialty area course, list the faculty member assigned to teach the course.

 Please see table above

 Identify courses currently offered by distance technology (with an asterisk\*) and endnote at the end of the document.

 All courses will be developed online to be taught using distance technology.

 Indicate the number of contact hours for internship/clinical courses.

 3 hours of Special Topics Econ 636V courses.

 State the program admission requirements.

 Students entering the M.S. in Economic Analytics program are expected to have a bachelor’s degree from an accredited institution with a satisfactory grade-point average. In addition, they are expected to have already mastered basic economic concepts or, demonstrated, with an official GMAT or GRE test score, the ability to master economic concepts taught in the program. International applicants must submit an acceptable TOEFL or IELTS score, or complete the Intensive English Language Program (Spring International Language Center) and receive an English proficiency recommendation for admission. Other admissions criteria can be considered on a case by case basis. Students from all academic backgrounds are encouraged to apply.

 Describe specified learning outcomes and course examination procedures.

 Students will have the ability to apply econometric and machine learning methods, optimization, and computing to identify, assess, and seize the opportunity for data-driven value creation in the private and public sector.

 Examinations will involve problem solving and practicum-style data-analysis, depending upon the course.

 Include a copy of the course evaluation to be completed by the student.

 The Standard Purdue Course Evaluation form will be used.

 Include information received from potential employers about course content.

 Potential employers expressed the need for strong econometric skills, especially in forecasting, causal inference, machine learning and other skills for analyzing “big data.” These will be taught in the program.

 Provide institutional curriculum committee review/approval date for proposed program. May 1, 2019

 8. **FACULTY**

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

|  |  |  |
| --- | --- | --- |
| **Faculty Member** | **Degree, Subject** | **Institution** |
| Raja Kali | PhD, Economics | Maryland-College Park |
| Gary Ferrier | PhD, Economics  | North Carolina - Chapel Hill |
| Arya Gaduh | PhD, Economics | Southern California  |
| Jingping Gu  | PhD, Economics | Texas A&M |
| Hyunseok Jung | PhD, Economics | Syracuse |
| Jeff Mullins | PhD, Information Systems | Arkansas-Fayetteville |
| Elizabeth Kieffer | PhD, Information Systems | Arkansas-Fayetteville  |
| Don Koh | PhD, Economics | Washington-St Louis |
| Ryan Sheets | Ph.D., English | Illinois, Urbana-Champaign  |

 Faculty CV’s attached.

 Indicate lead faculty member or program coordinator for the proposed program.

 Raja Kali, Professor and Chair, Economics Department

 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 credentials/experience and expected hire date.**

Five existing faculty.

 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. Also, provide the projected startup costs for faculty research laboratories, and the projected number of and costs for graduate teaching and research assistants.

 There will not be any lab or graduate assistantship costs.

 Faculty CV’s attached.

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

Existing resources on campus will be used.

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.)

 **If no new costs required for program implementation, provide explanation.**

Existing resources on campus will be used. Existing faculty in Economics and Information Systems will teach the courses. Except for three new proposed courses, the other courses are already offered on a regular basis.

For the three new courses, the department has plans to re-organize faculty teaching to be able to fully staff these. Currently the department has two assistant professors who are on reduced teaching loads. One of these faculty members will come off their teaching reductions in the next year (Fall 2019), and the other will increase his teaching load in Fall 2020. In addition, the department is hiring a new faculty member to join the department in Fall 2019.

As a result, based on current faculty resources the department’s capabilities are aligned with the ability to offer three new courses. If the proposed program experiences rapid growth in the number of students, then resource constraints will be re-evaluated in the future.

Marketing and recruiting costs for the program will be supported by the College.

11. **SOURCE 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.

The program will be initially funded using Walton College operational funds and, eventually, program revenues as they are generated. Start-up marketing and recruiting costs will initially be supported by the College. Administrative responsibilities will be handled by the Economics Department Masters Program Coordinator.

As noted above, for the three new courses, the department has plans to re-organize faculty teaching to be able to fully staff these. Currently the department has two assistant professors who are on reduced teaching loads. One of these faculty members will come off their teaching reductions in the next year (Fall 2019), and the other will increase his teaching load in Fall 2020. In addition, the department is hiring a new faculty member to replace a faculty who left the department. This faculty member will join the department in Fall 2019. As a result, based on current faculty resources the department’s capabilities are aligned with the ability to offer three new courses.

 Provide the projected annual student enrollment, the amount of student tuition per
 credit hour, and the total cost of the program that includes tuition and fees.

Expected student enrollment for the first 3 years is 10-15.

Tuition and Fees based on current rates for MS in Economic Analytics – 30 hours

In-State Tuition & Fees: $642.10/hour, Total=$19,263

Out-of-State Tuition & Fees: $1620.61/hour, Total=$48,618.30

International Tuition & Fees: $1694.48/hour, Total=$50,834.30

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

 Other (grants [list grant source & amount of grant], employers, special tuition rates,
 mandatory technology fees, program specific fees, etc.).

