TOPIC: University of Maryland, College Park: Master of Science in Marketing Analytics (MSMA)

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: March 11, 2014

SUMMARY: This proposal is a continuation of a larger effort to disaggregate the concentrations in the M.S. in Business (MSB) that started in Fall 2013 with the degree in Finance. Separation of the concentrations within the MS in Business will allow students to pursue more than one area of expertise for those who desire to do so. The proposed Master of Science in Marketing Analytics   would replace the existing concentration. No curriculum changes are anticipated**,** but offering a separate degree with the words "Marketing Analytics" in the title will better articulate on the diploma the credentials of students graduating from the program and make them more competitive in international markets. The Smith School also offers a joint MSB/Marketing Analytics-MBA degree and thus the University also seeks to convert this option to a joint MBA-MSMA program.

Participants in the Master of Science in Marketing Analytics program gain the cutting-edge knowledge and skills necessary to succeed in applying marketing analytics in business practice. This program specializes in marketing analytics and helps students to benefit from businesses' increasing focus on the analysis of customer data, a trend fueled by the rapidly growing number of data sets enabled by various new technologies. The program provides an in-depth understanding of the mathematical and statistical models and tools needed for such customer analysis in the context of marketing problems. It is suitable for students with a strong background in quantitative disciplines (e.g., mathematics, statistics, engineering, etc.) who wish to adapt and apply to their skills to business and marketing.

No other institution within the State of Maryland offers a degree program in Marketing Analytics. The University of Maryland University College offers two online programs with some common curricular elements. UMUC's Master of Science in Management: Marketing is a general marketing program, without the data analytics focus. Its MS in Data Analytics is a more general curriculum in data analytics without a specific focus on the business discipline. Our program is differentiated from both of these by its tailored approach to the specific field of analytics applied in business and marketing. Nationally and internationally, peer programs to which our curriculum might be compared are at the University of Georgia, DePaul University, the University of Wisconsin, and Tilburg University in the Netherlands.

ALTERNATIVE(S): The Regents may not approve the program or may request further information.

FISCAL IMPACT: There is no fiscal impact.

CHANCELLOR'S RECOMMENDATION: That the Committee on Education Policy and Student Life recommend that the Board of Regents approve the proposal from the University of Maryland, College Park to offer the Master of Science in Marketing Analytics.

COMMITTEE RECOMMENDATION: Approval   DATE: March 11, 2014

BOARD ACTION: DATE:

SUBMITTED BY: Joann Boughman   301-445-1992   jboughman@usmd.edu

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

X New Instructional Program

___ Substantial Expansion/Major Modification

___ Cooperative Degree Program

X Within Existing Resources, or

___ Requiring New Resources

University of Maryland College Park

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Institution Submitting Proposal

Master of Science in Marketing Analytics

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Title of Proposed Program

Master of Science	**Fall 2014**
Award to be Offered	Projected Implementation Date

	52.1499
Proposed HEGIS Code	Proposed CIP Code

Robert H. Smith School of Business	**Wendy Moe**
Department in which program will be located	Department Contact

(301) 405-9187	**wendy_moe@rhsmith.umd.edu**
Contact Phone Number	Contact E-Mail Address

	February 17, 2014
Signature of President or Designee	Date

Mission

The University of Maryland College Park mission statement includes a goal to "continue to build a strong, university-wide culture of graduate and professional education" and to provide knowledge-based programs and services that are responsive to the needs of the citizens of the state and the nation. The Robert H. Smith School of Business promotes this mission through its objective to grow future leaders to address the increasingly relevant global issues of our time. As part of this goal, the Smith School currently offers an internationally competitive Master of Science in Business degree with several concentrations, one of which is a concentration in Marketing with a focus on analytics (MSB/MA). ***This proposal is to replace the MSB/MA with a standalone degree program with the title Master of Science in Marketing Analytics (MSIS). No curriculum changes are anticipated,*** but offering a separate degree with the words "Marketing Analytics" in the title will better articulate on the diploma the credentials of students graduating from the program and make them more competitive, particularly in international markets.

