UNC CHARLOTTE

Office of the Chancellor

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August 19, 2013

Dr. Chris Brown
Vice President for Research and Graduate Education
General Administration
University of North Carolina
Post Office Box 2688
Chapel Hill, North Carolina 27515-2688

Dear Dr. Brown:

   Enclosed is UNC Charlotte's Request for Authorization to Establish a M.S. in Data Science and Business Analytics. The proposed degree is a Professional Science Masters (PSM) program at the intersection of business, computer and information sciences, statistics, and operations research. As a PSM, the focus of the program is on developing graduates with the technical skills, understanding of business processes, and hands-on experience to add value to real-world challenges.

   Thank you for your consideration of this request. Provost Joan Lorden or I would be pleased to respond to any questions that you may have.

Cordially,

Philip L. Dubois
Chancellor

cc: Provost Joan F. Lorden
       Dean Steve Ott
       Dean Yi Deng
       Cody Thompson
       Associate Vice President Courtney Thornton

October 10, 2013

Courtney H. Thornton, Ed.D.
Associate Vice President for Research and Graduate Education
General Administration
University of North Carolina
910 Raleigh Road
Post Office Box 2688
Chapel Hill, North Carolina 27515-2688

Dear Courtney:

Enclosed is UNC Charlotte's updated Request for Authorization to Establish a new M.S. in Data Science and Business Analytics. The following changes have been made to address your questions and a revised Appendix C is enclosed:

Program and Curriculum:
p. 6 – Indicates new courses are being developed, but no new courses are identified in the curriculum listing on pp. 19-22. Please note which are new per the instructions in III.D.
This issue has been clarified on page 6. In anticipation of the PSM and to support the recently approved Data Science and Business Analytics Certificate, four new courses have been added and approved by the faculty. One additional course, Cloud Computing, is in the final stage of the campus curriculum approval process. Since these courses have already received or in the final stage of receiving campus approval, they were not listed as new courses. No additional courses are required to offer the PSM. However, new courses may be added as needed once the program is established. We will be happy to indicate these courses as new if that would be more appropriate.

p. 17 – States "Acceptable scores" for GRE are required. NCSU's program does not require GRE but applicants must demonstrate "high aptitude for quantitative analysis" through prior coursework or work experience. If you suspect any of your potential applicant populations may be questionable in this regard, you may consider stating how you will assess quantitative abilities (is it a minimum GRE score? Something else?)
Clarification was added under III.B.1.c that indicates that the DSBA PSM Program Director will make the final decision about the acceptability of GRE scores in conjunction with other factors, including a determination of aptitude for quantitative analysis based on previous coursework and work experience.

p. 30 – What is the status of the PSM Advisory Board for this program? If in place, name the members. If not in place, what is the status? This is required for PSM affiliation.

 While the PSM Advisory Board has not been established at this time, preliminary discussions with business leaders in analytics roles have occurred. For example, the individuals who participated in the DSBA PSM planning session, March 2012 indicated interest in serving on the Advisory Board. We will formalize the Advisory Board selection once the program is approved.

Demand:
p. 9 – Reviewers will be able to further interpret the student demand data and percent responding if the number of survey recipients /respondents is included.

 Additional information was added to page 9 with number of respondents from each of the four groups. More than 400 students and alumni responded to the survey including 163 responses from Belk College undergraduates, 75 respondents from CCI undergraduates, 108 respondents from Belk College alumni and 72 respondents from CCI alumni.

Budget:
p. 32 – A justification must be included for the amount of differential tuition requested. You may also consider referencing Appendix D here (tuitions for national programs collected by NCSU).

 A paragraph was added on page 32 to address the justification for the tuition increment. The budget in Appendix B provides detailed information about the needs that will be funded with tuition increment funds. The study conducted by NCSU (Appendix D) indicates that the proposed tuition increment is consistent with tuition charged by NCSU and other analytics programs. A document providing more specific justification will be prepared and submitted during the next Tuition and Fee cycle.

p. 32 – Since this program is to begin August 2014, we do not believe the request for tuition differential will need to be approved by BOG prior to next Tuition and Fee cycle, but please advise.

 This has been changed. We will submit a tuition increment proposal for the DSBA PSM during the next Tuition and Fee cycle and will not request approval by the BOG prior to the next Tuition and Fee cycle.

p. 32 – Because the budget includes some dependence upon enrollment growth funding, please include a letter of commitment from campus administration that the program can still be "implemented and sustained and, if so, how…" (per XI.C)

 This letter serves as the letter of commitment; see statement below.

pp. 40-47 – The differential tuition calculation calls for FTE; the current version seems to be built off of head count. For example, in Year 1, you expect 10 FT and 10 PT students, so your FTE will be something less than 20. All years of budgets will need to be adjusted.

 The original budget in Appendix B has been adjusted to reflect both the effect of part-time students on FTEs and the continuing students. In the original budget it was assumed that all students would complete the degree program in one year. The program plan is for full-time students to complete the program in three semesters and part-time students to generally complete

the program in five semesters plus a summer internship with $4,500 and $3,375 paid in tuition increment per semester, respectively. The revised budget also reflects this program plan. Revenue and expenditure details are presented in Appendix B.

The updated proposal includes a detailed budget. We have determined that start up and continuing costs can be funded by a combination of differential tuition and additional allocations, and have indicated exact amounts to be taken from each source. UNC Charlotte is committed to funding the expenses for the degree as described by reallocating funds, if needed.

Thank you for your consideration of this request and please let me know if I can provide additional information.

Cordially,

Joan F. Lorden, Ph.D.
Provost and Vice Chancellor for Academic Affairs

Enclosure

cc: Yi Deng, Dean, College of Computing and Informatics, UNC Charlotte
       Steven Ott, Dean, Belk College of Business, UNC Charlotte
       Cody Thompson, Assistant to the Vice President for Academic & University Programs

<p style="text-align:center">Summary of Feedback on
Proposed UNC Charlotte MS in Data Science and Business Analytics</p>

Number of campuses submitting reviews: 7
Number of Reviewers Total: 23+
Number of Non-Administrative Faculty: 16+

Reviews consistently noted that the proposal aligns well with UNC Charlotte's mission and has the potential to leverage local business relationships.

The following areas of concern, in order of frequency, were raised by more than one institution and resulted in reviews of either "acceptable with some considerations" or "not acceptable unless significant deficiencies are addressed." Representative comments are included.

1. **Collaborative agreements:** Several reviewers noted the similarity to NCSU's Analytics program and sought additional information on the status of course sharing agreements with NCSU as well as UNC-CH.

   There is a similar program at North Carolina State University. The proposed program is open to part-time students with more emphasis on business and management domains. The proposal mentions development of reciprocal course sharing agreements with NCSU; it is not clear if that agreement has been reached.

   Not clear whether agreement has been reached on the promised course sharing with NCSU and UNC Chapel Hill.

   …at the time of submitting this proposal, the authors are indicating a potential for future collaboration with the existing programs at NCSU and UNC Chapel Hill. These potential relationships should be further explored at the onset to determine the ultimate interest level of these potential partners and the true potential for the realization of intended "sharing agreements".

   <u>Response</u>

   North Carolina State University's (NCSU) Analytics program differs from the one proposed by UNC Charlotte in several important ways. The NCSU program is a full-day, full-time program that offers a course structure that differs significantly from a 3-credit hour structure usually offered by universities. In addition, its programmatic focus only partially matches UNC Charlotte's DSBA PSM program in terms of its treatment of analytics techniques and target industries. While the NCSU program offers its students a unique and valuable experience, the uniqueness of UNC Charlotte's program is its focus on the Charlotte region's heavy investment in the financial services, energy, healthcare, logistics, and retail industries.

   The non-traditional course structure at NCSU makes it difficult to envision extensive course sharing opportunities with the DSBA PSM program. However, this does not mean that there will be no courses at other NCSU programs that could be offered to UNC Charlotte students, should they have an on-line version. UNC Charlotte has already spearheaded establishment of a

coalition of statewide Health Informatics programs through the NCHICA organization for its Health Informatics PSM degree program. We hope that this coalition will eventually result in a better planning for future extensions of existing Health Informatics programs at various institutions. We hope that a similar effort may be undertaken for Analytics programs in the State. This will help each program grow without necessarily having to secure all resources at each institution to offer quality and comprehensive analytics programs. Such collaborative agreements could include both NCSU and UNC-CH, but also other institutions within the UNC system.

Finally, the UNC Charlotte's DSBA PSM program will be offered primarily in the evening hours at the downtown location close to most businesses to make it convenient for part-time students. This will potentially place limitations on the degree of course sharing that can be established between UNC campuses, but we will certainly make every effort to maximize such opportunities.

2. **Sufficiency of Resources – Material and Personnel:** Several reviewers sought additional details about computing, library, and other supports required by the program. One reviewer questioned plans for administrative relationships to manage the program.

> *More information about support for computing facilities, especially some of the specialized software and computing resources, which can be quite expensive. Multiple labs already in place; not clear that the needed software is already available. No additional library resources are requested, but they will likely be needed.*
>
> *Although it seems reasonable to assume that UNC Charlotte's Belk College of Business and College of Computing and Informatics has the necessary physical resources to conduct this program, especially since it is indicated that most of the proposed courses are already being offered, specific information on the impact of this program on College resources over at least the next five years should be made more explicit.*
>
> *Alternating the program director every two years seems too frequent. Also, the Director seems to have very heavy responsibilities. It also appears to increase the responsibilities of the Grad School Dean. The relationship of the program director with the Deans of CCI and BCOB need to be strengthened.*

Response

As stated in the original proposal, UNC Charlotte has world-class laboratories in place to support the program (see Table VI-A of the proposal). The university currently holds full site licenses for SAS Analytics, SPSS, Oracle and host of other related software resources for students and faculty. In addition, through research units such Charlotte Visualization Lab, UNC Charlotte has created a portfolio of new state-of-the-art tools to be used in delivering the program. Access to these facilities and resources is a priority for both colleges and the university as a whole. Starting FY2013-14, the Chancellor committed $1 million in permanent funds to support this initiative and its related start-up costs. These funds are available to support immediate staffing needs as well as resources for laboratory infrastructure, technology tools, and library holdings.

Prior to the Chancellor's commitment, the College of Computing and Informatics invested $250K in FY 2012-13 in technology infrastructure. Additional university and college investments in technology infrastructure and platforms are expected.

The tenure of the Program Director has been changed from two years to three. In addition a new Director of Student Services, Joshua Hertel, was brought on in December 2013 to support the Program Director. The overall DSBA program will be administered through the Graduate Center, part of the Graduate School, in close collaboration with the College of Computing and Informatics and the Belk College of Business.

3. **Sufficiency of Resources – Funding to Operate:** Several reviewers questioned the sustainability of the program based on projected funding sources.

> *The funding model seems optimistic, in terms of the proposed tuition differential and matching funds available from the state. The proposal includes plans for hiring additional faculty. It seems overly optimistic in terms of the funding sources available for these plans. In particular, state matching funds for professorships are currently hard to come by, and enrollment increase money is somewhat unpredictable. Given the high cost of the program (for students) but the expected high return on that investment, student support seems adequate.*

> *The proposal addresses support via typical campus funding mechanisms and also the hiring of a program dedicated endowed professor. However, the proposal indicates the heavy reliance on new positions, including two faculty positions and a Director of DSBA PSM. This is uncertain in this and future economic climates and also in light of the proposers' reliance on future tuition increment funds.*

> *Budget sustainability is not clearly articulated.*

Response

UNC Charlotte is fully committed to fund and deliver this program as stated in the proposal document. The Chancellor has designated this initiative as the top academic priority for the university and allocated $1M in continuing funds for faculty and staff positions in support of research, instruction, and executive education. During the past two years in support of this initiative and using either new or reallocated funds, searches have been completed or are underway for four faculty positions in the College of Computing and Informatics and three in the Belk College of Business. A search is also underway for a data scientist (staff) position to support the development of education, training and research platforms. The Belk Corporation has already committed an endowed position for a faculty member in business analytics.

Through these investments and the anticipated demand for the program, we are confident that this program will be sustainable despite budgetary uncertainties at the state level.

4. **Part-time Student Considerations:** One reviewer raised extensive questions about the ability of the program to attract and facilitate successful completion of part-time students.

The proposed headcount includes 50% part-time students. How will the program accommodate their needs regarding course scheduling, feasibility of internships? Several of the courses have pre-requisites that are not part of the program (8 are mentioned, plus statistics). Is it expected that applicants will already have taken these, or comparable courses, or will students' programs actually take substantially more than the 33 hours required? Will the pre-requisites limit the applicant pool? There are three areas of concern that will eventually need to be addressed, though I wouldn't support denial of the proposal for them: -Fit with business school context: In several places the proposal discusses the context of the program and its close links to the business school. That is good, but the coursework itself doesn't actually provide much grounding in business if a student has come in from a different field. (This may be problematic for accreditation.) -A number of the courses require prerequisites. By my count, the students will need to complete 9 prerequisites in addition to the required courses in the program. Thus, it's hard to see how they can finish the PSM in 1.5 years full time. If the expectation is that the prerequisites will be routinely waived, then the course descriptions should be changed; if it's expected that this will filter incoming students based on their prior education, then that goal should be explicit. -It's not clear that the scheduling of the classes will make it feasible for part-time students to complete the program. Will enough courses be offered online, on weekends, or in the evening, so that part-time students (half the student body) can complete the program in a timely manner?

Response

The class schedule and the internship for the Professional Science Masters in Data Science and Business Analytics will be similar in structure to the existing Professional Science Masters in Health Informatics (HIPSM). As with the HIPSM, courses will be offered in the evenings to maximize access for working professionals. In addition both the College of Business and the College of Computing and Informatics are committed to expanding their catalog of online and hybrid/blended courses as appropriate. Students who are employed will not be expected to resign their positions or to take a leave of absence in order to participate in the practicum or internship process. As in the HIPSM, students are encouraged to work with their current employer to identify an appropriate project outside their current duties and responsibilities. Students enrolled in the internship must submit a proposal for faculty review. The project requires a minimum of 160 contact hours, a preceptor, and defined product to be evaluated by the faculty advisor. This provides flexibility for both student and employer.

The program assumes that most DSBA students will have work experience. This experience will be evaluated by the Program Director, who will subsequently determine whether this experience can be accepted in lieu of certain course prerequisites. Some students with or without prior work experience will have completed some of the prerequisites specified by the program, thereby reducing the number of courses that will have to be taken prior to their enrollment. Of course, there will be students who will have to take a significant number of preparatory courses before they can be properly prepared for this exciting journey. We want to be assured that every student has a sufficient background for the course of study offered by the DSBA PSM program at UNC Charlotte to enable them to be successful.

For students who enter the program without an extensive business background, we note that half of the DSBA PSM courses are offered by the faculty from the Belk College of Business. This will offer substantial opportunities for such students to gain knowledge of best business practices, especially in the context of data science and business analytics.

UNC Charlotte already offers a full range of graduate courses in business during the evening in our Center City Building to accommodate working professionals. These offerings will be expanded with the addition of the DBSA PSM and will ensure that the program is accessible to part-time students.

5. **Program Need:** One reviewer questioned the need for the program (versus MBA with Business Analytics concentration).
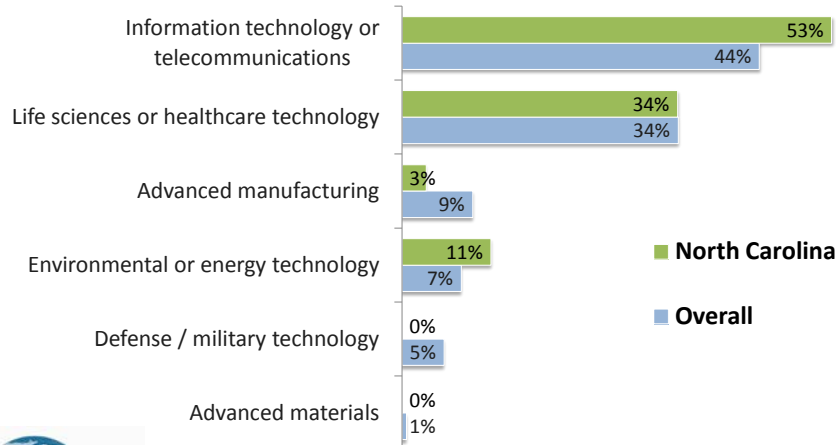
> *The MBA program already has a concentration in Business Analytics; that program could be strengthened to achieve most of the stated goals for the proposed degree program.*

Response

Our MBA program, like many in the UNC system, is by design a general management degree to provide broad skills across all functional areas of business and is aimed at working professionals who already have business experience. Of the 37 credit hours required for the MBA program, 9 credit hours (3 courses) are reserved for a concentration. Concentrations in this program include finance, supply chain management, business analytics, real-estate finance and development and others. While the primary goal of the MBA program is to develop leaders and managers, concentrations enable students to learn more about certain areas in order to be able to provide managerial leadership to the teams who are tasked with conducting the analyses. On the other hand, the proposed PSM in DSBA is a specialized Master's program designed to provide students with big data and analytical skills which require considerably deeper computer science and statistical skills as well as business context to know where and how these skills can be applied in a business environment. While more seasoned IT/CS and business professionals may seek out this program, we envision positioning the DSBA PSM program toward younger individuals who will focus more on the technical aspects of data science and business analytics than on general management within the organization. In most cases, this audience will be very different from our part-time, working professional MBA program.

The graph and chart below from the 2012 Technology Councils of North America illustrate the importance of this area to the economy of the State and suggest that there is ample room and need for different types of programs

Ranking of Importance of Tech Sector Segments

Segment	North Carolina	Overall
Information technology or telecommunications	53%	44%
Life sciences or healthcare technology	34%	34%
Advanced manufacturing	3%	9%
Environmental or energy technology	11%	7%
Defense / military technology	0%	5%
Advanced materials	0%	1%

■ **North Carolina**

■ **Overall**

TECNA
Technology Councils of North America

Assessment of Technologies as Contributors to Growth in State/Region Over Next Two Years

Overall	North Carolina	
64%	73%	Big Data analytics, data mining and business intelligence
60%	51%	Mobile apps development
59%	70%	Healthcare tech
59%	70%	Cloud-based software development (SaaS)
48%	70%	Everything-as-a-service (e.g. managed help desk, networks, security, etc.)
42%	30%	Wireless services
39%	27%	E-commerce or mobile commerce
38%	46%	Cloud implementation, integration or consulting services
37%	35%	Green tech
36%	38%	Mobile implementation, integration or consulting services
35%	38%	Mobile device development (Tablets, smartphones, accessories)
34%	27%	Biotech
33%	32%	Business process automation
31%	27%	Social solutions and technologies
30%	43%	Big Data storage and management
29%	32%	Enterprise collaboration (Video conferencing, collaboration tools)
29%	35%	Cloud data centers
26%	19%	Data visualization
24%	19%	Location-based services and technologies
23%	27%	Aggregation/Orchestration (coordination among multiple service providers)
17%	3%	Machine-to-machine learning or interaction
14%	5%	Defense tech
9%	11%	Telecom equipment development

To: Joan Lorden, PhD,
               Provost and Vice Chancellor for Academic Affairs

From: Mirsad Hadzikadic, PhD
               Professor of Computer Science
               Director, Data Science and Business Analytics PSM

Re: Additional Documentation Requested

Date: January 23, 2014

The following information addresses the questions and requests for additional information received from Dr. Courtney Thornton:
1. The change in requested differential tuition, from $9,000 to $7,000 per year, is a result of an effort by the faculty and administration of UNC Charlotte to both reduce the cost of the program and shift some of the services to functions already in place at the University. The revised Appendix C, reflecting the budget changes due to the lower differential tuition, is attached to this memo.

2. The following list represents a summary of the approvals of the DSBA program on campus, recommendations made by the reviewing committees/councils, and actions taken based upon these recommendations. Where appropriate, a copy of the meeting minutes is provided as well.
    a. A joint task force consisting of faculty from the College of Computing and Informatics (CCI) and the Belk College of Business (CoB) designed the program.
    b. The CCI approval process included:
        i.   CCI Graduate Council approved the proposal unanimously with two recommendations on 10/11/2013. The first recommendation had to do with the format of the signature sheet. The signature sheet was updated to reflect the Committee's recommendation. The second recommendation referenced the need to update the list of laboratories available for this program. The list of laboratories was subsequently updated and elaborated upon.
        ii. CCI Faculty approved the proposal unanimously and without recommendations 10/15/2013
        iii. CCI Dean approved the proposal on 10/16/2013
    c. The Belk CoB approval process included:

       i. Belk CoB   Graduate Council approved the proposal
           unanimously and without recommendations on 9/13/2013
      ii. Belk CoB   Faculty approved the proposal unanimously and
           without recommendations on 10/11/2013
    iii. Belk CoB   Dean approved the proposal on 10/16/2013

d. The UNC Charlotte Graduate Council approved the proposal
    unanimously on 11/5/2013 with one non-substantive
    administrative change to the naming convention used for the
    proposal. The minutes of the meeting are attached to this memo.

e. The UNC Charlotte Faculty Council approved the proposal
    unanimously and without recommendations on 12/2/13. The link
    to the approval can be found at:
    http://facultygovernance.uncc.edu/approval-memos/PSM-Data-
    Science-and-Business-Analytics.

Graduate Council Meeting Minutes
November 5, 2013

Members Present: Anderson, Kelly – Special Ed and Child Development
Davis, Christine – Communication Studies
Deng, Shaozhong – Math and alternate for Cheryl Hicks, HIST
Fodor, Anthony – Bioinformatics and Genomics
Freitag, Alan – Communication Studies and Graduate Council Chair
Gray, Lee – College of Arts + Architecture
Howarth, T. Joe – GPSG Student Representative
McCarter, Susan – Social Work
Ogundiran, Akin – Africana Studies and alternate for Angela Davies, PHOS
Reynolds, Tom – Associate Provost and Dean of the Graduate School
Wiggins, Casper – Accounting and alternate for Peter Schwarz, ECON
Zhou, Aixi – Engineering Tech and Construction Mgmt

Absent: Walker, Judy – Atkins Library

Also Attending: Coren O'Hara – Graduate School
Susan Sell – Graduate School
Matt Wyse – Academic Affairs
Leslie Zenk – Academic Affairs

I.   <u>Approval for the October 1, 2013 Meeting Minutes</u>
Chair Freitag called the meeting to order. Chair Freitag called for a motion to approve the October 1, 2013 meeting minutes as submitted. There being no further discussion, Anderson made the motion with a second from McCarter. The motion was approved unanimously.

II.   <u>Report of the Chair</u>
- Graduate Faculty by-laws - Chair Freitag created a subcommittee to review Graduate Faculty by-laws. The members are Joe Howarth, Susan McCarter, Aixi Zhou and Chair Freitag. Chair Freitag communicated that there may be some restructuring.
- Course & Curriculum Proposals (short/long forms) – Chair Freitag communicated there may be some restructuring or parceling out of long/short forms to the Graduate Council.
- Graduate Program Directors Advisory Council to meet on November 18.
- New subcommittee – Chair Freitag would like to create a subgroup to look at the websites for graduate programs and possibly consolidate or streamline processes. A checklist might be helpful.
- Interdisciplinary Programs – Paula Goolkasian forwarded a white paper expressing observations on how the university could get a better handle on these programs. It was suggested that possibly the Graduate School be responsible for the governance of interdisciplinary programs. Paper to be uploaded in Active Collab and presented at December 3, 2013 meeting.

- GRAD 7999/9999 – This topic has been discussed since 2003. There has been a challenge in the manner in which it is being managed. Banner cannot monitor the policy. Susan Sell to present a short form requesting a change to the policy. There needs to be clarification in the purpose with clarity.

III.   Report of the Dean – Dean Tom Reynolds

- Admissions Pro, the new graduate admissions online application is set to go live today, November 5, 2013.
- The Graduate School has hired an outside vendor, Eduventures to help us with enrollment planning for graduate education. The plan will be delivered to the Chancellor in April 2014.

IV.   Graduate Course and Curriculum Proposals

a.   DSBA 08-29-13: Establish a Professional Science Master's in Data Science & Bus Analytics
Chair Freitag called for a motion to consider. The motion was made by Anderson with a second from Fodor. As no further discussion took place, a motion was made to approve the proposal as submitted. The motion was unanimously approved.

b.   GRAD 9-3-13: Graduate-Level Writing for International Students
Chair Freitag called for a motion to consider. The motion was made by Anderson with a second from Gray. A discussion took place with the following comments:

- Is this the first of its kind? Dean Reynolds stated that Assistant Dean Katherine Hall-Hertel worked with the ELTI office to develop support for international students at the graduate level. ELTI is focused more toward undergraduate students.
- It was mentioned that the program should think about having more than the one instructor.

There being no further discussion, Chair Freitag made a motion to approve the proposal as submitted. The motion was unanimously approved.

c.   ITIS 8-23-13: Establish New Course, ITCS 6190/8190 Cloud Computing for Data Analysis
Chair Freitag called for a motion to consider. The motion was made by Anderson with a second from Fodor. A discussion took place and the following revisions were suggested:
- Needs Library Consultation
- Typo on page 6, "supplied" needs to be "supplies"
- Missing Consultations stated in Section IV, Item B,
- Proposal needs to refer to both 6190/8190 courses throughout.

There being no further discussion, Chair Freitag made a motion to approve the proposal pending editorial changes. The motion was unanimously approved.

d.   PSYC 4-15-13: Revision of the Master's in Clinical Community Psychology Degree
Chair Freitag called for a motion to consider. The motion was made by Anderson with a second from Ogundiran. The purpose of the proposal is to re-craft the program to answer

licensure requirements. There being no further discussion, Chair Freitag made a motion to approve the proposal as submitted. The motion was unanimously approved.

V.   <u>Course and Curriculum Work Flow Process Update – Leslie Zenk</u>
Academic Affairs administers Course and Curriculum changes. Subsequently, this creates changes for the catalog, Banner and other administrative processes. Last year, AA piloted a set of deadlines at the UG C&C level to help people plan ahead.

- One of the purposes is to get a handle on the process
- And second, to provide a level of transparency to the process

Matt Wyse looked at when graduate proposals are received. He distributed a handout which showed November and May as busy months for short forms and December and May for long forms.

Two years ago an Advisory Group was formed with a representative from each college with conversations about moving from a Word document process to an electronic workflow process to manage this process.
- ITS communicated that the process was too complex for their resources
- A business case was put forward
- Researched systems and spoke with about a dozen universities
- Benefits to an electronic system:
  - Eliminates errors
  - Streamlines the process
  - Transparency in finding status of a proposal
  - An official repository for historical referencing
  - Will also push us to the level of standardization
  - The short form and long forms may go away
  - Will build in what approvals/consultations will be needed
  - Will be an easier process of updating the catalog, department websites and student handbooks.
- Also a perfect time to look at the bylaws for short and long form approval processes
- Plan to reconstitute existing advisory group to assist as we go forward, with representation from Graduate Council, Graduate School, and each of the colleges.

VI.   <u>Other Business</u>
Howarth – how many times can a topics course be taught before being submitted as a new course? Chair Freitag researched and could find no written policy. The Council agreed there should be a policy to address this issue. Chair Freitag to speak with Faculty Council Chair Eddy Souffrant and also bring to the attention of Brian Cooper, FABSC.

The next meeting will be held on Tuesday, December 3, 2013, at 12 noon in Cato 228.

Chair Freitag called for a motion to adjourn the meeting. Gray made the motion with a second from Anderson. The meeting adjourned at 1:03 pm.

Respectfully submitted,

Annette Parks
Secretary to the Graduate Council

APPENDIX C

UNIVERSITY OF NORTH CAROLINA

REQUEST FOR AUTHORIZATION TO ESTABLISH
A NEW DEGREE PROGRAM

<u>INSTRUCTIONS</u>: *Each proposal should include a 2-3 page executive summary. The signature of the Chancellor is required. Please submit <u>one</u> hard copy and an electronic copy of the proposal to the Office of the Senior Vice President of Academic Affairs at UNC General Administration.*

Date: <u>January 24, 2014</u>

Constituent Institution: The University of North Carolina at Charlotte

_____

CIP Discipline Specialty Title: Management Science and Quantitative Methods, Other

_____

CIP Discipline Specialty Number: ___52.1399___ Level: B _____ M __X___ 1st Prof _____ D _____

Exact Title of the Proposed Degree: Data Science and Business Analytics

_____

Exact Degree Abbreviation (e.g. B.S., B.A., M.A., M.S., Ed.D., Ph.D.): _____M.S._____

Does the proposed program constitute a substantive change as defined by SACS?   Yes __X__ No _____

> The current SACS Substantive Change Policy Statement may be viewed at:
> *http://www.sacscoc.org/pdf/081705/Substantive%20Change%20policy.pdf*

If yes, please briefly explain.

As required by the Policy Statement on Substantive Change for Accredited Institutions of the Commission on Colleges, the University of North Carolina at Charlotte (UNC Charlotte) is required to submit a letter of notification prior to implementation for new degree programs. Notification of this new degree program will be provided to SACS after approval by the University of North Carolina Board of Governors and prior to implementation.

Proposed date to establish degree program: *Month* ___August_____ *Year* _____2014_____

Are there plans to offer all or a portion of this program to
students off-campus or online?   Yes _____ No ___X__

The program will be offered on the UNC Charlotte Main Campus and the UNC Charlotte Center City Building. There are no plans to offer the program in any other locations.

If yes, complete the form to be used to request establishment of a distance education program and submit it along with this request.

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[1]This Appendix C supersedes the preceding Appendix C entitled, "Request for Authorization to Establish a New Degree Program," adopted May 6, 2009.

Note: If a degree program has not been approved by the Board of Governors, its approval for alternative, online, or distance delivery must wait until BOG program approval is received. (400.1.1[R], page 3)

EXECUTIVE SUMMARY

Overview:

The proposed MS in Data Science and Business Analytics (DSBA) is an interdisciplinary Professional Science Master's (PSM) program that draws faculty expertise from the Belk College of Business (BCOB) and the College of Computing and Informatics (CCI) to help develop a new generation of data scientists, business analysts and managers who will have both technical and business skills to transform data into smart, innovative business solutions. The focus of this degree is on developing graduates with cutting-edge technology skills, a deep understanding of business processes, and the hands-on experience to add value on day one.

Students entering the program will have completed an undergraduate major in economics, business, healthcare, computer science, information technology or a quantitative discipline such as mathematics, statistics or engineering. The interdisciplinary nature of the DSBA program gives students an understanding of business theory and practice as well as deep informatics and analytics capabilities, thus providing students with the skills and knowledge to lead in the development, evaluation, and deployment of business analytics and informatics applications. Students will gain a solid foundation in analytics, plus the opportunity to either specialize in a concentration or further broaden their analytics spectrum.

Need for the program:

Results from an in-depth study conducted by McKinsey and Company (2011) project that the demand for deep analytical positions in the U.S. will exceed the supply being produced by 140,000 to 190,000 positions by 2018. Similarly, they project a need for 1.5 million additional managers and analysts in the U.S. who can ask the right questions and consume the results of the analysis of big data effectively. It is estimated that these numbers approach 5,000 professionals and 40,000 managers in North Carolina alone. A study by Accenture (October, 2012) reports that the U.S. is projected to create 44 percent of the new jobs for analytics experts but only 23 percent of the supply, suggesting a significant mismatch between the need for analytics experts and domestic universities' ability to supply that talent.

Research suggests that the gap in North Carolina may be even wider than in the U.S. as a whole. A study by the Technologies Councils of North America (November, 2012) found that 73 percent of the respondents reported that big data analytics, data mining and business intelligence would significantly contribute to the growth in North Carolina over the next two years. Nationally this was reported as 64 percent. In the same study, 61 percent of respondents reported a moderate shortage while 11 percent reported a significant shortage in technology talent in North Carolina.

A survey of undergraduate students and alumni from the BCOB and the CCI indicates considerable potential interest and demand for the DSBA PSM. Demand for the DSBA PSM appears to come from a pool of students with interests and needs not previously served by the institution, due to the unique composition of the program as a blend of technology, analytics and business.

Objectives:

The objective of the program is to develop analytics professionals to meet the growing need for these skills. Specific educational objectives of the program include:

1. Foundational understanding of:
   - business theory and practice,
   - information technology and computational analytics, and
   - statistical modeling and analysis.
2. Enhanced curiosity and critical thinking abilities.
3. Deep technical skills in predictive and prescriptive modeling to support business decision-making.
4. Ability to acquire, clean, and transform data and to translate data into clear actionable insights.
5. Effective communication skills that facilitate the effective presentation of analysis results to non-technical, business audiences.
6. Ability to manage and lead analytics projects and work in cross-functional business teams.

Focus on Engaging the Business Community:

The program is designed to

- Develop the world-class talent that can accelerate the transfer of analytics and informatics technologies to local businesses, attract informatics-based companies to the region, and stimulate entrepreneurial activities; and
- Provide the intellectual capital to help grow data-intensive industries by significantly strengthening their analytics capabilities.

The Data Science and Business Analytics Professional Science Master's is a unique blend of business acumen, data appreciation, exposure to a diverse set of advanced analytics methods, and hands-on experience designed to help students apply learned knowledge on representative business problems. DSBA graduates will be well equipped for employment in a wide variety of data intensive industries, such as financial services, energy, retail/supply chain, or healthcare, where the need for business analysts with quantitative, computational, and sophisticated analytical skills is growing at an explosive pace. The DSBA PSM is uniquely positioned in UNC Charlotte's portfolio of analytics and informatics programs as a program that combines technology, analytics and business to prepare graduates as data scientists and business analysts capable of applying their expertise across many industries, thus complementing existing or future programs that focus on a deep understanding of analytics and informatics within a single industry.

I. **DESCRIPTION OF THE PROGRAM**

    A.   Describe the proposed degree program (i.e., its nature, scope, and intended audience).

        The MS in Data Science and Business Analytics (DSBA) is an interdisciplinary Professional Science Master's (PSM) program at the intersection of business, computer and information sciences, statistics, and operations research. Students entering the program are likely to have completed an undergraduate degree in economics, finance, business, healthcare, computer science, information technology, or a quantitative discipline such as mathematics, statistics or engineering. The program gives students an understanding of (a) business theory and practice, (b) the nature of data-related technologies and processes, including acquisition, retrieval, security and privacy, mining, visualization, modeling, simulation, optimization, and prediction, and (c) the skill sets required to use data and deep analytics to improve the bottom line of their current or future organizations. The program is a unique blend of business acumen, data understanding, exposure to a diverse set of advanced analytics methods, and hands-on experience designed to help students apply learned knowledge on representative business problems. DSBA graduates will be well equipped for employment in a wide variety of data intensive industries, such as financial services, energy, retail/supply chain, or health care, where the need for business analysts with quantitative, computational, and sophisticated analytical skills is growing at an explosive pace.

        Students are expected to enter the program with at least one object-oriented programming course. This specific requirement can be met by courses at UNC Charlotte, equivalent courses at other institutions, or work experience.

    B.   List the educational objectives of the program.

        The objective of the program is to develop analytics professionals to meet the growing need for these skills. Specific educational objectives of the program include:

1. Foundational understanding of:
   - business theory and practice,
   - information technology and computational analytics, and
   - statistical modeling and analysis.
2. Enhanced curiosity and critical thinking abilities.
3. Deep technical skills in predictive and prescriptive modeling to support business decision-making.
4. Ability to acquire, clean, and transform data and to translate data into clear actionable insights.
5. Effective communication skills that facilitate the effective presentation of analysis results to non-technical, business audiences.
6. Ability to manage and lead analytics projects and work in cross-functional business teams.

        Given the likely broad spectrum of academic backgrounds and work experiences of successful applicants, students may be required to take preparatory courses in business, mathematics and statistics, and computing as needed to build a foundation for further study. All students will take a set of core courses designed to build breadth in data science and business analytics. As in all Professional Science Master's programs, courses will also be designed to build strength in communication and leadership skills. Core courses will emphasize the hands-on experience that is needed to develop practical analytics skills utilizing current tools and technologies such as SAS, SPSS, Hadoop, SQL, and similar tools and technologies. Elective courses are selected or designed to provide an area of depth in data science or business analytics. The final component of the program will be an internship or capstone practicum to provide experience working with a business or

organization. By focusing on industry case studies and examples in the courses, engaging guest lecturers from industry, and through the internship program or business practicum, we will equip students to be productive employees who are well versed in industry tools and practices.

C.   Describe the relationship of the program to other programs currently offered at the proposing institution, including the common use of:

There are no programs currently existing at UNC Charlotte that significantly overlap with the proposed PSM in Data Science and Business Analytics. While an overlap of elective courses in the MS in Health Informatics and the DSBA PSM exists, only one course overlaps in each program's core requirements. Moreover, the DSBA PSM focuses on developing strong technical, analytics and business skills across industries rather than concentrating on a deep understanding of analytics in the healthcare industry. Also, the MBA electives in analytics were developed to serve both DSBA PSM and the analytics concentration, as well the Big Data Analytics for Competitive Advantage course to serve multiple analytics-related programs. The DSBA PSM program is unique in the interdisciplinary nature of the program that combines elements of business decision-making and computational analytical techniques and the applied nature of the program that actively engages industry in the educational process of their future employees.

1.   Courses

The PSM in Data Science and Business Analytics will complement existing master's programs in computer science (MS CS), information technology (MS IT), business administration (MBA), and the PSM in Health Informatics (PSM HI). In contrast to the existing master's programs that focus on their disciplinary specializations, the DSBA PSM will be integrative in scope and provide a pathway from theoretical/foundational computational and business concepts to their verification in the fields of data science and business analytics. This program's unique interdisciplinary emphasis will combine elements of business decision-making and computational analysis techniques.