12. **ORGANIZATIONAL CHART REFLECTING NEW PROGRAM**

 Proposed program will be housed in (department/college): Department of Economics

13. **SPECIALIZED REQUIREMENTS**

 If specialized accreditation is required for program, list the name of accrediting agency.

 AACSB International

 Indicate the licensure/certification requirements for student entry into the field.

 None

#  Provide documentation of Agency/Board review/approvals (education, nursing--initial approval required, health-professions, counseling, etc.)

14. **BOARD OF TRUSTEES APPROVAL**

 Provide the date that the Board approved (or will consider) the proposed program.

 Provide a copy of the Board meeting agenda that lists the proposed program, and written documentation of program/unit approval by the Board of Trustees prior to the Coordinating Board meeting that the proposal will be considered.

15. **SIMILAR PROGRAMS**

#  List institutions offering program:

 Johns Hopkins University, MS in Economic Analysis

 North Carolina State University

New York University

UC-San Diego

Tufts University

Georgia Tech

George Washington University

 University Autonoma de Barcelona

Amsterdam School of Economics

##  Proposed undergraduate program – list institutions in Arkansas

 Proposed master’s program – list institutions in Arkansas and region

 None

 Proposed doctoral program – list institutions in Arkansas, region, and nation

 State why proposed program needed if offered at other institutions in Arkansas or
 region.

 List institution(s) offering a similar program that the institution used as a model to
 develop the proposed program.

 North Carolina State University

 University Autonoma de Barcelona

 Provide a copy of the e-mail notification to other institutions in the state notifying them of the proposed program. Please inform institutions not to send the response to **“Reply All”**. If you receive an objection/concern(s) from an institution, reply to the institution and copy ADHE on the email. That institution should respond and copy ADHE. If the objection/concern(s) cannot be resolved, ADHE may intervene.

 **Note: A written institutional objection/concern(s) to the proposed program/unit may delay Arkansas Higher Education Coordinating Board (AHECB) consideration of the proposal until the next quarterly AHECB meeting.**

16. **DESEGREGATION**

 State the total number of students, number of black students, and number of other minority students enrolled in related degree programs, if applicable.

 N/A

1. **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.

1. **ACADEMIC PROGRAM REVIEW**

 Provide scheduled program review date (within 10 years of program implementation date).

 2021-2022

1. **PROVIDE ADDITIONAL INFORMATION IF REQUESTED BY ADHE** **STAFF**
2. **INSTRUCTION BY DISTANCE TECHNOLOGY**

 If the proposed program will be offered by distance technology, provide the following information:

 Summarize institutional policies on the establishment, organization, funding and management of distance courses/degrees.

An academic department intending to propose new distance programs are required to identify the program’s anticipated costs, funding sources, demand, and need for library resources, and to present plans to address the increased workload. The proposal needs to be approved by Vice Provost for Distance Education, Academic College, University Course and Programs Committee, Graduate Council (if at the graduate level), Faculty Senate, Provost, Board of Trustees, and Arkansas Department of Higher Education. Change requests for existing distance courses and programs follow similar approval processes. Global Campus assists programs during the conceptualization, market research, and planning stage. Once programs are approved, it provides start-up capital and course development funds as well as in-kind support by Global Campus’s instructional designers, academic technologists, and marketing and recruitment teams. Global Campus also supports compliance with interstate regulatory requirements. All distance courses are certified to be complete only when they meet appropriate quality standards.

 Describe the internal organizational structure that coordinates (development, technical support, oversight) distances courses/degrees.

Global Campus is a supporting unit that provides assistance in course development and maintenance, technical support for both faculty and students, quality assurance, and compliance to all online programs across the campus.

Summarize the policies and procedures to keep the technology infrastructure current.

IT Services maintains the technology infrastructure to ensure the security and compatibility of enterprise systems as guided by the [Computer and Network Security Policy](https://its.uark.edu/policies/network-security/), [Data Management Use and Protection Policy](https://vcfa.uark.edu/policies/fayetteville/uits/3095.php), and [Acquisition of Enterprise Systems Policy](https://vcfa.uark.edu/policies/fayetteville/uits/3096.php). The [Computer Activities Council](https://provost.uark.edu/committees/cac.php) (CAC), the information technology governance structure at the University, facilitates participation of students, faculty, staff, and administrators in long-range planning and setting of priorities for IT Services.

Updates to applications (learning management system, video conferencing software, web conferencing software, etc.) are reviewed by application administrators and stakeholder representatives on a regular basis to ensure continuity of operation, security, and high levels of performance and support.

The Global Campus Instructional Design and Support Services team, along with the IT Services Director of Academic Technology and Innovation, work with faculty to identify, evaluate, pilot, and deploy emerging technology solutions that will enhance teaching and learning.

 Summarize the procedures that assure the security of personal information.

Procedures are in accordance with the [Computer and Network Security Policy](https://its.uark.edu/policies/network-security/), [Code of Computing Practices](https://its.uark.edu/policies/code/), and [Privacy Policy](https://its.uark.edu/policies/privacy/). The IT Security group monitors university systems and performs security audits of resources. IT Services also provides security services such as security information, anti-virus software, and security alerts.