This proposal is a continuation of a larger effort to disaggregate the concentrations in the M.S. in Business, that started in Fall 2013 with the degree in Finance. Three other concentrations will also be proposed for conversion to standalone programs in Accounting, Information Systems, and Supply Chain Management. These will be submitted as separate proposals. Separation of the concentrations within the MS in Business will allow students to pursue more than one area of expertise for those who desire to do so.

The Smith School also offers a joint MSB/MA -MBA degree and thus we also seek to convert this option to a joint MBA-MSMA program.

In light of the growing amount of data available to organizations, employers are looking for marketing analytics specialists who have a thorough understanding of mathematical and statistical models and the ability to rigorously apply these methods to business problems, particularly those related to customer behavior and marketing strategy. McKinsey & Company states, "There will be a shortage of talent necessary for organizations to take advantage of big data. By 2018, the United States alone could face a shortage of 140,000 to 190,000 people with deep analytical skills as well as 1.5 million managers and analysts with the know-how to use the analysis of big data to make effective decisions."[1]

Characteristics of the Proposed Program

UMD's MS in Business is a 30-credit program, with approximately 40 new students admitted per year into the Marketing concentration. Approximately the same level of enrollment is expected in the MSMA degree program in its first year. Applications for the class of 2014 have been strong, with an average GMAT score of over 700 and average GPA of 3.4.

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[1] Manyika, J., Chui, M., Brown, B., Bughin, J., Dobbs, R., Roxburgh, C., Hung Byers, A. (2011). *Big data: The next frontier for innovation competition, and productivity.* McKinsey Global Institute.

Applicants will apply to the University of Maryland Graduate School and must have completed all of the requirements for a baccalaureate degree prior acceptance, with particular emphasis on a sufficient mathematical background. All applicants must submit: a) transcripts from all undergraduate and graduate institutions that have been previously attended; b) Graduate Record Examination (GRE) scores or the Graduate Management Admissions Test (GMAT) scores; c) a complete online application form that includes a written essay articulating qualifications and motivation for pursuing advanced education; and d) two letters of recommendation from supervisors or from professors competent to judge the applicant's probability of success in graduate school. Another standardized test in lieu of the GRE or GMAT can be substituted at the discretion of the Academic Director.

An admissions interview may be required. After initial screening, the Admissions Office may select candidates for interviews which may be done in person or by telephone. Proof of English language proficiency (TOEFL or IELTS official scores) is also required unless the applicant has received an undergraduate or graduate degree from a select list of countries. For international students needing an F1 visa, a completed certification of finance form and supporting financial documentation are required.

In addition to Graduate School requirements, admission decisions for the MSMA program will be based on the quality of previous undergraduate and graduate course work (if applicable), the strength of Graduate Record Examination scores or the Graduate Management Admissions Test scores, the relevance of prior work and research experience, and the congruence of professional goals with those of the program.

Catalog Description

Participants in the Master of Science in Marketing Analytics program gain the cutting-edge knowledge and skills necessary to succeed in applying marketing analytics in business practice. This program specializes in marketing analytics and helps students benefit from businesses' increasing focus on the analysis of customer data, a trend fueled by the rapidly growing number of data sets enabled by various new technologies. The program provides an in-depth understanding of the mathematical and statistical models and tools needed for such customer analysis in the context of marketing problems. It is suitable for students with a strong background in quantitative disciplines (e.g., mathematics, statistics, engineering, etc.) who wish to adapt and apply to their skills to business and marketing.

Curriculum

Students will enter the MSMA program with a Bachelor's degree. The proposed MSMA program requires 30 credit hours comprised of core courses (22 credits), application courses (6 credits), and an action learning project (2 credits). Sample student schedules and course descriptions are provided in Appendix A.

Expected Learning Outcomes

The Master of Science in Marketing Analytics degree is designed to introduce students to the basic skills needed for marketing analytics and the theoretical frameworks needed to understand marketing data and strategy and application areas in which marketing analytics is relevant.