The DSBA PSM will utilize existing and recently approved courses in the Belk College of Business (BCOB) and College of Computing and Informatics (CCI). In anticipation of approval of the DSBA PSM and to support the recently approved DSBA Certificate, four courses (DSBA 6100, MBAD 6276, MBAD 6277 and MBAD 6278) were developed and approved by the faculty during the 2012-2013 academic year. One additional course (ITCS 6190) is in the final stage of the campus course approval process. No additional courses are needed to offer the DSBA PSM. Also, a number of new courses in the areas of analytics and data science that address topics not covered in current offerings will be developed across the participating colleges and departments once the DSBA PSM program is in place. The following table summarizes the common course utilization in the proposed program:

	Core Courses	**MS CS**	**MS IT**	**MBA**	**PSM HI**
DSBA 6100	Big Data Analytics for Competitive Advantage*		x	x	
ITCS 6160	Database Systems	x	x		x
ITCS 5122	Visual Analytics	x	x		
ITCS 6156	Machine Learning	x			
MBAD 6201	Business Intelligence and Analytics			x	
MBAD 6211	Advanced Business Analytics			x	
MBAD 6276	Consumer Analytics*			x	

Electives Courses					
ITIS 6500	Complex Adaptive Systems		x		x
ITIS 6520	Network Science		x		x
ITCS 6121	Information Visualization	x			x
ITCS 6155	Knowledge Based Systems	x	x		x
ITIS 5510	Web Mining		x		x
ITCS 6190	Cloud Computing for Data Analysis	x			
MBAD 6208	Supply Chain Management			x	
MBAD 6207	Project Management			x	
MBAD 6122	Decision Modeling and Analysis		x	x	
MBAD 6277	Social Media Marketing and Analytics*			x	
MBAD 6278	Innovation Analytics*			x	

* new courses

In addition to the electives listed above, students may propose a three-course specialization in a significant area of interest for approval by the Director of the DSBA PSM Program. This specialization may include graduate courses from MS in CS, MS in IT, MBA, MS in Applied Statistics, MS in Mathematical Finance, MS in Economics, PSM in Health Informatics and other programs or Departments within the University with approval of the related Department.

2.   Faculty

The DSBA faculty will be comprised of the Graduate Faculty members, whose expertise is relevant to the DSBA, from the Belk College of Business and the College of Computing and Informatics. Industry experts with proper credentials and relevant experience will also be recruited to serve as Adjunct Faculty. In addition, any member of the Graduate Faculty at the University with proper credentials and expertise and interest in teaching and/or serving on committees of the PSM may apply to become an adjunct faculty member of the DSBA PSM faculty. The DSBA PSM faculty will be appointed by a DSBA PSM Program Director in consultation with a Joint BCOB/CCI Program Committee. The appointments will be for five-year terms with re-appointments made according to guidelines established by the DSBA PSM Program Director, approved by the Deans of the Graduate School, BCOB, and CCI.

3.   Facilities, and

The DSBA PSM will employ existing facilities of BCOB and CCI at the main campus as well as the UNC Charlotte Center City Building.

4.   Other resources

N/A

D.   Identify opportunities for collaboration with institutions offering related degrees and discuss what steps have or will be taken to actively pursue those opportunities where appropriate and advantageous.

The current and projected demand for analytics professionals far exceeds the planned programs throughout the State and the nation. For the class of 2014 North Carolina State University (NCSU) received 468 applications and expects to enroll about 85 students. We

anticipate the demand for our program to also greatly exceed capacity. We plan to explore collaboration with universities that have analytics or related programs such as North Carolina State University and University of North Carolina at Chapel Hill (UNC Chapel Hill). Eventually, we would like to develop reciprocal course sharing agreements with these institutions. As other institutions develop analytics related programs, we will seek similar opportunities. UNC Charlotte is also involved with various statewide collaborative projects in informatics and analytics including membership in the recently-established National Consortium for Data Science with NCSU, UNC Chapel Hill, and Duke University.

II. **JUSTIFICATION FOR THE PROGRAM** - **NARRATIVE STATEMENT**

 A. Describe the proposed program as it relates to:

  1. Institutional mission

  The proposed DSBA PSM closely aligns with the UNC Charlotte mission as North Carolina's urban research university. It strongly supports the University's focus on community engagement, professional programs, and economic development for the Charlotte region and aligns with the missions of the two participating Colleges: Belk College of Business (BCOB) and College of Computing and Informatics (CCI). The joint academic program in Data Science and Business Analytics combine the strengths of both colleges and enhance joint engagement in the larger business community through efforts such as the Data Science and Business Analytics Initiative and the Charlotte Informatics Conference, which involve all the major companies in the region as well as several entrepreneurial start-ups. In addition, a main objective of all Professional Science Master's programs is to engage in educational and research activities that focus on real-world challenges and satisfying company needs in specific industries.

  2. Strategic plan

  The DSBA PSM is aligned with UNC Charlotte's strategic plan. The Academic Affairs Goal #1 is to "improve educational opportunities that respond to the intellectual and professional needs of the region". One of the action steps for meeting this goal is to "maintain a broad portfolio of master's and baccalaureate programs." The DSBA PSM will enhance the current portfolio of masters' programs and provide synergy with other analytics, data science and informatics programs currently being offered. Similarly, the DSBA PSM will contribute to Academic Affairs Goal #8, "To graduate students with the breadth and depth of knowledge and the intellectual and professional skills that prepare them for a productive life in an ever-changing world." One of the action steps for that goal is "Develop fundamental skills of inquiry in writing, mathematical and logical reasoning, information literacy and technology, and the sciences." The DSBA PSM is designed to enhance all these skills at the graduate level.

  3. Responsiveness to local, regional, or statewide needs

  An in-depth study conducted by McKinsey & Company (2011) entitled *Big data: The next frontier for innovation, competition, and productivity* includes a detailed analysis of the talent necessary for organizations to take advantage of big data. Results suggest that while companies will recognize that harnessing value from big data will be a key determinant of competition in all sectors, it will be constrained by a significant shortage of talent, "particularly of people with deep expertise in statistics and machine learning, and the managers and analysts who know how to operate companies by using insights from big data." Results from the study project that the demand for deep analytical positions in the U.S. will exceed the supply being produced by 140,000 to 190,000 positions by 2018.

Similarly by 2018 they project a need for 1.5 million additional managers and analysts in the U.S. who can ask the right questions and consume the results of the analysis of big data effectively. The McKinsey study also notes that the U.S.—and other economies facing similar shortages—cannot fill this gap simply by changing graduate requirements and waiting for people to graduate with more skills or by importing talent.

The Charlotte region and state face a shortage of talent as the demand for data scientists and data savvy business leaders expands. The proposed DSBA PSM offers to broaden and deepen North Carolina's data science and business analytics talent pool and through the DSBA Initiative support high-end job creation and business investment in the Charlotte region and the state.

To seek the input of local industry and inform industry leaders about the proposed program, the BCOB and CCI held the Data Science and Business Analytics Program Planning Forum at UNC Charlotte's Center City campus on March 20, 2012. Fifteen invited participants from leading local industries (Bank of America, Wells Fargo, Duke Energy, Belk, Lowe's, Carolinas Healthcare System, Ernst and Young, CSG Systems) and leading analytics services and software providers (IBM, SAS) met with the joint BCOB-CCI PSM Planning Committee to discuss the objectives of the program. Participants identified the key skills needed by graduates of the program, and discussed the program curriculum and structure. These industry partners expressed strong support for the proposed program validating the need for analytics professionals, offering to involve key employees, and offering internship and project opportunities for students in the program (a PSM requirement).

4. Student demand. Discuss the extent to which students will be drawn from a pool of students not previously served by the institution.

An extensive survey was conducted among undergraduate students and alumni from the Belk College of Business and the College of Computing and Informatics (CCI). The purpose was to evaluate the potential interest and likely demand for the proposed PSM in Data Science and Business Analytics. More than 400 students and alumni responded to the survey including 163 responses from Belk College undergraduates, 75 respondents from CCI undergraduates, 108 respondents from Belk College alumni and 72 respondents from CCI alumni.

Interest in a Master's Degree

Respondents were first asked about their likelihood of enrolling in a master's degree program in the future. Their responses, on a 7-point scale, indicate a high likelihood that the respondents would enroll in a master's degree program in the future. At least 50% of the respondents from three of the four groups surveyed indicate that they would consider enrolling in a master's degree program in the future. The findings suggest that Belk College alumni were relatively less likely to enroll in a master's degree program. This may be because many of them already have a master's degree, as indicated in Question 6.

- 63.80% of Belk College Undergraduates likely to consider enrolling in a master's degree program

- 52% of CCI Undergraduates likely to consider enrolling in a master's degree program

- 30.57% of Belk College Alumni likely to consider enrolling in a master's degree program

- 50% of CCI Alumni likely to consider enrolling in a master's degree program

Interest in the PSM in Data Science and Business Analytics

Respondents were then asked about their likelihood of enrolling in the proposed DSBA PSM. Their responses, on a 7-point scale, indicate a high likelihood that they would enroll in the proposed DSBA PSM in the future. At least 50% of the respondents from all four groups (including Belk College alumni) indicate that they would consider enrolling in the DSBA PSM. The responses from the Belk College alumni are particularly interesting. It may appear that even alumni who currently have a master's degree (such as an MBA) find the proposed PSM compelling enough to consider enrolling in a second master's degree program. Similarly, CCI alumni who also currently have a master's degree appear to be willing to consider enrolling in a second master's degree program in Data Science and Business Analytics.

- 61.11% of Belk College Undergraduates likely to consider enrolling in proposed PSM

- 58.67% of CCI Undergraduates likely to likely to consider enrolling in proposed PSM

- 54.33% of Belk College Alumni likely to consider enrolling in proposed PSM

- 50% of CCI Alumni likely to consider enrolling in proposed PSM

Summary of Potential Interest and Likely Demand for the Proposed PSM

Based on the data collected, there appears to be considerable potential interest and demand for the proposed DSBA PSM at UNC Charlotte. It is evident from the survey that the primary pool of students likely attracted to this program is currently not served by graduate programs at UNC Charlotte that meets their needs. This program uniquely appeals to students who want a blend of technology, analytics and business. There are no other programs offered at UNC Charlotte that provide this blend. Students who want a stronger focus in computing would continue to enroll in the master's programs in CCI and students with a stronger business focus would choose an MBA or other business master's degrees.

5. Employment opportunities. Document need for proposed degree recipients in the region, the state, or nationally

Big data is transforming every industry – from financial services and retail to healthcare and manufacturing – and business leaders often struggle with how best to understand, analyze and use this information to make business decisions and remain competitive. They also struggle with a dearth of workforce talent. The consulting firm McKinsey (May, 2011) estimates that by 2018, the U.S. will have a deficit of nearly 200,000 professionals with deep analytical skills, and will need to employ 1.5 million managers who understand the value of data and know the right questions to ask. It is estimated that these numbers approach 5,000 professionals and 40,000 managers in North Carolina alone. A study by Accenture (October, 2012) reports that the U.S. is projected to create 44 percent of the new jobs for analytics experts but only 23 percent of the supply suggesting a significant mismatch between the need for analytics experts and domestic universities' ability to supply that talent. Professionals who possess industry knowledge, data science expertise, and the communications and leadership skills needed in business are particularly hard to find.

Research suggests that the gap in North Carolina may be even wider than the U.S. as a whole. A study by the Technologies Councils of North America (November, 2012) found that 73 percent of the respondents reported that big data analytics, data mining and business intelligence would significantly contribute to the growth in North Carolina over the next two years. Nationally this was reported as 64 percent. In the same study 61 percent of respondents reported a moderate shortage and 11 percent reported a significant shortage in technology talent in North Carolina.

Anecdotal evidence from major employers in the region further supports the need for analytics expert talent. Guenther Hartfeil, Director of Client Insight and Innovation at BB&T, notes that "BB&T recognizes that information and analytics will be a significant contributor to future growth and, in turn, a broader and deeper skill set in these areas is required." In remarks about the need for employees with both technology and information management skills as well as business skills, Hartfeil comments that "there simply are not enough people with the right amount of knowledge that cut across these areas". These remarks are echoed by Brian Marley, Executive Vice President/Chief Financial Officer at Belk, Inc. in his comments about UNC Charlotte:

> "The great news in all of this is that it appears the University is uniquely qualified to satisfy this need. With strengths already in business, computing, informatics and mathematics, as well as a collaborative culture, we're fortunate to have the basic building blocks in place. The even better news for the people of North Carolina is that as we look to build employment and transform our economy, these are very high skill and valued positions for today and tomorrow."

Michael C. Tarwater, Chief Executive Officer at Carolinas HealthCare supports the program by saying:

> "This program will bring a unique and highly sought after skillset to market for our organization and others that are advancing in the field of analytics. There is a present need for a skilled analytical workforce but it will continue to grow with no limits in sight."

Finally, Mark Wyatt, Vice President of Grid Modernization at Duke Energy supports the program with the following comment:

> "The Belk College and the College of Computing and Informatics have the unique opportunity to leverage technical and business faculty expertise combined with strong business partnerships to develop a new generation of data scientists, business analysts and managers. Located in a region with large data-intensive industries, UNC Charlotte is well positioned to be a leader in talent development and research. I see this as a win-win situation for UNC Charlotte and for the business community."

Clearly this data substantiating the gap between the supply and demand for data science and business analytics talent in the U.S. and in North Carolina combined with the comments from major employers in the region and state supporting their need for talent and their perception that UNC Charlotte can play a major role in supplying this talent provide evidence that a large pool of students will find the Professional Science Master's program in Data Science and Business Analytics attractive. Newly created jobs exist at very competitive salaries and companies are looking to promote employees who gain strong data science and business analytics skills.

B.   Discuss potential program duplication, program competitiveness, and opportunities for collaboration in the delivery of the program

1.   Identify similar programs offered by public and private universities elsewhere in North Carolina. Indicate how the proposed new degree program differs from other programs like it within UNC. If the program duplicates other UNC programs, explain:

a.   Why the proposed program is necessary or justified, and

b.   How all or portions of the curriculum might be offered collaboratively with another UNC institution.

- NCSU's MS in Analytics (MSA), which began in 2007, is the leading analytics program in the country. The MSA program is a cohort based full-time program that is 10 months in duration and has a common curriculum for all students. The focus of the program is to produce a new breed of data scientists. It recently doubled its capacity to 80 students. The program is very different from a traditional MS program and cannot be used as a prelude towards higher degrees such as a PhD. The program has a fairly large practicum component (12 credit hours) where students work closely with a selected business partner to gain a more hands-on expertise. This program is structured entirely around teamwork and does not allow for any part-time students. Our proposed DSBA program will be different from the MSA program in several ways. The most distinct feature of this program is that it is a joint program between the Belk College of Business and the College of Computing and Informatics. This collaboration allows us to create a curriculum that achieves a good balance between business analytics, data science, and informatics. That is, our program will differ from the MSA program in emphasizing and closely integrating the computational aspects of data science with fundamental business reasoning. Thus, graduates will be equipped with the technical skills to gather, clean, and analyze data, and then draw actionable insights based on business objectives. Further, it will provide students the flexibility to select electives based on their interests and career goals. This program will be 1.5 years in duration and also allow part-time to students so that we can serve needs of interested working professionals in the region. Since this program also has a practicum component it creates a good balance between theory and practice. In summary, the proposed DSBA program will complement the NCSU MSA program in several ways and serve the increasing needs of the region for competent data science and business analytics professionals.

- UNC Chapel Hill offers a track in Business Analytics in their MS program in Interdisciplinary Statistics and Operations Research (INSTORE). The focus of this track is largely on deep statistical and operations research skills, rather than on a more comprehensive integration of business, big data, analytics, and informatics. This program does not require any industry practicum or collaboration.

- UNC Charlotte does offer a MBA program with a concentration in Business Analytics, but this program does not have the level of specialization offered by the proposed program. Neither does it offer comprehensive data science and big data skills required for a successful career focused on business analytics.

- UNC Charlotte also offers a PSM in Health Informatics (PSM HI) which focuses on understanding the concept of data in health care, including acquiring, storing, indexing, retrieving, securing, analyzing, visualizing, mining, and utilizing the acquired data techniques and methods to improve the bottom line of the business of healthcare for the organization in question. The proposed program is focusing on helping students master general analytics methods, including statistics,

spreadsheet manipulation, machine learning, data mining, visualization, business decision making, and simulation and modeling, in order to equip them with the state-of-the-art methods and methodologies for helping their organizations understand market trends and expectations. Therefore, the DSBA program is by necessity more concerned with specific technological methods and general business and market conditions, while the HI PSM program highlights specific analytical skill sets in a specific industry with specific requirements and business conditions.

We would like to develop reciprocal course sharing agreements with NCSU and UNC Chapel Hill. As other institutions develop analytics related programs, we will seek similar opportunities.

2. If the program is a graduate or first professional degree, compare it with other similar programs in public and private universities in North Carolina, in the region, and in the nation. Where appropriate, describe how all licensure or professional accreditation standards will be met, including required practica, internships, and supervised clinical experiences.

A comparison of all public and private universities in North Carolina with similar master's degrees in data science and business analytics is provided above. North Carolina State University Institute for Advanced Analytics conducted a comprehensive study of analytic programs in the U.S. and abroad. That portion of the study that addresses full-time graduate analytics programs is attached in Appendix D. The study has been updated to include new programs and updated tuition estimates on the NCSU Institute for Advanced Analytics website (http://analytics.ncsu.edu/?page_id=4184). While the types of programs are quite varied, no program described in the study combined the technical expertise from a College of Computing and Informatics with the business expertise from a College of Business. This unique collaboration provides a unique advantage to the proposed DSBA PSM.

No licensure or professional accreditation is required for the program. Academic accreditation is discussed in section VIII of this document.

C. Enrollment (baccalaureate programs should include only upper division majors, that is, juniors and seniors).

Headcount enrollment

Show a four-year history of enrollments and degrees awarded in similar programs offered at other UNC institutions (using the format below for each institution with a similar program); indicate which of these institutions you consulted regarding their experience with student demand and job placement. Indicate how their experiences influenced your enrollment projections.

Institution: North Carolina State University_____

Program Title: Master of Science in Analytics_____

	2010	2011	2012	2013

Enrollment	40	40	40	84
Degrees-awarded	38	39	38	81

Dr. Mirsad Hadzikadic, Professor of Software and Information Systems at UNC Charlotte, met with Professor Michael Rappa, Director of Institute for Advanced Analytics at North Carolina State University and Mr. Tony Mostek, Academic Program Coordinator at North Carolina State University on April 1, 2013. During this meeting Prof. Rappa expressed clear support for the DSBA program at UNC Charlotte. The participants of the meeting agreed that differing emphases and academic structures of the two programs will ensure the complementarity of these programs, which will only benefit the State of North Carolina.

In addition to Dr. Hadzikadic's meeting with Professor Rappa and Mr. Mostek, we studied the NCSU MSA program website which includes detailed information on student demand and job placement. For the class of 2014 MSA reportedly received 468 applicants, a 72% increase over the previous year. They expect to enroll about 85 students (program capacity was doubled from 40 to 80 in 2013). The MSA website reports that "the job placement rates for MSA have exceeded 90-percent by graduation over a period of 6 consecutive years despite the severe economic recession." During the last three years (2011, 2012, 2013) 96-, 100-, and 97-percent of their graduates had one or more job offers by graduation. These statistics and our survey findings along with national and regional demand for data science and analytics professionals suggest that the demand for our program will be strong. Additionally, since we expand our admissions to both full- and part-time students, we expect a larger pool of potential applicants. We based our enrollment projections shown below on our planned program capacity, initially limited to about 20 and expected to increase to 50 over four years.

Please indicate the anticipated first year and fourth year steady-state enrollment (head count) for the proposed program.

Year 1:   Full Time _____10_____   Part-time _____10_____   Total ____20_____

Year 4:   Full-time ____25_____   Part-time ____25_____   Total ____50_____

III.   **PROGRAM REQUIREMENTS AND CURRICULUM**

A.   Program Planning

1.   List the names of institutions with similar offerings regarded as high quality programs by the developers of the proposed program.

The following universities offer master's degree programs in areas related to the data science and business analytics.

North Carolina State University

Institute for Advanced Analytics

MS in Analytics

http://analytics.ncsu.edu/?page_id=123

Northwestern University

School of Continuing Studies

MS in Predictive Analytics Online

http://www.scs.northwestern.edu//program-areas/graduate/predictive-analytics/

McCormick School of Engineering and Applied Science

MS in Analytics

http://www.analytics.northwestern.edu/

University of Tennessee at Knoxville

College of Business Administration

MS in Business Analytics

http://soms.utk.edu/analytics/curriculum.htm

University of Connecticut

School of Business

MS in Business Analytics and Project management

http://msbapm.business.uconn.edu/academics/curriculum/

University of Cincinnati

Carl H. Linder School of Business

MS in Business Analytics

http://business.uc.edu/programs/graduate/msbana.html

Columbia University

Institute for Data Sciences and Engineering

MS in Data Science (targeted for Fall 2014)

http://idse.columbia.edu/academics-idse

New York University

Stern School of Business

MS in Business Analytics

http://www.stern.nyu.edu/programs-admissions/global-degrees/business-analytics/program-overview/index.htm

New York University

Center for Data Science

MS in Data Science

http://cds.nyu.edu/academics/ms-in-data-science/curriculum/

2.   List institutions visited or consulted in developing this proposal. Also discuss or append any consultants' reports or committee findings generated in planning the proposed program.

Meeting with IBM

On November 7, 2011 IBM hosted a discussion of analytics and skill requirements with eight UNC Charlotte faculty and administrators and ten IBM professionals. IBM provided an overview of current and future trends in analytics and skills required for careers in analytics. The session included brainstorming with IBM executives on curriculum and a discussion of how to enhance hands-on experience by integrating cases and projects into the curriculum. A presentation by IBM provided information about how other universities are responding to the need for analytic talent.

Business Forum

To seek the input of local industry and inform industry leaders about the proposed program, the BCOB and CCI held the Data Science and Business Analytics Program Planning Forum at UNC Charlotte's Center City campus on March 20, 2012. Fifteen invited participants from leading local industries (Bank of America, Wells Fargo, Duke Energy, Belk, Lowe's, Carolinas Healthcare System, Ernst and Young, CSG Systems) and leading analytics services and software providers (IBM, SAS) met with the joint BCOB-CCI PSM Planning Committee to discuss the objectives of the program. Participants identified the key skills needed by graduates of the program, and discussed the program curriculum and structure. These industry partners expressed strong support for the proposed program validating the need for analytics professionals, offering to involve key employees, and offering internship and project opportunities for students in the program (a PSM requirement).

Informatics Conference

In May 2012 the College of Computing, Belk College of Business and the Charlotte Chamber of Commerce hosted the Charlotte Informatics 2012: Competing + Winning through Analytics conference. The conference attracted more than 300 local and regional business leaders. The conference brought a diverse group of leading national thinkers, visionaries, experts and executives from business technology and education, including Tom Davenport, to discuss the impact of big data analytics. A focal point of the conference was a panel that included analytics leaders in health care, retail, energy and finance who discussed the significant need for data science and business analytics talent. The conference and panel session provided the opportunity to gain insight from the formal presentations as well as from informal conversations with the panel and other conference participants.

Support from Other Business Leaders

The DSBA PSM program was presented and discussed in the Belk College Board of Advisors and College of Computing and Informatics Dean's Advisory Board meetings. These boards are comprised of business leaders from major companies in the region. Members of both boards expressed strong support for the program as well as further confirmation of the need for data science and business analytics talent in their companies.

Additionally, business leaders wrote letters to support the DSBA PSM program. These letters appear in Appendix C of this document.

Consultation with NCSU MSA Program Director

As mentioned above, Dr. Hadzikadic met with NCSU MSA program founder and director Professor Michael Rappa and Mr. Tony Mostek. During this meeting Prof. Rappa expressed his support for the DSBA program at UNC Charlotte, and agreed that the two programs are complementary rather than competing in nature.

B.   Admission. List the following:

1.   Admissions requirements for proposed program (indicate minimum requirements and general requirements).

The minimum admission requirements for the program are:

a)   An earned undergraduate degree in any scientific, engineering or business discipline or a closely related field;

b)   An undergraduate GPA of 3.00 or better;

c)   Acceptable scores on the verbal, quantitative, and analytical sections of the GRE. The Data Science and Business Analytics Program Director will make the final decision on the acceptability of GRE scores in conjunction with other information, including a determination of aptitude for quantitative analysis based on previous coursework or work experience;

d)   Three positive letters of recommendation;

e)   A statement of purpose outlining the goals for pursuing a graduate education;

f)   A minimum TOEFL score of 220 (computer-based), 557 (paper-based), or 83 (internet based) or a minimum IELTS band score of 6.5 is required from any applicant whose native language is not English; and

g)   Other credentials as required by the Graduate School.

2.   Documents to be submitted for admission (listing or attach sample).

a.   Official transcripts from all colleges and universities attended.
b.   Official GRE scores.
c.   Official TOEFL or IELTS scores for applicants whose native language is not English.
d.   The UNC Charlotte application for graduate admission form.
e.   Three letters of recommendation.

C.   Degree requirements. List the following:

1.   Total hours required. State requirements for Major, Minor, General Education, etc.

Thirty-three graduate credit hours are required for the DSBA PSM. Of the 33 graduate credit hours, 24 credit hours are required core courses inclusive of the 3 hours for the internship, and 9 credit hours are electives. All students will take the following courses:

DSBA 6100 Big Data Analytics for Competitive Advantage
ITCS 6160 Database Systems
MBAD 6201 Business Intelligence and Analytics
ITCS 5122 Visual Analytics
ITCS 6156 Machine Learning
MBAD 6211 Advanced Business Analytics
MBAD 6276 Consumer Analytics
DSBA 6400 DSBA Internship

In addition students will choose 3 elective courses from a growing list of data science and business analytics courses or propose a three-course specialization for approval by the DSBA program director. In choosing their electives (3 courses) students must select at least one course from each of the following areas:

Data Science Electives:
ITIS 5510 Web Mining
ITCS 5121 Information Visualization
ITCS 6155 Knowledge Based Systems
ITIS 6500 Complex Adaptive Systems
ITIS 6520 Network Science
ITCS 6190 Cloud Computing for Data Analysis

Business Analytics Electives:
MBAD 6122 Decision Modeling and Analysis via Spreadsheets
MBAD 6208 Supply Chain Management
MBAD 6207 Project Management
MBAD 6277 Social Media Marketing and Analytics
MBAD 6278 Innovation Analytics
ECON 6112 Graduate Econometrics

Student-Structured Electives Option:
Students may propose a three-course specialization (9 credit hours) in a significant area of interest for approval by the Director of the PSM DSBA Program. In addition to the courses listed in the Data Science and Business Analytics specializations listed above, this specialization may include graduate courses from MS in CS, MS in IT, MBA, MS in Applied Statistics, MS in Mathematical Finance, MS in Economics, and other programs or Departments within the University with approval of the related Department.

2.   Other requirements (e.g. residence, comprehensive exams, thesis, dissertation, clinical or field experience, "second major," etc.).

   An internship (DSBA 6400) is part of the required 33 credit hours.

For graduate programs only, please also list the following:

3.   Proportion of courses open only to graduate students to be required in program

   At UNC Charlotte, courses having 5000 numbers are open to graduate students. Courses with 6000, 7000, and 8000 numbers are open to graduate students only. A minimum of 24 credit hours presented towards a PSM in the DSBA degree must be numbered 6000 or higher.

4. Grades required

A student in the DSBA PSM Program must maintain a minimum GPA of 3.0 for continued enrollment in the program. Accumulation of three C grades will result in the suspension of the student's enrollment in the program. Accumulation of one U grade will result in the suspension of the student's enrollment in the program.

5. Amount of transfer credit accepted

Up to six hours of approved coursework may be transferred from regionally accredited master's and doctoral programs. Only courses in which the student earned a grade of B or better may be transferred.

6. Language and/or research requirements

None

7. Any time limits for completion

Time limits are described in the UNC Charlotte Graduate Catalog: University policy requires that no course listed on a master's student's candidacy form be older than six years at the time of graduation. This policy is in place because of the University's interest in a degree being current when it is awarded. Courses that exceed this time limit must be revalidated or retaken, whichever the graduate program decides necessary, if they are to count in a degree program.

D. For all programs, list existing courses by title and number and indicate (*) those that are required. Include an explanation of numbering system. List (under a heading marked "new") and describe new courses proposed.

(*) DSBA 6100. Big Data Analytics for Competitive Advantage (3). This course provides an introduction to the use of big data as a strategic resource. A focus is placed on integrating the knowledge of analytics tools with an understanding of how companies leverage data analytics to gain strategic advantage. A case approach will be used to emphasize hands-on learning and real-world view of big data analytics. (Fall, On Demand).

(*) ITCS 6160. Database Systems. (3) Cross-listed as HCIP 6160. Prerequisite: ITCS 6114 or permission of department. Introduction to principles of database design, and survey of alternative database organizations and structures. Logical database organization; schemas; subschemas; data description languages; hierarchical, network, and relational databases; database management systems; normal forms. (Fall, Spring)

(*) ITCS 5122. Visual Analytics. (3) Prerequisite: STAT 1220, STAT 1221, STAT 1222, STAT 2122, STAT 2223, or approval of the instructor. Introduces the new field of visual analytics, which integrates interactive analytical methods and visualization. Topics include: critical thinking, visual reasoning, perception/cognition, statistical and other analysis techniques, principles of interaction, and applications. (Fall)

(*) ITCS 6156. Machine Learning. (3) Prerequisite: ITCS 6150 or permission of department. Machine learning methods and techniques including: acquisition of declarative knowledge; organization of knowledge into new, more effective representations; development of new skills through instruction and practice; and

discovery of new facts and theories through observation and experimentation. (Fall, Odd years)

(*) MBAD 6201. Business Intelligence and Analytics (3) Prerequisite: MBAD 5121 or equivalent. An overview of the business approach to identifying, modeling, retrieving, sharing, and evaluating an enterprise's data and knowledge assets. Focus is on the understanding of data and knowledge management, data warehousing, data mining (including rule-based systems, decision trees, neural networks, etc.) and other business intelligence concepts. Covers the organizational, technological and management perspectives. (Fall, On demand)

(*) MBAD 6211 Advanced Business Analytics (3G). Pre-requisite: MBAD 6201 or ITCS 6162 or consent of the department. An in-depth study of applications of data analytics techniques to discover non-trivial relationships that are useful and actionable to decision makers. A case approach will be used to emphasize hands-on learning and real-world deployment of business analytics. (Spring, On Demand)

(*)MBAD 6276. Consumer Analytics. (3) Prerequisite: MBAD 6270 or permission of the department. The utilization of analytics techniques in marketing decision-making and consumer strategy. This involves the extraction of hidden insight about consumers from structured and unstructured Big Data, and the translation of that insight into a market advantage. Applications in areas such as consumer targeting, product innovation and promotion strategy (Fall)

(*) DSBA 6400. Internship. (3) Prerequisite: Completion of 21 credit hours of core course requirements. A data science or business analytics project is chosen and completed under the guidance of an industry partner. Each student's internship project program must be approved by the program director. A proposal form must be completed and approved prior to registration and the commencement of the internship. A mid-term report and a final report to be evaluated by the industry partner and supervising faculty. Grading will be by the supervising faculty in consultation with off-campus supervisor at the internship organization. Graded on a Pass/No Credit basis. (Fall, Spring, Summer)

MBAD 6277. Social Media Marketing and Analytics. (3) Prerequisite: MBAD 6270 or permission of the department.. The utilization of social media in marketing strategy and tactics. Topics include the use of social media in building brand strength and equity, as a customer acquisition tool and as a customer relationship management tool. The utilization of analytics in effective social media marketing. (Summer)

MBAD 6278. Innovation Analytics. (3) Prerequisite: MBAD 6270 or permission of the department.. The comprehension and application of text analytics as a tool to examine unstructured qualitative information to generate innovations. Identifying the various sources of consumer insight and using them in innovation strategy. Understand how to differentiate between what consumers want versus what they say. (Spring)

MBAD 6122. Decision Modeling & Analysis via Spreadsheets. (3) Prerequisite: MBAD 5141 or equivalent. This course focuses on the role operations research/management science plays in the decision making process. Specific topics covered in this course include fundamental techniques such as linear, integer, goal and multi objective programming, queuing theory and applications, decision support via Monte Carlo simulation, decision making under uncertainty and risk, decision trees, and multi-criteria decision making. The emphasis is on models that are widely used in all industries and functional areas, including operations, supply chain management, finance, accounting, and marketing. (Spring, On Demand)

MBAD 6208. Supply Chain Management. (3) Prerequisites: MBAD 6141 or permission of the department. Supply chain management is concerned with all of the activities performed from the initial raw materials to the ultimate consumption of the finished product. From a broad perspective, the course is designed to examine the major aspects of the supply chain: the product flows; the information flows; and the relationships among supply chain participants. The course content is interdisciplinary in nature and will cover a variety of topics such as supply chain information technologies, supply chain design, strategic alliances between supply chain participants and supply chain initiatives. (Spring, On demand)

MBAD 6207. Business Project Management. (3). Project management is widely used in a variety of business environments to manage complex, non-routine, endeavors. Examples of projects include consulting and process improvement projects, advertising projects, and technology projects. This course focuses on tools, techniques and skills for business project management, with attention to both the quantitative and the qualitative aspects of project management. Major topics include project evaluation, estimation, monitoring, risk management, audit, managing global projects, outsourcing and project portfolio management. Students will also gain experience using Project Management Software. (Spring)

ECON 6112. Graduate Econometrics. (3) Prerequisites: Admission to graduate program and permission of program coordinator. Advanced study of the theory and application of statistics to economic problems. Topics include: derivation of least-squares estimators; maximum likelihood estimation; and problems of multicollinearity, heteroskedasticity, and autocorrelation. (Fall, Spring)

ITCS 6155 Knowledge Based Systems (3) Prerequisite: ITCS 6162 or permission of department. Knowledge systems; knowledge discovery; association rules; query languages and operational semantics; decision systems; cooperative and collaborative systems; tree structured information systems; tree structured query languages; flexible query answering; chase algorithm based on rules; local and global ontologies; action rules; optimization problems for query answering systems. (Spring)

ITIS 5510 Web Mining Pre- or corequisites: ITIS 5160 and full graduate standing, or permission of department. Topics include: measuring and modeling the Web; crawling, Web search and information retrieval; unsupervised learning, supervised learning, semi-supervised learning in Web context; social network analysis and hyperlink analysis; text parsing and knowledge representation. (Spring)

ITIS 6500 Complex Adaptive Systems (3) Cross-listed as ITCS 8500, ITIS 6500, and ITIS 8500. Prerequisite: Permission of instructor. Complex adaptive systems (CAS) are networked (agents/part interact with their neighbors and, occasionally, distant agents), nonlinear (the whole is greater than the sum of its parts), adaptive (the system learns to change with its environment), open (new resources are being introduced into the environment), dynamic (the change is a norm), emergent (new, unplanned features of the system get introduced through the interaction of its parts/agents), and self-organizing (the parts organize themselves into a hierarchy of subsystems of various complexity). Ant colonies, networks of neurons, the immune system, the Internet, social institutions, organization of cities, and the global economy are a few examples where the behavior of the whole is much more complex than the behavior of the parts. Examples of current research efforts are provided. Topics include: Self-organization; emergent properties; learning; agents; localization affect; adaptive systems; nonlinear behavior; chaos; complexity. (On demand)

ITCS 5121 Information Visualization (3). Prerequisite: Graduate standing. Information visualization concepts, theories, design principles, popular techniques, evaluation methods, and information visualization applications. (Spring)

ITIS 6520 Network Science (3). Networks are all around us, including natural and man-made systems. Examples include rivers, trees, arteries, highways, brain, economy, social connections, military, energy distribution, cyber attacks, terrorist networks, epidemics, Internet, and Facebook. Network Science helps students design faster, more resilient communication networks; revise infrastructure systems such as electrical power grids, telecommunications networks, and airline routes; model market dynamics; understand synchronization in biological systems; and analyze social interactions among people. It examines the various kinds of networks (regular, random, small-world, influence, scale-free, and social) and applies network processes and behaviors to emergence, epidemics, synchrony, and risk. The course integrates concepts across computer science, biology, physics, social network analysis, economics, and marketing. In this class students will learn (a) the basic principles, concepts, and principles of networks; (b) how and why network structures and properties determine the performance and sustainability of any system; (c) how to measure and evaluate network-based systems; (d) how to utilize networks for the benefit of their organizations and society; and (e) how to utilize and design tools for understanding, visualizing, and applying the principles of networks. (On Demand).

ITCS 6190: Cloud Computing for Data Analysis (3). Prerequisites: ITCS 6114 or permission of department. Familiarity with Java, Unix, Data structures and Algorithms, Linear Algebra, and Probability and Statistics are expected. Students should have good programming skills and a solid mathematical background. This course will introduce the basic principles of cloud computing for data-intensive applications. It will focus on parallel computing using Google's MapReduce paradigm on Linux clusters, and algorithms for large-scale data analysis applications in web search, information retrieval, computational advertising, and business and scientific data analysis. Students will read and present research papers on these topics, and implement programming projects using Hadoop, an open source implementation of Google's MapReduce technology, and related technologies for analyzing unstructured data. (Spring, long form in process).

IV. **FACULTY**

A. (For undergraduate and master's programs) List the names, ranks and home department of faculty members who will be directly involved in the proposed program. The official roster forms approved by SACS may be submitted. For master's programs, state or attach the criteria that faculty must meet in order to be eligible to teach graduate level courses at your institution.

There are significant numbers of existing faculty members from the Belk College of Business and the College of Computing and Informatics at UNC Charlotte that will be directly involved and serve as the main faculty body in the proposed program. These faculty members offer cutting edge knowledge and expertise in data science and business analytics. In addition, industry practitioners with appropriate credentials will also be invited to serve as adjunct faculty for the program on needed basis. The table below shows the list of faculty members for the proposed DSBA PSM. (CS: Computer Science; BISOM: Business Information Systems and Operations Management.)