University systems (student information system, learning management system, etc.) require authentication. Privileged supervisory accounts are limited and managed by system administrators.

Users must agree to the Code of Computing Practices and take a security quiz when setting up their UARK accounts. Users agree to comply with security mechanisms and to keep login credentials private.

Links to the [privacy policies of third-party tools used in online instruction](https://tips.uark.edu/privacy-policy-links/) are provided in the information section of online courses and support sites.

 Provide a list of services that will be outsourced to other organizations (course materials, course management and delivery, technical services, online payment, student privacy, etc.).

The only service outsourced is online proctoring service. The University of Arkansas partners with ProctorU for online test proctoring services for some online exams.

ADDENDUM

**Employer Survey Summary**

**Master of Science in Economic Analytics Proposal**

**Department of Economics, University of Arkansas, Fayetteville**

**Program Overview**

The digital revolution ignited an explosion of data. The availability of data is no longer a constraint to answering important questions. The critical constraint is now the ability to analyze, digest, visualize, and ultimately harness the data to drive decision making in business, science, and society.

The Master of Science in Economic Analytics is a 10-month intensive program that will guide students through economic modeling and theory to computational practice and cutting-edge tools, providing a thorough training in descriptive, predictive, and prescriptive analytics. Students will be armed with a solid knowledge of econometric and machine learning methods, optimization, and computing. These “big-data” skills, combined with knowledge of economic modeling, will enable them to identify, assess, and seize the opportunity for data-driven value creation in the private and public sector.

Upon successful completion of the program, students will be eligible to receive a certificate in Data Analytics in addition to the MS in Economic Analytics degree.

**Employer Needs Survey Summary**

The employer needs survey form was sent to several individuals working in prominent positions in the corporate sector. The individuals who responded come from firms such as Visa, Amazon, IRI, and Toyota, among others. All these individuals have responsibilities that involve data analysis, interpretation and application for their companies. Documents describing the program, course structure and curriculum were shared with them. All of them expressed a strong need for the kind of training that would be provided by the proposed MS in Economic Analytics. Common job titles associated with the knowledge and skills obtained from the proposed program were Data Products Analyst, Business Intelligence Engineer, Program Manager and Data Scientist. Expected salary for these positions was fairly uniform: starting in the $75-85K range and rising sharply with experience.

As would be expected, the expected number of position openings varied with the size of the firm with which the respondent was affiliated. Amazon already has hundreds of openings for such skills and expects to have thousands more in the next five years. Visa expects to have over a hundred openings in the next five years. Smaller startups and boutique investments banks expect to have two to three each. Growth is expected in the area by all respondents. The respondent from Amazon says “There are large technological advances being made in the data analytics and predictive space. Over time, the tools that are being developed will filter down to jobs in schools, industries, and government. This is a field that is not going away. Those areas that have invested in the ability to incorporate and adopt the tools will thrive. This program is taking one step in the right direction.”

The respondent from Information Resources Inc (IRI) says, “I believe this is a very nice addition to a standard Economics Degree program, infusing the incredibly valuable core reasoning and thinking skills from a traditional program with advanced data manipulation, analysis and interpretation skills. Graduates of Econ programs are among the best problem solvers we have. Adding more direct data science skills will only make them more effective in the workforce.”

The letters of support from all the industry partners received were very positive. One of them, coming from someone who works in healthcare analytics for Duke University Hospital says “Hospitals collect massive amounts of information and effective utilization of this information is necessary to remain competitive and financially solvent. The proposed coursework in SQL programming, Business Intelligence, and Python scripting combined with graduate economic coursework is a great foundation for understanding healthcare processes, asking great questions, and most importantly—successfully solving problems.”

**Employer Needs Survey Form**

Date: 09/29/2018

Institution\_Department of Economics, University of Arkansas, Fayetteville \_\_\_\_

Return this survey by email to\_\_\_\_kali@uark.edu\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (Institution provide email address above)

**Proposed Degree Program\_\_\_\_\_\_**MS in Economic Analytics**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Brief description of the program**\_ The Master of Science in Economic Analytics is a 10-month intensive program that will guide students through economic modeling and theory to computational practice and cutting-edge tools, providing a thorough training in descriptive, predictive, and prescriptive analytics.\_ Students will be armed with a solid knowledge of econometric and machine learning methods, optimization, and computing. These “big-data” skills, combined with knowledge of economic modeling, will enable them to identify, assess, and seize the opportunity for data-driven value creation in the private and public sector.