The proposed program will provide students with:

a) a clear understanding of the basic concepts of marketing strategy, consumer behavior, and marketing research and analytics;

b) critical reasoning, written communication, and oral communication skills;

c) an understanding of business ethics and the issues associated with managing and analyzing data, with a particular focus on the ethics of data privacy;

d) the ability to work effectively with other members of a team in the preparation of a group project;

e) an ability to analyze big data sets with a variety of modern computer packages, including SPSS, SAS, and R;

f) expertise in business analytics that will make them valuable contributors to a variety of employers and organizations in diverse communities.

A description of how the program outcomes will be organized and assessed is included as Appendix B.

While the University of Maryland's Robert H. Smith School of Business is accredited by the American Association of Collegiate Schools of Business (AACSB), no specialized accreditation is sought for this program.

Other programs within the state of Maryland

No other institution within the State of Maryland offers a degree program in Marketing Analytics. The University of Maryland University College offers two online programs with some common curricular elements. UMUC's Master of Science in Management: Marketing is a general marketing program, without the data analytics focus. Its MS in Data Analytics is a more general curriculum in data analytics without a specific focus on the business discipline. Our program is differentiated from both of these by its tailored approach to the specific field of analytics applied in business and marketing.   Nationally and internationally, peer programs to which our curriculum might be compared are at the University of Georgia, DePaul University, the University of Wisconsin, and Tilburg University in the Netherlands.

Academic Oversight, Quality Control and Student Services

Primary oversight of this program will be provided by a faculty member assigned as the director of the program. A committee of faculty members has been created to address issues including admissions, academic policies, student activities, and internship / placement opportunities. The program would also be overseen by the chair of the marketing department and the Dean's office.

The marketing department of the Robert H Smith School of Business currently has a faculty of 23 FTE. Nineteen of these are tenure/ tenure track, all of whom have doctoral degrees in marketing, psychology, or computer science. The four additional teaching faculty members also have graduate degrees in related fields.

Method of Delivery

Currently, the program is structured to be entirely delivered in a traditional classroom setting. Over time, we may evaluate online and/or blended learning opportunities. Should courses move to an online format, the guidance outlined in COMAR 13B.02.02.22C: "Principles and Guidelines for Distance Education Programs" will be followed.

Classes will be held at the Universities at Shady Grove. Those facilities already contain adequate classrooms, computer facilities, study rooms, and administrative space for academic advising, career advising, and student activity support.

Commitment to Diversity and the State's Minority Achievement Goals

The Robert H. Smith School of Business community is multifaceted at every level – students, staff and faculty represent a diverse blend of backgrounds, nationalities, ethnicities and experiences. About a dozen Smith School and student clubs are focused on bringing members together who have similar interests in gender, nationality, religion, and sexual orientation.

Current efforts include a wide range of recruiting efforts, including visits to academic program fairs, use of social media, visits to U.S. colleges and universities, presentations at professional conferences, and participation in Graduate Business Education events targeted for populations typically underrepresented in graduate business programs, particularly U.S. minorities and women. Future efforts will include targeted recruiting towards military families and veterans, highlighting of alumni and current graduate students who reflect a more diverse population.

Resources and Finance

Because this program replaces a current concentration within an existing program and we do not at this time anticipate growing it beyond its current scale, no additional courses, changes in advising, physical resources, or administrative workload are anticipated. Approval of this proposal would not alter the responsibilities of the faculty beyond those already generated by the existing Masters of Science in Business and Management with the concentration in Marketing that this proposal seeks to replace.

The President assures that institutional library resources meet new program needs.

Appendix A: Course Descriptions

Sample Student Schedule

Below is a table showing how a typical MSMA student can complete the required coursework over a one-year period as a full-time student. The program is cohort-based and all students are expected to begin during the Fall semester.

Student Schedule for Full-time MSMA, Masters of Science in Marketing Analytics

Fall 1	Fall 2	Winter	Spring 1	Spring 2
Market-Based Management*		Business Communications*	Data Science*	
Customer Analysis*		Business Ethics*	Marketing Research and Analysis*	
Advanced Marketing Analytics*			Application 1	Application 3
Statistical Programming*			Application 2	Action Learning Project

* Core Course

Core Courses

Market-Based Management (3 Credits) The purpose of this course is to introduce students to the fundamentals of marketing. This course combines lectures, readings, case analyses and a competitive simulation. A significant part of the course involves a competitive computer-based simulation in which student teams leverage marketing data and metrics to make marketing decisions for an organization that is competing in a market against other student teams in the class.