Faculty Name	Title	Affiliation
Dr. Srinivas Akella	Associate Professor	CS
Dr. Jianping Fan	Professor	CS
Dr. Zbigniew Ras	Professor	CS

Dr. William Ribarsky	Professor & Chair & Bank of America Endowed Chair in Information Technology	CS
Dr. Richard Souvenir	Associate Professor	CS
Dr. Xiaoyu Wang	Research Assistant Professor	CS
Dr. Wensheng Wu	Assistant Professor	CS
Dr. Jing Yang	Associate Professor	CS
Dr. Mirsad Hadzikadic	Professor & Director of Complex Systems Institute	SIS
Dr. Anita Raja	Associate Professor	SIS
Dr. David Wilson	Associate Professor	SIS
Dr. Xintao Wu	Professor	SIS
Dr. Cem Saydam	Professor & Chair	BISOM
Dr. Ram Kumar	Professor	BISOM
Dr. Chandra Subramaniam	Associate Professor	BISOM
Dr. Kexin Zhao	Assistant Professor	BISOM
Dr. Xiuli He	Assistant Professor	BISOM
Dr. Monica Johar	Associate Professor	BISOM
Dr. Antonis Stylianou	Professor	BISOM
Dr. Sunil Erevelles	Associate Professor & Chair	Marketing
Dr. Christie Amato	Professor & Associate Dean for Graduate Programs	Marketing
Dr. Sangkil Moon	Associate Professor	Marketing
Dr. Jennifer Ames-Stuart	Assistant Professor	Marketing
Dr. Charles Bodkin	Professor	Marketing
Dr. Jared Hansen	Assistant Professor	Marketing
Dr. Jennifer Troyer	Professor & Chair	Economics
Dr. Rob Roy McGregor	Professor	Economics
Dr. Craig Depken	Professor	Economics
Dr. Steve Billings	Assistant Professor	Economics

Vitas of faculty listed above are provided as an attachment to the Request to Establish document.

B.   (For doctoral programs) List the names, ranks, and home department of each faculty member who will be directly involved in the proposed program. The official roster forms approved by SACS may be submitted. Provide complete information on each faculty member's education, teaching and research experience, research funding, publications, and experience directing student research including the number of theses and dissertations directed.

NA

C.   Estimate the need for new faculty for the proposed program over the first four years. If the teaching responsibilities for the proposed program will be absorbed in part or in whole by the present faculty, explain how this will be done without weakening existing programs.

The current faculty at the University has the expertise needed to teach the courses in the proposed program. Many of the courses in the proposed program are or will be shared with the existing degree programs in the BCOB and CCI. Such sharing will create synergy between the proposed program and existing programs, and also between the two colleges involved. Such synergy, we believe, will help to strengthen the existing programs. Some new courses, as articulated in this document, have been created or will need to be created. Although there is a critical faculty mass, many of the core courses are at or beyond capacity therefore we need to hire new faculty to teach additional sections of those courses. We expect to hire four new faculty members in the first four years to cover additional sections as well as increased demand for these courses from existing degree programs. The faculty hiring plan is detailed in the budget section.

D.   Explain how the program will affect faculty activity, including course load, public service activity, and scholarly research.

The new program will help to create opportunities for research, scholarly activities and collaboration for the faculty members in both colleges. The combination of data science and business analytics represents fertile ground for research, innovation, and technology development. This new program will help to build bridges among the faculty, among the disciplines, between colleges, and between UNC Charlotte and industry. It will create additional opportunities for the faculty to work with industry and community partners. Given the size and scale of both colleges, as well as anticipated addition of hiring of adjunct faculty and new faculty members in both colleges through our normal growth, we the introduction of this new program will not increase the faculty teaching load.

V.   **LIBRARY**

A.   Provide a statement as to the adequacy of present library holdings for the proposed program to support the instructional and research needs of this program.

Library statement provided in Appendix A

B.   State how the library will be improved to meet new program requirements for the next four years. The explanation should discuss the need for books, periodicals, reference material, primary source material, etc. What additional library support must be added to areas supporting the proposed program?

Presently there are no plans to increase library holdings specifically for this program. Expansion of relevant holdings will be sought as funds become available.

C.   Discuss the use of other institutional libraries.

Holdings of other major libraries in the North Carolina system and beyond are accessible to faculty and students through online and interlibrary loan options.

VI.   **FACILITIES AND EQUIPMENT**

A.   Describe facilities available for the proposed program.

Table VI-A. Available Laboratories and Facilities for the Proposed DSBA Master's Program

College of Computing and Informatics

Name	Description
Teaching Laboratories:	
CCI General Purpose Computer Lab	General teaching lab equipped with desk top computers available to all college students, 1945 sq. ft., Woodward Hall.
Introduction to Computer Science Lab	Hands-on teaching lab for introduction to computer science courses, ~1000 sq. ft., Woodward Hall
Computer Teaching Labs	Three (3) teaching labs equipped with Apple Mac desktops for teaching and class projects, in the new Bioinformatics Building. Over 3000 sq. ft.
Cyber Corps Lab	Computer security laboratory, 400 sq. ft.
Relevant Research Labs will be made available for teaching purpose as needed:	
Computer Science Networking Research Lab	
Visualization laboratory	
Computer Science Biomedical Research and Instruction Lab	
Information and Infrastructure Security Lab	
Vulnerability Assessment Lab	
Cyber Defense and Network Assurance Lab	
Honey Net Research Lab	
Computer Forensics Lab	
Human-Computer Interaction Lab	

Belk College of Business

Name	Description
Teaching Laboratories:	

Instructional Lab	Friday 339 = 40-seat Windows based computer lab equipped with campus-standard and discipline-specific software, 1334 sq. ft.
Instructional Lab	Friday 280 = 32-seat Windows based computer lab equipped with campus-standard and discipline-specific software, 1274 sq. ft.
Open Student-Use Lab	Friday 338 = 42-seat Windows based computer lab equipped with campus-standard and discipline-specific software, 1226 sq. ft.
Open Student-Use Lab	Friday 216 = 30-seat Windows based computer lab equipped with campus-standard and discipline-specific software. 934 sq. ft.
Specialty Laboratory:	
Trading Room	

UNC Charlotte Center City Building	
Name	**Description**
Teaching Laboratories:	
Instructional Lab	CCB 801 = 62-seat dual-boot Mac OS 10.7/Windows 7 computer lab equipped with campus-standard and discipline-specific software. 1596, sq. ft.
Instructional Lab	CCB 802 = 57-seat dual-boot Mac OS 10.7/Windows 7 computer lab equipped with campus-standard and discipline-specific software, 1592 sq. ft.

B. Describe the effect of this new program on existing facilities and indicate whether they will be adequate, both at the commencement of the program and during the next decade.

The existing facilities and laboratories in the Belk College of Business and the College of Computing and Informatics plus the classrooms and computer labs in the UNC Charlotte Center City Building will be adequate to support the new program in the first five years. Furthermore, given the scale of the two colleges and their combined space and facilities plus the facilities in the UNC Charlotte Center City Building, the new program will not negatively affect existing program offerings.

Beyond the first five years from the start of the new program, new space, laboratories and/or equipment may be needed as the proposed PSM grows in enrollment and in offerings. With the normal resource allocation process at the university, as well as with

other sources of funding the need for new facilities can be satisfied. These funding sources would include: a) normal budget and resource allocation process at the university to accommodate program growth; b) grant opportunities from federal and private foundations; and c) funding and/or in-kind support from local industry partners.

C.   Describe information technology and services available for the proposed program

The Information and Technology Services (ITS) at UNC Charlotte, under the leadership of the Vice Chancellor and Chief Information Officer, is responsible for providing campus wide technology support and services for all the colleges. The ITS systems and organization are designed to support the University's goals and programs, including the proposed PSM. A common architecture serves as an enabler for excellent and cost effective services. Specifically ITS:

- Promotes the use of Information Systems for enhancing teaching, learning and research;
- Provides access to secure, quality, and timely information and online services;
- Provides excellent support for campus-wide systems and technologies;
- Evaluates and recommends new technologies as to their capability to promote the University's mission and goals; and
- Uses all campus IT resources effectively to provide agreed on services and solutions.

A component of ITS, the Center for Teaching and Learning, provides support for instructional technology.

In addition, the Office of Technical Support (OTS) and its team of technical staff in the College of Computing and Informatics (CCI) are responsible for providing services specifically for CCI where there is a gap that is not provided for by ITS. OTS architects, implements, and maintains numerous systems and services for CCI. OTS strives to support the research and teaching efforts of CCI by introducing and maintaining appropriate infrastructure.

These combined capabilities will be adequate to support the anticipated information technology needs for the new program.

D.   Describe the effect of this new program on existing information technology and services and indicate whether they will be adequate, both at the commencement of the program and during the next decade.

Since most of the courses for the DSBA PSM are currently being offered, we anticipate minimal initial effect of the proposed program on existing information technology and services. Information technology and services are currently adequate for the program. As the proposed PSM grows in enrollment and in offerings, additional resources will be needed. With the normal resource allocation process at the university, as well as with other sources of funding the need for new facilities can be satisfied. These funding sources would include: a) normal budget and resource allocation process at the university to accommodate program growth; b) grant opportunities from federal and private foundations; and c) funding and/or in-kind support from local industry partners.
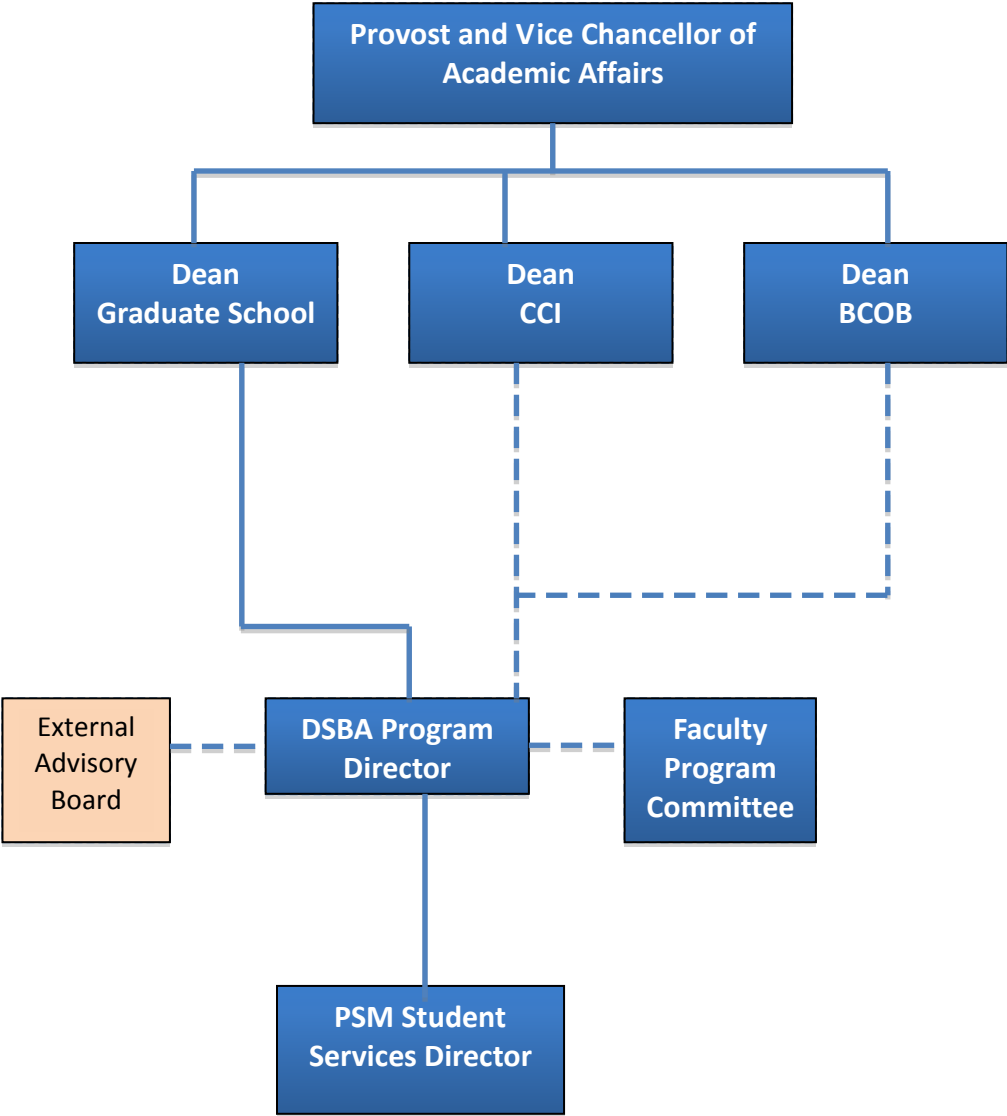

VII.   **ADMINISTRATION**

Describe how the proposed program will be administered, giving the responsibilities of each department, division, school, or college. Explain any inter-departmental or inter-unit administrative plans. Include an organizational chart showing the "location" of the proposed new program.

The interdisciplinary Data Science and Business Analytics (DSBA) Professional Science Master's (PSM) program will be administered jointly by three units at UNC Charlotte – The Graduate School (GS), the Belk College of Business (BCOB) and the College of Computing and Informatics (CCI). Because of its interdisciplinary nature and the fact that its scope goes beyond that of either BCOB or CCI, the Graduate School will be the home for this new degree and will be responsible for the administration of the program. The Program Director for the DSBA PSM will be a faculty member from either the BCOB or CCI who provides oversight for curriculum and operations of the program. The Program Director will be appointed for a two-year term. The Program Director position will alternate between the BCOB and CCI. The Program Director will report directly to the Graduate School Dean and will be a dotted line report to the Deans of CCI and BCOB. The PSM Student Services Director will be responsible for the program's day-to-day operations. The Student Services Director reports directly to the Program Director.

A.   Organizational Chart

The organization chart for the administration of the Data Science and Business Analytics Professional Science Master's Program is shown in Figure VII -A.

Figure VII-A Organizational chart for the Data Science and Business Analytics PSM

The administrative structure of the Data Science and Business Analytics PSM is described below:

- *Graduate School*: The DSBA PSM will be housed in the Graduate School. The Graduate school is responsible for monitoring the quality of graduate programs, the final admission of graduate students, approval of programs of study, appointments to the Graduate Faculty, and the enhancement of research activities essential to the conduct of graduate programs.

- *Dean of the Graduate School*: At the University of North Carolina at Charlotte, the Dean of the Graduate School is the administrative officer with primary responsibility for the supervision of graduate programs. The Dean is responsible for the executive and administrative affairs of the Graduate School in accordance with policies determined by the UNC Charlotte Graduate Council, the Graduate Faculty, and the Faculty Council. The Dean of the Graduate School in collaboration with the Deans of the BCOB and CCI will share administrative responsibility for the DSBA PSM program. The DSBA PSM Director has a direct reporting responsibility to the Dean of the Graduate School.

- *Dean of the Belk College of Business*: The Dean of the College has the administrative responsibility for supervision of all departments and programs housed within the College. The Dean of the BCOB in collaboration with the Dean of the Graduate School and the Dean of CCI share administrative responsibility for the DSBA PSM program. The Director for the DSBA PSM program has a dotted line report to the BCOB Dean.

- *Dean of the College of Computing and Informatics*: The Dean of the College has the administrative responsibility for supervision of all departments and programs housed within the College. The Dean of the CCI in collaboration with the Dean of the Graduate School and the Dean of BCOB share administrative responsibility for the DSBA PSM program. The Director for the DSBA PSM program has a dotted line report to the CCI Dean.

- *Data Science and Business Analytics PSM Program Director:* The Program Director is appointed by the Deans of the Graduate School, BCOB and CCI. The Program Director is a faculty member in either CCI or BCOB who oversees the curriculum and operations of the DSBA PSM program. Responsibilities for the Program Director will include:
    - *Oversight of curriculum and conduct of the program*
    - *Oversight for marketing and recruiting for the program*
    - *Chairing meetings of the DSBA PSM Program Committee*
    - *Communicating assessment of the program and personnel to the Chairs of relevant participating departments*
    - *Reporting program operation status to the Graduate School, BCOB, and CCI*
    - *Evaluating program outcomes and student employment*
    - *Recommending operating budgets to the Graduate School, BCOB, and CCI*
    - *Coordinating scheduling of courses among the participating units*
    - *Working with the External Advisory Board*
    - *Representing the program to external constituencies*
    - *Supervising the Director of Student Services for the program*

- *Data Science and Business Analytics PSM Director of Student Services:* The Director of Student Services will support the DSBA PSM Program Director by providing the day-to-day recruiting, enrollment management, advising and coordinating activities of the program. The Director of Student Services reports directly to the DSBA PSM Program Director.

- *Joint BCOB and CCI Data Science and Business Analytics PSM Program Committee:* The Program Committee will be composed of an equal number of Graduate Faculty members from BCOB and CCI. The committee members are nominated by relevant department Chairs in the

BCOB and CCI departments, and approved by the Offices of BCOB and CCI Deans. The DSBA PSM Program Director will have ex officio membership on the Program Committee, and the Program Director serves as chairperson for the Committee. Membership on the Committee will be for a two-year period. The Program Committee works with the Program Director to set policy and curriculum, recommend students for admission to the program and candidates for the degree, and evaluate the program.

- *External Advisory Board*: An External Advisory Board, consisting of industry leaders and experts in the field of data science and business analytics will advise the Data Science and Business Analytics PSM program. The Board will provide advice in the direction of the PSM, industry needs and curriculum design. The Board will also serve as an advocate for the Program to the industry and to the community. Companies represented on the Board will represent major employers of the PSM students and help to provide internship and project opportunities for PSM students.

VIII.   **ACCREDITATION AND LICENSURE**

A.   Indicate the names of all accrediting agencies normally concerned with programs similar to the one proposed. Describe plans to request professional accreditation.

UNC Charlotte is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (SACS) to award baccalaureate, master's, and doctoral degrees.

The Belk College of Business is accredited by the Association to Advance Collegiate Schools of Business (AACSB) and the DSBA PSM will be included in the College's accreditation scope.

B.   If the new degree program meets the SACS definition for a substantive change, what campus actions need to be completed by what date in order to ensure that the substantive change is reported to SACS on time?

The Belk College of Business and the College of Computing and Informatics will draft a substantive change prospectus per SACS requirements. The draft will be submitted to the University Accreditation Manager, who will work with the Provost and Chancellors Office to submit the prospectus at least six months prior to the start of the DSBA PSM degree program.

C.   If recipients of the proposed degree will require licensure to practice, explain how program curricula and title are aligned with requirements to "sit" for the licensure exam.

No licensure to practice is required.

IX.   **SUPPORTING FIELDS**

Are other subject-matter fields at the proposing institution necessary or valuable in support of the proposed program? Is there needed improvement or expansion of these fields? To what extent will such improvement or expansion be necessary for the proposed program?
None needed.

X.   **ADDITIONAL INFORMATION**

Include any additional information deemed pertinent to the review of this new degree program proposal.

XI.   **BUDGET**

Based upon your responses in previous sections, provide estimates of the incremental continuing and one-time costs required to implement the proposed program.

A.   Estimates should be provided for the <u>first</u> and <u>fourth</u> years of the program in the following broad categories and be inclusive of applicable employee fringe benefit costs:

Please see Appendix B for a comprehensive four year budget plan.

1.   New Faculty and Instructional Support Staff (including Library)

An endowed professor was hired for the DSBA fall 2013. In October 2012 $100,000 was authorized by the UNC General Administration to support this position. Estimates of needs for the program include one faculty member in year one and a second faculty member in year two. Also in year one, money will be allocated for a stipend for the faculty DSBA PSM Program Director. In year three, an endowed professor of Consumer Analytics will be hired by the BCOB. The endowed professor will be funded through a combination of funds generated from an endowed professorship gift from Belk, Inc. and a requested state match. The state match would be $667,000 bringing the endowment to $2,167,000. At a 4% interest rate, $86,680 would be available for the endowed professorship each year. The remaining salary and benefits would come from enrollment increase funds. In year four, a CCI faculty member will be added. By year three one of the faculty positions will be partially funded and in year four completely funded by tuition increment funds.

2.   New Non-Academic Administrative Support Positions

In year one a Director of DSBA PSM Student Services will be added to manage recruiting and marketing, advising, enrollment and other tasks outlined in the Administration section. (See Section VII.) In year three an Associate Director of DSBA PSM Student Services will be hired to coordinate the practicum, including internships, and provide career development services.

3.   Recurring Operational Expenses (e.g., supplies, materials, telephone, travel, insurance, library or software subscriptions, equipment maintenance, etc.)

See Appendix B for estimates of operating expenses.

4.   One-time expenses for facilities renovations or additions, equipment purchases, library materials, etc.

No facility renovations are required to deliver this program. Equipment necessary to deliver the program in years one and two is in place. Money is allocated in the fixed charges section of the budget in years three and four to update equipment. No other one-time expenses are expected.

B.   Based on the campus' estimate of available existing resources or expected non-state financial resources that will support the proposed program (e.g., federal support, private sources, tuition revenue, etc.), will the campus:

1.   Seek enrollment increase funds or other additional state appropriations (both one-time and recurring) to implement and sustain the proposed program? If so, please elaborate.

UNC Charlotte made an expansion budget request for FY14-15 to support the analytics initiative across the campus. The budget projections presented here do not assume the availability of these funds, only enrollment increase funding, private funding, and internal reallocation.   Fund raising has already started for the data science and business analytics initiatives at UNC Charlotte. The Professional Science Master's program would be an important component of this initiative. In a recent $5 million gift to the Belk College of Business from Belk,

Inc., $1.5 million was earmarked for an endowed professorship in marketing analytics and $1.5 million was provided to support a scholars program to provide scholarships for high potential undergraduate business students to groom them for careers in analytics and for quantitative master's programs like the Professional Science Masters' program in Data Science and Business Analytics. The gift also included $1 million for faculty research and teaching grants in the area of analytics that may provide support for DSBA students who work with faculty. The willingness of one of the region's major employers to provide a significant contribution to our analytics initiative plus the expressed support by other top employers suggest an opportunity to develop private funding for assistantships and scholarships.

2. Require differential tuition supplements or program-specific fees? If so, please elaborate.

   a. State the amount of tuition differential or program-specific fees that will be requested.

      The tuition differential would be $3,500 per semester (fall and spring) for a full-time graduate student and prorated for part-time graduate students:

0-2 Credit Hours	$875
3-5 Credit Hours	$1,750
6-8 Credit Hours	$2,625
9+ Credit Hours	$3,500

   b. Describe specifically how the campus will spend the revenues generated.

      Revenue generated through the tuition differential will be used to enhance academic excellence in the program through funding for:

      Student scholarships and assistantships

      Student services including career development

      Attracting a diverse, high-caliber student body

      Technology enhancements and maintenance

      Faculty development

      Faculty DSBA Program Director stipend

      Director and Assistant Director of DSBA Graduate Student Services

      Other operating expenses

   c. Does the campus request for the tuition differential or program-specific fees need to be approved by the Board of Governors prior to the next Tuition and Fee cycle?

      No. A request for tuition differential is currently being prepared for the next Tuition and Fee cycle. Appendix B includes a comprehensive budget plan that includes the proposed budget items that will be funded through the tuition increment. A study of national analytics programs conducted by NCSU (See Appendix D) provides additional justification for including $3,500 per semester increment for full-time students. This tuition is in line with NCSU and other analytics programs.

C.   If additional enrollment increase funding or other state appropriations elaborated above
<u>are not forthcoming</u>, can the program still be implemented and sustained and, if so, how
will that be accomplished? Please elaborate.

Yes, the program with the proposed enrollment can be implemented and sustained
without enrollment increase funding. UNC Charlotte has prioritized analytics as the top
campus initiative and will prioritize the program for funding due to the critical importance
of this program to our students, the Data Science and Business Analytics initiative and our
industry constituents.

Please see Appendix B for summaries of estimated additional costs in the first four years of program
operation.

XII.   EVALUATION PLANS

All new degree program proposals must include an evaluation plan which includes:

A. Criteria to be used to evaluate the quality and effectiveness of the program, including academic
program student learning outcomes.

Proposed Student Learning Outcomes

SLO1   Students will demonstrate knowledge of big data analytics

SLO2   Students will demonstrate the ability to think critically in making decisions based
on data and deep analytics.

SLO3   Students will demonstrate the ability to use technical skills in predictive and
prescriptive modeling to support business decision-making

SLO4   Students will demonstrate the ability to translate data into clear actionable
insights

SLO5   Students will demonstrate effective communication skills that facilitate the
effective presentation of analysis results

Other external criteria which will be used to evaluate the program include, but are not
limited to the following:

- Quality of applicants and entering students

- Progress toward degree

- Number of students that meet student learning outcomes

- Number of graduates from the program

- Successful placement of the majority of graduates in positions in industry or
government

- Successful placement of graduates not immediately seeking employment in
advanced degree (Ph.D.) programs

B.   Measures (metrics) to be used to evaluate the program (include enrollments, number of
graduates, and student success).

The program is expected to reach a steady-state enrollment of about 50 students within
four years, with about half of them being part time.

Full-time students are expected to complete the program in 1.5 years. Part-time students are expected to complete the degree in 2.5 years. Hence, we expect to graduate about 33 students per year.

The program will be deemed successful if graduates receive competitive job offers from industry and government or if graduates are recruited to pursue doctoral training in leading Ph.D. programs.

The SACS Student Learning Outcomes Assessment Plan will be used to evaluate the five student learning objectives.

C.   The plan and schedule to evaluate the proposed new degree program prior to the completion of its fourth year of operation.

Annual evaluations prior to the fourth year will consist of a review of achievements related to student recruitment, admissions, and retention; and in student course evaluations and satisfaction with advising and placement. After two years, statistics regarding time to graduation also will be collected annually. Periodic surveys of alumni and employers will complement the data that will be collected annually. The Advisory Board and program committee will asked for feedback on a regular basis, such as innovations in the field, which may signal a need to examine and potentially revise the curriculum.

The SACS Student Learning Outcomes Assessment Plan will be used to evaluate the five student learning objectives.

XIII.   REPORTING REQUIREMENTS

Institutions will be expected to report on new program productivity as a part of the biennial low productivity program review process.

This proposal to establish a new degree program has been reviewed and approved by the appropriate campus committees and authorities.

Chancellor: _____   Date: _____

APPENDIX A

Library consultation

UNC CHARLOTTE

J. Murrey Atkins Library

Consultation on Library Holdings

To: Dr. Cem Saydam

From: Nicole Spoor

Date: August 13, 2013

Subject: Establishment of Data Science and Business Analytics Professional Science Master's Degree

Summary of Librarian's Evaluation of Holdings:

Evaluator: Nicole Spoor, Business Librarian   **Date:** August 13, 2013

Please Check One:

1.   Holdings are superior   ☐
2.   Holdings are adequate   ☒
3.   Holdings are adequate only if dept. purchases additional items   ☐
4.   Holdings are inadequate   ☐

Comments:

After a thorough evaluation of Atkins Library resources with regards to journals, databases, and circulating books that are relevant to the establishment of a Professional Science Master's degree in Data Science and Business Analytics, it is found that the library's resources are sufficient to support this program.

The following table shows the print source holdings that are relevant to a Professional Science Master's degree in Data Science and Business Analytics. After performing multiple searches of the catalog, it is found that there are adequate resources related to

Data Science and Business Analytics. Individual books not owned by the library may be requested through the library's interlibrary loan service.

Catalog Searches Performed	Total Results	Results Less Than 5 Years Old
Data AND Business	2524	339
Big Data	14	13
Business Analytics	55	36
Innovation AND (Business OR Industry)	1348	487
"Business Intelligence"	272	81
"Supply Chain"	501	129
Econometrics	525	35

Print sources will not be the most relevant resource for this certificate. Databases containing current research will prove more useful for students. The following is a list of selected databases that may be relevant to Data Science and Business Analytics to which Atkins Library provides access:

Business Source Complete

EconLit

IEEE Xplore

INSPEC

JSTOR

Lexis Nexis Academic

ScienceDirect

SimplyMap

Atkins Library also has access to several journal titles that may be relevant to Data Science and Business Analytics. Journal articles not owned by the library may be requested through the library's interlibrary loan service.

Business Intelligence Journal

Business Intelligence Review

Data and Knowledge Engineering

Journal of Data Management

Innovation: The Magazine of Research & Technology

Innovation: Management, Policy and Practice

Conclusion:

The holdings of Atkins Library with regards to print resources, databases and journals are sufficient to support the establishment of a Professional Science Master's degree in Data Science and Business Analytics. It is suggested that the participating academic departments continue ordering new resources as they are published.

Evaluator's Signature: Nicole Spoor, Business Librarian, Atkins Library

Date: August 13, 2013

APPENDIX B

Summary of Estimated Additional Costs

SUMMARY OF ESTIMATED ADDITIONAL COSTS FOR PROPOSED PROGRAM

INSTITUTION		UNC Charlotte	DATE		1-Sep-13
Program (CIP, Name, Level)		52.1399, Management Science and Quantitative Methods, Other, Masters			
Degree(s) to be Granted		M.S. Data Science and Business Analytics	Program Year		Year 1 (2014-2015)
Differential tuition requested per student per academic year		$7,000			
Projected annual FTE students		17.5[2]			
Projected annual differential tuition		$122,500			

	ADDITIONAL FUNDS REQUIRED - BY SOURCE				
	Reallocation of Present Institutional Resources	Projected Differential Tuition	Enrollment Increase Funds	Other New Allocations (Identify)	Total
EPA/SPA Regular Salaries					
Director DSBA Student Services [pos# 1]	$30,000.00	$30,000.00	$-	$-	$60,000.00
PT Staff	$-	$-	$-	$-	$-
EPA Academic Salaries					
Program Director Stipend [pos# 2]	$20,000.00				$20,000.00
Salary Supplement [pos# 3]				$100,000.00	$100,000.00
Assistant/Associate Professor [pos# 4]			$130,000.00		$130,000.00
Benefits (Social security, Retirement, Medical Insurance)	$10,700.00	$17,400.00	$27,000.00	$-	$55,100.00
Graduate Stipends	$-	$-	$-	$-	$-
[5 stipends]	$-	$50,000.00	$-	$-	$50,000.00
Supplies and Materials	$-	$10,000.00	$-	$-	$10,000.00
Current Services	$-	$1,750.00	$-	$-	$1,750.00
Travel	$-	$4,580.00	$-	$-	$4,580.00
Communications	$-	$1,350.00	$-	$-	$1,350.00

[2] FTE calculation: Full-time student = 1FTE, Part-time student = .75 FTE

Printing and Binding	$-	$5,970.00	$-	$-	$5,970.00
Recruitment	$67,500.00	$1,450.00	$-	$-	$68,950.00
Space Rental/Building Lease	$-	$-	$-	$-	$-
Fixed Charges	$-	$-	$-	$-	$-
Software	$-	$-	$-	$-	$-
Libraries	$-	$-	$-	$-	$-
TOTAL ADDITIONAL COSTS	**$128,200.00**	**$122,500.00**	**$157,000.00**	**$100,000.00**	**$507,700.00**

Note: A salary supplement of $100,000 was authorized by the UNC General Administration to hire a Professor of Data Science and Business Analytics on October 15, 2012. The position was filled fall 2013.

SUMMARY OF ESTIMATED ADDITIONAL COSTS FOR PROPOSED PROGRAM

INSTITUTION		UNC Charlotte	DATE	1-Sep-13
Program (CIP, Name, Level)		52.1399, Management Science and Quantitative Methods, Other, Masters		
Degree(s) to be Granted		M.S. Data Science and Business Analytics	Program Year	Year 2 (2015-2016)
Differential tuition requested per student per academic year		$7,000		
Projected annual FTE students		38.75		
Projected annual differential tuition		$271,250		

	ADDITIONAL FUNDS REQUIRED - BY SOURCE				
	Reallocation of Present Institutional Resources	Projected Differential Tuition	Enrollment Increase Funds	Other New Allocations (Identify)	Total
EPA/SPA Regular Salaries					
Director DSBA Student Services [pos#1]	$30,000.00	$30,000.00	$-	$-	$60,000.00
PT Staff	$-	$-	$-	$-	$-
EPA Academic Salaries					
Program Director Stipend [pos# 2]	$20,000.00				$20,000.00
Salary Supplement [pos# 3]				$100,000.00	$100,000.00
Assistant/Associate Professor [pos# 4]			$130,000.00		$130,000.00
Assistant/Associate Professor [pos# 5]	$-	$-	$150,000.00	$-	$150,000.00
Benefits (Social security, Retirement, Medical Insurance)		$37,400.00	$61,200.00	$-	$98,600.00
Graduate Stipends	$-	$-	$-	$-	$-
[8 stipends]	$-	$80,000.00	$-	$-	$80,000.00
Supplies and Materials	$-	$12,550.00	$-	$-	$12,550.00
Current Services	$-	$7,200.00	$-	$-	$7,200.00
Travel	$-	$6,500.00	$-	$-	$6,500.00
Communications	$-	$4,300.00	$-	$-	$4,300.00

Printing and Binding	$-	$3,000.00	$-	$-	$3,000.00
Recruitment	$-	$50,000.00	$-	$-	$50,000.00
Space Rental/Building Lease	$-	$-	$-	$-	$-
Fixed Charges	$-	$11,200.00	$-	$-	$11,200.00
Software	$-	$29,100.00	$-	$-	$29,100.00
Libraries	$-	$-	$-	$-	$-
TOTAL ADDITIONAL COSTS	**$50,000.00**	**$271,250.00**	**$341,200.00**	**$100,000.00**	**$762,450.00**

Note: A salary supplement of $100,000 was authorized by the UNC General Administration to hire a Professor of Data Science and Business Analytics on October 15, 2012. The position was filled fall 2013.

SUMMARY OF ESTIMATED ADDITIONAL COSTS FOR PROPOSED PROGRAM

INSTITUTION	UNC Charlotte	DATE	1-Sep-13
Program (CIP, Name, Level)	52.1399, Management Science and Quantitative Methods, Other, Masters		
Degree(s) to be Granted	M.S. Data Science and Business Analytics	Program Year	Year 3 (2016-2017)
Differential tuition requested per student per academic year	$7,000		
Projected annual FTE students	57.5		
Projected annual differential tuition	$402,500		

ADDITIONAL FUNDS REQUIRED - BY SOURCE

	Reallocation of Present Institutional Resources	Projected Differential Tuition	Enrollment Increase Funds	Other New Allocations (Identify)	Total
EPA/SPA Regular Salaries					
Director DSBA Student Services [pos#1]	$30,000.00	$30,000.00	$-	$-	$60,000.00
Assoc. Dir. DSBA Student Services [pos# 6]	$-	$48,000.00	$-	$-	$48,000.00
PT Staff	$-	$-	$-	$-	$-
EPA Academic Salaries					
Program Director Stipend [pos# 2]	$20,000.00				$20,000.00
Salary Supplement [pos# 3]				$100,000.00	$100,000.00
Assistant/Associate Professor [pos# 4]			$130,000.00		$130,000.00
Assistant/Associate Professor [pos# 5]	$-	$100,000.00	$50,000.00	$-	$150,000.00
Endowed Professor [pos# 7]	$-	$-	$63,320.00	$86,680.00	$150,000.00
Benefits (Social security, Retirement, Medical Insurance)	$-	$60,320.00	$95,700.00		$156,020.00
Graduate Stipends	$-	$-	$-	$-	$-
[8 stipends]	$-	$80,000.00	$-	$-	$80,000.00
Supplies and Materials	$-	$12,550.00	$-	$-	$12,550.00
Current Services	$-	$7,430.00	$-	$-	$7,430.00

Travel	$-	$6,500.00	$-	$-	$6,500.00
Communications	$-	$5,200.00	$-	$-	$5,200.00
Printing and Binding	$-	$4,300.00	$-	$-	$4,300.00
Recruitment	$-	$30,000.00	$-	$-	$30,000.00
Space Rental/Building Lease	$-	$-	$-	$-	$-
Fixed Charges	$-	$10,000.00	$-	$-	$10,000.00
Software	$-	$8,200.00	$-	$-	$8,200.00
Libraries	$-		$-	$-	$-
TOTAL ADDITIONAL COSTS	**$50,000.00**	**$402,500.00**	**$339,020.00**	**$186,680.00**	**$978,200.00**

Note: A salary supplement of $100,000 was authorized by the UNC General Administration to hire a Professor of Data Science and Business Analytics on October 15, 2012. The position was filled fall 2013.

Note: The Endowed Professor position will be funded through a combination of funds generated from an endowed professorship gift from Belk, Inc. and a requested state match. The state match would be $667,000 bringing the endowment to $2,167,000. At a 4% interest rate, $86,680 would be available for the endowed professorship each year. The remaining salary and benefits would come from enrollment increase funds.

SUMMARY OF ESTIMATED ADDITIONAL COSTS FOR PROPOSED PROGRAM

INSTITUTION	UNC Charlotte	DATE	1-Sep-13
Program (CIP, Name, Level)	52.1399, Management Science and Quantitative Methods, Other, Masters		
Degree(s) to be Granted	M.S. Data Science and Business Analytics	Program Year	Year 4 (2017-2018)
Differential tuition requested per student per academic year	$7,000		
Projected annual FTE students	74.38		
Projected annual differential tuition	$520,660		

ADDITIONAL FUNDS REQUIRED - BY SOURCE

	Reallocation of Present Institutional Resources	Projected Differential Tuition	Enrollment Increase Funds	Other New Allocations (Identify)	Total
EPA/SPA Regular Salaries					
Director DSBA Student Services [pos#1]	$30,000.00	$30,000.00	$-	$-	$60,000.00
Assoc. Dir. DSBA Student Services [pos# 6]	$-	$48,000.00	$-	$-	$48,000.00
PT Staff	$-	$-	$-	$-	$-
EPA Academic Salaries					
Program Director Stipend [pos# 2]	$20,000.00				$20,000.00
Salary Supplement [pos# 3]				$100,000.00	$100,000.00
Assistant/Associate Professor [pos# 4]			$130,000.00		$130,000.00
Assistant/Associate Professor [pos# 5]	$-	$150,000.00		$-	$150,000.00
Endowed Professor [pos# 7]	$-	$63,320.00		$86,680.00	$150,000.00
Assistant/Associate Professor [pos# 8]	$-	$-	$150,000.00	$-	$150,000.00
Benefits (Social security, Retirement, Medical Insurance)	$25,000.00	$59,482.80	$106,337.20		$190,820.00
Graduate Stipends	$-	$-	$-	$-	$-
8 stipends]	$-	$80,000.00	$-	$-	$80,000.00
Supplies and Materials	$-	$12,550.00	$-	$-	$12,550.00

Current Services	$-	$7,500.00	$-	$-	$7,500.00
Travel	$-	$6,500.00	$-	$-	$6,500.00
Communications	$-	$5,200.00	$-	$-	$5,200.00
Printing and Binding	$-	$4,300.00	$-	$-	$4,300.00
Recruitment	$-	$35,000.00	$-	$-	$35,000.00
Space Rental/Building Lease	$-	$-	$-	$-	$-
Fixed Charges	$-	$10,000.00	$-	$-	$10,000.00
Software	$-	$8,807.20	$-	$-	$8,807.20
Libraries	$-	$-	$-	$-	$-
TOTAL ADDITIONAL COSTS	**$75,000.00**	**$520,660.00**	**$386,337.20**	**$186,680.00**	**$1,168,677.20**

Note: A salary supplement of $100,000 was authorized by the UNC General Administration to hire a Professor of Data Science and Business Analytics on October 15, 2012. The position was filled fall 2013.