Employer: Amazon Type of company: Tech

Contact Person: Salar Jahedi Position Title: Senior Economist

Email: sjahedi@amazon.com Telephone number: 206-981-4631

1. List job titles with your company that require employees to have the knowledge and skills obtained from the proposed degree program: Business Analyst, Business Intelligence Engineer, Program Manager, Data Scientist
2. List the degree required for each job title listed in #1: Bachelor’s, Masters, with relevant work experience
3. Indicate the certification/licensure required for each job title listed in #1? Bachelor’s, Masters
4. How many positions do you currently have for each job title listed in #1? thousands
5. How many position openings do you currently have for each job title listed in #1? hundreds
6. How many position openings will you have the next 2–5 years for each job title listed in #1? thousands
7. What is the annual salary for each position listed in #4 &#5? competitive
8. If no openings now, when do you anticipate having openings for the positions listed in #1? N/A
9. Would you give hiring preference to applicants with the proposed degree? The topics covered in the program are relevant to the modern day workforce and provide skills that will allow people to be successful at their positions.
10. Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree program? Many definitely would. If yes, would you provide tuition assistance? Not in position to make that decision.
11. Would it be helpful for your employees if the courses were offered online/distance technology, evenings or weekends? Yes, it would allow people with busy schedules to attend. Indicate your preference: No preference. Having a structured class with many students has advantages, as does the option to offer distance learning.
12. Indicate the type of support your company will provide for the proposed degree program, such as, program start-up funds, provide an internship site, part-time faculty, tuition reimbursement, employee release time, or equipment? Nothing more than the educational benefits already offered.
13. Will you or a co-worker serve on the institution’s program advisory committee? I certainly will consider it.

 (provide name of employee & email)

1. Indicate the skills individuals would need for employment in the positions listed in #1.

\_\_\_\_Interpersonal communications \_\_\_\_Supervision/Management \_\_\_\_Budgeting

\_ X\_Written/oral communications \_\_\_\_Leadership/initiative \_X\_\_Data analysis

\_\_\_\_Team work \_\_\_\_Planning/Organizing \_\_\_\_Public Speaking

\_ X\_Independent worker \_\_\_\_Conflict resolution \_\_\_\_Marketing

\_ X\_Analytical reasoning \_\_\_\_Problem Solver \_\_\_\_Teacher/Trainer

\_ X\_Computer programming \_ X\_Computer applications \_\_\_\_PowerPoint Presentations

\_\_\_\_Foreign Language (specify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_Other skills not listed (identify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How will this proposed degree program benefit your local community, the state, region or nation? There are large technological advances being made in the data analytics and predictive space. Over time, the tools that are being developed will filter down to jobs in schools, industries, and government. This is a field that is not going away. Those areas that have invested in the ability to incorporate and adopt the tools will thrive. This program is taking one step in the right direction.
2. Provide any additional comments about the proposed degree program. It is important for schools to continually revise their curriculum. Given the explosion occurring in Tech, and the invention of tools that rely on smart technology to help with data analysis, it makes sense for schools to invest in learning and sharing the skills with the future crop of students.

**Employer Needs Survey Form**

Date\_\_\_\_10/1/2018\_\_\_\_\_\_\_\_\_ Institution\_Department of Economics, University of Arkansas, Fayetteville \_\_\_\_

Return this survey by email to\_\_\_\_kali@uark.edu\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (Institution provide email address above)

**Proposed Degree Program\_\_\_\_\_\_**MS in Economic Analytics**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Brief description of the program**\_ The Master of Science in Economic Analytics is a 10-month intensive program that will guide students through economic modeling and theory to computational practice and cutting-edge tools, providing a thorough training in descriptive, predictive, and prescriptive analytics.\_ Students will be armed with a solid knowledge of econometric and machine learning methods, optimization, and computing. These “big-data” skills, combined with knowledge of economic modeling, will enable them to identify, assess, and seize the opportunity for data-driven value creation in the private and public sector.

Employer\_\_\_\_\_\_\_\_\_Visa Inc\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Type of company\_\_\_\_\_\_\_\_\_Payment Solutions\_\_\_\_\_\_\_\_\_\_

Contact Person\_\_\_\_\_\_\_Michael Brown\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Position Title\_\_\_Principal U.S. Economist\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Email\_\_\_\_\_\_michaebr@visa.com\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Telephone number\_\_\_\_1-650-4324653\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. List job titles with your company that require employees to have the knowledge and skills obtained from the proposed degree program\_\_\_Sr. Analyst-Data Products, Data Scientist\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. List the degree required for each job title listed in #1\_\_\_\_\_Bachlor’s Degree and/or Master’s degree for both postions\_\_
3. Indicate the certification/licensure required for each job title listed in #1?\_\_None\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. How many positions do you currently have for each job title listed in #1?1-Sr. Analyst-Data Products and 5-Data Scientist positions\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. How many position openings do you currently have for each job title listed in #1? \_\_1-Sr. Analyst-Data Products and 5-Data Scientist positions \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. How many position openings will you have the next 2–5 years for each job title listed in #1? \_Estimated to be over 100\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. What is the annual salary for each position listed in #4 &#5?\_\_\_\_the average is $85,000 depending on location\_\_\_\_
8. If no openings now, when do you anticipate having openings for the positions listed in #1? \_\_\_\_\_N/A\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. Would you give hiring preference to applicants with the proposed degree?\_\_\_\_Yes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree program?\_\_\_\_None\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ If yes, would you provide tuition assistance?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. Would it be helpful for your employees if the courses were offered online/distance technology, evenings or weekends?\_\_\_\_Yes\_\_\_\_\_\_\_\_\_\_\_ Indicate your preference \_\_\_Distance technology\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. Indicate the type of support your company will provide for the proposed degree program, such as, program start-up funds, provide an internship site, part-time faculty, tuition reimbursement, employee release time, or equipment?\_\_\_None\_\_\_\_\_\_\_\_\_
13. Will you or a co-worker serve on the institution’s program advisory committee?