Customer Analysis (3 Credits) This course focuses on the analysis of customer decision-making and how marketing strategy can be used to influence those decisions. The framework used is the buyer behavior model, in which concepts from psychology, sociology, and economics are applied to individual and organizational purchase decisions. Marketing strategies of leading firms in consumer products, technology, and services (including internet services) are analyzed using a variety of case study formats.

Advanced Marketing Analytics (3 Credits) This course deals with the analysis of marketing data needed for profitable marketing decisions. It teaches students advanced methods of marketing analysis for marketing decisions, including choice and count data models, joint analysis of consumers' choice, quantity and timing decisions, mixture and mixture regression models, and conjoint analysis, all using data-based cases and SAS software. Applications are in the areas of strategic marketing,

marketing segmentation, eye tracking for advertising effectiveness, new product development, sales promotion analysis, pricing, design of marketing mix, and direct marketing.

Statistical Programming (3 Credits) This course provides students with a foundation in probability and statistics with a focus on business applications. It also gives students a foundation for thinking in both likelihood and Bayesian frameworks. The course teaches students the basics of SAS, as well as its use in statistical analysis and statistical programming. Also addressed are basic SAS language structure, data management, OLAP, enterprise miner, statistical analysis, writing procedures.

Business Communications (2 Credits) This course teaches students how to communicate quantitative information effectively. The course will focus on developing written, spoken and presentation skills.

Business Ethics (2 Credits) This course is a study of the standards of business conduct, morals and values as well as the role of business in society. Students will consider the sometimes conflicting interests of and claims on the firm and its objectives.

Database Science (3 Credits) This class provides an introduction to data science and the basic concepts of database management. The course also provides an overview of the various sources of in house data that are available to many organizations. Students will learn how to work with click stream, scanner panel and social media data. Geo-demographic datasets will be discussed and explored, and techniques for data-fusion will receive ample attention.

Marketing Research and Analysis (3 Credits) This course provides a review of primary data collection methods for marketing data. Students will learn how to design and implement effective confirmatory research. Both direct methods such as surveys and indirect methods such as experiments will be covered. In this hands-on course, students will design and conduct research with target customers, analyze the data, and then present their results to decision makers.

Application Courses
All courses listed below are 2 credit courses. Students can elect any 3 to fulfill the 6 credit requirement.

Customer Equity Management This course focuses on managing customers of a business, whether in B2B or B2C space, as a portfolio of equity. It provides an understanding of the current and future value of customers to the business. Topics include selective acquisition, development, and retention of customers using latest developments in information technology.

Market Forecasting In this course, students will learn a number of market forecasting methods, each appropriate for different contexts. The majority of this course focuses on quantitative modeling techniques based on established statistical methods. We also cover non-statistical methods that are often used when empirical data is scarce. This is a very hands-on class where students will apply the forecasting methods learned to real data.

Pricing Analytics and Strategies The course will focus on the economic and behavioral aspects of pricing and the evaluation of innovative pricing practices such as price matching, customized pricing,

bundle pricing and product line pricing. The course will cover both B2B, B2C, online and offline markets. Instruction will be through a mix of case studies, pricing simulation games, hands-on exercises, practitioner guest lectures and discussions.

Retail Analytics Planning and implementing retail marketing strategies often involve sophisticated analytics. This course will teach the analytical tools needed to develop retail strategies. Both store and non-store (catalog, Internet) retailing are discussed. Also, students will learn how to evaluate the impact of environmental trends in the consumer market, competition, the economy and technology on retail strategy in the U.S. and global market.

Web Analytics This course examines the process of developing, implementing and analyzing strategies for successfully marketing a variety of existing and potential products and services on the Internet. Special attention is devoted to the tools and techniques unique to the electronic media.