Note: The Endowed Professor position will be funded through a combination of funds generated from an endowed professorship gift from Belk, Inc. and a requested state match. The state match would be $667,000 bringing the endowment to $2,167,000. At a 4% interest rate, $86,680 would be available for the endowed professorship each year. The remaining salary and benefits would come from enrollment increase funds.

APPENDIX C

Letters of Support

October 4, 2012

President Thomas W. Ross
The University of North Carolina
General Administration
Post Office Box 2688
Chapel Hill, NC 27515-2688

Dear Tom,

It was a pleasure meeting you to discuss the need for the North Carolina Initiative for Data Science and Analytics. Executives at BB&T recognize the importance of information and analytics as contributors to growth and profitability. Two very significant investments are being made right now by BB&T in the areas of Enterprise Information Management and Sales. The former project will make it easier to collect and analyze information to improve risk management, client management, financial management and decision making. The latter project will provide the right information to our sales staff, sales managers and executive management to improve sales effectiveness and help our clients achieve economic success. Both of these projects underscore the need for and are fundamentally about information and analysis.

In my conversations with our CIO and other executives, it is increasingly apparent in our industry that technology and information management is inseparable from business management. Technologists need to understand business and business people need to understand technology. So, IT experts need additional skills training in broad business knowledge and, most particularly, the softer skills which include teamwork, collaboration, communication and strategic thinking. Business managers need additional skills training in understanding the technology trends, opportunities and analytics which can make or break their business. There simply are not enough people with the right amount of knowledge that cut across these areas.

The growth of "Big Data" accelerates these fundamental skill set requirements. Right now, there is more data being produced world-wide in a single day than during the entire year of 2000. Much of this data is hard to analyze using traditional methods: Pictures, videos, blogs, comments or relationships among people or products. Google, Amazon and others have pioneered ways to use this information and have set high expectations among consumers who want the right information and analysis right now. Banks are working hard to catch up. As an example, two of our peers are working with a Big Data company to use Internet information to direct commercial bankers to the right client and prospect opportunities. BB&T is working toward a relationship with that company so that, for example, if a company is hiring 30 people via LinkedIn, we will know about it and can talk about employee benefit plans or the need for working capital. We need to know more about our clients and prospects so we can serve them better. We need to build the skills to do that.

BB&T is headquartered in Winston-Salem and is one of the largest companies in North Carolina with additional significant numbers of employees in Charlotte, Raleigh, Wilson, Whiteville, Asheville and elsewhere. BB&T recognizes that information and analytics will be a significant contributor to future growth and, in turn, a broader and deeper skill set in these areas is required. The North Carolina Initiative for Data Science and Analytics is on target and consistent with these needs. Please give serious consideration to the proposal set forth by UNC Charlotte.

Sincerely,

Guenther Hartfeil
Director, Client Insight & Innovation
BB&T Lending and Marketing

belk
MODERN. SOUTHERN. STYLE.

October 3, 2012

Thomas W. Ross, President
The University of North Carolina
PO Box 2688
Chapel Hill, NC 27515

Dear Tom:

I am writing you to offer my enthusiastic support for the North Carolina Initiative for Data Science and Analytics. I am certain this initiative will have significant benefits for area companies and our State. "Big Data" has become an important initiative for many companies and key technology companies are positioning themselves to support this critical need. IBM and SAS in particular, two very important companies in North Carolina, are investing heavily in the effort.

I have the privilege to serve on the Board of Advisors of the Belk College of Business. This proposal has generated a great deal of excitement, especially for me and my contemporaries at Belk. We have announced a $600 million investment program in our business over five years beginning in 2011. Technology and analytics are at the core of our investment program. eCommerce is expanding and evolving rapidly. The need for us to understand our customers better and market to them in a personal way is driving everything we do. As we expand online and in social media, the information our customers entrust us with grows exponentially. Our customers expect in return that we use the data to understand them and directly satisfy their needs online and in our stores. The very important point is that it is not enough to capture the data, but to also have the critical thinking and analytical skills to boil down millions of data points into actions that benefit our customers. Trend spotting, customer relationship marketing, one on one and social marketing and demographic data for real estate investments are just a few examples of how analytics are driving our business today. I can tell you that there is a shortage of talent in this area as we try to hire analysts to support our new systems. This problem will become more acute as we bring more planned technology online over the next three years, all of which will require analyst support.

The great news in all this is that it appears the University is uniquely qualified to satisfy this need. With strengths already in business, computing, informatics and mathematics, as well as a collaborative culture, we're fortunate to have the basic building blocks in place. The even better news for the people of North Carolina is that as we look to build employment and transform our economy, these are very high skill and valued positions for today and tomorrow.

If I can be of any assistance as you pursue this important goal, please do not hesitate to contact me.

Sincerely,

Brian T. Marley
Executive Vice President/Chief Financial Officer

cc: Chancellor Phil Dubois, UNC Charlotte
        Dr. Steve Ott, Dean, UNC Charlotte Belk College of Business
        Tim Belk, CEO, Belk

James E.S. Hynes
Chairman

Michael C. Tarwater, FACHE
Chief Executive Officer

Joseph G. Piemont
President & COO

October 8, 2012

President Thomas W. Ross
The University of North Carolina
General Administration
Post Office Box 2688
Chapel Hill, North Carolina 27515-2688

Dear President Ross:

The healthcare industry continues to be buffeted by increasing regulation and transformation. With the variety of challenges presented in this environment, one of the critical tasks that arise is handling the immense amount of information necessary for analysis and decision making. Historically, the industry has had access primarily to financial and claims information. However in recent years, with incredible advances in healthcare technology and the automation of the clinical electronic health record, clinical systems have generated quantum increases in accessible information commonly termed, "Big Data".

Carolinas HealthCare System has worked closely with UNC Charlotte to ensure the development of student programs to meet workforce needs now and for the future. Most recently, we were excited to see an approved Graduate Degree program in Health Informatics. This was the result of an innovative approach blending the educational offerings of two colleges, the College of Computing and Informatics (CCI) and the College of Health and Human Services.

There is now before you a request for a new program which will also utilize this innovative educational approach, combining the CCI with the Belk College of Business, to create another unique program under the North Carolina Initiative for Data Science and Analytics.

This program is designed to develop a future workforce which would have a foundation in technology while simultaneously evolving strong business skills. This program will bring a unique and highly sought after skillset to market for our organization and others that are advancing in the field of analytics. There is a present need for a skilled analytical workforce but it will continue to grow without limits in sight.

As the largest healthcare system in this region, Carolinas HealthCare is focused on creative and innovative ways to continue to transform healthcare in terms of high quality, excellent service and exceptional value. The accessibility to "Big Data" and the development of a workforce skilled in advanced analytics will speed this journey. We applaud your efforts to educate this skilled workforce and encourage the support of programs under the North Carolina Initiative for Data Science and Analytics led by UNC Charlotte.

Carolinas HealthCare is looking forward to working with UNC Charlotte leaders on this project as it will assist us in attracting and retaining the best and brightest to help in the quest to deliver the highest quality healthcare to the residents of the Carolinas and beyond.

With best regards, I am

Sincerely,

Michael C. Tarwater
Chief Executive Officer

October 12, 2012

President Thomas W. Ross
The University of North Carolina
General Administration
Post Office Box 2688
Chapel Hill, NC 27515-2688

Dear President Ross:

The Charlotte region has continued to grow even through the recession and we predict we will continue to grow by 45,000 new residents per year. Our projections lead to a region of over 4 million people by the year 2046. It is critical to grow the number of jobs in the region as well.

As the chief economic development recruiting agency for Charlotte, we are focused on recruiting and expanding companies in: aviation; biotech; energy; financial services; health care; logistics and distribution; manufacturing; and, motorsports. Charlotte is home to more than 13,000 firms representing more than 280,000 jobs in those sectors today. We believe there is great potential to grow jobs in those sectors which, in turn, helps to grow North Carolina's economy.

One key driver to recruitment efforts is a highly educated talent pool.   That workforce must be able to work with and adjust to working with new technologies and systems. The industry representatives tell us that workforce has and will need to have bachelors, masters and doctoral degrees.

I am writing to convey the support of the Charlotte Chamber of Commerce in an industry-led initiative, with UNC Charlotte as an integral partner, to create a talented workforce, to increase the skills of existing professionals and to grow the research capabilities in the area referred to as "Big Data."   The proposed North Carolina Initiative for Data Science and Analytics (NCIDSA) will lead to the state of North Carolina becoming a hub and a leader in the new field of data science and analytics. The applications affect many different industries today and the business community sees opportunity and a necessity for continued growth in the field.

We co-sponsored the "Charlotte Informatics 2012: Competing and Winning through Analytics" conference earlier this year with UNC Charlotte's College of Computing and Informatics (CCI), The Belk College of Business and the Charlotte Research Institute. There were 300 in attendance and overwhelming responses from industry representatives regarding initiatives coming out of the conference.

After the Charlotte Douglas International Airport, I believe UNC Charlotte is poised to be the second most important driver of economic development providing the talented workforce, applied research and industry partnerships that lead to increased economic activity. The proposed NCIDSA would follow similar efforts, such as the Energy Production Infrastructure Center, that put UNC Charlotte in the lead as we work to grow our economy. We look forward to working with UNC Charlotte on this project.

Thank you for your consideration and for the leadership you provide to all the citizens of North Carolina.

Sincerely,

Bob Morgan
President

President Thomas W. Ross
The University of North Carolina
General Administration
Post Office Box 2688
Chapel Hill, NC 27515-2688

Dear Dr. Ross,

One of the key factors in determining which companies, social organizations and governments will thrive, and even survive, is their ability to leverage analytics. At IBM we are leading this new data driven era through a strategy we call "smarter planet". This strategy is all about taking data from an increasingly instrumented world and turning it into information that can be used by leaders to make better decisions.

In this smarter world, a new type of professional manger is required – both in business and in government. Increasingly, managers will be required to understand analytical concepts and to possess specific skills in analytics. This means that business will demand our universities to produce a new type of graduate. These new "smarter managers" will require education in business, technology and analytics. They will be required to question assumptions and to decide if the data presented is valuable – both in terms of applicability to the business or societal issue and whether the data itself is valid from statistical and technical perspectives.

The proposed North Carolina Initiative for Data Science and Analytics (NCIDSA) is aimed directly at filling this gap. I believe that the cooperation being demonstrated by leaders at UNC – Charlotte to focus on the industry need across both the College of Computing and Informatics and the Belk College of Business is unique. My company has worked closely with both programs and I am confident that their collaboration will produce the graduates required by the new data- driven economy. These graduates will provide much needed skills to a range of industries from financial services, to healthcare, from retail to government.

IBM is actively supporting UNCC to help develop the curriculum for this program. We are making this investment because we recognize how vital this is to our company and to the customers we serve. Perspective employees with a solid analytics foundation will be important to IBM as we continue with our smarter planet strategy. IBM values the strong relationship we have with UNCC in this area. We will continue to support and advise UNCC to make certain that their programs are producing the skills that IBM and our customers demand.

Respectfully,

Gary Lancaster
IBM Managing Director
Senior Location Executive

Dr. Steve Ott/Dr. Yi Deng
Dean
Belk College of Business/College of Computing and Informatics
9201 University City Boulevard
Charlotte, NC 28223

Dear Dean Ott/Deng:

I am pleased to write a letter supporting the proposed Professional Science Master's Degree in Data Science and Business Analytics (DSBA). The Charlotte region, our company and the financial industry all face a strong demand and undersupply of candidates with data science and business analytics training. Building upon the expertise present in the Belk College of Business and the College of Computing and Informatics -- combined with the local business community's enormous need for experience in data and analytics -- UNC Charlotte has the opportunity to become a leader in master's-level data science and business analytics education. The Professional Science Master's (PSM) concept provides candidates with the right mix of analytics, programming and business skills local businesses need to meet big data analytics challenges today and in the future.

The Belk College and the College of Computing and Informatics have the unique opportunity to leverage their faculties' technical and business expertise and strong business partnerships to produce a new generation of data scientists, business analysts and managers. Located in a region with large data-intensive industries, UNC Charlotte is well positioned to be a leader in talent development and research. I view this as a critical and strategic opportunity for UNC Charlotte and for the local business community.

Please let me know if I can be of further assistance in making this degree program successful.

Sincerely,

Ned Carroll
Bank of America
Senior Vice President – Information Management and Analytics
Bank of America Corporate Center
100 N Tryon St
Charlotte, NC 28255
980.388.9825

DUKE ENERGY®

526 South Church Street
EC3XP
Charlotte, NC 28202
o: 704-382-9625
c: 704-905-6045

Mar. 26, 2013

Dr. Steve Ott and Dr. Yi Deng
Dean
Belk College of Business/College of Computing and Informatics
9201 University City Boulevard
Charlotte, NC 28223

Dear Dean Ott and Dean Deng:

I am pleased to write a letter supporting the proposed Professional Science Master's Degree in Data Science and Business Analytics (DSBA). At Duke Energy, we are in the midst of transforming our company operating model to leverage the vast amount of data we have collected over the years to improve key performance indicators such as asset operating performance, grid reliability and customer satisfaction. Building upon the expertise present in the Belk College of Business and the College of Computing and Informatics along with the enormous interest and experience present in businesses within the Charlotte region, UNC Charlotte has the opportunity to become a leader in master's-level data science and business analytics education. The Professional Science Master's (PSM) concept that combines the right mix of analytics, programming and business skills provides the talent we need to meet the big data analytics challenges today and in the future. Our company and industry face a strong demand and undersupply of talent with data science and business analytics training. Companies like Duke Energy have a proud history of providing exceptional operating performance to our customers and our shareholders. However, with the increasing volumes of data we now have available to us we do not have the right mix of technology and business skills to turn this data into useful, actionable information. As we continue changing the demographics of our future workforce we will be heavily dependent on a consistent, quality pipeline of data analytics talent.

The Belk College and the College of Computing and Informatics have the unique opportunity to leverage technical and business faculty expertise combined with strong business partnerships to develop a new generation of data scientists, business analysts and managers. Located in a region with large data-intensive industries, UNC Charlotte is well positioned to be a leader in talent development and research. I see this as a win-win situation for UNC Charlotte and for the business community.

Please let me know if I can be of further assistance in making this a successful degree program.

Sincerely,

Mark Wyatt
Vice President, Grid Modernization

APPENDIX D

North Carolina State University Institute for Advanced Analytics Study

GRADUATE PROGRAMS IN ANALYTICS

FULL-TIME MASTERS DEGREES IN ANALYTICS (OR CLOSELY RELATED)					
University	**Unit**	**Degree – Name**	**Duration (mo.)**	**Est. Tuition**	**Started**
North Carolina State University	Institute for Advanced Analytics	M.S. – Analytics	10	$19,500 (R) $34,500 (NR)	Summer 2007
Northwestern University	School of Engineering	M.S. – Analytics	15	$52,000	Fall 2012
Louisiana State University at Baton Rouge	Colleges of Business and Agriculture	M.S. – Analytics	10	$8,500 (R) $22,000 (NR)	Summer 2012
University of Tennessee at Knoxville	College of Business	Master – Business Analytics	17	$14,200 (R) $40,000 (NR)	Fall 2010
Drexel University	College of Business	M.S. – Business Analytics	20	$46,000	Fall 2011
Fordham University	Graduate School of Business	M.S. – Business Analytics	12	$64,000	Fall 2013
DePaul University	School of Computing and Marketing Dept	M.S. – Predictive Analytics	12+	$37,000	Fall 2010
Stevens Institute of Technology	School of Technology Management	M.S. – Business Intelligence & Analytics	20	$44,000	Spring 2012
University of Denver	School of Business	M.S. – Business Intelligence	20	$60,000	Fall 2008
Bentley University	School of Business	M.S. – Marketing Analytics	20+	$41,500	Fall 2007

INSTITUTE FOR
ADVANCED ANALYTICS

DEGREES WITH TRACKS OR CONCENTRATIONS IN ANALYTICS (OR RELATED)					
University	**Unit**	**Degree – Name**	**Duration (mo.)**	**Tuition**	**Started**
Carnegie Mellon University	School of Information Systems & Management	Master – Info. Systems Mgmt. / Bus. Intelligence & Data Analytics	16	$60,700	Fall 2011
Univ. of Illinois at Urbana-Champaign	College of Liberal Arts & Sciences	M.S. – Statistics / Analytics	20	$28,800/R) $55,400/NR	Fall 2007
University of North Carolina at Chapel Hill	College of Arts & Sciences	M.S. – Statistics & OR / Business Analytics Track	20	$17,200/R $48,500/NR	Fall 2010
Virginia Commonwealth University	School of Business	M.S. – Business / Decision Sciences & Business Analytics	9+	$11,500/R $21,700/NR	Fall 2011
Cornell University	College of Engineering	M.Eng. – Operations Research / Data Analytics	9+	$41,300/2T $62,000/3T	–
University of Alabama	College of Commerce	M.S. – Applied Statistics / Data Mining	20	$15,800/R $20,500/NR	2000
University of Central Florida	College of Sciences	M.S. – Statistical Computing / Data Mining	20	$11,800/R $40,400/NR	2000
Central Michigan University	College of Science and Technology	M.A. – Mathematics / Data Mining	20	$13,700/R $23,000/NR	2000
Oklahoma State University	School of Business	M.S. – MIS / Knowledge Mgmt. Systems	20	$9,000/R $24,000/NR	2004
Texas Tech University	College of Business	M.S. – MIS / Bus. Intelligence	20	23,700/R 31,200/NR	2007

MBA PROGRAMS WITH ANALYTICS TRACKS					
University	**Unit**	**Degree – Name**	**Duration (mo.)**	**Tuition**	**Started**
Carnegie Mellon Univ.	School of Business	MBA – Business Analytics Track	20	$52,500	Fall 2010
Ohio State University	College of Business	MBA – Business Analytics Track	20	$48,740 (R) $80,610 (NR)	Fall 2010
University of Tennessee at Knoxville	College of Business	MBA – Business Analytics Track	17	$28,944 (R) $54,510 (NR)	Fall 2010
Simmons College	School of Management	MBA – Business Analytics Track	16	$60,000	Fall 2010
University of Connecticut	School of Business	MBA – Business Analytics Track	20	$24,000 (R) $56,000 (NR)	Fall 2010
Indiana University	Kelley School of Business	MBA in Business Analytics	20	$57,738 (R) $90,700	Fall 2011

INSTITUTE FOR
ADVANCED ANALYTICS

		Online / Blended / Part-Time Degrees and Certificates			
University	**Unit**	**Name**	**Duration (mo.)**	**Tuition**	**Started**
Northwestern University	School of Continuing Studies	M.S. – Predictive Analytics	20+	$38,665	Fall 2011
Stanford University	Center for Professional Development	Mining Massive Data Sets Graduate Certificate	12-24	$16,900	Fall 2011
Central Connecticut State University	Department of Mathematical Sciences	M.S. – Data Mining	20+	$17,800	2004
Saint Joseph's University	School of Business	M.S. – Business Intelligence	20+	$26,000	?
Texas A&M University	College of Science	M.S. – Statistics / Business Analytics	15+	$18,000 (R) $28,800 (NR)	Fall 2011
Oakland University (MI)	School of Business	M.S. – IT Management / Business Analytics	12	$17,500	Fall 2012

		ANALYTICS EXECUTIVE EDUCATION			
University	**Unit**	**Name**	**Duration (days)**	**Tuition**	**Started**
Northwestern University	Kellogg School of Management	Insight and Analytics	5	$9,700	Fall 2011

INSTITUTE FOR
ADVANCED ANALYTICS

Degrees at Foreign Universities					
University	**Unit**	**Name**	**Duration (mo.)**	**Tuition**	**Started (enroll.)**
University of Warwick (UK)	School of Business	M.Sc. – Business Analytics and Consulting	12	£11,000/R £16,500/NR	Fall 2008 (76)
University of Lancaster (UK)	School of Management	M.Sc. – Management Science and Marketing Analytics	12	£8,400/R £13,000/NR	Year? (30)
Ghent University (Belgium)	Faculty of Economics and Business	Master – Marketing Analysis	12	€541	Fall 1999
University of Technology, Sydney (Australia)	Faculty of Engineering and Information Technology	Master – Analytics (Research)	12-24	AU$35,000	Fall 2011

ANALYTICS CENTERS AND INSTITUTES					
University	**Unit**	**Name**	**Funding**	**Sponsors**	**Started**
Indiana University Bloomington	Kelley School of Business	Institute for Business Analytics	–	Deloitte (?)	October 2011
University of Delaware	Lerner School of Business	Institute for Business Analytics	$5.0 M	JP Morgan	October 2011
Yale University	School of Management	Center for Customer Insights	–	IBM	Spring 2011
University of Pennsylvania	School of Business	Wharton Customer Analytics Initiative	$1.0 M	Art Bilger (Shelter Capital)	January 2011
Fordham University	School of Business	Center for Digital Transformation	–	IBM	October 2011
University of Technology, Sydney (Australia)	Faculty of Engineering and Information Technology	Advanced Analytics Institute	–	–	Sept. 2011
DePaul University	School of Computing and Marketing Dept.	Center for Data Mining and Predictive Analytics	–	IBM	Fall 2010
Texas Tech University	College of Business Administration	Center for Advanced Analytics and Business Intelligence	–	SAS P&G (?)	Spring 2004

SUMMARY OF ESTIMATED ADDITIONAL COSTS FOR PROPOSED PROGRAM

INSTITUTION	UNC Charlotte	DATE	1-Sep-13
Program (CIP, Name, Level)	52.1399, Management Science and Quantitative Methods, Other, Masters		
Degree(s) to be Granted	I.S. Data Science and Business Analytic Program Year		Year 4 (2017-2018)
Differential tuition requested per student per academic year	$7,000		
Projected annual FTE students	74.38		
Projected annual differential tuition	$520,660		

ADDITIONAL FUNDS REQUIRED - BY SOURCE

	Reallocation of Present Institutional Resources	Projected Differential Tuition	Enrollment Increase Funds	Other New Allocations (Identify)	Total
EPA/SPA Regular Salaries					
Director DSBA Student Services [pos#1]	$ 30,000.00	$ 30,000.00	$ -	$ -	$ 60,000.00
Assoc. Dir. DSBA Student Services [pos# 6]	$ -	$ 48,000.00	$ -	$ -	$ 48,000.00
PT Staff	$ -	$ -	$ -	$ -	$ -
EPA Academic Salaries					
Program Director Stipend [pos# 2]	$ 20,000.00				$ 20,000.00
Salary Supplement [pos# 3]				$ 100,000.00	$ 100,000.00
Assistant/Associate Professor [pos# 4]			$ 130,000.00		$ 130,000.00
Assistant/Associate Professor [pos# 5]	$ -	$ 150,000.00		$ -	$ 150,000.00
Endowed Professor [pos# 7]	$ -	$ 63,320.00		$ 86,680.00	$ 150,000.00
Assistant/Associate Professor [pos# 8]	$ -	$ -	$ 150,000.00	$ -	$ 150,000.00
Benefits (Social security, Retirement, Medical Insurance)	$ 25,000.00	$ 59,482.80	$ 106,337.20		$ 190,820.00
Graduate Stipends	$ -	$ -	$ -	$ -	$ -
8 stipends]	$ -	$ 80,000.00	$ -	$ -	$ 80,000.00
Supplies and Materials	$ -	$ 12,550.00	$ -	$ -	$ 12,550.00
Current Services	$ -	$ 7,500.00	$ -	$ -	$ 7,500.00
Travel	$ -	$ 6,500.00	$ -	$ -	$ 6,500.00
Communications	$ -	$ 5,200.00	$ -	$ -	$ 5,200.00
Printing and Binding	$ -	$ 4,300.00	$ -	$ -	$ 4,300.00
Recruitment	$ -	$ 35,000.00	$ -	$ -	$ 35,000.00
Space Rental/Building Lease	$ -	$ -	$ -	$ -	$ -
Fixed Charges	$ -	$ 10,000.00	$ -	$ -	$ 10,000.00
Software	$ -	$ 8,807.20	$ -	$ -	$ 8,807.20
Libraries	$ -	$ -	$ -	$ -	$ -
TOTAL ADDITIONAL COSTS	$ 75,000.00	$ 520,660.00	$ 386,337.20	$ 186,680.00	$ 1,168,677.20

Note: A salary supplement of $100,000 was authorized by the UNC General Administration to hire a Professor of Data Science and Business Analytics on October 15, 2012. The position was filled fall 2013.

Note: The Endowed Professor position will be funded through a combination of funds generated from an endowed professorship gift from Belk, Inc. and a requested state match. The state match would be $667,000 bringing the endowment to $2,167,000. At a 4% interest rate, $86,680 would be available for the endowed professorship each year. The remaining salary and benefits would come from enrollment increase funds.

BIOGRAPHICAL SKETCH

Faculty Name: Christie Hawkins Amato | UNCC ID: 800007804

Position Title/Rank: Professor

Department Name: Marketing

College: College of Business (Col) | Date Submitted/Revised: 05/11/2012

EDUCATION

Doctor of Philosophy, University of Alabama, 1978, Marketing
Master of Science, University of Alabama, 1974, Home Economics
Bachelor of Science, University of Tennessee, Memph, 1972, Home Economics

POSITIONS AND HONORS

1991 - Now: Professor of Marketing, University of North Carolina at Charlotte, Charlotte, North Carolina
1983 - 1991: Associate Professor of Marketing, University of North Carolina at Charlotte, Charlotte, North Carolina
1978 - 1983: Assistant Professor of Business Administration, University of North Carolina at Charlotte, Charlotte, North Carolina
1975 - 1978: Research Assistant, University of Alabama, Center for Business and Economic Research Tuscaloosa, Alabama
1973 - 1975: Graduate Teaching Assistant, University of Alabama, Tuscaloosa, Alabama
1972 - 1973: Management Training Program Intern and Multiple-Department Head of Sales, Rich's Inc., Atlanta, Georgia

COURSES TAUGHT

MBAD6171 - Marketing Management
MBAD6172 - Marketing Research
MKTG3110 - Marketing Concepts
MKTG3219 -
Marketing Strategy

PUBLICATIONS

Amato, C., Amato, L. (2011) Corporate Commitment to Global Quality of Life Issues: Do Slack Resources, Industry Affiliations and Multinational Headquarters Matter?. Business And Society. 50(2), 388-416.
Amato, C., Bodkin, C. Peters, C. (2010) Building a Fan Community through the Folklore of NASCAR. International Journal of Sport Management and Marketing 8 (1-2), 5-20.
Bodkin, C., Amato, C., Peters, C. (2009) The Role of Conflict, Culture, and Myth in Creating Attitudinal Commitment. Journal of Business Research. 62 (10), 1013-1019.
Amato, L., Amato, C. (2009) Changing Retail Power and Performance in Distribution Channels. International Journal of Retail and Distribution Management. 37 (12), 1057-1076.
Peters, C., Amato, C., Hollenbeck, C. (2007) An Exploratory Investigation of Consumers' Perceptions of Wireless Advertising. Journal of Advertising. 36 (4), 129-145.
Amato, L., Amato, C. (May, 2007) The Effects of Firm Size and Industry on Corporate Giving. Journal of Business Ethis. 72 (3), 229-241.
Amato, C., Peters, C., Shao, A. (2005) An Exploratory Investigation into NASCAR Fan Culture. Sport Marketing Quarterly. 14 (2), 71-83.
Amato, C., Amato, L. (2005) Enhancing Student Team Effectiveness: Application of Myers-Briggs Personality Assessment in Business Courses. Journal of Marketing Education. 27 (1), 41-51.
Amato, L., Amato, C. (2004) Firm Size, Strategic Advantage, and Profit Rates in U.S. Retailing. Journal of Retailing and Consumer Service. 11 (3), 181-193.
Davis, W., Amato, L., Amato, C. (2003) Mock Labor Negotiations and a Group Rawlsian Experiment. Journal of Economics and Economic Education Research. 10 (1), 35-47.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

Amato, L., Amato, C. (February, 2009) The Effects of Green Marketing Profit Ratios for Select Firms. American Society for Business and Behavioral Sciences.   Las Vegas, NV.

Amato, L., Amato, C. (February, 2008) Environmental Commitment and Profitability: An Empirical Study. American Society for Business and Behavioral Sciences.   Las Vegas, Nevada.

Peters, C., Amato, C., Okleshen, M. (May, 2006) The Good, the Bad, and the Ugly: Young Adults' Perceptions of Wireless Advertising Messaging. Hawaii International Conference on Business.   Waikiki, Hawaii.

Amato, C. (August, 2006) Impact of Environmental Ratings on Profitability. ASBBS 9th International Conference.   London, United Kingdom.

Amato, C., Amato, L. (April, 2006) Understanding the Relationship between Psychological Type and Student Performance in Large Classes. Marketing Educator's Association Conference.   San Francisco, California.

Amato, L., Amato, C. (February, 2005) Corporate Giving and the Structure Performance Relationship. American Society of Business and Behavioral Sciences.   Las Vegas, Nevada.

Amato, C., Amato, L. (April, 2005) Role Portrayal in Agricultural Advertising: Do Role Match Target Market Profiles. Allied Academies Meeting.   Memphis, Tennessee.

Amato, L., Amato, C. (February, 2004) Profitability and Firm Size in the Primary Metals Industries. American Society of Business and Behavioral Sciences.   Las Vegas, Nevada.

Amato, L., Amato, C. (April, 2004) Productivity, Innovation, and Antitrust Policy. Allied Academies.   New Orleans, Louisiana.

Amato, L., Amato, C., Burson, T. (February, 2003) Profitability, Deregulation, and Market Structure in the Communications Sector. American Society of Business and Behavioral Sciences.   Las Vegas, Nevada.

RESEARCH SUPPORT

N/A

EXTERNAL SERVICE

2007-2008 - Reviewer: Ad Hoc Reviewer for a Journal (International) Journal of Marketing Letters, Reviewed article

2007-2008 - Reviewer: Ad Hoc Reviewer for a Journal (International) Journal of Marketing Education, Reviewed Article

2007-2008 - Board Member: PRJ Editorial Review Board (International) Journal of the Academy of Marketing Science, 2006-2007 - Chair of a Committee (Local) Policies and Standards Committee, Davidson Lands Conservancy

2006-2007 - Board Member: PRJ Editorial Review Board (International) Journal of the Academy of Marketing Science, 2005-2006 - Chair of a Committee (Local) Policies and Standards Committee, Davidson Lands Conservancy

2005-2006 - Board Member: PRJ Editorial Review Board (International) Journal of the Academy of Marketing Science, 2004-2005 - Chair of a Committee (Local) Policies and Standards Committee, Davidson Lands Conservancy

2003-2004 - Chair of a Committee (Local) Policies and Standards Committee, Davidson Lands Conservancy

2002-2003 - hair of a Committee (Local) Policies and Standards Committee, Davidson Lands Conservancy

2001-2002 - Member of a Committee (Local) Marketing Committee for the Charlotte Symphony Orchestra

2000-2001 - Member of a Committee (Local) Marketing Committee for the Charlotte Symphony Orchestra

1999-2000 - Member of a Committee (Local) Marketing Committee for the Charlotte Symphony Orchestra

SERVICE TO THE UNIVERSITY

2009-2010 - Committee Member (University) Graduate Enrollment Planning Workgroup, Work with the Graduate School to develop enrollment projections for BCOB graduate programs.

2009-2010 - Committee Member (College) Graduate Student Professional Development Program Selection Committee

2009-2010 - Committee Member (College) Belk College Senior Staff

2008-2009 - Committee Member (University) University Honors Advisory Committee

2008-2009 - Committee Member (Department) Marketing Department Curriculum Committee

2008-2009 - Committee Member (College) University Course and Curriculum Committee

2008-2009 - Committee Chair (College) MBA/MBAS/MACC Working Group

2008-2009 - Committee Chair (College) Faculty Teaching and Learning Center Advisory Committee

2008-2009 - Committee Chair (College) Belk College Strategic Planning Committee, Educational Programs sub-committee

2007-2008 - Committee Member (University) University Honors Advisory Committee

SERVICE TO THE UNIVERSITY - Cont.

SUPERVISED ACADEMIC WORK

2005-2006: Thesis / Dissertation Committee - Member, Business Honors Thesis Committee Member for Robert Thompson
2005-2006: Thesis / Dissertation Committee - Member, Business Honors Thesis Committee Member for Julia Patton
2005-2006: Student Assign-Supervised Thesis (UG Seniors), Business Honors Thesis Advisor for Eric Sim
2004-2005: Thesis / Dissertation Committee - Member, Business Honors Thesis Committee Member for Lauren Welch
2004-2005: Student Assign-Supervised Thesis (UG Seniors), Business Honors Thesis Advisor for Michael Korenchuk
2003-2004: Thesis / Dissertation Committee - Member, Business Honors Thesis Committee Member for Lisa Bruce
2003-2004: Thesis / Dissertation Committee - Member, Business Honors Thesis Committee Member for Caleb Stroup
2003-2004: Student Assign-Supervised Thesis (UG Seniors), Business Honors Thesis Advisor for Kristy Mersinger
2003-2004: Student Assign-Supervised Thesis (UG Seniors), Business Honors Thesis Advisor for Erin Dillon
2002-2003: Thesis / Dissertation Committee - Member, Business Honors Thesis Committee Member for Jessica Mann
2002-2003: Student Assign-Supervised Thesis (UG Seniors), University Honors Thesis Advisor for Mary Starnes

BIOGRAPHICAL SKETCH

Faculty Name: Anita Raja	UNCC ID: 800202778

Position Title/Rank: Associate Professor

Department Name: Software & Information Systems

College: College of Computing & Informatics	Date Submitted/Revised: 05/15/2012

EDUCATION

Doctor of Philosophy, University of MA-Amherst, 2003, Computer Science
Master of Science, University of MA-Amherst, 1998, Computer Science
Bachelor of Science, Temple University, 1996, Computer Science

POSITIONS AND HONORS

January 2011 - Present
Visiting Research Scientist, Center for Computational Learning Systems, Columbia University (on educational leave from UNCC).

July 2009- Present
Associate Professor, Software and Information Systems, University of North Carolina at Charlotte

Aug 2003- June 2009
Assistant Professor, Software and Information Systems, University of North Carolina at Charlotte.

Aug 1996-June 2003
Graduate Research Assistant, Multi Agent Systems Lab, University of Massachusetts.

January 1999
Lecturer, Computer Science, University of Massachusetts.

Feb 1995- May 1996
Undergraduate Research Assistant, FLAIRS Lab, Computer and Information Sciences, Temple University.

Aug 1993-May 1996
Tutor, Mathematics, Temple University.

Honors:

• Best Paper Award, "DLB-SDPOP: A Multiagent Pseudo-tree Repair Algorithm for Load Balancing in WLANs" co-authored with Shanjun Cheng, Linda Xie and Ivan Howitt and published at the Intelligent Agent Technology Conference (IAT) 2010 as part of the Ninth IEEE/WIC/ACM International Joint Conference on Intelligent Agent Technology and Web Intelligence.
• Essam El-Kwae 2006 UNCC College of IT Student-Faculty Research Award (with undergraduate student George Alexander).
• Finalist for Best Paper Award, "Meta-level Reasoning in Deliberative Agents" coauthored with Victor Lesser and published at the Intelligent Agent Technologies Conference (IAT) 2004 as part of the Third IEEE/WIC/ACM International Joint Conference on Intelligent Agent Technology and Web Intelligence. One of three finalists.
• AAAI Student Scholarship to participate in AAAI 2002, Edmonton, Canada.
• NSF/Intel/AAAI grant to AAAI grant to attend Grace Hopper Celebration of Women in Computing, Cap Cod, MA. September 2000.
• NSF Student Scholarship to attend ICMAS 2000, Boston. July 2000.
• NSF/DARPA Scholarship awarded to student first authors with accepted publication at Agents 2000 to participate in the conference, Barcelona, Spain. June 2000
• NSF Scholarship to attend EASSS 1999 (European Agent Systems Summer School) in University of Utrecht, Netherlands.
• B.S degree summa cum laude with University Honors and Distinction in Major.
• Temple University's Presidential Award for academic excellence, Spring 1996.
•

POSITIONS AND HONORS - Cont.