If needed, Michael Brown, michaebr@visa.com\_is willing to serve on the advisory committee\_\_\_\_\_

 (provide name of employee & email)

1. Indicate the skills individuals would need for employment in the positions listed in #1.

\_\_X\_\_Interpersonal communications \_\_\_\_Supervision/Management \_\_\_\_Budgeting

\_\_X\_\_Written/oral communications \_\_X\_\_Leadership/initiative \_\_X\_\_Data analysis

\_\_X\_\_Team work \_\_X\_\_Planning/Organizing \_\_X\_\_Public Speaking

\_\_X\_\_Independent worker \_\_\_\_Conflict resolution \_\_X\_\_Marketing

\_\_X\_\_Analytical reasoning \_\_X\_\_Problem Solver \_\_\_\_Teacher/Trainer

\_\_X\_\_Computer programming \_\_X\_\_Computer applications \_\_X\_\_PowerPoint Presentations

\_\_\_\_Foreign Language (specify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_Other skills not listed (identify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How will this proposed degree program benefit your local community, the state, region or nation?

Across our global footprint we continue to have trouble finding qualified candidates to fulfill our data-intensive roles. This proposed program will serve to provide another pipeline of graduates to help fulfill our growing need in the area of data analytics.

1. Provide any additional comments about the proposed degree program.

The proposed program design appears well suited to provide students with a solid foundation in data analytics and economics.

**Employer Needs Survey Form**

Date: September 25, 2018 Institution\_Department of Economics, University of Arkansas, Fayetteville

Return this survey by email to\_\_\_\_kali@uark.edu\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (Institution provide email address above)

**Proposed Degree Program\_\_\_\_\_\_**MS in Economic Analytics**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Brief description of the program**\_ The Master of Science in Economic Analytics is a 10-month intensive program that will guide students through economic modeling and theory to computational practice and cutting-edge tools, providing a thorough training in descriptive, predictive, and prescriptive analytics.\_ Students will be armed with a solid knowledge of econometric and machine learning methods, optimization, and computing. These “big-data” skills, combined with knowledge of economic modeling, will enable them to identify, assess, and seize the opportunity for data-driven value creation in the private and public sector.

Employer: *Information Resources, Inc.* Type of company: *Information Services / Market Research*

Contact Person\_\_\_\_\_Fernando Salido\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Position Title\_\_\_EVP Shopper Analytics, IRI\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Email\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Telephone number\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. List job titles with your company that require employees to have the knowledge and skills obtained from the proposed degree program: *Skills such as those offered by the proposed program would be a good fit for Analyst or possibly Consultant level positions on the Product Development, Research & Development, Shopper Analytics, Strategic Analytics, or Data Science teams*
2. List the degree required for each job title listed in #1: *MS or MA in a quantitative field, (e.g. Mathematics, Statistics or a Social Science discipline with emphasis in data analysis)*
3. Indicate the certification/licensure required for each job title listed in #1? *NA*
4. How many positions do you currently have for each job title listed in #1? *On average 3-10 per area*
5. How many position openings do you currently have for each job title listed in #1? *One to three in total*
6. How many position openings will you have the next 2–5 years for each job title listed in #1? *Perhaps 10-15*
7. What is the annual salary for each position listed in #4 &#5? *65K – 70K (starting) +*
8. If no openings now, when do you anticipate having openings for the positions listed in #1? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. Would you give hiring preference to applicants with the proposed degree? *Not preference necessarily, but definite interest and consideration*
10. Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree program? *Perhaps 3 – 6*  If yes, would you provide tuition assistance? *The company has a defined tuition reimbursement program for coursework that is relevant to their jobs*
11. Would it be helpful for your employees if the courses were offered online/distance technology, evenings or weekends? *Yes*  Indicate your preference *Online is preferred in order to maximize flexibility*
12. Indicate the type of support your company will provide for the proposed degree program, such as, program start-up funds, provide an internship site, part-time faculty, tuition reimbursement, employee release time, or equipment? *Employee tuition reimbursement, potential data access for research projects, guest lectures by industry experts*
13. Will you or a co-worker serve on the institution’s program advisory committee?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (provide name of employee & email)

1. Indicate the skills individuals would need for employment in the positions listed in #1.

\_x\_\_Interpersonal communications \_\_\_\_Supervision/Management \_\_\_\_Budgeting

\_x\_\_Written/oral communications \_\_\_\_Leadership/initiative \_x\_\_Data analysis

\_x\_\_Team work \_x\_\_Planning/Organizing \_\_\_\_Public Speaking

\_x\_\_Independent worker \_\_\_\_Conflict resolution \_\_\_\_Marketing

\_x\_\_Analytical reasoning \_x\_\_Problem Solver \_\_\_\_Teacher/Trainer

\_x\_\_Computer programming \_\_\_\_Computer applications \_x\_\_PowerPoint Presentations

\_\_\_\_Foreign Language (specify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_Other skills not listed (identify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How will this proposed degree program benefit your local community, the state, region or nation?