Action Learning Project
This is a 2 credit project based course where students will analyze marketing data, report their findings and provide appropriate recommendations.

Appendix B: Student Learning Outcomes and Assessment

Learning Outcome 1	Students will demonstrate a clear understanding of the basic concepts of Marketing Strategy, Consumer Behavior and Marketing Research and Analytics.
Measure:	Students will be required to pass a core set of classes in these areas.
Criterion:	At least 90% of students will receive a rating of "Satisfactory" or better from the Academic Director, who will review their performance in the core classes. The Academic Director will meet with students rated below "Satisfactory" to help improve their performance or determine their continued participation in the program.
Assessment:	Every Year, starting in the 2013-2014 academic year.
Learning Outcome 2	Students will demonstrate critical reasoning, written and oral communication skills.
Measure:	Students must take at least one class that focuses on developing their communications skills.
Criterion:	At least 90% of students will receive a rating of "Satisfactory" or better from the course instructor.
Assessment:	Every Year, starting in the 2013-2014 academic year.
Learning Outcome 3	Students will demonstrate an understanding of business ethics and the ethical issues associated with managing and analyzing data, with a particular focus on the ethics of data privacy.
Measure:	Students must take one business ethics course.
Criterion:	At least 90% of students will receive a rating of "Satisfactory" or better from the course instructor.
Assessment:	Every Year, starting in the 2013-2014 academic year.
Learning Outcome 4	Students will demonstrate their ability to work effectively with other members of a team in the preparation of a group project.
Measure:	Students must prepare group projects as part of a class.
Criterion:	At least 90% of students will receive a rating of "Satisfactory" or better from the course instructor.
Assessment:	Every Year, starting in the 2013-2014 academic year.
Learning Outcome 5	Students will demonstrate an ability to analyze big data sets with a variety of computer programs, including SPSS, SAS, and R.
Measure:	Students will be required to pass classes in which these packages are taught.
Criterion:	At least 90% of students will receive a rating of "Satisfactory" or better from the Academic Director, who will review their performance in the core classes teaching these software packages.
Assessment:	Every Year, starting in the 2013-2014 academic year.

Table 1: Resources			
Resources Categories	Year 1	Year 2	Year 3
1.Reallocated Funds	None	None	None
2. Tuition/Fee Revenue ("a x d" below)	$1,710,000	$1,761,300	$1,814,139
a. FT Students	40	40	40
b. Credit Hour Rate	$1,425	$1,467.75	$1,512
c. Annual Credit Hours	30	30	30
d. Annual Fee Rate	$42,750	$44,033	$45,353
3. Grants, Contracts, & Other External Sources	None	None	None
4. Other Sources	None	None	None
TOTAL (Add 1 - 4)	$1,710,000	$1,761,300	$1,814,139

* The tuition/fee revenue is based a graduate tuition rate of $1,425 per credit hour, as approved by the USM Board of Regents.

Table 2: Expenditures			
Expenditure Categories	Year 1	Year 2	Year 3
1.Total Faculty[*] (b+c below)	$555,000	$571,650	$588,800
a. #FTE	2	2	2
b. Total Salary	$444,000	$457,320	$471,040
c. Total Benefits	$111,000	$114,330	$117,760
2.Total Administrative(b+c below)	$74,643	$76,882	$79,189
a. #FTE	3	3	3
b. Total Salary	$59,715	$61,506	$63,351
c. Total Benefits	$14,929	$15,376	$15,838
3.Total Support Staff (b+c below)	$692,638	$713,417	$734,819
a. #FTE	9	9	9
b. Total Salary	$193,984	$199,804	$205,798
c. Total Benefits	$48,496	$49,951	$51,449
4. New or Renovated Space			
5. Student Services	$51,875	$51,875	$51,875
6. Marketing	$25,000	$25,000	$25,000
7. Recruiting & Admissions	$30,000	$30,000	$30,000
8. Career Services	$30,150	$30,150	$30,150
9. Student Aid	$25,000	$25,000	$25,000
10. Other Expenses	$0	$0	$0
TOTAL (Add 1 - 10)	$1,484,306	$1,523,974	$1,564,833