 Member of Phi Beta Kappa Honor society.
• Member of Golden Key National Honor Society.
• Recipient of Temple University's International Student Scholarship, Spring 1995.
• Best Teaching Assistant Award at Temple University, Spring 1996.
• Scored 99.9 percentile in the All India Senior School Examination (March 1992)

COURSES TAUGHT

• COMS E6901   Independent Study Course: Situational Awareness in the Social Media Space (
Co-advisor, Columbia University) -   Fall 2011.
• UNCC ITIS 5166 Network Based Application Development, Spring 2004, Fall 2004, Fall 2006, Fall 2007,
Spring 2008, Fall 2008, Spring 2009, Fall 2009, Spring 2010. Graduate Course, redesigned course to
include lab components and interactive elements.
• UNCC ITIS 4166 Network Based Application Development, Fall 2006, Fall 2007, Spring 2008, , Fall
2008, Spring 2009, Fall 2009, Spring 2010. Undergraduate Course cross-listed with graduate level
course, developed undergraduate requirements making it core course in Web Application track.
• UNCC ITIS 6010/8010 Multiagent Systems, Spring 2005, Spring 2007, Spring 2009. Graduate Course,
developed new course.
• UNCC ITIS 2300 Web Based Application Development, Spring 2006. Undergraduate Course, Lecturer.
• UNCC ITIS/ITCS 6148/8148 Advanced Object Oriented Design and Implementation, Fall 2003, Fall 2005.
Graduate Course, developed new course.
• UNCC ITIS 3650, 3651 Undergraduate Senior Project Fall 2005, Spring 2006, Spring 2007, Summer 2007,
Fall 2007, Spring 2008.
• UMASS CMPSCI 197J Advanced UNIX Environment, Winter 1999
• Undergraduate Course, Lecturer.

PUBLICATIONS

Michael T. Cox and Anita Raja, (Editors) 2011. MetaReasoning: Thinking about Thinking MIT Press,
Cambridge, MA (ISBN-10 0-262-01480-7).

Michael T. Cox and Anita Raja, "Metareasoning: An Introduction", In Metareasoning: Thinking about
Thinking, M. Cox & A. Raja, (Ed.). MIT Press, Cambridge, USA, pp 3-14, March 2011.
http://coitweb.uncc.edu/~anraja/newpubs.html

 Shanjun Cheng, Anita Raja, Linda Xie, Ivan Howitt, "DLB-SDPOP: A Multiagent Pseudo-tree Repair
Algorithm for Load Balancing in WLANs" In Proceedings of   2010 IEEE/ WIC/ ACM International
Conference on Intelligent Agent Technology (IAT-2010), pp 311-318, Toronto, Canada (Acceptance Rate
18.8%, Received Best Paper Award). http://coitweb.uncc.edu/~anraja/newpubs.html

Shanjun Cheng, Anita Raja and Victor Lesser, ""Multiagent Meta-level Control for a Network of
Weather
Radars " In Proceedings of   2010 IEEE/ WIC/ ACM International Conference on Intelligent Agent
Technology (IAT-2010), pp 157-164, Toronto, Canada. (Acceptance Rate 18.8%).
http://coitweb.uncc.edu/~anraja/newpubs.html

Dingxiang Liu, Jia Yue, Xiaoyu Wang, Anita Raja, William Ribarsky "The Role of Blackboard-based
Reasoning and Visual Analytics in RESIN's Predictive Analysis", Proceedings of 2008 IEEE/ WIC/ ACM
International Conference on Intelligent Agent Technology), pp 508-511, Sydney, Dec 9-12, 2008.
http://coitweb.uncc.edu/~anraja/newpubs.html

George Alexander, Anita Raja, and David Musliner, "Controlling Deliberation in a Markov Decision
Process-Based Agent", Proceedings of the Seventh International Joint Conference on Autonomous Agents
and Multi-Agent Systems, pp 461-468, Estoril, Portugal, May 12-16, 2008 (Acceptance rate 22%).
http://coitweb.uncc.edu/~anraja/newpubs.html

Anita Raja and Victor Lesser, "A Framework for Meta-level Control in Multi-Agent Systems", In
Autonomous Agents and Multi-Agent Systems, Vol.15, Number 2, pp 147-196, October 2007, DOI
10.1007/s10458-006-9008-z. http://coitweb.uncc.edu/~anraja/newpubs.html

Thomas Wagner, Anita Raja, and Victor Lesser, "Modeling Uncertainty and its Implications to
Sophisticated Control in TAEMS Agents", In Autonomous Agents and Multi-Agent Systems, Vol. 13,
Number
3, pp 235-292, Nov 2006, DOI 10.1007/s10458-006-7669-2. http://coitweb.uncc.edu/~anraja/newpubs.html

Anita Raja and Victor Lesser. Meta-level Reasoning in Deliberative Agents. In Proceedings of the
International Conference on Intelligent Agent Technology (IAT 2004), September, 2004. Best Paper
Award Finalist (Acceptance rate 16%). http://coitweb.uncc.edu/~anraja/newpubs.html

Anita Raja, Victor Lesser and Thomas Wagner, "Toward Robust Agent Control in Open Environments",
P

PUBLICATIONS - Cont.

roceedings of Autonomous Agents 2000, pages 84-91, Barcelona, Spain.
http://coitweb.uncc.edu/~anraja/newpubs.html

Victor Lesser, Bryan Horling, Frank Klassner, Anita Raja, Thomas Wagner, Shelley XQ. Zhang. "BIG: A Resource-Bounded Information Gathering Agent", Proceedings of AAAI-98, pages 539-546, Madison, WI, July 1998, also UMASS Computer Science Technical Report 1998-003. (Acceptance Rate 30%).http://coitweb.uncc.edu/~anraja/newpubs.html

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

• Invited Talk: April 2011, "Coordinating about Coordination", Lesser's "First 50": Celebrating the First 50 Years of Victor Lesser's Career in Computing, University of Massachusetts, Amherst.

• Invited Talk: November 2010, "Formalizing Distributed Coordination in Complex Agent Systems", CUNY Computer Science Colloquia, CUNY Grad Center, NY, NY.

• September 2010, "Predictive Analytics Using a Blackboard-based Reasoning Agent", IEEE/ WIC/ ACM International Conference on Intelligent Agent Technology (IAT-2010), Toronto, Canada.

• May 2010, "Acquisition Risks in a World of Joint Capabilities", Naval Postgraduate Schools 7th Annual Acquisition Research Symposium, Monterey, CA.

• March 2009, "A Blackboard-based Approach towards Predictive Analytics", AAAI Spring Symposium on Technosocial Predictive Analytics, Stanford University, CA.

• Invited Talk, October 2008 Metalevel Control Across Agent Boundaries, School of Interactive Computing, Georgia Institute of Technology, Atlanta, GA.

• July 2008 Coordinating Agents' Meta-level Control, AAAI 2008, Workshop on Metareasoning: Thinking about Thinking, Chicago, IL.

• Invited Talk, June 2008 Agent-based Computing, UNCC Diversity In information Technology Institute NSF REU program.

• May 2008 Controlling Deliberation in a Markov Decision Process-Based Agent, Seventh International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS08), Estoril, Portugal.

• Invited Lecture, January 2008 Distributed Computing, ITIS 1203 Survey of Computing, Software and Information Systems

RESEARCH SUPPORT

1. Naval Postgraduate School "Modeling Non-linear Cascading Consequences in Interdependent Networks", Principal Investigator: Anita Raja, 5/24/2011-5/23/2012.

2. National Science Foundation "RI: Small: A Hybrid Approach For Meta-Level Control Across Agent Boundaries, Principal Investigator: Anita Raja, 9/16/2010-8/31/2012, $151,653 .

3. Naval Postgraduate School "Acquisition Risks in a World of Joint Capabilities", Principal Investigator: Maureen Brown; Consultant: Anita Raja, 01/01/2010-12/31/2010, $100,000

4. DHS "Regional Visualization and Analytics Center", Principal Investigator: William Ribarsky; Co-Principal Investigators: Anita Raja, William Tolone, Jianping Fan, Robert Kosara, Jing Yang, 01/01/2006-06/30/2009 $1,554,486.

5. National Science Foundation "NETS-NBD: WLAN Resource Management Using Multi-Agent Systems", Principal Investigator: Linda Xie; Co-Principal Investigators: Ivan Howitt, Anita Raja, 09/01/2006-08/31/2008, $75,000.

6. DARPA IPTO Program "COORDINATORs: Intelligent Coordination Support for Humans" Principal Investigator: Anita Raja. Honeywell International, Inc. (DARPA/AFRL Prime), 2/11/2005-8/31/2007 $272,500.

7. Defense Intelligence Agency, "Sudden Capital Real-World Model Extensions" Principal Investigator: William J. Tolone; Co-Principal Investigators: Wei-Ning Xiang, Gail-Joon Ahn, David Wilson, Anita Raja, and Seok-Won Lee, 11/12/2004 – 12/21/2005 $1,729,193.

8. National Science Foundation SFS Capacity Building Proposal "Collaborative Project: Bridging Gaps in IA Education through Collaboration" Principal Investigator: Bill Chu; Co-Principal Investigators: Seok-Won Lee, Gail-Joon Ahn, Anita Raja, Yuliang Zheng, Yongge Wang, William Tolone, Zhaoyu Liu, and David Wilson, 08/15/04 - 07/31/06. $300,000.

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RESEARCH SUPPORT - Cont.

. National Security Agency "Department of Defense Information Assurance Scholarship Program" Principal Investigator: Gail-Joon Ahn; Co-Principal Investigators: Bill Chu, William Tolone, Yuliang Zheng, Yongge Wang, Zhaoyu Liu, David Wilson, Anita Raja, Seok-Won Lee, Teresa Dahlberg. 09/17/2004-09/16/2005. $58,088.

10. Defense Intelligence Agency, "Model Capability Demonstration". Principal Investigator: William J. Tolone; Co-Principal Investigators: David Wilson, Anita Raja, and Wei-Ning Xiang. 4/15/04-9/30/04. $424,536.

EXTERNAL SERVICE

Co-chair, AAAI -10 Workshop on Metacognition for robust social systems. Colocated with AAAI 2010, July 11, 2010, Atlanta, Georgia.

Co-Chair, SASO Workshop on Metareasoning in Self-Adaptive Systems. September 2009, SanFrancisco, USA.

Co-Chair, AAAI Workshop on MetaReasoning: Thinking about Thinking, July 2008, Chicago, USA.

Co-Chair, First International Workshop on Meta Reasoning in Agent-Based Systems (MRABS 2007), Colocated with AAMAS 2007, May 14, 2007, Hawaii, USA.
Program Co–Chair, FLAIRS-2006, Special Track on Artificial Intelligence Education.

Senior Program Committee: Twenty-second International Joint Conference on Artificial Intelligence, 2011, Barcelona, Spain.

Program Committee:
• Autonomous Agent and Multi-Agents Systems - AAMAS (2004, 2005, 2007, 2008, 2009, 2010, 2011).
• Association for the Advancement of Artificial Intelligence - AAAI (2006, 2007, 2008).
• Fourth IEEE International Conference on Self-Adaptive and Self-Organizing Systems (2010).
• Florida Artificial Intelligence Research Society Special Track on Artificial Intelligence Education (2004, 2005, 2006, 2007, 2008, 2009, 2010).
• AAMAS Workshop on Safety and Security in Multiagent Systems - SASEMAS (2004, 2005, 2006).
• AAMAS Workshop on Multi-Agent Sequential Decision Making in Uncertain Domains (2007, 2008, 2009).
• AAAI Spring Symposium on Technosocial Predictive Analytics (March 2009).
• Fifth International Symposium High-capacity Optical Networks & Enabling Technologies (2008).
• Workshop on New Forms of Reasoning for the Semantic Web: Scalable, Tolerant and Dynamic (NeFOR08).
• ECAI Workshop on New Trends in Real-Time Artificial Intelligence - NTeRTAIn (2006).
• Pacific Rim International workshop on Multi-Agent systems - PRIMA (2004, 2005), International Workshop on Agent-based Computing for Enterprise Collaboration - ACEC-WETICE (2004, 2005, 2006), International Workshops on Enabling Technologies Infrastructure for Collaborative Enterprises - WETICE (2002, 2003).

Reviewer:
• 33rd Annual German Conference on Artificial Intelligence, Karlsruhe, Germany, September 21-24, 2010.
• International Transactions in Operational Research (2010)
• Journal of Autonomous Agents and MultiAgent Systems (2007, 2008, 2009).
• Artificial Intelligence Journal (2009, 2010), Computational Intelligence (2008).
• Special issue of Multiagent and Grid Systems on "Coordinating Agents' Plans and Schedules (2008).
• International Journal of Cooperative Information Systems (2007).
• IEEE Transactions on Automation Science and Engineering (2007).
• IEEE Transactions on Systems, Man and Cybernetics (2001, 2002, 2006, 2007).
• Journal of Machine Learning Research (2006).
• Journal of Systems and Software (2004).
• International Journal of Computers and Applications (2004).
• Fifth International Conference on Knowledge Based Computer Systems (2004).
• European Conference on Artificial Intelligence (2002).
• Autonomous Agents Workshop on Infrastructure for Agents, MAS, and Large Scale MAS (2001).

Grant Proposal Review:
• NSF Panel Member (IIS: 2004, 2008, 2009, 2011; CISE: 2010).
• NSF External Reviewer (2007).
• Israel Science Foundation (2011).
• Dutch National Science Foundation (NWO), 2004.

Professional Affiliations:
• Association for the Advancement of Artificial Intelligence (AAAI).
• Voting Member of The International Foundation for Autonomous Agents and Multiagent Systems (IFAAMAS).

Community Engagement:
• Invited Talk, "Information Technology and Education: Opening Doors for Service in India", India H

EXTERNAL SERVICE - Cont.

arvest 2010 conference.
- Volunteer judge at Greater Charlotte Christian Communicators Debate Competitions, 2007, 2008.
- Invited talk, "Careers in Computer Science", Agape Ministry of Computing for People with Disabilities, 2006.
- Two day course on Computer Basics for forty 6th to 8th graders from villages in South India, 2006.

SERVICE TO THE UNIVERSITY

- Co-organizer and Judge, Department of Software and Information Systems' "8-hour start-up Competition" (April 2008).
- UNCC Graduate Research Fair Judge (2005).
- Invited Panel Member at New Faculty Orientation (August 2004).
- Chair of CCI Honors Committee (2008-2010).
- Chair of Software and Information Systems Departmental Academic Planning Committee (2009-2010).

SUPERVISED ACADEMIC WORK

- Ph.D. Proposal Defense Committee Chair, June 14, 2011, Shanjun Cheng, Topic: "Coordinating Meta-level Control Across Agent Boundaries".

- Ph.D. Qualifying Exam Chair, December 2009, Shanjun Cheng, Area of Concentration: Artificial Intelligence.

- M.S. Thesis Defense Committee Chair, Jia Yue, November 2009, Department of Software and Information Systems, "Controlling resource-bounded reasoning for visual analytics in a blackboard-based agent".

- Ph.D. Qualifying Exam Chair, December 2008, George Alexander, Area of Concentration: Artificial Intelligence.

- Primary Advisor for Undergraduate Senior Project, Fall 2007-Spring 2008, Jason Hillgen, Department of Computer Science, "Empirical Study of a Multi-Agent System that Tracks Meteorological Phenomenon".

- Primary Advisor for Undergraduate Senior Project, Fall 2007-Spring 2008, James Rozier, Department of Computer Science, "Role of Constraint Optimization Algorithms in Wireless Network Resource Management".

- Primary Advisor for Undergraduate Senior Project, Summer 2007-Fall 2007, George Nwador, Department of Software and Information Systems, "A Web-based Application for Research Project and Publication Display and Management".

BIOGRAPHICAL SKETCH

Faculty Name: Anthony C Stylianou | UNCC ID: 800015106

Position Title/Rank: Professor

Department Name: Business Info Systems/Operations

College: College of Business (Col) | Date Submitted/Revised: 05/11/2012

EDUCATION

Doctor of Philosophy, Kent State Univ-Kent, 1989, Management Info Systems
Master-Business Administration, Kent State Univ-Kent, 1983, Bus Mgmt and Administration
Bach-Business Administration, Kent State Univ-Kent, 1982, Accounting
Bach-Business Administration, Kent State Univ-Kent, 1982, Business Economics

POSITIONS AND HONORS

2005 - Now: Professor, University of North Carolina, Charlotte, North Carolina
2007 - 2009: EGADE,
Monterrey Tech, Mexico, Global MBA Course
2007 - 2007: Mannheim University, Germany, Short course
1996 -
2005: Associate Professor, University of North Carolina at Charlotte, Charlotte, North Carolina
1990 -
1996: Assistant Professor, University of North Carolina at Charlotte, Charlotte, North Carolina
1992 -
1994: Adjunct Faculty, Kent State University, Kent, Ohio
1988 - 1990: Assistant Professor, Villanova
University, Villanova, Pennsylvania
1984 - 1987: Instructor / Research Fellow, Kent State University,
Kent, Ohio
1982 - 1983: Research & Teaching Assistant, Kent State University, Conducted computer workshops
for classes; provided programming and research assistance to faculty; Tutored graduate and undergraduate
students in Accounting Information Systems, and programming in BASIC, FORTRAN, COBOL and SPSS, Kent,
Ohio
1982 - 1983: Research & Teaching Assistant, Kent State University, Kent, Ohio

COURSES TAUGHT

INFO2130 - Introduction to Business Computing
INFO3000 - Information Technology Audit
INFO3130 - Management Information Systems
INFO3233 - Business Database Systems
INFO3240 - Fundamentals of E-Business
INFO8201 - Data and Knowledge Management in Business
INFO8700 - Advanced Topics in MIS
INFO8800 - Information Systems Research Seminar
INFO8900 - Directed Individual Study in Business Information Systems
MBAD6182 - E-Business Systems
MBAD6201 - Data and Knowledge Management in Business
MBAS6320 - Internet and Technology in Sports Management

PUBLICATIONS

Robbins, S., Stylianou, A. (May, 2010) A Longitudinal Study of Cultural Differences in Global Corporate
Web Sites. Journal of International Business & Cultural Studies. 3 17.
Jeong, B., Stylianou, A. (April,
2010) Market Reaction to Application Service Provider (ASP) Adoption: An Empirical Investigation.
Information & Management. 47 (3), 176-187.
Berg, B., Stylianou, A. (June, 2009) Factors Considered when
Outsourcing an IS System: An Empirical Examination of the Impacts of Organizational Size, Strategy and the
O

PUBLICATIONS - Cont.

bject of a Decision. European Journal of Information Systems. 18 (3), 235-248.
Khouja, M., Stylianou, A.
(August, 2009) A (Q,R) Inventory Model with Drop Shipping Option for E-Business Retailers. Omega. 37 (4), 896-908.
Vatanasombut, B., Igbaria, M., Stylianou, A., Rodgers, W. (November, 2008) Factors Affecting
Information Systems Continuance Intention of Customers Who are Users of Web-Based Applications: The Case of Online Banking. Information & Management. 45 (7), 419-428.
Stylianou, A., Jackson, P. (Summer, 2007) A
Comparative Examination of Individual Differences and Beliefs on Technology Usage: Gauging the Role of the IT Artifact. Journal Of Computer Information Systems. 47 (4), 11-18.
Dardan, S., Kumar, R., Stylianou, A.
(October, 2007) The Diffusion Of Customer-Related IT Among Large And Mid-Sized Companies. Information Resources Management Journal. 20 (4), 12-24.
Dardan, S., Stylianou, A., Kumar, R. (Winter, 2006) The
Impact of Customer-Related IT Investments on Customer Satisfaction and Shareholder Returns. Journal Of Computer Information Systems. 47 (2), 100-111.
Articles Stylianou, A., Kumar, R., Robbins, S. (Fall, 2005)
Pricing on the Internet and In Conventional Retail Channels: A Study of Over-The-Counter Pharmaceutical Products. International Journal of Electronic Commerce. 10 (1), 135-148.
Dardan, M., Stylianou, A.,
Dardan, S. (Fall, 2005) The Valuation of eCommerce Announcements during Fluctuating Financial Markets. Journal of Electronic Commerce Research. 6 (4), 312-326.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

Zheng, Y., Zhao, K., Stylianou, A. (December, 2010) Why Do Users Continue Participating in Online Communities: The Impacts of Individual Benefits and Participation History. Web 2010 - The Ninth Workshop on E-Business.   Saint Louis, MO.
Wu, X., Stylianou, A. (December, 2010) Linkages between Information
Technology, Supply Chain Actions and Firm Performance. Pre-ICIS 2010 Enterprise Systems Workshop.   Saint Louis, MO.
Zheng, Y., Zhao, K., Stylianou, A. (December, 2010) The Antecedents and Impacts of Social
Influence in Online Recommendation Systems. Pre-ICIS SIG-HCI Workshop 2010.   Saint Louis, MO.
Zheng, Y.,
Zhao, K., Stylianou, A. (December, 2009) The Impact of Information Quality and System Quality on User
Continuance Intention in Online Communities: An Empirical investigation. Pre-ICIS SIG-HCI Workshop 2009.
  Phoenix, Arizona.
Campbell, M., Stylianou, A. (December, 2009) Personal Internet Usage at Work: The Dark
Side of Technology Adoption. DIGIT 2009.   Phoenix, Arizona.
Berg, B., Stylianou, A. (December, 2009) A
Foraging Model for Human Behavior in E-Commerce. Web 2009 – The Eighth Workshop on E-Business.   Phoenix, Arizona.
Temizkan, O., Stylianou, A. (December, 2009) IT Value Creation through Value Chain Processes: The
Effect of CIO/TMT Engagement and Knowledge of Senior Executives. Pre-ICIS SIG-OSRA Conference 2009.
Phoenix, Arizona.
Niu, Y., Park, S., Stylianou, A., Subramaniam, C. (December, 2009) Bridging Gaps in
Organizational Knowledge - The Role of IT-enabled Organizational Learning in Supply Chain Partnerships.
30th International Conference on Information Systems.   Phoenix, Arizona.
Niu, Y., Stylianou, A., Winter,
S. (August, 2008) Blowing the Whistle on Unethical Information Technology Practices: The Role of
Machiavellianism, Gender and Computer Literacy. Proceedings of the American Conference on Information
Systems.   Toronto, Canada.
Stylianou, A., Winter, S. Accepting Unethical Information Practices: The
Interactive Effects of Individual and Situational Factors. Academy of Management.   New Orleans, LA.

RESEARCH SUPPORT

N/A

EXTERNAL SERVICE

2010-2011 - Member: Committee / Task Force (International) University of Crete - Department of Primary
Education - Center for Intercultural and Migration Studies, At the invitation of the University of Crete
I participated in a 3-day work group on the establishment of a global eLearning system. The research is
funded by the European Union and the Greek government. A follow-up meeting will be in July.
2010-2011 - Other Community Service Activities (Local) Socrates Academy - Public Charter School, I was one
of the founders of Socrates Academy (http://socratesacademy.us), a public charter school located in
Matthews. The school started with 65 students in Kindergarten and 1st grade in 2005-2006. Next year it
will have 540 students in K-7th grades. Last year, based on EOG results, the school was again designated
as an Honor School of Excellence with High Growth. This year I hel the position of Vice President on the
Board of Directors, the ultimate decision-making and management body atthe school. I am a member on the
Executive Committee, which is charged with monitoring, evaluating, and screening all aspects of the
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peration of the school and with making recommendations to the Board. Tasks include the monitoring and evaluation of the performance of the school (teachers, principal, other staff), financial management, personnel decisions, policy making, legal, etc. With regards to personnel, the Committee works closely with the Greek embassy to secure teachers in both the language as well as specialized areas such as math, music, etc. I co-chair the Curriculum Committee with Dean Gutierrez, who joined the Board two years ago taking a position held by Dean Calhoun in the previous three years. In that capacity, I have recruited several other faculty from UNC Charlotte (Drs. Green, Yon, Romanoff, Athanasopoulou, Saurino, Grote) and from other Universities (Drs. Peine, Compton, White; Dean Bongartz, Cologne U.; Dr. Tsiplakou, U. of Cyprus) to help with the work of this committee. The Curriculum Committee is charged with the development of the curriculum for the school in terms of both content and teaching methods. The Committee also identifies and/or develops professional development programs for the teachers and the principal. As co-chair of the Committee I am also involved in observing and evaluating teaching and suggesting improvement strategies. We are currently working closely with the College of Education at UNC Charlotte in order to offer seminars in mathematics, Socratic teaching, and differentiated instruction for the Socrates Academy teachers. We also continue to work with Hellenic Society Paideia to secure scholarships for teachers to study in Greece during the summer. The work of the Committee extends beyond the regular school day and also involves the before and after-school offerings at the school, as well as summer camps. I co-chair the Information & Technology Committee, which is charged with the evaluation, introduction, monitoring, and maintenance of all technology at the school. In this role, I pay special attention at possible ways for the use of technology to improve instruction and learning. I chair the Admissions Committee and run the yearly public lottery at the school.

2010-2011 - Other Community Service Activities (Local) Socrates Academy Foundation, I am the lead founder of the Socrates Academy Foundation, an organization founded to manage fundraising for the Socrates Academy charter school. I am currently the President of the Board of Trustees of the Foundation.

2010-2011 - Other Professional Service Activities (National) Brigham Young University, External RPT Reviewer

2010-2011 - Editor: Academic PRJ (International) Data Base for Advances in Information Systems

2010-2011 - Chair: Conference / Track / Program (International) Conference on Information Systems and Technology, Conference Chair

2010-2011 - Chair: Conference / Track / Program (International) Mediterranean Conference on Information Systems, Conference Chair

2007-2008 - Other Community Service Activities (Local) Socrates Academy, I was one of the founders of Socrates Academy (http://socratesacademy.us), a public charter school located in Matthews. I have held the position of Secretary on the Board of Directors, the ultimate decision-making and management body at the school. I am a member on the Executive Committee, which is charged with monitoring, evaluating, and screening all aspects of the operation of the school and with making recommendations to the Board. Tasks include the monitoring and evaluation of the performance of the school (teachers, principal, other staff), financial management, personnel decisions, policy making, legal, etc. With regards to personnel, the Committee works closely with the Greek embassy to secure teachers in both the language as well as specialized areas such as math, music, etc. I co-chair the Curriculum Committee with Dean Gutierrez, who joined the Board this year taking a position held by Dean Calhoun in the previous three years. In that capacity, I have recruited several other faculty from UNC Charlotte (Drs. Green, Yon, Romanoff) and from other Universities (Dean Bongartz, Cologne U., Dr. Tsiplakou, U. of Cyprus) to help with the work of this committee. The Curriculum Committee is charged with the development of the curriculum for the school in terms of both content and teaching methods. The Committee also identifies and/or develops professional development programs for the teachers and the principal. As co-chair of the Committee I am also involved in observing and evaluating teaching and suggesting improvement strategies. We are currently working closely with the College of Education at UNC Charlotte in order to offer seminars in mathematics, Socratic teaching, and AIG for the Socrates Academy teachers. We also continue to work with Hellenic Society Paideia to secure scholarships for teachers to study in Greece during the summer. The work of the Committee extends beyond the regular school day and also involves the before and after-school offerings at the school, as well as summer camps. I chair the Information & Technology Committee, which is charged with the evaluation, introduction, monitoring, and maintenance of all technology at the school. In this role, I pay special attention at possible ways for the use of technology to improve instruction and learning. I chair the Admissions Committee and run the yearly public lottery at the school. I am currently in charge of setting up the Socrates Academy Foundation, a separate organization that will be managing fundraising for the school.

2007-2008 - Editor: Academic PRJ (International) Data Base for Advances in Information Systems, Senior Editor

SERVICE TO THE UNIVERSITY

2010-2011 - Other Institutional Service Activities (Department) Department Peer Evaluations of Teaching
2010-2011 - Faculty Advisor (Department) Ph.D. students
2010-2011 - Committee Member (Department) Graduate Affairs Committee
2010-2011 - Committee Chair (Department) YiMing Zheng, Dissertation Committee Chair
2010-2011 - Faculty Advisor (University) OCF Student Organization
2010-2011 - Committee Member (College) College Review Committee
2010-2011 - Faculty Advisor (University) Hellenic Student Association
2010-2011 - Committee Chair (College) GCALC, Department alternate representative

SUPERVISED ACADEMIC WORK

2009-2010: Thesis advisor/supervisor (PhD), YiMing Zheng
2009-2010: Thesis / Dissertation Committee -
Member, Tanusree Pai
2009-2010: Thesis / Dissertation Committee - Chair, Yuan Niu
2009-2010: Thesis /
Dissertation Committee - Chair, Matt Campbell
2009-2010: Thesis / Dissertation Committee - Chair, Bjarne
Berg
2007-2008: Thesis / Dissertation Committee - Member, Tanusree Pai, Ph.D. in IT program
2007-2008:
Thesis / Dissertation Committee - Chair, Dissertation Chair for Matt Campbell, Ph.D. in IT
program
2007-2008: Thesis / Dissertation Committee - Chair, Dissertation Chair for Bjarne Berg, Ph.D. in
IT program
2007-2008: Ph.D. student advisor, Yuan Niu, Ph.D. in IT program - up to Fall 2007, continued
informal advising after that.
2007-2008: Ph.D. student advisor, Pamela Karr, Ph.D. in IT program - up to
Fall 2007
2007-2008: Ph.D. student advisor, Dennis Coffey, Ph.D. in IT program
2007-2008: Directed Study
supervisor, Ph.D. level directed study for Bong-Keun Jeong
2007-2008: Directed Study supervisor, Megha
Shaw, MBA program

BIOGRAPHICAL SKETCH

UNC CHARLOTTE

Instructions: *A biographical sketch is required of all faculty and staff that teach credit courses at the University of North Carolina at Charlotte. SACS (the University accrediting agency) requires that we provide evidence that the teaching faculty and staff have the appropriate credentials and other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes. Please provide the following information in the format described. If a section does not apply to you, note by using N/A. The form has been set up as a template so you should be able to cut and paste your information from other vitas or proposal submissions.*

Faculty Name:	**Charles D Bodkin**	**UNCC ID#: 800202290**
Position Title/Rank:	**Professor**	
Department Name:	**Marketing**	
College:	**College of Business (Col)**	**Date Submitted/Revised : 11/21/2011**

EDUCATION

List in chronological order degrees, institution and location, dates, and field of study.

Doctor of Philosophy, Virginia Tech, , Marketing
Master-Business Administration, UNC Greensboro, , Bus Mgmt and Administration
Bach-Business Administration, Notre Dame,University Of, , Marketing

POSITIONS AND HONORS

List in reverse chronological order previous positions held, beginning with the current position (include any honors).

2011 - Now: Professor, University of North Carolina at Charlotte, Charlotte, North Carolina
1997 - 2011: Associate Professor, University of North Carolina at Charlotte, Charlotte, North Carolina
1991 - 1997: Assistant Professor, University of North Carolina at Charlotte, Charlotte, North Carolina
1989 - 1991: Assistant Professor, Bentley College, Waltham, Massachusetts
1987 - 1989: Instructor, Virginia Polytechnic Institute and State University, Blacksburg, Virginia
1985 - 1987: Research Assistant, Virginia Polytechnic Institute and State University, Blacksburg, Virginia
1984 - 1985: Graduate Research Assistant, University of North Carolina at Greensboro, Greensboro, North Carolina
1979 - 1984: Store Management, K-Mart Corporation, Troy, Michigan

COURSES TAUGHT

Include a selected list of regularly taught courses (no more than 10) and provide the institution's name, if other than UNC Charlotte

MBAD6171 - Marketing Management
MKTG3110 - Marketing Concepts
MKTG3212 - Retail Management

PUBLICATIONS

Include a selected list of significant refereed publications (no more than 10) in reverse chronological order (do not list abstracts). Each publication identified must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. If the document is only available electronically, the website address should be identified.

Bodkin, C., Amato, C., Peters, C. (October, 2009) The Role of Conflict, Culture, and Myth in Creating Attitudinal Commitment. Journal of Business Research. 62 (10), 1013-1019.
Sewell, E., Bodkin, C. (January, 2009) The Internet's Impact on Competition, Free Riding and the Future of Sales Service in Retail Automobile Markets. Eastern Economic Journal. 35 (1), 96-114.
Amato, C., Bodkin, C., Peters, C. (2008) Building a Fan Community through the Folklore of NASCAR. International Journal of Sports Management and Marketing. 8 (1-2), 5-20.
Bodkin, C., Stevenson, T. (June, 2007) University Students' Perceptions Regarding Ethical Marketing Practices: Affecting Change through Instructional Techniques. Journal of Business Ethics. 72 (3), 207-228.
Peters, C., Bodkin, C. (January, 2007) An Exploratory Investigation of Problematic Online Auction
Behaviors: Experiences of e-Bay Users. Journal of Retailing and Consumer Service. 14 (1), 1-16.
Bodkin, C., Miaoulis, G. (April, 2007) eHealth Inforton Qality and Ethics Issues: An Exploratory Study of Consumer Perceptions. International Journal of Pharmaceutical and Healthcare Marketing. 1 (1), 27-42.
Bodkin, C., Perry, M. (January, 2004) Good Retailers and Service Providers: Comparative Analysis of Web Site Marketing Communications. Journal of Retailing and Consumer Service. 11 (1), 19-29.
Sewell, E., Bodkin, C. (June, 2002) Internet Savings on New Car Purchases: Perception and Reality. Atlantic Economics Journal. 30 (2), 220.
Perry, M., Bodkin, C. (February, 2002) Fortune 500 Manufacturers Web Sites: Innovative Marketing Strategies or Cyberbrochures?. Industrial Marketing Management. 31 (2), 133-144.
Perry, M., Bodkin, C. (2000) Content Analysis of Fortune 100 Company Websites. Corporate Communications: An International Journal. 5 (2), 87-96.

Exhibitions, Performances, Presentations, and Readings

Include a reverse chronological listing, citing complete information regarding most significant exhibitions, performances, poetry readings, etc. (no more than 10)

Bodkin C. 2005. Punishment of unethical retail behavior and the role of machiavellianism" Proceedings of the Marketing Educator's Association Conference.
Miaoulis G, Bodkin C. 2005. eHealth ethics issues and impact evaluation study. Proceedings of the Annual Association for Marketing and Health Care Research.
Conchar M, Zinkhan G, Bodkin C. 2003. Announcements of new advertising campaigns: Signals to stock market investors. Proceedings of the Society for Marketing Advances.

Research Support

Include a selected list of proposals and grants received from outside agencies in reverse chronological order (no more than 10). Indicate the amount of the grant and the dates of the project period.

NA

EXTERNAL SERVICE

Include selected service and outreach to the profession, community entities, and engagement with the larger community (e.g. journal editorship, national grant review committees, positions in professional organizations)

2010-2011 - Presentation (Regional) Ben Craig Center, Held a marketing seminar for participants in the Ben Craig Center's Five Ventures Program.
2010-2011 - Other Professional Service Activities (Regional) WBTV television news interview, Interview with Kristen Miranda on May 6, 2011

2010-2011 - Other Professional Service Activities (Local) WCNC, On air interview with Dion Lim, news anchor, to discuss retailing strategies used by Best Buy. November 24, 2010

2010-2011 - Other Professional Service Activities (Local) WCNC, On air interview to discuss retail Black Friday sales. November 26, 2010

2010-2011 – Other Professional Service Activities (Local) WBTV-TV, On air interview to discuss Black Friday retail sales.

2010-2011 - Member: Committee / Task Force (Regional) NC Licensure, Conducted licensure visit for Johnson and Wales University.

2009-2010 - Other Professional Service Activities (National) Parsons The New School of Design, External reviewer for a tenure and promotion decision

2009-2010 - Consulting (Regional) WSOC-TV News broadcast, Tight Economy May Dampen Sales During Tax-Free Sales

2009-2010 – Consulting (Regional) Charlotte Research Institute - Five Ventures Program, Presented how to develop a marketing strategy in an entrepreneurial environment

2009-2010 - Consulting (Regional) Charlotte Observer, Interviewed for the Charlotte Observer article Tax-free lure snares back-to-school buyers.

SERVICE TO THE UNIVERSITY

Include a selected list of significant directed work (e.g. thesis/dissertation advisor, honors student research mentor, etc)

2011-2012 - Past-President of the Faculty, Chair of Faculty Academic Planning and Budget Committee

2010-2011 - President of the Faculty

2010-2011 - Committee Member (University) UNC Tomorrow Initiative, Worked to implement the goals of the UNC Tommorow Initiative as outlined by President Bowles.

2009-2010 - President-Elect of the Faculty, Chair of O. Max Gardner Award Committee

2009-2010 - Committee Chair (University) University Entrepreneurship Program, Chaired the committee to create a University Entrepreneurship Program. Members included representatives from all colleges and administrators.

SUPERVISED ACADEMIC WORK

Include a selected list of significant directed work (e.g. thesis/dissertation advisor, honors student research mentor)

NA

BIOGRAPHICAL SKETCH

UNC CHARLOTTE

Instructions: *A biographical sketch is required of all faculty and staff that teach credit courses at the University of North Carolina at Charlotte. SACS (the University accrediting agency) requires that we provide evidence that the teaching faculty and staff have the appropriate credentials and other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes. Please provide the following information in the format described. If a section does not apply to you, note by using N/A.*

Faculty Name: Craig A Depken II	UNCC ID: 800558051

Position Title/Rank: Professor

Department Name: Economics

College: College of Business (Col)	Date Submitted/Revised: 05/15/2012

EDUCATION

Doctor of Philosophy, University of GA-Athens, 1996, Business Economics
Bachelor of Arts, University of GA-Athens, 1991, Business Economics

POSITIONS AND HONORS

1996 - 2007: UT-Arlington, Economics Professor

COURSES TAUGHT

ECON3090 - Topics in Economics
ECON3171 - International Business Economics
ECON6090 - MS Economics,
Special Topics
ECON6112 - Graduate Econometrics
ECON6113 - Cross Section Time Series Econ
MBAD6112 - The
Economics of Business Decision Making
MBAS6310 - Sports Economics

PUBLICATIONS

Depken, C., Haglund, L. (February, 2011) Peer Effects in Team Sports: Evidence from NCAA Relay Teams.
Journal of Sports Economics. 12 (1), 3-19.
Depken, C., Williams, C., Wilson, D. (February, 2011) From the
Hardwood to the Gridiron to the Dorm: Influences on Attendance to Women's Collegiate Basketball.
International Journal of Sport Finance. 6 (1), 3-22.
Depken, C., Grant, D. (April, 2011) Multiproduct
Pricing in Major League Baseball: A Principal Components Analysis. Economic Inquiry. 49 (2),
474-488.
Depken, C., Ying, Z. (November, 2010) Adverse Selection and Reputation in a World of Cheap Talk.
Quarterly Review of Economics and Finance. 50 (4), 548-558.
Depken, C., Hollans, H., Swidler, S.
(December, 2010) Do Tax Benefits Conferred to Sub-S Banks Affect Their Deposit or Loan Rates? Finance
Research Letters. 7 (4), 238-245.
Depken, C., Gregorious, B. Auction Characteristics, Seller Reputation,
and Closing Prices: Evidence from eBay Sales of the iPhone. International Journal of Electronic Business.
8 (2), 170-186.
Coates, D., Depken, C. (September, 2009) Impact of College Football Games on Local Sales
Tax Revenues: Evidence from Four Cities in Texas. Eastern Economic Journal. 35 (4), 531-547.
Hollans, H.,
Swidler, S. (October, 2009) Empirical Analysis of Residential Property Flipping. Journal of Real Estate
Finance and Economics. 39 (3), 249-263.
Chamblee, J., Dehring, C., Depken, C. (March, 2009) Watershed
Development Restrictions and Land Prices: Empirical Evidence from Buncombe County North Carolina.
Regional Science and Urban Economics. 39 (2), 287-296.
Schwarz, P., Depken, C., Hanning, A., Peterson, K.
(Fall, 2009) Comparing Contaminated Property Redevelopment for Mandatory and Voluntary Cleanup Programs in
California. Journal of Environmental Management. 90 (12), 3730-3735.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

Depken, C. (May, 2011) What Happened to the Player Manager in Major League Baseball?. European Associaiton of Sports Economists, annual meeting, Prague, Czech Republic

Depken, C. (March, 2011) Sports Economics: Recent Contributions and Ongoing Research. Omicron Delta Epsilon Research Seminar Series, Department of Economics, UNC Charlotte.   Charlotte, NC`.