*Walmart and its suppliers demand highly educated, quantitative individuals to analyze data in order to make better and more profitable decisions, who themselves demand higher salaries and contribute to the tax base and the local economy.*

1. Provide any additional comments about the proposed degree program.

*I believe this is a very nice addition to a standard Economics Degree program, infusing the incredibly valuable core reasoning and thinking skills from a traditional program with advanced data manipulation, analysis and interpretation skills. Graduates of Econ programs are among the best problem solvers we have. Adding more direct data science skills will only make them more effective in the workforce.*

**Employer Needs Survey Form**

Date\_\_\_10/08/2018\_\_\_\_\_\_\_\_\_ Institution\_Department of Economics, University of Arkansas, Fayetteville \_\_\_\_

Return this survey by email to\_\_\_\_kali@uark.edu\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (Institution provide email address above)

**Proposed Degree Program\_\_\_\_\_\_**MS in Economic Analytics**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Brief description of the program**\_ The Master of Science in Economic Analytics is a 10-month intensive program that will guide students through economic modeling and theory to computational practice and cutting-edge tools, providing a thorough training in descriptive, predictive, and prescriptive analytics.\_ Students will be armed with a solid knowledge of econometric and machine learning methods, optimization, and computing. These “big-data” skills, combined with knowledge of economic modeling, will enable them to identify, assess, and seize the opportunity for data-driven value creation in the private and public sector.

Employer\_\_RichContext\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Type of company\_\_Retail Technology\_\_\_\_\_\_\_\_\_\_\_\_\_

Contact Person\_\_\_Justin LeBlanc\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Position Title\_\_Director of Data Science\_\_\_\_\_\_\_\_\_\_\_

Email\_\_justin@richcontext.com\_\_\_\_\_\_\_\_\_\_\_\_\_ Telephone number\_\_\_870-688-9041\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. List job titles with your company that require employees to have the knowledge and skills obtained from the proposed degree program\_\_\_Sr. Analyst, Data Engineer, Data Scientist \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. List the degree required for each job title listed in #1\_\_B.S. minimum + years of experience depending on degree\_\_\_\_\_\_\_
3. Indicate the certification/licensure required for each job title listed in #1?\_\_\_\_n/a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. How many positions do you currently have for each job title listed in #1?\_\_\_\_2-3\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. How many position openings do you currently have for each job title listed in #1? \_0-1\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. How many position openings will you have the next 2–5 years for each job title listed in #1? \_\_Very difficult to say. I would estimate 5-20\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. What is the annual salary for each position listed in #4 &#5?\_\_$70,000 - $120,000\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. If no openings now, when do you anticipate having openings for the positions listed in #1? \_\_\_Within 6 months\_\_\_\_\_\_\_
9. Would you give hiring preference to applicants with the proposed degree?\_\_I cannot establish preference. \_\_\_\_\_\_\_\_
10. Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree program?\_\_\_potentially up to 4\_\_\_\_\_\_\_\_ If yes, would you provide tuition assistance?\_\_That is not my decision. \_\_\_\_
11. Would it be helpful for your employees if the courses were offered online/distance technology, evenings or weekends?\_\_\_Yes.\_\_\_\_\_ Indicate your preference \_\_I think in class lectures for material like this is important.\_\_\_\_
12. Indicate the type of support your company will provide for the proposed degree program, such as, program start-up funds, provide an internship site, part-time faculty, tuition reimbursement, employee release time, or equipment?\_\_\_\_\_\_\_\_\_\_\_\_
13. Will you or a co-worker serve on the institution’s program advisory committee?\_\_\_Justin LeBlanc (contact info above) has been asked to do so, and would like to be involved.\_\_\_\_

 (provide name of employee & email)

1. Indicate the skills individuals would need for employment in the positions listed in #1.

\_\_x\_\_Interpersonal communications \_\_\_\_Supervision/Management \_\_\_\_Budgeting

\_\_x\_\_Written/oral communications \_\_x\_\_Leadership/initiative \_\_x\_\_Data analysis

\_\_x\_\_Team work \_\_x\_\_Planning/Organizing \_\_x\_\_Public Speaking

\_\_x\_\_Independent worker \_x\_\_\_Conflict resolution \_\_\_\_Marketing

\_\_x\_\_Analytical reasoning \_\_x\_\_Problem Solver \_\_\_\_Teacher/Trainer

\_x\_\_\_Computer programming \_\_x\_\_Computer applications \_\_x\_\_PowerPoint Presentations

\_\_\_\_Foreign Language (specify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_Other skills not listed (identify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How will this proposed degree program benefit your local community, the state, region or nation?

Copying and pasting from my letter of endorsement because I think it speaks to this directly –

Having been immersed in the business world and being employed as a data scientist or data engineer in some form or fashion for many years, I cannot express how timely the formation of this degree is. Companies of all sizes are increasingly aware of the need for sound data analytics capabilities and making data-driven decisions; but so often they do not know where to start. This program will not only produce graduates with the skills to enter into these organizations with the ability to undoubtedly add value to the company as a whole, but will enable those individuals to break through the barrier that seems to divide academia and the business world *per se* at above entry-level.

I am incredibly excited to see this happening at the University of Arkansas, an institution I hold dear to my heart. Further, I think that this will be an opportunity to supply the Northwest Arkansas with a much-needed intellectual resource that tends to be gravitating to more populous areas such as Silicon Valley and Seattle.

1. Provide any additional comments about the proposed degree program.

**Employer Needs Survey Form**

Date\_\_\_10/9/2018\_\_\_\_\_ Institution\_Department of Economics, University of Arkansas, Fayetteville \_\_\_\_

Return this survey by email to\_\_\_\_kali@uark.edu\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (Institution provide email address above)

**Proposed Degree Program\_\_\_\_\_\_**MS in Economic Analytics**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Brief description of the program**\_ The Master of Science in Economic Analytics is a 10-month intensive program that will guide students through economic modeling and theory to computational practice and cutting-edge tools, providing a thorough training in descriptive, predictive, and prescriptive analytics.\_ Students will be armed with a solid knowledge of econometric and machine learning methods, optimization, and computing. These “big-data” skills, combined with knowledge of economic modeling, will enable them to identify, assess, and seize the opportunity for data-driven value creation in the private and public sector.

Employer\_\_\_\_\_\_\_Toyota Financial Services\_\_\_\_\_\_\_\_\_\_\_ Type of company\_\_\_\_\_\_\_\_\_\_\_\_Finance\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Contact Person\_\_\_\_\_\_\_\_\_\_\_\_Jared Reber\_\_\_\_\_\_\_\_\_\_\_\_ Position Title\_\_\_\_\_\_Manager, Data Science\_\_\_\_\_\_\_\_\_\_

Email\_\_\_\_\_\_\_\_\_\_Jared.Reber@Toyota.com\_\_\_\_\_\_\_\_\_\_\_ Telephone number\_\_\_\_\_\_479-301-0868\_\_\_\_\_\_\_\_

1. List job titles with your company that require employees to have the knowledge and skills obtained from the proposed degree program\_\_\_\_\_\_\_\_\_\_ Consultant, Senior Analyst, Analyst\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. List the degree required for each job title listed in #1\_\_\_\_\_\_Graduate degree in a quantitative field\_\_\_\_\_\_\_\_\_\_\_
3. Indicate the certification/licensure required for each job title listed in #1?\_\_\_\_\_\_\_\_\_\_N/A\_\_\_\_\_\_\_\_\_\_\_\_
4. How many positions do you currently have for each job title listed in #1?\_\_\_\_\_\_\_\_\_\_3\_\_\_\_\_\_\_\_\_\_\_\_
5. How many position openings do you currently have for each job title listed in #1? \_\_\_\_\_\_\_\_\_\_0\_\_\_\_\_\_\_\_\_\_\_\_\_
6. How many position openings will you have the next 2–5 years for each job title listed in #1? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_3-4\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. What is the annual salary for each position listed in #4 &#5?\_\_\_\_\_\_\_\_\_\_\_85k – 125k\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. If no openings now, when do you anticipate having openings for the positions listed in #1? \_\_\_\_\_\_\_\_\_6 months\_\_\_\_\_\_\_
9. Would you give hiring preference to applicants with the proposed degree?\_\_Not necessarily\_\_\_\_\_\_\_\_
10. Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree program?\_\_\_\_\_\_2\_\_\_\_\_\_\_ If yes, would you provide tuition assistance?\_\_\_\_\_\_\_\_\_\_\_No\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. Would it be helpful for your employees if the courses were offered online/distance technology, evenings or weekends?\_\_\_\_\_\_Yes\_\_\_\_\_\_\_ Indicate your preference \_\_\_\_\_\_\_\_\_\_Online\_\_\_\_\_\_\_\_\_\_\_\_
12. Indicate the type of support your company will provide for the proposed degree program, such as, program start-up funds, provide an internship site, part-time faculty, tuition reimbursement, employee release time, or equipment?\_\_None\_\_\_\_
13. Will you or a co-worker serve on the institution’s program advisory committee?\_\_\_\_\_I am willing\_\_\_\_\_

 (provide name of employee & email)

1. Indicate the skills individuals would need for employment in the positions listed in #1.

\_\_x\_\_Interpersonal communications \_\_\_\_Supervision/Management \_\_\_\_Budgeting

\_\_x\_\_Written/oral communications \_\_\_\_Leadership/initiative \_\_x\_\_Data analysis

\_\_x\_\_Team work \_\_\_\_Planning/Organizing \_\_\_\_Public Speaking

\_\_x\_\_Independent worker \_\_\_\_Conflict resolution \_\_\_\_Marketing

\_\_\_x\_Analytical reasoning \_\_x\_\_Problem Solver \_\_\_\_Teacher/Trainer

\_\_x\_\_Computer programming \_\_x\_\_Computer applications \_\_\_\_PowerPoint Presentations

\_\_\_\_Foreign Language (specify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_Other skills not listed (identify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How will this proposed degree program benefit your local community, the state, region or nation?