Depken, C., Sonora, R., Wilson, D. (April, 2011) Performance Under Pressure: An Extension to the National Hockey League. Department of Economics, Clemson University.   Clemson, SC.

Depken, C. (April, 2011) What Happened to the Player Manager in Major League Baseball?. Department of Economics, Clemson University.   Clemson, SC.

Depken, C. (October, 2010) Public Subsidies and Stadiums: White Elephants or Cash Cows?. Wake Forest University.   Winston-Salem, NC.

Depken, C. (November, 2010) What Happened to the Player Manager in Major League Baseball?. 2010 Southern Economic Association annual meeting.   Atlanta, Georgia.

Berkowitz, J., Dpken, C., Wilson, D. (July, 2010) Outcome Uncertainty, Attendance, and Television Audience in NASCAR," with J. Berkowitz and D. Wilson. 2010 Western Economic Associatin annual meeting.   Portland, Oregon.

Billings, S., Depken, C. (July, 2010) "Crime Patterns Surrounding Professional Sporting Events and Venues," with S. Billings. 2010 Western Economic Association annual meetings.   Portland, Oregon.

Depken, C., Ward, M. (January, 2010) Sited, Sighted, and Cited: JSTOR and Economics Research. American Economic Association annual meetings.   Atlanta, Ga.

Depken, C., Ward, M. (October, 2009) Sited, Sighted, and Cited: JSTOR and Economics Research. Applachian State University Department of Economics.   Boone, NC.

RESEARCH SUPPORT

2011: $12,000 - National Science Foundation - Coweeta Long Term Ecological Research Project. Principle Investigator. 2010: $11,000 - National Science Foundation - Coweeta Long Term Ecological Research Project. Principle Investigator.

2009: $11,000 - National Science Foundation - Coweeta Long Term Ecological Research Project. Principle Investigator.

2008: $11,000 - National Science Foundation - Coweeta Long Term Ecological Research Project. Principle Investigator.

EXTERNAL SERVICE

2010- Co-editor of Contemporary Economic Policy

2010 - Editorial board, Journal of Sports Economics

2010-2011 - Reviewer: Article / Manuscript (National) Journal of Economics and Management Strategy, Referee paper

2010-2011 - Reviewer: Conference Paper (National) American Real Estate and Urban Economics Association, Discuss paper at national conference

2010-2011 - Academic Conference: Discussant (University) American Real Estate and Urban Economics Association, Paper discussant

2010-2011 - Academic Conference: Discussant (University) Southern Economic Association, Paper discussant

2010-2011 - Reviewer: Article / Manuscript (National) Eastern Economic Journal, Referee paper

2010-2011 - Reviewer: Article / Manuscript (National) Economic Inquiry, Referee paper

2010-2011 - Academic Conference: Moderator / Facilitator (Department) Southern Economic Association, Organize and chair several sessions

2010-2011 - Reviewer: Article / Manuscript (Local) Eastern Economic Journal, Referee paper

201-2011 - Reviewer: Article / Manuscript (National) Journal of Economic Education, Referee paper

20102011 - Reviewer: Article / Manuscript (National) Journal of Sports Economics, Referee paper

SERVICE TO THE UNIVERSITY

2010-2011 - Committee Member (Department) Department Chair Screening Committee, consider applications for department chair.

2010-2011 - Committee Member (University) University Faculty Hearing Committee, hear faculty greivances, provide written report for committee and provost.

2010-2011 - Committee Member (Department) Faculty Search Committee, member of faculty search committee, interview candidates

2010-2011 - Committee Member (College) Summer Research Grant Review Committee, review grant proposals, determine amount of funding for research grants.

2010-2011 - Committee Chair (College) Graduate Curiculum and Assurance of Learning Committee, Organize committee meetings, manage proposed graduate curriculum changes, present proposed graduate curriculum, organize oversight of Assurance of Learning procedures in graduate programs within the BCOB, report to the faculty about Assurance of Learning oversight.

2010-2011 - Committee Member (University) Faculty Research Grant Committee, review research grants, provide written reviews of grants.

2010-2011 - Committee Chair (University) Faculty Research Grant Committee, review research grants, provide written reviews of grants.

2009-2010 - Committee Chair (College) Graduate Curriculum and Assurance of Learning Committee, Organize committee meetings, manage proposed graduate c

SERVICE TO THE UNIVERSITY - Cont.

urriculum changes, present proposed graduate curriculum changes to the college faculty, create assurance
of learning oversight procedures.
2009-2010 - Committee Member (University) Faculty Research Grant Review
Committee, read and recommend funding for summer research grants submitted by UNCC faculty.
2009-2010 -
Committee Chair (Department) Graduate Affairs Committee, handle proposed changes to graduate programs in
economics

SUPERVISED ACADEMIC WORK

N/A

BIOGRAPHICAL SKETCH

Faculty Name: A. Cem Saydam | UNCC ID: 800013850

Position Title/Rank: Professor

Department Name: Business Info Systems/Operations

College: College of Business (Col) | Date Submitted/Revised: 05/11/2012

EDUCATION

Doctor of Philosophy, Clemson University, 1985, Industrial & Management Engr
Bachelor of Science, Bogazici Universitesi, 1980, Industrial & Management Engr

POSITIONS AND HONORS

1997 - Now: Professor, University of North Carolina at Charlotte, Charlotte, North Carolina
1999 - 2002: Chair, University of North Carolina at Charlotte, Charlotte, North Carolina
1998 - 1999: Interim Chair, University of North Carolina at Charlotte, Charlotte, North Carolina
1991-1997; Associate Professor, University of North Carolina at Charlotte, Charlotte, North Carolina
1986-1991; Assistant Professor, University of North Carolina at Charlotte, Charlotte, North Carolina
1984-1986; Appalachian State University, Assistant Professor,
1983-1984; University of South Carolina at Spartanburg, Lecturer

COURSES TAUGHT

INFO3800 - Directed Study
INFO8900 - Directed Individual Study in Business Information Systems
MBAD6122 -
Decision Modeling and Analysis via Spreadsheets
OPER3100 - Operations Management
OPER3203 - Management
Science
OPER8122 - Technology Enhanced Decision Making

PUBLICATIONS

Rajagopalan, H., Saydam, C., Sharer, E., Setzler, H. (March, 2011) Ambulance Deployment and Shift Scheduling: An Integrated Approach. Journal of Service Science and Management. 4 (1), 66-78.
Iannoni, A.,
Morabito, R., Saydam, C. (June, 2009) An Optimization Approach for Ambulance Location and the Districting of the Response Segments on Highways. European Journal of Operational Research. 195 (2), 528-542.
Setzler,
H., Saydam, C., Park, S. (June, 2009) EMS Call Volume Predictions: A Comparative Study. Computers & Operations Research. 36 (6), 1843-1851.
Rajagopalan, H., Saydam, C. (December, 2009) A Minimum Expected
Response Model: Formulation, Heuristic Solution, and Application. Socio-economic Planning Sciences: Intl. Jnl. of Pub. Sector Decision-making. 43 (4), 253-262.
Rajagopalan, H., Saydam, C., Xiao, J. (March,
2008) A Multiperiod Set Covering Location Model for Dynamic Redeployment of Ambulances. Computers & Operations Research. 35 (3), 814-826.
Iannoni, A., Reinaldo, M., Saydam, C. (January, 2008) A Hypercube
Queuing Model Embedded into a Genetic Algorithm for Ambulance Deployment on Highways. Annals of Operations Research. 157 (1), 207-224.
Rajagopalan, H., Vergara, B., Saydam, C., Xiao, J. (February, 2007) Developing
Effective Meta-Heuristics For a Probabilistic Location Model Via Experimental Design. European Journal of Operational Research. 177 (1), 83-101.
Khouja, M., Saydam, C., Rajagopalan, H., Vergara, F. (June, 2006)
Optimal Inventory Policy under Continuous Unit Cost Decrease and Risk of Sudden Obsolescence. International Journal of Operations and Quantitative Management. 12 (2), 89-106.
Khouja, M., Park, S.,
Saydam, C. (January, 2005) The Joint Replenishment Problem under Continuous Unit Cost Change.
I

PUBLICATIONS - Cont.

nternational Journal of Production Research. 43 (2), 311-326.
Saydam, C., Aytug, H. (March, 2003)
Accurate Estimation of Expected Coverage: Revisited. Socio-economic Planning Sciences: Intl. Jnl. Of
Pub. Sector Decision-making. 37 (1), 69-80.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

Iannoni, A., Morabito, R., Saydam, C. (November, 2010) A Probabilistic Optimization Approach to Analyze
Large Scale Emergency Medical System on Highways. INFORMS.   Austin, TX.
Kuyath, S., Mickelson, R.,
Saydam, C. (June, 2010) Reducing Social Isolation Among Distance Education Students Through the Use of
Instant Messaging. CCES XIV World Congress.   Istanbul, Turkey.
Iannoni, A., Morabito, R., Saydam, C.
(June, 2009) An Approximate Hypercube Queuing Model Embedded into Straightforward Optimization Methods to
Analyze Large Emergency Medical Systems on Highways. EURO XXIII.   Bonn, Germany.
Setzler, H., Park, S.,
Saydam, C. (June, 2005) Developing Accurate Forecasts for Ambulance Demand via Artificial Neural Networks:
A Framework. International Conference of Computers & IE.   Istanbul, Turkey.
Iannoni, A., Morabito, R.,
Saydam, C. (July, 2005) Using the Hypercube Queuing Model Embedded into a Genetic Algorithm to Analyze
Emergency Medical Systems on Highways. International Federation of Operational Research Societies (IFORS).
  Honolulu, Hawaii.
Rajagopalan, H., Saydam, C. (January, 2005) An Efficient and Hybrid Heuristic for a
Probabilistic Coverage Location Problem for Dynamic Deployment. INFORMS Computing Society Conference.
Annapolis, Maryland.
Rajagopalan, H., Saydam, C., Xiao, J. (December, 2005) A Multiperiod Expected
Covering Location Model for Dynamic Redeployment of Ambulances. the 10th EWGT Meeting & 16th Mini-EURO
Conference.   Poznan, Poland.
Iannoni, A., Morabito, R., Saydam, C. Analyzing the Configuration and
Operation of Emergency Medical Systems on Highways Using the Hypercube Model. Latin-Ibero-American
Conference on Operations Research (CLAIO).   Havana, Cuba.
Rajagopalan, H., Vergara, F., Saydam, C., Xiao,
J. (October, 2003) Evaluating the Performance of Several Search Methods Applied to a Probabilistic
Location Model. INFORMS Annual Meeting.   Atlanta, Georgia.
Rajagopalan, H., Vergara, F., Saydam, C.
(June, 2003) A Review of Inventory Models with Obsolescence Costs. Southeast Decision Sciences Institute.
  Williamsburg, Virginia.

RESEARCH SUPPORT

N/A

EXTERNAL SERVICE

2010-2011 - Editor: Associate Editor (International) Information Technology and Management
(ITEM)
2010-2011 - Editor: Associate Editor (Local)
2009-2010 - Reviewer: Conference Paper (National)
INFORMS 2009, Judge for Interactive Sessions
2009-2010 - Reviewer: Article / Manuscript (International)
European Journal of Operational
Research, Review manuscripts
2009-2010 - Other Community Service
Activities (Local) American Youth Soccer Organization, Volunteer as a referee, help manage fields, help
with various activities (about 12 weekends per year, Fall and Spring)
2009-2010 - Other Community Service
Activities (Local) Habitat for Humanity, Charlotte, Spend 8-10 Saturdays help build homes
2009-2010 -
Officer: Organization / Association (National) INFORMS 2011 National Conference, General Chair (head of
INFORMS 2011 Charlotte Meeting)
2009-2010 - Reviewer: Article / Manuscript (International) Computers &
Operations Research, Review papers
2008-2009 - Editorial Board Member (International) International
Journal of Electronic Marketing and Retailing
2007-2008 - Chair: Conference / Track / Program (National)
General Chair of INFORMS 2011, Nominated and approved by INFORMS Board to be the General Chair of INFORMS
2011 to be held in Charlotte

SERVICE TO THE UNIVERSITY

2010-2011 - Committee Member (University) Honorary Degree Advisory Committee, Also served on Email
Replacement Analysis subcommittee
2

SERVICE TO THE UNIVERSITY - Cont.

010-2011 - (University) Faculty Information and Technology Services
Advisory Committee (FITSAC) (meets monthly)
2009-2010 - Committee Member (Department) Course and
Curriculum, Develop, review course and curriculum related proposals
2009-2010 - (Department) Departmental
GAC, Co-chair
2009-2010 - Committee Member (University) Faculty Information and Technology Services
Advisory Committee (FITSAC) (meets monthly), Also serving on Email Replacement Analysis subcommittee
(meets bi-weekly)
2009-2010 - Committee Chair (University) Honorary Degree Advisory Committee, Chair.
Write evaluation letters (rather time consuming but quite important and fulfilling)
2008-2009 - Committee
Member (University) Faculty Information Technology Services, Advisory Committee
2008-2009 - Committee
Member (College) College Graduate Affairs Committee
2008-2009 - Committee Member (Department) Dept. Course
& Curr. Com.
2008-2009 - Committee Member (Department) Graduate Affairs Committee

SUPERVISED ACADEMIC WORK

2010-2011: Thesis / Dissertation Committee - Member of Said Marouf,
2010-2011: Thesis / Dissertation
Committee - Member of Napolean Paxton,
2010-2011: Thesis / Dissertation Committee - Member of Kyle
Kreth,
2010-2011: Thesis / Dissertation Committee - Member of Gorrell Cheek,
2008-2009: Thesis /
Dissertation Committee - Member, Jing Jin PhD IT (Dr. M. Shehab chair)
2008-2009: Thesis / Dissertation
Committee - Member, Marguerite Doman PhD IT (Dr. Dahlberg chair)
2008-2009: Thesis / Dissertation
Committee - Member, Adeel Zaffar PhD IT (Dr. Kumar chair)
2008-2009: Thesis / Dissertation Committee -
Member, Moo Nam Ko PhD IT (Dr. Shehab chair)
2008-2009: Thesis / Dissertation Committee - Member, Beth
Vergara PhD IT (Dr. Khouja chair)
2006-2007: Thesis / Dissertation Committee - Member, Beth
Vergara
2006-2007: Thesis / Dissertation Committee - Chair, Steve Kuyath
2006-2007: Thesis / Dissertation
Committee - Chair, Hubert Setzler, defended, will graduate in May 2007.
2006-2007: Directed Study
supervisor, Location theory and probabilistic models for a PhD Student

BIOGRAPHICAL SKETCH

Faculty Name: Chandrasekar Subramaniam	UNCC ID: 800211612

Position Title/Rank: Associate Professor

Department Name: Business Info Systems/Operations

College: College of Business (Col)	Date Submitted/Revised: 05/14/2012

EDUCATION

Doctor of Philosophy, University of IL-Urbana, 2003, Bus Mgmt and Administration
Master-Business Administration, Indian Institute of Technology, 1988, Business and Management
Bach-Engineering in Technology, Bharathidasan University, 1986, Engineering

POSITIONS AND HONORS

2009 - Present: Associate Professor, University of North Carolina at Charlotte, Charlotte, North Carolina
2003 - 2009: Assistant Professor, University of North Carolina at Charlotte, Charlotte, North Carolina
1993 - 1997: Assistant Professor of Information Systems, Bharathidasan Institute of Management, Trichy, India
1990 - 1993: Senior Faculty, Uptron Academy of Computer Learning, Madras, India
1989 - 1990: Systems Executive, NIIT Ltd., In charge of Training Division, Madras, India
1988 - 1989: Systems Trainee, Kunal Engineering Ltd., In charge of Marketing Information Systems, Madras, India
1988 - 1988: Management Trainee, CMC Ltd., Bombay, India

COURSES TAUGHT

INFO2130 - Introduction to Business Computing
INFO3130 - Management Information Systems
INFO3229 -
Business Data Communications
INFO3240 - Fundamentals of E-Business
INFO8100 - Information Systems Research
Methodologies
INFO8202 - Business Information Systems: Analysis Design and Management
INFO8900 - Directed
Individual Study in Business Information Systems
MBAD6202 - Business Information Systems: Analysis,
Design, and Management
MBAS6320 - Internet and Technology in Sports Management

PUBLICATIONS

Wu, X. and Subramaniam, C. (October 2011) Understanding and Predicting Radio Frequency Identification (RFID) Adoption in Supply Chains. Journal of Organizational Computing and Electronic Commerce. 21 (4), 348-367.

Sen, R., Subramaniam, C., Nelson, M. (July 2011) Open Source Software Licenses: Strong-Copyleft, Non-Copyleft, or Somewhere in Between?. Decision Support Systems. (Forthcoming and currently available online)

Zhao, K., Xia, M., Shaw, M., Subramaniam, C. (May, 2009) The Sustainability of B2B E-Marketplaces: Ownership, Market Competition, and Prior Buyer-Seller Connections. Decision Support Systems. 47 (2), 105-114.

Subramaniam, C., Sen, R., Nelson, M. (January, 2009) Determinants of Open Source Software Project Success. Decision Support Systems. 46 (2), 576-585.

Sen, R., Subramaniam, C., Nelson, M. (Winter, 2008) Determinants of the Choice of Open Source Software License. Journal of Management Information Systems. 25 (3), 207-239.

PUBLICATIONS - Cont.

Kumar, R., Park, S., Subramaniam, C. (Fal, 2008) Understanding the Value of Countermeasure Portfolios in Information Systems Security. Journal of Management Information Systems. 25 (2), 241-280.

Nelson, M., Sen, R., Subramaniam, C. (February, 2006) Understanding Open Source Software: A Research Classification Framework. Communications of the AIS. 17 (2), 266-287.

Subramaniam, C., Shaw, M. (January, 2004) The Effects of Process Characteristics on the Value of B2B -Procurement. Information Technology and Management. 5 (1-2), 161-180.

Subramaniam, C., Shaw, M. (Summer, 2002) A Study on the Value and Impact of B2B E-commerce: The Case of Web-based Procurement. International Journal of Electronic Commerce. 6 (4), 19-40.

Shaw, M., Subramaniam, C., Tan, G., Welge, M. (May, 2001) Knowledge Management and Data Mining for Marketing. Decision Support Systems. 31 (1), 127-137.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

Wu, X., Subramaniam, C. (December, 2009) UNDERSTANDING RFID INFUSION IN SUPPLY CHAIN. 8th Annual on E-Business.   Phoenix, AZ.
Workshop

Temizkan, O., Kumar, R., Park, S., Subramaniam, C. (December, 2009) SOFTWARE VENDORS' PATCH RELEASE BEHAVIORS: IMPACT OF VULNERABILITY CHARACTERISTICS. 8th Annual Workshop on E-Business.   Phoenix, AZ.

Niu, Y., Park, S., Stylianou, A., Subramaniam, C. (December, 2009) BRIDGING GAPS IN ORGANIZATIONAL KNOWLEDGE -- THE ROLE OF IT-ENABLED ORGANIZATIONAL LEARNING IN SUPPLY CHAIN PARTNERSHIPS. Thirtieth International Conference on Information Systems.   Phoenix, AZ.

Karr, P., Subramaniam, C. (December, 2006) Electronic Information Transfer: Technology Choice and Success in B2B Integration. Fifth Workshop on E-Business.   Milwaukee, WI.

Gribbins, M., Subramaniam, C., Shaw, M. (December, 2006) Process-Technology Fit: Extending Tasktechnology Fit To Assess Enterprise Information Technologies. Twenty Seventh International Conference on Information Systems. Milwaukee, WI.

Kumar, R., Park, S., Subramaniam, C., Kim, T. (August, 2006) A Framework for Assessing Portfolios of IT Security Investments. Americas Conference on Information Systems.   Acapulco, Mexico.Subramaniam, C., Gribbins, M., Shaw, M. (December, 2004) The Impact of Process and Technology Factors on Users' Assessment of the Fit of E-Procurement with the Procurement Process. Workshop on E-Business.   Washington, District of Columbia.

Subramaniam, C., Qualls, W. (March, 2003) The Transformational Effects of Web-Based E-procurement Systems. North American Research/Teaching Symposium on Purchasing and Supply Chain Management.   Tempe, Arizona.

Subramaniam, C., Zhao, K., Shaw, M., Xia, M. (December, 2002) Business-to-business Collaborations and Evolution of Enterprise Networks. Workshop on Information Systems Economics.   Barcelona, Spain.

Subramaniam, C., Shaw, M. (November, 2001) Exploring the Role of Process and Organizational Factors in B2B E-Commerce Impact: An Economic Perspective of Buyer-side B2B System. INFORMS Conference on Information Systems and Technology.   Miami, Florida.

RESEARCH SUPPORT

N/A

EXTERNAL SERVICE

2009-2010 - Reviewer: Article / Manuscript (International) Journal of Management Information
Systems
2009-2010 - Reviewer: Article / Manuscript (International) Decision Support Systems
journal
2009-2010 - Chair: Conference / Track / Program (International) Research Track Economics of
E-Business in the Workshop on Ebusiness, The Workshop on E-Business is the premium research workshop held annually along with the International Conference on Information Systems. This year, my track received well over 20 high-quality papers and I was responsible for choosing the highest-quality papers among them through a rigorous review process.
2007-2008 - Officer: Organization / Association (International)
Association of Information Systems, Vice-President Finance for the Special Interest Group in B2B
E-Business
2007-2008 - Reviewer: Article / Manuscript (International) Decision Support Systems
2007-2008
- Reviewer: Article / Manuscript (International) Journal of Management Information Systems
2

EXTERNAL SERVICE - Cont.

007-2008 -
Chair: Conference / Track / Program (International) Research track Economics of E-Business, Workshop on
E-Business, Montreal, Canada, December 2007
2006-2007 - Officer: Organization / Association
(International) Association of Information Systems, Vice-President Finance for the Special Interest Group
in B2B E-Business
2006-2007 - Reviewer: Article / Manuscript (International) Decision Support
Systems
2006-2007 - Chair: Conference / Track / Program (International) Research track Research
Opportunities in E-Business, Workshop on E-Business, Milwaukee, December 2006

SERVICE TO THE UNIVERSITY

2010-2011 - Committee Member (University) Faculty Council, Department's alternate representative to the
university faculty council. Due to the leave of absence of the primary representative in Fall 2010, I
represented the department during that full semester.
2010-2011 - Faculty Advisor (University) Association
of Information Systems - UNCC Student Chapter, Faculty Advisor for this registered student organization.
 Helped organize invited speakers for events.
2010-2011 - Committee Member (College) Belk College Graduate
Council, I am the department rep on this committee, which was formerly known as Graduate Curriculum and
Assessment of Learning Committee (GCALC)
2010-2011 - Committee Member (Department) BISOM Graduate Affairs
Committee
2010-2011 - Student Thesis - Advisor (Thesis/Diss) Dissertation Committee of Xiaoran Wu
(candidate for PhD in IT), I am the chair of Ms. Wu's dissertation committee. Ms. Wu successfully
defended her dissertation proposal in December 2010.
2010-2011 - Student Thesis Committee - Member
(Thesis/Diss) Dissertation Committee of Yiming Zheng
2009-2010 - Committee Member (Department) BISOM
Graduate Affairs Committee, As member, involved in all decisions regarding the graduate program at the
department level.
2009-2010 - Committee Member (College) MBA 21 Task Force, This is a faculty task force
set up to re-imagine the Belk College MBA program. I am contributing ideas for innovative MBA curriculum
and program structures for 21st century MBA to be pursued by the Belk College.
2009-2010 - Committee
Member (University) Faculty Council, Member of Faculty Council.
2009-2010 - Student Thesis - Advisor
(Thesis/Diss) Dissertation Committee of Xiaoran Wu (candidate for PhD in IT), I am the chair of the
dissertation committee of Xiaoran Wu. Ms. Wu will be defending her dissertation proposal in the Fall of 2010.

SUPERVISED ACADEMIC WORK

2008-2011: Thesis / Dissertation Committee - Chair, Student name: Xiaoran Wu
2010-2011: Special Projects or Assignments, I am the faculty-in-charge of the first batch of 6 students in
the Applied Technology Program (ATP). The ATP is an innovative 18-month internship program offered by Bank
of America as a collaboration with UNC Charlotte. The 6 students are enrolled in the 6-credit INFO3400
course for Spring 2011.
2007-2008: Student Assign-Supervised Thesis (UG Seniors), Advisor for Business Honors and University
Honors Thesis of Ms. Jamie Beason.
2007-2008: Thesis / Dissertation Committee - Member, Student name: Haya Ajjan
Program: PhD in IT Topic:DETERMINANTS OF DIFFUSION AND VALUE OF INFORMATION TECHNOLOGY
MANAGEMENT: A CASE STUDY AND A SURVEY
2007-2008: Thesis advisor/supervisor (PhD), Student name: Yuan Niu
Program: PhD in IT Topic: IT capability and Knowledge Management capability in Supply Chain Management

BIOGRAPHICAL SKETCH

UNC CHARLOTTE

Faculty Name:	**Derek Xiaoyu Wang**	**UNCC ID#:**	**800380842**
Position Title/Rank:	**Research Assistant Professor**		
Department Name:	**Computer Science**		
College:	**College of Computing and Informatics**	**Date Submitted/Revised :**	**7/17/2013**

EDUCATION

List in chronological order degrees, institution and location, dates, and field of study.

Doctor of Philosophy, University of North Carolina at Charlotte, 2011, Computer Science
Bachelor of Engineering, Beijing University of Post and Telecommunication, 2006, Electronic Engineering

POSITIONS AND HONORS

List in reverse chronological order previous positions held, beginning with the current position (include any honors).

Associate Director of the Charlotte Visualization Center, UNCC
Research Scientist, Palo Alto Research Center, Xerox
Risk Research Analyst, Bank of America

COURSES TAUGHT

Include a selected list of regularly taught courses (no more than 10) and provide the institution's name, if other than UNC Charlotte

Introduction to Visual Analytics

PUBLICATIONS

Include a selected list of significant refereed publications (no more than 10) in reverse chronological order (do not list abstracts). Each publication identified must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. If the document is only available electronically, the website address should be identified.

1.William Ribarsky, **Xiaoyu Wang**, and Wenwen Dou, A Novel Approach to Customer Analytics via Social Media Analysis, Invited paper. Computers & Graphics (Special Issue on EuroVA 2013)
2.**Xiaoyu Wang**, Zhiqiang Ma, Wenwen Dou, and William Ribarsky, Discover Diamonds-in-the-Rough using Interactive Visual Analytics System: Tweets as a Collective Diary of the Occupy Movement IEEE SocMedVis 2013 (2013).
3. Wenwen Dou, Li Yu, **Xiaoyu Wang**, Zhiqiang Ma, William Ribarsky, "*HierarchicalTopics: Visually Exploring Large Text Collections Using Topic Hierarchies*", to Appear IEEE VIS Journal 2013

4.Wenwen Dou, **Xiaoyu Wang**, Drew Skau, William Ribarsky, and Michelle X. Zhou. Leadline: Interactive visual analysis of text data through event identification and exploration. In IEEE Conference on Visual Analytics Science and Technology (IEEE VAST)Visual Analytics Science and Technology, pages 93–102, 2012

5. Amy Ingram, **Xiaoyu Wang** and William Ribarsky ,Towards the Establishment of a Framework for Intuitive Multi-touch Interaction Design, Proceedings of the International Conference on Advanced Visual Interfaces, AVI 2012.

6**. Xiaoyu Wang**, Dong Hyun Jeong, Remco Chang, and William Ribarsky. Riskva: A visual analytics system for consumer credit risks analysis. *Tsinghua Sceince and Technology*, 17(4):pp1–16, August 2012

7**. Xiaoyu Wang**, Wenwen Dou, Zhiqiang Ma, Jeremy Villalobos, Thomas Kraft, and William Rib- arsky. I-si: Scalable architecture of analyzing latent topical-level information from social media data. *Computer Graphics Forum (Eurovis 2012)*, 31(3):1275–1284, June 2012.

8.Wenwen Dou, Remco Chang**, Xiaoyu Wang**, and William Ribarsky. ParallelTopics: A Probabilistic Approach to Exploring Document Collections. Accepted for publication, IEEE VAST 2011.

9. **Xiaoyu Wang**, Wenwen Dou, Thomas Butkiewicz, Eric Bier, and William Ribarsky. A two- stage framework for designing visual analytics system in organizational environments. In IEEE Conference on Visual Analytics Science and Technology (IEEE VAST), pages 251–260, 2011.

10. **Xiaoyu Wang**, Wenwen Dou, Shen en Chen, William Ribarsky, and Remco Chang. An interac- tive visual analytics system for bridge management. Computer Graphics Forum (Eurovis 2010), 29(3):1033–1042, June 2010

Exhibitions, Performances, Presentations, and Readings

Include a reverse chronological listing, citing complete information regarding most significant exhibitions, performances, poetry readings, etc. (no more than 10)

1. Invited Panelist, Triangle Analytics Group, RTP, North Carolina, 2013
2. Invited Speaker, Department of Homeland Security Maritime Risk Symposium, University of Southern California, CA 2012
3. Invited Speaker, Department of Computer Science, Beijing University of Post and Telecommunication, China, 2012
4. Invited Speaker, SCI Institute, University of Utah, Salt Lake City, 2012
5. Invited Speaker, China Academy of Science. Shenzhen Institutes of Advanced Technology, 2011

Research Support

Include a selected list of proposals and grants received from outside agencies in reverse chronological order (no more than 10). Indicate the amount of the grant and the dates of the project period.

 "**Visualization and Analysis of the Emergence, Evolution, and Spread of Pathogens**" Defense Threat Reduction Agency, Xiaoyu Wang (Co-PI), Ümit V. Çatalyürek (PI), Daniel Janies (Co-PI), Karmer, Kaya (Co-PI), $487,000, Sep 2013-Sep 2014

"Analyzing and Depicting Social Media through Signal Metrics", Army Research Office
PIs: Xiaoyu Wang with William Ribarsky, $ 300,000, May 2013 – Dec 2015

"**An Analytical Framework for Rapid End--to--End Support for Effective Civil--Military Operations.**", Engineer Research and Development Center (ERDC), PIs: Xiaoyu Wang, William Ribarsky, William J. Tolone, $200,000, Sep 2013 – May 2014

"**VASA: Visual Analytics for Security Applications - Germany-U.S. collaboration with U.S.**", U.S. Department of Homeland Security (DHS)
PIs: Xiaoyu Wang, William Ribarsky, William J. Tolone, $1,353,000, Sep 2012 – Dec 2015

EXTERNAL SERVICE

Include selected service and outreach to the profession, community entities, and engagement with the larger community (e.g. journal editorship, national grant review committees, positions in professional organizations)

Chair of Bird of Feather Session for IEEE Visual Analytics of Science and Technology Conference 2012—2013
Session Chair for the SciVis in IEEE Visualization 2012
Program Committee for the International Symposium on Visual Information Communication and Interaction (VINCI 2012-2013)

SERVICE TO THE UNIVERSITY

Include a selected list of significant directed work (e.g. thesis/dissertation advisor, honors student research mentor, etc)

Associate Director of the Charlotte Visualization Center, 2013 -
Big-Data Coordinator for the College of Computing and Informatics, 2012 –
Member, Infrastructure Committee, CCI.
Member, Envision Charlotte Measurement Committee

SUPERVISED ACADEMIC WORK

Include a selected list of significant directed work (e.g. thesis/dissertation advisor, honors student research mentor)

Dissertation Advisor
Thomas Kraft (2012 -): Big Data Social Media Visual Analysis.
Todd Eaglin (2013 -): Visual Perception In Mobile Visual Analytics
Jeffery Delawder (2013 -): Infer Demographics from Online Communities

BIOGRAPHICAL SKETCH

UNC CHARLOTTE

Instructions: *A biographical sketch is required of all faculty and staff that teach credit courses at the University of North Carolina at Charlotte. SACS (the University accrediting agency) requires that we provide evidence that the teaching faculty and staff have the appropriate credentials and other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes. Please provide the following information in the format described. If a section does not apply to you, note by using N/A.*

Faculty Name: David Casey Wilson	UNCC ID: 800211733

Position Title/Rank: Associate Professor

Department Name: Software & Information Systems

College: College of Computing & Informatics	Date Submitted/Revised: 05/14/2012

EDUCATION

Doctor of Philosophy, Indiana University-Bloomington, 2001, Computer Science
Master of Science, Indiana University-Bloomington, 1995, Computer Science
Bachelor of Arts, Rockford College, 1993, Computer Science

POSITIONS AND HONORS

2009-Present. Associate Professor with Tenure, Department of Software and Information Systems, University of North Carolina at Charlotte.

2003-2009. Assistant Professor, Department of Software and Information Systems, University of North Carolina at Charlotte.

2001-2003. College Lecturer with Tenure (Granted 2002), Smart Media Institute, Department of Computer Science, National University of Ireland, Dublin (University College Dublin). Irish tenure track position.

2000-2001. Assistant Lecturer, Smart Media Institute, Department of Computer Science, National University of Ireland, Dublin (University College Dublin). Irish tenure track position.

COURSES TAUGHT

Computer Forensics
Network Based Application Development
Applied Databases

PUBLICATIONS

Celine Latulipe, David Wilson, Sybil Huskey, Berto Gonzalez and Melissa Word. (2011). "Temporal Integration of Interactive Technology in Dance: Creative Process Impacts." In Proceedings of ACM Creativity & Cognition.

Pamela Wisniewski, Heather Richter Lipford, and David Wilson. (2011). "A New Social Order: Boundary Regulation within Online Social Networks." In Proceedings of Americas Conference on Information Systems (AMCIS).

Celine Latulipe, David Wilson, Sybil Huskey, Melissa Word, Arthur Carroll, Erin Carroll, Berto Gonzalez, Vikash Singh, Mike Wirth and Danielle Lottridge. (2010). "Exploring the design space in technology-augmented dance." In ACM CHI 2010 Companion Proceedings. ACM.

Wilson, David C., Bertolotto, Michela, and Weakliam, Joe. (2010). "Personalising Map Content to Improve Task Completion Efficiency." International Journal of Geographical Information Science. 24(5):741-760. Taylor & Francis.

Wilson, David C., Leland, Suzanne, Godwin, Kenneth, Baxter, Andrew, Levy, Ashley, Smart, Jamie, Najjar, Nadia, and Andaparambil, Jayakrishnan. (2009). "SmartChoice: An Online Recommender System to Support Low-Income Families in Public School Choice." AI Magazine. AAAI.

Pamela Karr Wisniewski, Okan Pala, Heather Richter Lipford, David C. Wilson. (2009). "Grounding Geovisualization Interface Design: A Study of Interactive Map Use." In Companion Proceedings of ACM Human Factors in Computing Systems (CHI 2009).

W

ilson, David, Richter Lipford, Heather, Carroll, Erin, Karr, Pamela, and Najjar, Nadia. (2008). "Charting New Ground: Modeling User Behavior in Interactive Geovisualization." In Proceedings of the 16th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM GIS 2008).

Mac Aoidh, Eoin, Bertolotto, Michela, and Wilson, David C. (2008). "Understanding Geospatial Interests by Visualizing Map Interaction Behavior." Information Visualization. 7(3-4):275-286. Palgrave Macmillan.

Wilson, David C., Leland, Suzanne, Godwin, Kenneth, Baxter, Andrew, Levy, Ashley, Smart, Jamie, Najjar, Nadia, and Andaparambil, Jayakrishnan. (2008). "The Law of Choice and the Decision Not to Decide." In Proceedings of the 20th Conference on Innovative Applications of Artificial Intelligence. AAAI Press. (IAAI Innovative Application Award).

Wilson, David, Doyle, Julie, Weakliam, Joe, Bertolotto, Michela, and Lynch, Daniel. (2007). "Personalised Maps in Multimodal Mobile GIS." International Journal of Web Engineering and Technology. Vol. 3, No. 2. Inderscience Publishers.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

"SoundPainter." Dance Performance. To be performed at ACM Creativity & Cognition, November 2011.

"SoundPainter" Dance Performance and Workshop. To be performed/presented at the Congress on Research in Dance. Philadelphia, November 2011.

"The Angled Angels Assembly." (2011). Dance Performance. UNC Charlotte Spring Dance Concert, April 2011. Choreography: Sybil Huskey and Melissa Word. Technology: Celine Latulipe, David Wilson, Nathan Nifong, Berto Gonzalez, Adam Harris. Evaluation: Erin Carroll and Danielle Lottridge. Dancers: Caroline Deeprose, Jordan Stevens, Cameryn Bevill, Susan Rogers, Brittany Skala, Nicole Stein, Caitlyn Swett.