With nearly all industries moving towards bid data and predictive analytics, such a degree will provide the skills necessary, but also the intuition and reasoning that comes from an economics background. This will be beneficial to making correct decisions based upon bid data analytics.

1. Provide any additional comments about the proposed degree program.

**Employer Needs Survey Form**

Date\_\_2018-09-11\_\_\_\_\_\_\_ Institution\_Department of Economics, University of Arkansas, Fayetteville \_\_\_\_

Return this survey by email to\_\_\_\_kali@uark.edu\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Institution provide email address above)

**Proposed Degree Program\_\_\_\_\_\_**MS in Economic Analytics**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Brief description of the program**\_ The Master of Science in Economic Analytics is a 10-month intensive program that will

guide students through economic modeling and theory to computational practice and cutting-edge tools, providing a

thorough training in descriptive, predictive, and prescriptive analytics.\_ Students will be armed with a solid knowledge of

econometric and machine learning methods, optimization, and computing. These “big-data” skills, combined with

knowledge of economic modeling, will enable them to identify, assess, and seize the opportunity for data-driven value

creation in the private and public sector.

Employer\_\_\_\_\_\_\_Green Street Energy\_\_\_\_\_\_\_\_ Type of company\_\_\_\_\_Renewable Energy Finance\_\_\_\_\_\_\_\_\_\_

Contact Person\_\_\_\_\_\_Michael Cawthon\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Position Title\_\_\_\_\_Chief Investment Officer\_\_\_\_\_

Email\_\_\_\_mcawthon@greenstenergy.com\_\_\_\_\_\_\_\_\_ Telephone number\_\_\_\_479-442-1407\_\_\_

1. List job titles with your company that require employees to have the knowledge and skills obtained from the proposed

degree program\_\_\_\_Analyst, Data scientist\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. List the degree required for each job title listed in #1\_\_\_\_\_individual-dependent, but often quantitative\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Indicate the certification/licensure required for each job title listed in #1?\_\_\_\_\_\_\_\_\_\_\_\_none\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. How many positions do you currently have for each job title listed in #1?\_\_\_\_\_\_\_\_\_\_\_\_\_\_one\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. How many position openings do you currently have for each job title listed in #1? \_\_\_\_\_\_\_\_\_\_\_none\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. How many position openings will you have the next 2–5 years for each job title listed in #1? \_\_\_hopefully 1-2\_\_\_\_\_\_\_

7. What is the annual salary for each position listed in #4 &#5?\_\_\_$75k to $300+k, depending on seniority\_\_\_\_\_\_\_\_

8. If no openings now, when do you anticipate having openings for the positions listed in #1? \_\_within 18 months\_\_\_\_\_\_\_

9. Would you give hiring preference to applicants with the proposed degree?\_\_Maybe not preference, but the summary

curriculum sounds highly qualifying\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. Indicate the number of employees who would benefit from enrolling in selected coursework in the proposed degree

program?\_\_Our firm is too small today \_\_\_\_\_\_ If yes, would you provide tuition

assistance?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11. Would it be helpful for your employees if the courses were offered online/distance technology, evenings or

weekends?\_\_\_\_\_\_\_\_unclear, though my pedagogical bias is for live instruction \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12. Indicate the type of support your company will provide for the proposed degree program, such as, program start-up funds,

provide an internship site, part-time faculty, tuition reimbursement, employee release time, or equipment?\_\_\_certainly

internship opportunities and potentially lending part-time faculty\_\_\_\_\_\_\_\_\_

13. Will you or a co-worker serve on the institution’s program advisory committee?\_\_\_\_I would consider doing it myself\_\_\_

(provide name of employee & email)

14. Indicate the skills individuals would need for employment in the positions listed in #1.

x\_\_Interpersonal communications \_\_\_\_Supervision/Management \_\_\_\_Budgeting

x\_\_\_Written/oral communications \_\_\_\_Leadership/initiative x\_Data analysis

x\_\_Team work \_x\_\_Planning/Organizing \_\_\_\_Public Speaking

\_x\_\_Independent worker \_\_\_\_Conflict resolution \_\_\_\_Marketing

x\_\_Analytical reasoning \_\_\_\_Problem Solver x\_\_Teacher/Trainer

x\_Computer programming \_x\_Computer applications \_\_\_\_PowerPoint Presentations

\_\_\_\_Foreign Language (specify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_Other skills not listed (identify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

15. How will this proposed degree program benefit your local community, the state, region or nation?

It’s difficult to say how it would benefit the region, but I do think there is ample need for the skills offered by the

program.