"An Instance Of ...." (2010). Dance Performance. UNC Charlotte Fall Dance Festival, October 2010. Choreography: Sybil Huskey and Melissa Word. Technology: Celine Latulipe, David Wilson, Nathan Nifong, Berto Gonzalez and Adam Harris. Evaluation: Erin Carroll, Danielle Lottridge. Dancers: Melissa Word, Jordan Stevens, Caroline Deeprose.

"Bodies/Antibodies." (2010). Dance Performance. CHI Media Showcase, April 2010. Also performed at the Connecting Kinetics Presentation, UNC Charlotte, April, 2010. Choreography: Melissa Word. Choreographic Lead: Sybil Huskey. Technology: Celine Latulipe, David Wilson, Berto Gonzalez, Arthur Carroll, Nathan Nifong, Vikash Singh, Mike Wirth. Evaluation: Erin Carroll, Danielle Lottridge. Dancers: Jordan Stevens, Caroline Deeprose, Bianca Abarca, Lindsey Herring.

"Whispering to Ophiucus." (2009). Dance Performance. UNC Charlotte Fall Dance Festival, 2009. Choreography: Sybil Huskey. Artist: Mike Wirth. Technology: Celine Latulipe, David Wilson, Berto Gonzalez, Arthur Carroll. Evaluation: Erin Carroll, Danielle Lottridge. Dancers: Jordan Stevens, Caroline Deeprose, Summer Hilton, Dana Riley, Shonda Hooper, Stephanie Kovac, Cassie Hughes.

"A Mischief of Mus musculus." (2008). Dance Performance. UNC Charlotte Fall Dance Festival, November 17-23, 2008. November 17-23rd. Choreography: Sybil Huskey. Technology: Celine Latulipe and David Wilson. Visualization Design: Mike Wirth. Performers: Erin Jenkins, Bettina Martin, Samantha Parrett, Daniel Pietruszka, Anna Varn, Sara Veale.

RESEARCH SUPPORT

National Science Foundation. "Dance.Draw: Embodiment as Input for Collaborative, Creative Expression." 2009-2012. $762K.

Department of Defense. SUDDEN CAPITAL: Integrated Modeling and Simulation Capability (IMSC) Development, Integration, Maintenance and Support. 2010. $1.8M.

Department of Defense. "SUDDEN CAPITAL: Integrated Modeling and Simulation Capability, Option Year Award #2." 2009. $322K.

Department of Defense. "SUDDEN CAPITAL: Integrated Modeling and Simulation Capability, Option Year Award #1." 2008-2009. $697K.

National Science Foundation. "Studying Map Interaction Behavior." 2007-2009. $83K.

Department of Defense. "SUDDEN CAPITAL: Integrated Modeling and Simulation Capability." 2007-2008. Co-PI. $1.34M.

Department of Defense. "Sudden Capital Initial Operating Capability Phase I, Option Year Award #2." 2006-2007. $960K.

RESEARCH SUPPORT - Cont.

EXTERNAL SERVICE

General Chair, 23rd International FLAIRS Conference, 2010.

Program Chair, Eighth International Conference on Case-Based Reasoning, 2009.

Program Chair, 21st and 20th International FLAIRS Conferences, 2008, 2007.

Workshop Program Chair, International Conference on Case-Based Reasoning, 2007.

SERVICE TO THE UNIVERSITY

College and University Ad Hoc Committees on Health Informatics - principal architect of recently established Professional Science Masters in Health Informatics. 11-12, 10-11, 09-10.

SIS Graduate Coordinator (Master of Science in Information Technology, Graduate Certificate in Information Security and Privacy, Graduate Certificate in Management of Information Technology) - admissions, advising, administration, development of new policies and in- frastructure for enrollment management and advising. 11-12, 10-11, 09-10.

Healthcare Information Technology Graduate Certificate Program Director - admissions, advising, administration, development of policies and procedures for new certificate program. 11-12, 10-11, 09-10.

SUPERVISED ACADEMIC WORK

Jason Whaley (MS, 2008). Thesis Advisor. "Improving Recommendation Quality in Large-Scale Online Systems." University of North Carolina at Charlotte.

Ruituraj Gandhi (MS, 2007). Thesis Advisor. "United We Stand Divided We Fall: A Multi-Strategy Approach To Geo-Entity Extraction." University of North Carolina at Charlotte.

Carlos Seminario (PhD, current). Dissertation Advisor. University of North Carolina at Charlotte.

Pamela Karr (PhD, current). Dissertation Advisor. University of North Carolina at Charlotte.

Nadia Najjar (PhD, current). Dissertation Advisor. University of North Carolina at Charlotte.

Okan Pala (PhD, current). Dissertation Advisor. University of North Carolina at Charlotte.

Donald Baker (2008). Research Mentor. Mobile, location-aware virtual golf game.

Brian Vanderford (2007). Research Mentor. Online legislation search, analysis, and visualization.

Komla Etse (2007). Research Mentor. Visualizing web-page interaction and use.

BIOGRAPHICAL SKETCH

Instructions: *A biographical sketch is required of all faculty and staff that teach credit courses at the University of North Carolina at Charlotte. SACS (the University accrediting agency) requires that we provide evidence that the teaching faculty and staff have the appropriate credentials and other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes. Please provide the following information in the format described. If a section does not apply to you, note by using N/A.*

Faculty Name: Jianping Fan	UNCC ID: 800211528

Position Title/Rank: Associate Professor

Department Name: Computer Science

College: College of Computing & Informatics	Date Submitted/Revised: 05/11/2012

EDUCATION

Doctor of Philosophy, Chinese Academy of Science, 1997, Engineering Physics
 Master of Science, Northwest University, 1994, Physics, General

POSITIONS AND HONORS

N/A

COURSES TAUGHT

ITCS3160, ITCS6160/8160, ITCS6161/8161, ITCS6157/8157

PUBLICATIONS

J. Fan, Y. Shen, C. Yang, N. Zhou, ``Harvesting Large-Scale Weakly-Tagged Image Databases from the Web",
IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'10), 2010.
Y. Shen, J. Fan, ``Leveraging Loosely-Tagged Images and Inter-Object Correlations for Tag Recommendation",
ACM Multimedia, 2010.
H. Luo, J. Fan, Y. Zhou, ``Multimedia news exploration and retrieval by integrating keywords, relationsand
visual features", Multimedia Tools and Applications, vol.51, pp.625¿648, 2011.
J. Fan, Y. Shen, C. Yang, N. Zhou, ``Structured Max-Margin Learning for Inter-Related Classifier Training
and Multi-Label Image Annotation", IEEE Trans. on Image Processing, 2010.
Z. Li, H. Luo, J. Fan, ``Incorporating Camera Metadata for Attended Region Detection and Consumer Photo
Classification", ACM Multimedia (MM'09), Beijing, 2009. A long version is also published on Multimedia
Tools and Applications, 2010. journal version
J. Fan, H. Luo, Y. Shen, C. Yang, ``Integrating Visual and Semntic Contexts for Topic Network Generation
and Word Sense Disambiguation", ACM Conf. on Image and Video Retrieval (CIVR'09), 2009.
Y. Gao, J. Peng, H. Luo, D. Keim, J. Fan, ``An Interactive Approach for Filtering out Junk Images from
Keyword-Based Google Search Results", IEEE Trans. on Circuits and Systems for Video Technology, vol. 19,
no.10, 2009. Some preliminary results are also presented at MMM'08. Online demo is available at Junk
Images filtering demo
Z. Li, J. Fan, ``Stochastic Contour Approach for Automatic Image Segmentation", Journal of Electronic
Imaging, vol.18, no.04, 2009.
J. Fan, D.A. Keim, Y. Gao, H. Luo, Z. Li, ``JustClick: Personalized Image Recommendation via Exploratory
Search from Large-Scale Flickr Images", IEEE Trans. on Circuits and Systems for Video Technology, vol. 19,
no.2, pp.273-288, 2009. Video
J. Fan, Y. Gao, H. Luo, ``Integrating Concept Ontology and Multi-Task Learning to Achieve More Effective
Classifier Training for Multi-Level Image Annotation", IEEE Trans. on Image Processing, vol. 17, no.3,
pp.407-426, 2008.
J. Fan, Y. Gao, H. Luo, R. Jain, ``Mining Multi-Level Image Semantics via Hierarchical Classification",
IEEE Trans. on Multimedia, special issue on Multimedia Data Mining, vol. 10, no.1, pp.167-187, 2008. Some
preliminary results are also presented at MIR'06, Video
H. Luo, J. Fan, S. Satoh, J. Yang, W. Ribarsky, ``Integrating Multi-Modal Content Analysis and Hyperbolic
Visualization for Large-Scale News Videos Retrieval and Exploration", Signal Processing: Image
Communication, special issue on Semantic Analysis for Interactive Multimedia Services, vol.23, no.8,
pp.538-553, 2008. Some preliminary results are also presented at IEEE VAST'07 and IEEE VAST'06. Video .
J. Fan, Y. Gao, H. Luo, ``Hierarchical classification for automatic image annotation", ACM SIGIR,
Amsterdam, pp.111-118, 2007. Presentation Slides
B. Li, M. Chi, J. Fan, X. Xue, ``Support Cluster Machine", International Conference on Machine Learning
(ICML'07), June 20-24, 2007, Oregon, USA.
J

PUBLICATIONS - Cont.

. Fan, H. Luo, Y. Gao, R. Jain, ``Incorporating Concept Ontology for Hierarchical Video Classification, Annotation and Visualization'', IEEE Trans. on Multimedia, special issue on Semantic Image and Video Indexing in Broad Domains, vol. 9, no.5, pp. 939-957, 2007. Some preliminary results are also presented at ACM Multimedia'06.

Y. Gao, J. Fan, H. Luo, X. Xue, R. Jain, ``Automatic Image Annotation by Incorporating Feature Hierarchy and Boosting to Scale up SVM Classifiers'', ACM Multimedia, Santa Barbara, CA, 2006. Presentation Slides , Video

J. Fan, Y. Gao, H. Luo, ``Multi-level annotation of natural scenes using dominant image components and semantic image concepts'', ACM Multimedia, New York, Oct.10-15, 2004 ( Best Paper Runner-ups), Presentation Slides, Video. An extended journal version for this work: J. Fan , Y. Gao, H. Luo, G. Xu, ``Statistical modeling and conceptualization of natural images'', Pattern Recognition, vol.38, no.6, pp.865-885, 2005.

J. Fan , H. Luo, A.K. Elmagarmid, ``Concept-Oriented Indexing of Video Database towards More Effective Retrieval and Browsing'', IEEE Trans. on Image Processing, vol.13, no.7, pp.974-992, 2004. Video

J. Fan , X. Zhu, A.K. Elmagarmid, W.G. Aref, L. Wu, ``ClassView: Hierarchical Video Shot Classification, Indexing, and Accessing'', IEEE Trans. on Multimedia, vol.6, no.1, pp.70-86, 2004.

E. Bertino, J. Fan, E. Ferrari, M.-S. Hacid, A.K. Elmagarmid, Xingquan Zhu, ``A Hierarchical Access Control Model for Video Database Systems'', ACM Trans. on Information Systems, vol.21, no.2, pp.155-191, 2003.

J. Fan, David K.Y. Yau, Ahmed K. Elmagarmid, Walid G. Aref, ``Automatic image segmentation by integrating color edge detection and seeded region growing'', IEEE Trans. on Image Processing, vol.10, no.10, Oct., pp.1454-1466, 2001. Source Code

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

N/A

RESEARCH SUPPORT

N/A

EXTERNAL SERVICE

N/A

SERVICE TO THE UNIVERSITY

N/A

SUPERVISED ACADEMIC WORK

N/A

BIOGRAPHICAL SKETCH

Faculty Name: Jared M Hansen	UNCC ID: 800578893

Position Title/Rank: Assistant Professor

Department Name: Marketing

College: College of Business (Col)	Date Submitted/Revised: 05/15/2012

EDUCATION

Doctor of Philosophy, Texas Tech University, 2007, Marketing
Master-Business Administration, Brigham Young University, 2005, Business & Management, Other
Bachelor of Science, Brigham Young University, 2001, Civil,Const,Transportation Egr

POSITIONS AND HONORS

2008 - Present: UNC Charlotte, Assistant Professor of Marketing
2007 - 2008: Texas Tech University, Retail
Marketing Instructor
2006 - 2007: Texas Tech University, Marketing Research Instructor

COURSES TAUGHT

MBAD6172 - Marketing Research
MKTG3210 - Marketing Research and Analysis
MKTG3216 - Consumer Behavior

PUBLICATIONS

Hansen, J., Smith, S. (forthcoming) The Impact of Two-Stage Highly-Interesting Questions on Completion Rates and Data Quality in Online Marketing Research. International Journal of Market Research.

Hansen, J., Levin, M. (October, 2010) Retail E-Learning Assessment Effectiveness: Motivation, Location, and Prior Experience. International Journal of Retail & Distribution Management. 38 (10), 789-805.

Godfrey, P., Hatch, N., Hansen, J. (June, 2010) Toward a General Theory of CSRs: The Roles of Beneficence, Profitability, Insurance, and Industry Heterogeneity. Business And Society. 49 (2), 316-344.

Hansen, J., Raut, S., Swami, S. (March, 2010) Retail Shelf Allocation: A Comparative Analysis of Advances in Heuristic and Meta-Heuristic Approaches. Journal of Retailing. 86 (1), 94-105.

Hunt, Shelby D. and Jared M. Hansen (2010), "The Philosophical Foundations of Marketing Research: For Scientific Realism and Truth," in The Sage Handbook of Marketing Theory, Pauline Maclaran, Michal Saren, Barbara Stern, and Mark Tadajewski (eds). Sage: London, pg 111-126.

Godfrey, P., Merrill, C., Hansen, J. (April, 2009) The Relationship Between Corporate Social Responsibility and Shareholder Value: An Empirical Test of the Risk Management Hypothesis. Strategic Mament Journal. 30 (4), 425-445.

Hansen, J. (April, 2009) The Evolution of Buyer-Supplier Relationships: An Historical Industry Approach. Journal of Business & Industrial Marketing. 24 (3/4), 227-236.

Levin, M., Hansen, J (2008) Clicking to Learn or Learning to Click: A Theoretical and Empirical Investigation. College Student Journal. 42 (2), 665-674.

Hunt, S., Hansen, J. (December, 2007) Understanding Ethical Diversity in Organizations. Organizational Dynamics. 36 (2), 202-216.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

Hansen, J. (November, 2011) Good Management Matters in Remembering What Makes Organizations Great. 3rd Annual Global Drucker Forum.   Vienna, Austria.
Allen, J., Hansen, J. (July, 2011) Meeting orientation:

conceptualization, antecedents, and outcomes. INGroup.   Minneapolis, MN.
Hansen, J., Smith, S. (July,

RESEARCH SUPPORT

N/A

EXTERNAL SERVICE

Reviewer: Ad Hoc Reviewer for a Journal (International) Journal of Marketing
Reviewer: Ad Hoc Reviewer for a Journal (International) Journal of Retailing
Reviewer: Ad Hoc Reviewer for a Journal (International) Public Opinion Quarterly
Reviewer: Ad Hoc Reviewer for a Journal (International) Journal of Personal Selling & Sales Management
Reviewer: Ad Hoc Reviewer for a Journal (International) Journal of Business Ethics
Reviewer: Ad Hoc Reviewer for a Journal (International) Industrial Marketing Management
Reviewer: Ad Hoc Reviewer for a Journal (International) Journal of International Business Studies
Reviewer: Ad Hoc Reviewer for a Journal (International) MIS Quarterly
Reviewer: Ad Hoc Reviewer for a Journal (International) Journal of the Academy of Marketing Science
Positions Held in Civic Organizations (Local) Boy Scout Crew/Troop 215, Venture Crew Leader/Scoutmaster
Reviewer: Book / Textbook (International) Retailing, 7ed., 8ed., Cengage, Dunne, Lusch, and Carver

SERVICE TO THE UNIVERSITY

2010-2012 - Faculty Advisor (University) UNC Charlotte American Marketing Association Student
Chapter/Club
2009-2012 - Faculty Advisor (University) LDSSA Student Chapter/Club
2010-2011 - Committee Member (Department) Department Doctoral Committee
2010-2011 - Committee Member (Department) Department Undergraduate Curriculum Committee
2010-2012 - Committee Member (College) College Undergraduate Curriculum Committee (UCALC)
2010-2011 - Committee Member (College) Business Administration Doctoral Committee

SUPERVISED ACADEMIC WORK

2010-2011: Thesis/Dissertation Committee: YiMing Zheng, IT PhD Dissertation
2009-2010: Thesis/Dissertation Committee Member: Connie Johnston, EdD Dissertation
2009-2010: Mentoring Activities (University): Joseph Allen, how to draft a theory paper.

BIOGRAPHICAL SKETCH

UNC CHARLOTTE

Instructions: *A biographical sketch is required of all faculty and staff that teach credit courses at the University of North Carolina at Charlotte. SACS (the University accrediting agency) requires that we provide evidence that the teaching faculty and staff have the appropriate credentials and other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes. Please provide the following information in the format described. If a section does not apply to you, note by using N/A. The form has been set up as a template so you should be able to cut and paste your information from other vitas or proposal submissions.*

Faculty Name:	**Jennifer Stuart**	**UNCC ID#: 800813860**
Position Title/Rank:	**Assistant Professor of Marketing**	
Department Name:	**Marketing**	
College:	**Belk College of Business**	**Date Submitted/Revised : July 18, 2013**

EDUCATION

List in chronological order degrees, institution and location, dates, and field of study.

B.A. Economics, B.A. Business, University of Pittsburgh, April 1993
M.S. Management Information Systems, MBA, University of Pittsburgh, April 1996
M. Phil, Business Administration Columbia University, June 2000
Ph.D., Marketing, Columbia University, April 2003

POSITIONS AND HONORS

List in reverse chronological order previous positions held, beginning with the current position (include any honors).

Vice President of Marketing, Consumer Wellness and New Initiatives Jan 2011 – December 2012
Director of Sales, National Drug Mar 2009 – Dec 2010
Director of Marketing, Aleve Franchise (Analgesics & Cold), Midol and Vanquish Sept 2005- Dec 2008
Senior Brand Manager, Aleve Feb 2004 - Sept 2005
Senior Brand Manager, New Business July 2003 – Feb 2004
Brand Manager, New Business Oct 2002 - July 2003
Novartis Consumer Health, Parsippany, NJ
Brand Manager, Denavir and LamisilAT New Products July 2001-Oct 2002
Associate Brand Manager, LamisilAT Sept 2000 – July 2001
Hershey Foods Corporation, Hershey, PA
Associate Brands Manager, Twizzlers, Jolly Rancher, Good n Plenty, Rain-Blo Aug 1997-Aug 1998
SmithKline Beecham Consumer Healthcare, Pittsburgh, PA
Associate Brand Manager, Massengill Sept 1996-Sept 1997
Assistant Brand Manager, Lozenges (Sucrets, N'ICE. Cepastat) April 1996 – Sept 1996
Pennsylvania Blue Shield
Associate Business Systems Analyst April 1993-August 1994

COURSES TAUGHT

Include a selected list of regularly taught courses (no more than 10) and provide the institution's name, if other than UNC Charlotte

Marketing Analysis and Decision Making (Graduate, Undergraduate)

Marketing Research (Graduate), Queen's University
International Marketing, Queen's University

PUBLICATIONS

Include a selected list of significant refereed publications (no more than 10) in reverse chronological order (do not list abstracts). Each publication identified must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. If the document is only available electronically, the website address should be identified.

" Shaping Customer Satisfaction through Self-Awareness Cues", Pham, M.T., Goukens C., Lehmann D. R., and Stuart, J.A. Journal of Marketing Research, October 2010

"Spontaneous Visualization and Concept Evaluation", Lehmann, D., Stuart, J.A., Johar G., and Thozhur A., Journal of the Academy of Marketing Sciences, September 2006

"Valuing Customers", Gupta, S, Lehmann, D, and Stuart, J.A., Journal of Marketing Research, February 2004. Article received Paul E. Green and William O'Dell awards, judged to have the most potential to contribute to the practice of marketing research. Both awards are supported by the AMA Foundation

Exhibitions, Performances, Presentations, and Readings

Include a reverse chronological listing, citing complete information regarding most significant exhibitions, performances, poetry readings, etc. (no more than 10)

"Visualization and Concept Evaluation", Conference Presentation, Association for Consumer Research Conference, Columbus, October 1999

Research Support

Include a selected list of proposals and grants received from outside agencies in reverse chronological order (no more than 10). Indicate the amount of the grant and the dates of the project period.

EXTERNAL SERVICE

Include selected service and outreach to the profession, community entities, and engagement with the larger community (e.g. journal editorship, national grant review committees, positions in professional organizations)

Consultant, Stealth Mode start up company
Volunteer, Junior Achievement
Volunteer, Literacy Volunteers of America

SERVICE TO THE UNIVERSITY

Include a selected list of significant directed work (e.g. thesis/dissertation advisor, honors student research mentor, etc)

SUPERVISED ACADEMIC WORK

Include a selected list of significant directed work (e.g. thesis/dissertation advisor, honors student research mentor)

BIOGRAPHICAL SKETCH

Instructions: *A biographical sketch is required of all faculty and staff that teach credit courses at the University of North Carolina at Charlotte. SACS (the University accrediting agency) requires that we provide evidence that the teaching faculty and staff have the appropriate credentials and other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes. Please provide the following information in the format described. If a section does not apply to you, note by using N/A.*

Faculty Name: Jennifer Lynn Troyer	UNCC ID: 800016469

Position Title/Rank: Associate Professor

Department Name: Economics

College: College of Business (Col)	Date Submitted/Revised: 05/14/2012

EDUCATION

Doctor of Philosophy, Florida State University, 1999, Economics, General
Master of Science, Florida State University, 1996, Economics, General
Bach-Business Administration, University of Memphis, 1993, Economics, General

POSITIONS AND HONORS

2005-now: UNC Charlotte, Associate Professor, Charlotte, NC
1999-2005: UNC Charlotte, Assistant Professor, Charlotte, NC

COURSES TAUGHT

BPHD8130 - Econometrics II
ECON3141 - Health Economics
ECON4117 - Business and Economic
Forecasting
ECON6112 - Graduate Econometrics
HADM6138 - Health Care Finance
HSRD8004 - Econ of Helath &
Health Care
PPOL8667 - Econ of Health & Health Care

PUBLICATIONS

Troyer, J., Racine, E., Ngugi, G., McAuley, W. (March, 2010) The Effect of Home delivered DASH Meals on the Diets of Older Adults with Cardiovascular Disease. American Journal of Clinical Nutrition.
Kennedy, F., McWhorter, L., Troyer, J., Stroup, J. (June, 2010) Do Non-Profit Hospitals Provide More Charity Care When Faced with a Mandatory Minimum Standard? Evidence from Texas. Journal Of Accounting And Public Policy. 29 (3), 242-258.
Fehring, T., Odum, S., Troyer, J., Iorio, R., Kurtz, S., Lau, E. (December, 2010) Joint Replacement Access in 2016: A Supply Side Crisis. Journal of Arthroplasty. 25 (8), 1175-1181.
Troyer, J., McAuley, W., McCutcheon, M. (December, 2010) Cost-Effectiveness of Medical Nutrition Therapy and Therapeutically Designed Meals for Older Adults with Cardiovascular Disease. Journal of the American Dietetic Association. 110 (12), 1840-1851.
Chang, C., Troyer, J. (September, 2009) The Impact of TennCare on Hospital Efficiency. Health Care Management Science. 12 (3), 201-216.
Schwarz, P., Troyer, J., Walker, J. (July, 2007) Animal House: Economics of Pets and the Household. The B.E. Journal of Economic Analysis and Policy. 7 (1), Article 35.
Troyer, J., McAuley, W. (July, 2006) Environmental Contexts of Ultimate Decisions: Why White Nursing Home Residents are Twice as Likely as African Americans to Have an Advance Directive?. Journal of Gerontology: Social Sciences. 61b (4), S194-S202.
Brandon, W., Troyer, J., Sundaram, R., Sun, Y., Schoeps, N. (November, 2005) Medicaid Enrollee Switching Among Managed Care Plans. Journal of Health Care for the Poor and Underserved. 16 (4), 760-779.
Troyer, J. (October, 2004) Examining Differences in Death Rates for Medicaid and Non-Medicaid Nursing Home Residents. Medical Care. 42 (10), 985-991.
Troyer, J., Thompson, H. (February, 2004) The Impact of Litigation on Nursing Home Quality. Journal of Health Politics, Policy, and Law. 29 (1), 11-42.

PUBLICATIONS - Cont.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

Troyer, J., McAuley, W., McCutcheon, M. (November, 2009) Cost-Effectiveness of Medical Nutrition Therapy and Therapeutic Meals for Seniors with Hypertension and Hyperlipidemia. Gerontological Society of America Annual Scientific Meeting.   Atlanta, GA.

Troyer, J., Sause, W. (July, 2009) Complaints Against Nursing Homes: Comparing Two Sources of Complaint Information and their Relationship with Traditional Quality Measures. International Health Economics Association Conference.   Beijing, China.

Troyer, J., McAuley, W., McCutcheon, M. (November, 2008) Cost Effectiveness of Medical Nutrition Therapy and Therapeutic Meals for Seniors with Hypertension and Hyperlipidemia. University of Memphis Public Health Seminar Series. Memphis, TN.

Troyer, J., Fournier, G. (March, 2008) The Dilemma of Vacant Beds: Did Liberal CON Policies Toward Hospitals Make Nursing Homes 'Sick'?. CHeSS, Harris School of Public Policy, University of Chicago. Chicago, IL.

Troyer, J., Sause, W. (June, 2008) Complaints Against Nursing Homes: Comparing Two Sources of Complaint Information and their Relationship with Traditional Quality Measures. American Society for Health Economics Conference. Durham, NC.

Troyer, J., McAuley, W., McCutcheon, M. (September, 2007) Medical Nutrition Therapy and Therapeutic Meals for Seniors with Hypertension and Hyperlipidemia. NC Conference on Aging.   Winston-Salem, NC.

Troyer, J., Fournier, G. (November, 2007) The Dilemma of Vacant Beds: Did Liberal CON Policies Toward Hospitals Make Nursing Homes 'Sick'?. Gerontological Society of American Annual Scientific Meeting.   San Francisco, CA.

Troyer, J., Fournier, G. (May, 2006) The Dillema of Vacant Beds: Did Liberal CON Policies Toward Hospitals Make Nursing Homes 'Sick'?. Triangle Health Economics Workshop, UNC.   Chapel Hill, North Carolina.

Troyer, J., Chang, C. (June, 2006) The Impact of TennCare on Hospital Efficiency. American Society for Health Economics.   Madison, Wisconsin.

Troyer, J., McAuley, W. (October, 2005) Why are White Nursing Home Residents Twice as Likely as African Americans to Have an Advance Directive? Understanding Ethnic Differences in Advance Care Planning. ZEW European Conference on Long-Term Care.   Mannheim, Germany.

RESEARCH SUPPORT

Agency for Healthcare Research and Quality, National Institutes of Health - Quantitative Pretest Probability to Reduce Cardiopulmonary Imaging in the Emergency Department. Principle Investigator: Jennifer Troyer.

EXTERNAL SERVICE

2010-2011 - Reviewer: Article / Manuscript (International) The Gerontologist, Reveiwed four manuscripts.

2010-2011 - Reviewer: Conference Paper (International) American Society for Health Economics Conference, Reviewed two papers.

2010-2011 - Reviewer: Article / Manuscript (International) Southern Economic Journal, Reviewed one manuscript.

2010-2011 - Other Professional Service Activities (International) Scientific Committee, International Health Economics Association, Reviewed abstracts for program inclusion.

2010-2011 - Board Member: PRJ Editorial Review Board (International) The Gerontologist

2010-2011 - Presentation (Local) Omicron Delta Epsilon, the Economics Honor Society, Speaker, "Health Economics: Applying Microeconometric Tools to Matters of Health"

2009-2010 - Reviewer: Article / Manuscript (International) The Gerontologsit, Reviewed four manuscripts

2009-2010 - Reviewer: Article / Manuscript (International) BE Journal of Economic Analysis and Policy, Reviewed one manuscript.

2009-2010 - Speech / Presentation at a Community Meeting (Local) Charlotte-Mecklenburg Women's Summit, Part of a panel of presenters, April 2009.

2009-2010 - Speech / Presentation at a Community Meeting (Local) Charlotte Chamber Chapters Health Care Summ, Moderated a Panel Discussion: Practical Advice for Employer-Based Healthcare Coverage, May 2009, Charlotte, NC.

SERVICE TO THE UNIVERSITY

2010-2011 - Other Institutional Service Activities (College) Facilitator at the Belk College Graduate Programs Orientation Session Fall 2010

2010-2011 - Committee Member (University) School of Public Health

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SERVICE TO THE UNIVERSITY - Cont.

lanning Committee
2010-2011 - Committee Member (University) Faculty Council, Economics Department
Alternate
2010-2011 - Committee Member (University) Committee on Health Policy Specialization in the Ph.D.
in Public Policy
2010-2011 - Committee Member (University) Admissions Committee for the PhD in Public
Policy Program
2010-2011 - Committee Member (Department) Search Committee for Joint Position in Financial
Econometrics
2010-2011 - Committee Member (Department) Graduate Advisory Committee - Economics
2010-2011
- Committee Member (Department) Department Review Committee
2010-2011 - Committee Member (College)
Management Department Chair Search Committee, Outside member

SUPERVISED ACADEMIC WORK

2011-2012: Directed Study supervisor, Fall 2010 for Mark Bloxsam, Undergraduate
2010-2011 - Mentoring
Activities (University) UNC Charlotte's Summer Doctoral Teaching Assistants program, Faculty Mentor to
Barbara Ferguson, PhD student from Health Services Research
2010-2011: Thesis / Dissertation Committee -
Member, Galen Smith, PhD in Public Policy
2010-2011: Thesis / Dissertation Committee - Chair, Barbara
Ferguson, PhD in Health Services Research
2010-2011: Directed Study supervisor, Mark Bloxsam,
Undergraduate, Fall 2010
2010-2011: Thesis / Dissertation Committee - Chair, Andrew Baxter, PhD in Public
Policy
2010-2011: Thesis / Dissertation Committee - Member, Pinar Calis, MS in Economics
2010-2011: Thesis
/ Dissertation Committee - Member, Jennifer Bushelle-Edghill, PhD in Health Services Research
2010-2011:
Thesis / Dissertation Committee - Member, Carol Stivender, PhD in Public Policy
2010-2011: Thesis /
Dissertation Committee - Member, Chengxiu Sun, PhD in Public Policy
2010-2011: Thesis / Dissertation
Committee - Member, Lindsay Baran, PhD in Business Administration
2009-2010: Thesis / Dissertation
Committee - Member, Chenxiu Sun, PhD in Public Policy
2009-2010: Thesis / Dissertation Committee - Member,
Galen Smith, PhD in Public Policy
2009-2010: Directed Study supervisor, Spring 2010 - Health Economics for
Master's Student
2009-2010: Thesis / Dissertation Committee - Chair, Alan Jones, MS in Public
Health
2009-2010: Thesis / Dissertation Committee - Member, Andrew Baxter, PhD in Public Policy
2009-2010:
Thesis / Dissertation Committee - Member, Dolores Hernandez, PhD in Health Psychology
2009-2010: Thesis /
Dissertation Committee - Member, Shital Kamble, PhD in Health Services Research
2009-2010: Thesis /
Dissertation Committee - Member, Lindsay Baran, PhD in Business Administration
2009-2010: Thesis /
Dissertation Committee - Member, Carol Stivender, PhD in Public Policy
2009-2010: Thesis / Dissertation
Committee - Member, Mikael Thoustrup, MS in Economics
2009-2010: Thesis / Dissertation Committee - Chair,
Sandi Lane, PhD in Health Services Research
2008-2009: Thesis / Dissertation Committee - Member, Delores
Hernandex, PhD in Health Psychology
2008-2009: Directed Study supervisor, ECON 6800, Health Economics in
the Least Developed Countries Part 1, Jonathan Page, Summer I 2008
2008-2009: Thesis advisor/supervisor
(Masters), Alan Jones, MS in Public Health
2008-2009: Thesis / Dissertation Committee - Member, Lindsay
Baran, PhD in Business Administration with a concentration in Finance
2008-2009: Thesis / Dissertation
Committee - Member, Sandi Lane, PhD in Health Services Research (will be taking over as chair July 1,
2009)
2008-2009: Thesis / Dissertation Committee - Member, Shital Kamble, PhD in Health Services
Research
2008-2009: Thesis / Dissertation Committee - Member, Andrew Baxter, PhD in Public
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SUPERVISED ACADEMIC WORK - Cont.

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2008-2009: Directed Study supervisor, ECON 6800, Health Economics in the Least Developed Countries Part 2, Jonathan Page, Summer II 2008

2008-2009: Directed Study supervisor, ECON 6800, Pets and the Production of Health, Rachel Hutchinson, Summer II 2008

2008-2009: Thesis / Dissertation Committee - Member, Galen Smith, PhD in Public Policy

2007-2008: Thesis / Dissertation Committee - Member, Andrew Baxter, PhD in Public Policy

2007-2008: Thesis / Dissertation Committee - Member, Galen Smith, PhD in Public Policy

2007-2008: Thesis / Dissertation Committee - Member, Delores Hernandez, PhD in Public Policy

2007-2008: Thesis / Dissertation Committee - Member, Stephen Stemkowski, PhD in Public Policy

2007-2008: Thesis / Dissertation Committee - Member, Shital Kamble, PhD in Health Services Research

2007-2008: Thesis / Dissertation Committee - Member, Jonathan Poeder, MS in Economics

2007-2008: Thesis / Dissertation Committee - Member, Stephen Kuyath, PhD in IT

2006-2007: Thesis / Dissertation Committee - Member, Dissertation Committee Member, Stephen Kuyath, Doctoral program in Information Technology.

2006-2007: Thesis / Dissertation Committee - Member, Dissertation Committee Member, Stephen Stemkowski, Doctoral program in Public Policy.

2006-2007: Thesis / Dissertation Committee - Member, Thesis Committee Member, Jonathan Poeder, MS program in Economics.

2006-2007: Thesis / Dissertation Committee - Member, Dissertation Committee Member, Shital Kamble, Doctoral program in Health Services Research.

2005-2006: Directed Study supervisor, Directed Study for M.S. student in Economics in the area of Health Economics.

2005-2006: Thesis / Dissertation Committee - Member, Dissertation Committee Member, Stephen Kuyath, Doctoral program in Information Technology.

2005-2006: Directed Study supervisor, Directed Studies for THREE Public Policy Doctoral students in Health Economics.

2005-2006: Directed Study supervisor, Directed Study for M.S. student in Economics in the area of Health Economics.

2005-2006: Thesis / Dissertation Committee - Member, Dissertation Committee Member, Ashley Dunham, Doctoral Student program in Public Policy.

2005-2006: Thesis / Dissertation Committee - Member, Dissertation Committee Member, Stephen Kuyath, Doctoral program in Information Technology.

2005-2006: Directed Study supervisor, Directed Studies for THREE Public Policy Doctoral students in Health Economics.

2005-2006: Thesis / Dissertation Committee - Member, Dissertation Committee Member, Ashley Dunham, Doctoral Student program in Public Policy.

: Thesis / Dissertation Committee - Chair, Andrew Baxter, PhD in Public Policy

BIOGRAPHICAL SKETCH

UNC CHARLOTTE

Instructions: *A biographical sketch is required of all faculty and staff that teach credit courses at the University of North Carolina at Charlotte. SACS (the University accrediting agency) requires that we provide evidence that the teaching faculty and staff have the appropriate credentials and other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes. Please provide the following information in the format described. If a section does not apply to you, note by using N/A.*

Faculty Name: Jing Yang	UNCC ID: 800367716

Position Title/Rank: Associate Professor

Department Name: Computer Science

College: College of Computing & Informatics	Date Submitted/Revised: 05/14/2012

EDUCATION

Doctor of Philosophy, Worcester Poly Institute, 2005, Computer Science
Master of Science, Worcester Poly Institute, 2002, Computer Science
Bachelor of Science, Tsinghua University, 1997, Engineering Mechanics

POSITIONS AND HONORS

2011–Present Associate Professor, Department of Computer Science
University of North Carolina at Charlotte. Charlotte, NC.

2005–2011 Assistant Professor, Department of Computer Science
University of North Carolina at Charlotte. Charlotte, NC.

2000–2005 Research Assistant, Department of Computer Science
Worcester Polytechnic Institute. Worcester, MA.

COURSES TAUGHT

ITCS4121/5121 Information Visualization
ITCS 3160 Database Design and Implementation
ITCS 1212 Introduction to Computer Science

PUBLICATIONS

1. Y.Chen, J. Alsakran, S. Barlowe, J. Yang, and Y. Zhao: Supporting effective common ground construction in asynchronous collaborative visual analytics. IEEE VAST 2011: 99-108.

2. S. Barlowe, Y. Liu, J. Yang, D. Livesay, D. Jacobs, J. Mottonen, and D. Verma: WaveMap: A Visual Analytics Approach for Feature Discovery in Complex Computational Biology Datasets. Computer Graphics Forum 30(3) (EuroVis 2011): 1001-1010.

3. J. Yang, D. Luo, Y. Liu: Newdle: Interactive Visual Exploration of Large Online News Collections. IEEE Computer Graphics & Application 30(5): 32-41 (2010).

4. Y. Chen, J. Yang, and S. Barlowe: Click2Annotate: Automated Insight Externalization with Rich Semantics. IEEE Conference on Visual Analytics Science and Technology 2010: 155-162.

5. S. Barlowe, T. Zhang, Y. Liu, J. Yang and D. Jacobs. Multivariate Visual Explanation for High Dimensional Datasets. Proc. IEEE Symposium on Visual Analytics Science and Technology 2008: 147-154.

6. J. Yang, D. Hubball, M. Ward, . Rundensteiner and W. Ribarsky. Value and Relation Display: Interactive Visual Exploration of Large Datasets with Hundreds of Dimensions. IEEE Transactions on Visualization and Computer Graphics 13(3): p494-507 (2007).

7. J. Yang, J. Fan, D. Hubball, Y. Gao, H. Luo, W. Ribarsky and M. Ward. Semantic Image Browser: Bridging Information Visualization with Automated Intelligent Image Analysis. IEEE Symposium on Visual Analytics Science and Technology 2006: 191-198.

8. J. Yang, A. Patro, S. Huang, N. Mehta, M. Ward and E. Rundensteiner: Value and Relation Display for Interactive Exploration of High Dimensional Datasets. Proc. IEEE Symposium on Information Visualization 2004: 73-80.

9

. J. Yang, M. Ward, E. Rundensteiner and S. Huang: Visual Hierarchical Dimension Reduction for Exploration of High Dimensional Datasets. Proc. Eurographics/IEEE TCVG Symposium on Visualization 2003: 19-28.

10. J. Yang, M. Ward and E. Rundensteiner: InterRing: An Interactive Tool for Visually Navigating and Manipulating Hierarchical Structures. Proc. IEEE Symposium on Information Visualization 2002: 77-84.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

N/A

RESEARCH SUPPORT

Title of Grant: Visualizing High Dimensional Categorical Datasets as Text Corpora
PI: Jing Yang
Co-PI: Ye Zhao (Kent state University)
Funding Agency: Google
Program: Google Faculty research
Amount: $60,000
Amount (UNCC portion): $30,000
Dates of funding period: 9/1/2011 - 8/31/2012

Title of Grant: Air Pollution-Exposure-Health Effect Indicators: Mining Massive Geographically-Referenced Environmental Health Data to Identify Risk Factors for Birth Defects
PI: F. Benjamin Zhan (Texas State Univ.)
Co-PI: J. Brender, P. Langlois, J. Yang
Funding Agency: US Environmental Protection Agency
Program: NCER's Science to Achieve Results (STAR) program
Amount: $499,987
Amount (UNC Charlotte Portion): $85,590
Dates of Funding Period: 02/01/2011 – 01/31/2014

Title of Grant: EAGER: Link Free Graph Visualization for Exploring Large Complex Graphs
Funding Agency: NSF
Amount Funded: $144,444
PI: J. Yang
Co-PI: J. Fan
Dates of Funding Period: 8/5/2009-7/30/2011

Title of Grant: DAT: A Visual Analytcs Approach to Science and Innovation Policy
Funding Agency: NSF
Amount Funded: $746,567
PI: W. Ribarsky
Co-PI: J. Yang, R. Chang
Dates of Funding Period: 7/15/2009-7/14/2012

Title of Grant: Visual Analytics Applied to Automated Multimedia Content Analysis
Funding Agency: DHS
Amount Funded: $231,743
PI: W. Ribarsky
Co-PI: J. Yang, J. Fan, D. Keim
Dates of Funding Period: 8/15/2008-12/30/2009

Title of Grant: Proposal to Establish the Southeastern Regional Visualization and Analytics Center
Funding Agency: Battelle Memorial Institute
Amount Funded: $2,100,000
PI: W. Ribarsky
CoPI: A. Raja, W. Tolone, J. Fan, R. Kosara, and J. Yang
Dates of Funding Period: 01/01/2006-06/30/2009

Title of Grant: Using Information Visualization to Identify Sequence Pattern Signatures for Alpha Helix Stability within Model HP-Polypeptides
Funding Agency: Faculty Research Grants of UNCC
Amount Funded: $12,000
PI: J. Yang
CoPI: D. Jacobs
Dates of Funding Period: 01/07/2006 – 31/12/2007

Title of Grant: Applying Visual Analytics to Anti-Money Laundering Investigations
Funding Agency: Bank of America
Amount Funded: $149,148
PI: R. Kosara
CoPI: J. Yang and W. Ribarsky
D

RESEARCH SUPPORT - Cont.

ates of Funding Period: 01/2006 – 12/2006

EXTERNAL SERVICE

Program/Organizing Committees
• Program Committee of IEEE Conference on Information Visualization 2005-2007, 2009-2011;
• Program Committee of IEEE Conference on Visual Analytics Science and Technology 2011;
• Program Committee of IEEE Pacific Visualization Symposium 2011;
• Program Committee of EuroVis 2010-2011;
• Program Committee of Conference on Visualization and Data Analysis 2011;
• Program Committee of VINCI 2010;
• Program Committee of Visual Analytics for Homeland Defense and Security Conference 2009;
• Birds of a Feather Co-Chair of IEEE Conference on Information Visualization Conference 2007, 2010, 2011;
• Discovery Exhibition Co-Chair of IEEE Conference on Information Visualization Conference 2009;
• Contest Co-Chair of IEEE Conference on Information Visualization Conference 2008.
Editorial Boards/Panels
•   NSF proposal review panel

SERVICE TO THE UNIVERSITY

CCI Graduate Curriculum Committee, fall 2010-spring 2011

SUPERVISED ACADEMIC WORK

PhD Dissertation advisor of Scott Barlowe

BIOGRAPHICAL SKETCH

Faculty Name: Kexin Zhao	UNCC ID: 800561811

Position Title/Rank: Assistant Professor

Department Name: Business Info Systems/Operations

College: College of Business (Col)	Date Submitted/Revised: 05/15/2012

EDUCATION

Doctor of Philosophy, University of IL-Urbana, 2007, Bus Mgmt and Administration
Bachelor of Arts, Tsinghua University, 2001, Bus Mgmt and Administration

POSITIONS AND HONORS

2007 - Now: Assistant Professor, University of North Carolina at Charlotte, Charlotte, North Carolina

COURSES TAUGHT

INFO2130 - Introduction to Business Computing
INFO2130L - Lecture - Intro to Business Computing
(co-taught)
INFO2130Lab - Lab Section - Intro to Business Computing
INFO2130-SUP - Oversight of all
Sections of INFO 2130
INFO3130 - Management Information Systems
INFO3231 - Business Applications
Development
MBAD7090 - Special Topics in Business

PUBLICATIONS

Jeong, B., Khouja, M., Zhao, K. (forthcoming) The Impacts of Piracy and Supply Chain Contracts on Digital Music Channel Performance. Decision Support Systems.
Jeong, B., Zhao, K., Khouja, M. (forthcoming) Consumer-Piracy Risk: Conceptualization and Measurement in Music Sharing. International Journal of Electronic Commerce.
Xia, M., Zhao, K., Mahoeny, J. (2011) Enhancing Value via Cooperation: Firms' Process Benefits from Participation in a Standard Consortium. Industrial and Corporate Change.
Zaffar, M., Kumar, R., Zhao, K. (June 2011) Diffusion Dynamics of Open-Source Software: An Agent-Based Computational Economics (ACE) Approach. Decision Support Systems. 51 (3), 597-608
Zhao, K., Xia, M., Shaw, M. (2011) What Motivates Firms to Contribute to Consortium-Based E-Business Standardization. Journal of Management Information Systems. 28 (2)
Zhao, K., Khan, S., Xia, M. (2011) Sustainability of Vertical Standard Consortia as Communities of Practice: A Multi-Level Framework. Internatonal Journal of Electronic Commerce. 16 (1).
Zhao, K., Xia, M., Shaw, M., Subramaniam, C. (May, 2009) The Sustainability of B2B E-marketplaces: Ownership Structure, Market Competition, and Prior Buyer–Seller Connections. Decision Support Systems. 47 (2), 105-114.
Zhao, K., Xia, M., Shaw, M. (Spring, 2007) An Integrated Model of Consortium-Based E-business Standardization: Collaborative Development and Adoption with Network Externalities. Journal of Management Information Systems. 23 (4), 247-271.
Zhao, K., Xia, M., Shaw, M. (November, 2005) Vertical e-Business Standards and Standards Developing Organizations: a Conceptual Framework. Electronic Markets. 15 (4), 289-300.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

Zheng, Y., Zhao, K., Stylianou, A. (December 2011) The Formation of Social Influence in Online Recommendation Systems: A Study of User Reviews on Amazon.com, ICIS 2011, Shanghai, China
Zhao, K., Zhao, X., Deng, J. (December 2011) An Empirical Investigation of Online Gray Market: The Case of Luxury Handbags, WITS 2011, Shanghai, China.
Zhao, K., Zhao, X., Deng, J. (December 2011) Parallel Importation: An Empirical Investigation of O

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS - Cont.

nline Unauthorized Distribution Channels, The Tenth Workshop on E-Business, Shanghai, China.

Zhang, P., Zhao, K., Kumar, R. (December 2011) The Antecedents of IT Internal Control Deficiencies, SIGASYS Workshop 2011, Shanghai, China

Zheng, Y., Zhao, K., Stylianou, A. (November 2011) How Social Influence Is Developed Online: The Case of User Reviews, The INFORMS Annual Meeting, Charlotte, NC.

Khan, S., Kumar, R., Zhao, K. (December 2010) Narrow Framing Effects on Real Options: The Case of IT Application Portfolios, ICIS 2010, St Louis, MO.

Zheng, Y., Zhao, K. Stylianou, A. (December 2010) The Antecedents and Consequences of Social Influences in Online Recommendation Systems, The Ninth Annual Workshop on HCI Research in MIS, St Louis, MO.

Zheng, Y., Zhao, K., Stylianou, A. (December, 2010) Why Do Users Continue Participating in Online Communities: The Impacts of Individual Benefits and Participation History. The Ninth Workshop on E-Business. St Louis, MO.

Khouja, M., Jeong, B., Zhao, K. (October, 2009) The Impact of Piracy and Supply Chain Contracts on Digital Music Channel Coordination. The INFORMS Annual Meeting. San Diego, CA.

Zheng, Y., Zhao, K., Stylianou, A. (December, 2009) Information Quality and System Quality in Online Communities: an Empirical Investigation. The Eighth Annual Workshop on HCI Research in MIS. Phoenix, AZ.

Zaffar, A., Kumar, R., Zhao, K. (December, 2009) Investigation of Group-Based Adoption on Diffusion of Open Source Software: An Economics of Social Networks Perspective. The Eighth Workshop on E-Business (WEB 2009). Phoenix, AZ.

Zaffar, A., Kumar, R., Zhao, K. (December, 2009) Diffusion Dynamics of Open-Source Software: An Economics of Social Networks Perspective. WITS 2009. Poenix, AZ.

Zaffar, A., Kumar, R., Zhao, K. (December, 2008) Diffusion Dynamics of Open-Source Software in the Presence of Upgrades: An Agent-Based Computational Economics (ACE) Approach, ICIS 2008, Paris, France.

Zhao, K., Khan, S., Xia, M., Shaw, M. (December, 2008) Exploring the Social Structure of Vertical Standard Consortia. The 7th Workshop on e-Business, Paris, France.

Zhao, K., Xia, M., Shaw, M. (December, 2007) Contribution of Vendors and Users in Consortium-Based E-business Standardization: An Empirical Investigation. The Sixth Workshop on e-Business. Montreal, Quebec.

Zhao, K., Xia, M., Shaw, M. (December, 2006) An Empirical Investigation of E-Business Standardization Initiatives. The Fifth Workshop on e-Business (WeB). Milwaukee, WI.

Zhao, K., Xia, M., and Shaw, M.J., "A Co-adoption Model of Interorganizational Systems: Interdependent Benefits and Bargaining Power Structure", 12th Americas Conference on Information Systems (AMCIS), Acapulco, Mexico, 2006.

Xia, M., Zhao, K., and Shaw, M.J., "Open e-Business Standard Development and Adoption: an Integrated Perspective", MIS Quarterly Special Issue Workshop, Seattle, WA, 2003

Xia, M., Zhao, K., and Shaw, M.J., "The Economics of Open e-Business Standard Development and Adoption", Workshop on Information Systems and Economics (WISE), Seattle, WA, 2003

Gebauer, J., Shaw, M.J., and Zhao, K., "The Efficacy of Mobile e-Procurement: a Pilot Study", Hawaii International Conference on System Sciences (HICSS), Big Island, HI, 2003

Zhao, K., Shaw, M.J., Xia, M., and Subramaniam, C., "Business-to-Business Collaborations and Evolution of Enterprise Networks", Workshop on Information Systems and Economics (WISE), Barcelona, Spain, 2002

Gebauer, J., Shaw, M.J., and Zhao. K., "Accessing the Value of Emerging Technology: The Case of Mobile Technologies to Enhance Business-to-Business Applications", 15th Bled Electronic Commerce Conference: e-Reality - Constructing the e-Economy Bled, Slovenia, 2002.

RESEARCH SUPPORT

N/A

EXTERNAL SERVICE

2011-2012 - Editor: Guest Editor for a Journal (International) Information Systems Frontier
2011-2012 - Reviewer: Ad Hoc Reviewer for a Journal (International) Journal of Operations Management
2011-2012 - Reviewer: Ad Hoc Reviewer for a Journal (International) Journal of MIS
2011-2012 - Reviewer: Ad Hoc Reviewer for a conference (International) WITS
2011-2012 - Reviewer: Ad Hoc Reviewer for a Journal (International) European Journal of Operational Research
2010-2011 - Reviewer: Ad Hoc Reviewer for a conference (International) Hawaii International Conference on Systems Sciences
2010-2011 - Reviewer: Ad Hoc Reviewer for a conference (International) Workshop on e-Business
2010-2011 - Reviewer: Ad Hoc Reviewer for a Journal (International) Strategic Management Journal
2010-2011 - Reviewer: Ad Hoc Reviewer for a Journal (International) Journal of MIS
2010-2011 - Reviewer: Ad Hoc Reviewer for a Journal (International) Information Systems Research
2010-2011 - Reviewer: Ad Hoc Reviewer for a Jurnal (International) European Journal of Operational Research
2010-2011 - Reviewer: Ad Hoc Reviewer for a Journal (International) Decision Support Systems
2010-2011 - Reviewer: Ad Hoc Reviewer for a Journal (International) Decision Sciences
2009-2010 - Reviewer: Ad Hoc Reviewer for a Journal (International) ACM Transactions on Management Information Systems
2009-2010 - Reviewer: Ad Hoc Reviewer for a Journal (International) Decision Support Systems

SERVICE TO THE UNIVERSITY

2011-2012 - Other Institutional Service Activities (Department) I was a member of the Course Curriculum Committee

2011-2012 - Other Institutional Service Activities (Department) I was the course coordinator for INFO 3130

2010-2011 - Other Institutional Service Activities (Department) I was the course coordinator for INFO 3130

2009-2010 - Other Institutional Service Activities (Department) I was the course coordinator for INFO 2130

SUPERVISED ACADEMIC WORK

2010-2011 - Student Thesis - Advisor (University) I was co-advisor for Yiming Zheng, a Ph.D. candicate in BISOM, Ms. Zheng passed her proposal defense in 2010-2011.

2010-2011 - Student Thesis - Advisor (University) I was co-advisor for Sarah Khan, a Ph.D. candidata in BISOM

2009-2010: Thesis advisor/supervisor (PhD), Thesis co-supervisor for Yiming Zheng

2009-2010: Thesis / Dissertation Committee - Member, Served as the dissertation committee member for Adeel Zaffar, who defended his dissertation in Spring 2010

2009-2010: Thesis / Dissertation Committee - Member, Served as the dissertation committee member for Bjarne Berg, who defended his disseration in Spring 2010.

2009-2010: Thesis / Dissertation Committee - Member, Served as the disseration committee member for Bong-Keun Jeong, who proposed his dissertation in Fall 2009.

2009-2010 - Student Thesis Committee - Member (Department) I was a committee member for Matt Campbell, a doctoral candidate in BISOM.

2008-2009 - Student Thesis Committee - Member (Thesis/Diss) I was the thesis committee member for Haya Ajjan, a Ph.D. graduate from BISOM

2008-2009: Student Assign-Independent Studies, I supervised the independent study for Yiming Zheng, a doctoral student in BISOM

2008-2009: Thesis / Dissertation Committee - Member, I served as a member of the dissertation committee for Muhammad Zaffar, a doctoral candidate in BISOM

2007-2008: Thesis / Dissertation Committee - Member, I serve as a member of the dissertation committee for Haya Ajjan, a doctoral candidate in BISOM

2007-2008: Thesis advisor/supervisor (PhD), Together with Dr. Ram Kumar, I have supervised Muhammad Zaffar for his dissertation.

2007-2008: Student Assign-Supervised Research (GRAD), I have supervised Sarah Khan, a first year doctoral student in BISOM, on a research project. The title of the research project is Explore the dynamics of the social structure of e-business standard consortia: a resource-based view.

Faculty Name: Mirsad Hadzikadic	UNCC ID: 800007580

Position Title/Rank: Professor

Department Name: Software & Information Systems

College: College of Computing & Informatics	Date Submitted/Revised: 05/11/2012

EDUCATION

Doctor of Philosophy, Southern Methodist University, 1987, Computer Science
Mas-Public Affairs, Harvard University, 2009, Political Science and Govt
Master of Science, University of Banja Luka, 1981, Computer Science
Bachelor of Science, University of Banja Luka, 1977, Computer Science

POSITIONS AND HONORS

University of North Carolina at Charlotte (1987 - Present)
• Professor, Software and Information Systems, (2011 - Present)
•   Founding Director, Complex Systems Institute (2009 – Present)
• Founding Dean, College of Information Technology (2000 – 2008)
• Acting Director, School of Information Technology (2000)
• Associate Director, School of Information Technology (1999)
• Chairman, Computer Science Department (1999-2000)
• Associate Professor (1993 – Present)
• Assistant Professor (1987 – 1993)

Deloitte & Touche Consulting Group (1998)
• Managed strategic information systems planning engagements for healthcare institutions
• Initiated/supported development of data mining initiatives

Carolinas HealthCare System (1992-1998)
• Led the Carolinas HealthCare System (CHS) Technology Team responsible for the technology component
of the Enterprise-wide Core Systems Replacement Project, including hardware and system software
selection and overall system architecture
• Established Orthopedic Informatics Research and Medical Informatics groups at the Carolinas
HealthCare System
Medical Electronics, Inc. (1989 - 1990)
• Vice President in charge of the Advanced Technology Division
Rudi Cajavec, Inc. (1977 – 1984)
• Project Leader, researcher (software development), and programmer (process-control devices)

Awards
• North Carolina Technology Association award for lifetime achievement, 2008
• Dr. Richard Neel (Blue Diamond) Award for lifetime achievement in Information Technology, 2005

COURSES TAUGHT

Graduate Courses
• Applied Databases, Spring 2010
• Complex Adaptive Systems, offered in the 2000's
• Data Mining, offered in the 1990's
• Artificial Intelligence, offered in the 1990's
• Machine Learning, offered in the 1990's

8.2.2 Undergraduate Courses
• Introduction to Web-Based Information Systems, 2009
• Symbolic Programming, offered in the 1990's
• C Programming; offered in the 1990's
• Design and Analysis of Algorithms, offered in the 1990's
• Data Base Design and Implementation, offered in the 1990's

COURSES TAUGHT - Cont.

PUBLICATIONS

• Hadzikadic, M., Carmichael, T., and Curtin, C., "Complex Adaptive Systems and Game Theory: An Unlikely Union," Complexity Journal, November 2010
• Hadzikadic, M. and Sun, M., "Wisdom of Crowds in the Prisoner's Dilemma Context," in Advances in Machine Learning, Volume II, J. Koronacki et al (Eds.), Studies in Computational Intelligence, Springer, 2010
• Carmichael, T., Hadzikadic, M., Dreau, D., and Whitmeyer, J., "Towards a General Tool for Studying Threshold Effects Across Diverse Phenomena," in Advances in Information & Intelligent Systems, Z.W. Ras, W. Ribarsky (editors), Studies in Computational Intelligence, Springer, 2009
• Dréau, D., Stanimirov, D., Carmichael T., Hadzikadic M., "An Agent-Based Model of Solid Tumor Progression," 1st International Conference on Bioinformatics and Computational Biology, 8-10 April 2009, New Orleans
• Whitmeyer, J., Carmichael, T., Eichelberger, C., Hadzikadic, M., Khouja, M., Saric, A., Sun, M. "A Computer Simulation Laboratory for Social Theories," the 2008 IEEE/WIC/ACM International Conference on Intelligence Agent Technology, Sydney, Australia, December 2008
• Khouja, M., Hadzikadic, M., & Zaffar, M., "An agent-based modeling approach for determining optimal price-rebate schemes," Simulation Modeling Practice and Theory Journal, vol. 16, No. 1, pp. 111-126, 2008
• Khouja, M., Hadzikadic, M., Rajagopalan, H., and Tsay, L., "Applications of Agent-Based Modeling to Pricing of Reproducible Information Goods," Decision Support Systems Journal, vol. 44, issue 3, pages 725-739, February 2008
• Hadzikadic, M., Qin, Z., and Sun, M. "Network Classification," Journal of Experimental & Theoretical Artificial Intelligence 17, Special Issue on Knowledge Discovery, 35-44, 2005
• Hadzikadic, M., Bohren, B.F., "Learning to Predict: INC2.5," IEEE Transactions on Knowledge and Data Engineering. Vol. 9, No. 1, 168-173, 1997
• Hadzikadic, Mirsad and Yun, David Y.Y. "Concept Formation by Incremental Conceptual Clustering, "Proceedings of the Eleventh International Joint Conference on Artificial Intelligence, Detroit, Michigan, August 20-25, 1989, pp. 831-836

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

N/A

RESEARCH SUPPORT

• "Complex Adaptive Systems: Resilience, Robustness, and Evolvability," National Science Foundation, Mirsad Hadzikadic PI, Ted Carmichael Co-PI, $15,000, 2009-2010, Recommended for funding. Symposium support.
• "Computer Simulations in the Humanities," National Endowment for the Humanities, Marvin Croy (Philosophy) PI, Mirsad Hadzikadic Co-PI, $158,225, 2010-2010, Research and workshop.
• "Complex Adaptive Systems and the Threshold Effect: Views from the Natural and Social Sciences," National Science Foundation, Mirsad Hadzikadic PI, Ted Carmichael Co-PI, $48,060, 2009-2010. Symposium support.
• "ACSES: Actionable Capability for Social and Economic Systems," $695,000 total -- UNC Charlotte's participation was $268,000, DARPA, (Technical Lead Mirsad Hadzikadic, UNC Charlotte, Administrative Lead Steve Fernandez, ORNL, Collaborators: ORAU, Georgia Tech), 2007-2008. Research.
• "Critical Infrastructure Modeling and Simulation," Department of Defense, $746,683, (William J. Tolone PI, Mirsad Hadzikadic Co-PI, five other collaborators) , 2003-2004. Research.
• Subcontract (from Microelectronics Center of North Carolina) to research and prototype an advanced infrastructure modeling system to support the simulation of effect-based operations, Defense Intelligence Agency, $750,000, 2003, Co-PI. Research.
• "Web-based Materials for an Interdisciplinary Course in Cognitive science," NSF, $200,000, 1999-2001, Senior member of the curriculum development team (together with other members of the Cognitive Science Academy, Paula Goolkasian PI). Curriculum development.
• "Community-oriented Problem Oriented Policing System," Subcontract for a NIJ/DOJ award, 1999-2000, ($1,250,000), Technical Lead. Research and development.
• Program Director for the Charlotte Mecklenburg Hospital Authority's (CMHA) portion of the NIST-funded grant "Virtual Computer-based Patient Record," total value $9,600,000. The grant was obtained by the joint effort of CMHA, First Data Corp, and Hughes Aircraft. First Data Corp. provided the overall leadership on the project, 1995-1996. Research and development.
• "Cognitive Science Research Laboratory for Undergraduates," ($36,000) Awarded by the National Science Foundation, ILI program, Co-PI (together with five other members of the Cognitive Science Academy), 1993-95. Educational infrastructure development.

EXTERNAL SERVICE

At the professional level, I chaired or will chair AAAI Fall Symposia on Complex Adaptive Systems in 2009 and 2010, a Short Course on Agent-Based Modeling in Policy at the American Political Science Association's 2010 Annual Meeting and Exhibition, a Forum on the Future of Complex Systems and Applications in 2010, and conference and congress sessions since 1991; participated on programming
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EXTERNAL SERVICE - Cont.

ommittees of national and international conferences since 1989; reviewed journal and conference papers since 1988; reviewed NSF proposals from 1989 to 1993; and gave numerous invited talks.

At the regional level, I was a member of committees and boards of non-profit organizations, the Charlotte Chamber of Commerce IT Council, Technology Executives of Charlotte, External Advisory Board for the Johnson C. Smith University's Community of Research & Experiential Education program, and the Mayor's International Committee; volunteered in elementary schools and county science fairs; reviewed CPCC educational programs; participated in the city-wide effort to bring Charlotte to the level of a world-class city, and co-founded two university spin-offs.

At the state level, I actively participated in state trade organizations (NCTA, NCHICA) activities; Vision 2030, collaborative technologies, biotechnologies, and work-force improvement task forces; Department of Commerce delegations to Europe in 2002 and 2003 to promote the biotechnology and information technology resources in the state; and reviews for the North Carolina Innovation Research Fund, Technological Development Authority, NC Department of Commerce.
At the national level, I served as a member of the IT Deans Council from 2000 until 2008, the founding president of the Bosniak American Advisory Council for Bosnia and Herzegovina, the founding president of the Bosnian-Herzegovinian American Academy of Arts and Sciences, a member of the Advisory Board of "Sevdah U.S.A."

At the international level, I chair the Advisory Board for the School of Information Technology at the University of Dubai, and was a member of the Science Advisory Board of Bosnia and Herzegovina in the 1989-1990 period.

SERVICE TO THE UNIVERSITY

At the College level, I provided the rationale for the independent College of Information Technology (as it was known then); provided the leadership for the strategic and operational development of the College of Computing and Informatics (as it is known now); secured the resources and provided both the ideas and the focus for research efforts that led to the increase in the College research funding from ~$500K in 2000 to close to $9M in 2009, and to the increase in the number of full-time faculty from 17 to 57; spearheaded the process that led to the establishment of two new departments in the College (the Department of Software and Information Systems, and the Department of Bioinformatics and Genomics); promoted the establishment of research centers and laboratories, including the visualization, security, bioinformatics, and diversity centers and institutes; established the Complex Systems Institute, eBusiness Technology Institute, and Software Solutions Lab; promoted the importance of diversity in the College and suggested the establishment of the Diversity in Information Technology Institute; and ultimately led the College as its Founding Dean.

At the University level, I participated on the search committees for the Chancellor, the Dean of the Health and Human Services College (chaired the committee), the Executive Director of the Charlotte Research Institute, the Chief Information Officer, and the Duke Power Distinguished Professor; chaired the Interdisciplinary Task Force; provided the rationale and the justification for the new program in Bioinformatics, and initiated the Five Venture program (a competition for the best business plan).

SUPERVISED ACADEMIC WORK

Ph.D. Dissertations Supervised
• Ted Carmichael, "Complex Adaptive Systems and the Threshold Effect: Towards a General Tool for Studying Dynamic Phenomena Across Diverse Domains," defended his dissertation on March 5th, 2010 (The recipient of the 2101 Graduate Dean's Distinguished Dissertation Award in Social Science)
• Min Sun, "Evaluating and Extending the Concept of Wisdom of Crowds in the Context of Problem Solving," defended her dissertation on August 5th, 2010

Ph.D. Dissertation/Master's Thesis/Baccalaureate (Honors) Committees
• John Merritt, "A Novel Positional Sensor for 3D Vascular Construction," the date of the dissertation defense has not been announced, a member of the Ph.D. committee chaired by Dr. Mostafavi.
• Pamela Thompson, a member of the Ph.D. committee chaired by Dr. Ras, the committee has just been appointed.
• Rory Lewis, "Mining Emotions in a Non-Tagged Music Database," defended his dissertation on 12/19/2007, a member of the Ph.D. committee chaired by Dr. Ras.
• John Vannoy, "Real-Time Adaptive Robot Motion-Planning," defended his dissertation on 9/19/2007, a member of the Ph.D. committee chaired by Dr. Xiao.
• Xin Zhang, "Cooperative Music Retrieval Based on Automatic Indexing of Music," defended her dissertation on 9/13/2007, a member of the Ph.D. committee chaired by Dr. Ras.
• Alireza Darvish, "Unified Signal Processing and Machine Learning for Modeling Nonlinear Complex Systems," defended his dissertation in 2007, a member of the Ph.D. committee chaired by Dr. Najarian.
• Seung-Hyun Im, "Data Safekeeping Against Knowledge Discovery," defended her dissertation on 4/28/2006, a member of the Ph.D. committee chaired by Dr. Ras.
• Li-Shiang Tsay, "Discovering Extended Action Rules (DEAR)," defended her dissertation on 5/12/2005, a

SUPERVISED ACADEMIC WORK - Cont.

 member of the Ph.D. committee chaired by Dr. Ras.
• Angelina Tzacheva, "Action Rules: Feasibility and Lowest Cost Reclassification," defended her dissertation on 11/4/2004, a member of the Ph.D. committee chaired by Dr. Ras.

Masters Students Supervised
• Directed twenty-nine theses in the areas of data mining, medical informatics, and databases.

Bachelors Students Supervised
• Directed 138 student projects and independent study courses on the subjects of medical informatics, databases, machine learning, and expert systems.

BIOGRAPHICAL SKETCH

UNC CHARLOTTE

Faculty Name: Monica Surinder Johar	UNCC ID: 800396447

Position Title/Rank: Assistant Professor

Department Name: Business Info Systems/Operations

College: College of Business (Col)	Date Submitted/Revised: 05/14/2012

EDUCATION

Doctor of Philosophy, Texas At Dallas,U of, 2006, Business & Management, Other
Master of Science, Texas At Dallas,U of, 2005, Bus Mgmt and Administration
Bach-Engineering in Technology, University of Pune, 2000, Electrical and Electronics Egr

POSITIONS AND HONORS

2006 - Now: Assistant Professor, University of North Carolina at Charlotte, Charlotte, North Carolina

COURSES TAUGHT

INFO3130 - Management Information Systems
INFO8201 - Data and Knowledge Management in Business
INFO8800 - Information Systems Research Seminar
MBAD5141 - Business Statistics
MBAD6201 - Data and Knowledge Management in Business
INFO3236 - Business Analytics

PUBLICATIONS

Dong, S., Johar, M., Kumar, R. A Model to Facilitate Systematic Design of Knowledge Intensive
Service Delivery Networks. Forthcoming at Journal of Management Information Systems.
Johar, M., Kumar, N., Mookerjee, V. Content Provision Strategies in the Presence of Peer-To-Peer
Peer Networks. Forthcoming at Information Systems Research.
Johar, M., Mookerjee, V., Menon, S. (December, 2009) Analyzing Sharing Incentives in Peer-to-
Peer Networks Under Various Congestion Measures. Information Systems Research. 22 (2), 325-345.
Dawande, M., Johar, M., Kumar, S., Mookerjee, V. (March, 2008) A Comparison of Pair versus Solo
Programming under Different Objectives: An Analytical Approach. Information Systems Research.
19 (1), 71-92.

Coneference Proceedings
Dong, S., Johar, M., Kumar, R. (December, 2010) Understanding Key Issues in Creating and
Nurturing Organizational Networks in the Context of Knowledge Intensive Service Delivery. Workshop on
E-Business (WeB). Saint Louis, MS.
Ataha, P., Johar, M., Sarkar, S. (June, 2010) Offer Sets, User Profiles, and Firm Payoffs. Best
Paper Nominee, China Summer Workshop on Information Management (CSWIM). Wuhan, China, .
Atahan, P., Johar, M., Sarkar, S. (December, 2009) Optimizing Offer Sets Based On User Profiles.
Workshop on Information Technologies and Systems, (WITS'09). Phoenix, AZ.
Johar, M., Atahan, P., Sarkar, S. (December, 2008) Strategic Learning in Recommendation
Systems. Best Paper Nominee Seventh Workshop on e-Business (WeB). Paris, France.
Dong, S., Johar, M., Kumar, R. (December, 2007) A Model to Facilitate Systematic Design of
Knowledge-Intensive Service Delivery Networks. Workshop on Information Technologies and
Sytems, (WITS'07). Montreal, CANADA.
Johar, M., Sarkar, S. (December, 2006) Optimizing the Composition of the Consideration Set for
Web-based Personalization. Workshop on Information Technologies and Systems (WITS).
Milwaukee, WI.
Johar, M., Mookerjee, V., Sethi, S. (November, 2005) Optimal Local and Global Software Reuse
Policies: A Control Theoretic Approach. Conference on Information Systems and Technology
(CIST). San Francisco, CA.
Johar, M., Mookerjee, V., Menon, S. (December, 2004) An Economic and Operational Analysis of
sharing in P2P Networks. Workshop on Information Technologies and Systems (WITS).
Washington, DC.
D

PUBLICATIONS - Cont.

awande, M., Johar, M., Kumar, S., Mookerjee, V. (December, 2003) Optimizing Module-Developer Assignment in Software Projects: Pair versus Solo Programming, Best Paper Nominee. Workshop on Information Technologies and Systems (W Peer Reviewed Paper Presentations ITS). Seattle, WA.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

Johar, M., Mookerjee, V., Sethi, S. (May, 2009) Optimal software debugging policies for different development approaches: A Control Theoretic Approach. Institute for Operations Research and the Mangement Sciences, (INFORMS' 11).

Johar, M., Mookerjee, V., Sethi, S. (May, 2009) Optimal Local and Global Software Reuse Policies: A Control Theoretic Approach. Production and Operations Management. Orlando, Florida.

Dong, S., Johar, M., Kumar, R. (October, 2008) A Model to Facilitate Systematic Design of Knowledge Intensive Service Delivery Networks. Institute for Operations Research and the Mangement Sciences, (INFORMS' 08). Washington DC. Washington, District of Columbia.

Johar, M., Kumar, N., Mookerjee, V. (November, 2007) Analyzing the Impact of Peer-to-Peer Networks on the Market for Content Provision and Distribution. Institute for Operations Research and the Mangement Sciences, (INFORMS'07). Seattle, Washington.

Johar, M., Sarkar, S. (November, 2007) Optimizing the Compositin of the Consideration Set to Maximize Payoffs from Web-based Personalization. Institute for Operations Research and the Mangement Sciences, (INFORMS'07). Seattle, Washington.

Johar, M. (May, 2006) Optimizing the Composition o the Consideration Set to Maximize Payoffs from Web-based Personalization. International Conference on Management Science. Dallas, Texas.

Johar, M. (June, 2005) Optimal Local and Global Software Reuse Policies: A Control Theoretic Approach. Doctoral Internationalization Consortium in Information Systems. Seattle, Washington.

Johar, M. (December, 2005) Optimizing Module-Developer Assignment in Software Projects: Pair versus Solo Programming. Doctoral Consortium, International Conference on Information Systems (ICIS). LasVegas, Nevada.

Johar, M. (April, 2005) An Economic and Operational Analysis of Sharing in P2P Networks. Big XII Information Systems Research Symposium. Norman, Oklahoma.

RESEARCH SUPPORT

Dean's Scholar Research Grant 2011
Belk College Faculty Research Grant, Summer 2010

EXTERNAL SERVICE

2011-2012 - Reviewer: Ad Hoc Reviewer for a Journal (International) Management Science, Information Systems Research, Decision Support Systems, and Information Technology and Management.
2010-2011 - Reviewer: Ad Hoc Reviewer for a Journal (International) Management Science, Information Systems Research, Decision Support Systems, and Information Technology and Management.
2010-2011 - (International) Information Technology and Management (ITEM)
2009-2010 - Editor: Associate Editor (International) Information Technology and Management (ITEM)
2009-2010 - (International) Management Science, Information Systems Research, Information Technology and Management.
2009-2010 - (International) The Institute for Operations Research and Management Sciences
2009-2010 - (International) Association of Information Systems

Program Committee Member
Program Committee Member.Conference on Information Systems and Technology
(CIST).
Session Chair
Conference on Information Systems and Technolog(CIST).
Institute for Operations Research and the Management Sciences (INFORMS)

SERVICE TO THE UNIVERSITY

2010-2011 - Faculty Council Reprsentative
2010-2011 - (Department) Research Seminar Series for BISOM Department
2010-2011 - Committee Member (Department) Graduate Affairs Committee
2010-2011 - Committee Member (University) BISOM Representative on Faculty Council
2009-2010 - Committee Member (College) Entrepreneurship Task Force, As a member of the task force, I was involved in developing the Entrepreneurship Certificate Program.
2009-2010 - (Thesis/Diss) Doctoral Committee Co-chair, Continuing my responsibilites as a co-chair on Su Dong's doctoral committee. He is a PhD student in IT, BISOM track
2008-2009 - (Thesis/Diss) Doctoral Committee Co-Chair, I'm a co-chair on Su Dong's doctoral committee. He is a PhD student in IT, BISOM track
2008-2009 - Presentation (Department) Major Prntation, A presentation to introduce the under graduate students to the MIS major.
2008-2009 - (College) Education Program Task-force, As a member of the strategic planning team, I'm involved idveloping a Strategic Plan for the Belk College of Business. Particularly, I'm a member of the Educational programs task force, within which I'm a part of the Graduate Programs, and Undergraduate p

SERVICE TO THE UNIVERSITY - Cont.

rograms work groups.
2008-2009 - (Department) Course Evaluation, Required to provide the Office of Distance Education, in writing, with my observations and conclusions concerning the effectiveness of the online course in comparison to a face-to-face delivery of the course as measured by course evaluations, grades, and drop/withdrawal/completion rates.

SUPERVISED ACADEMIC WORK

Dissseration Co-advisor : Su Dong (PhD, May 2011)

Instructions: *A biographical sketch is required of all faculty and staff that teach credit courses at the University of North Carolina at Charlotte. SACS (the University accrediting agency) requires that we provide evidence that the teaching faculty and staff have the appropriate credentials and other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes. Please provide the following information in the format described. If a section does not apply to you, note by using N/A.*

Faculty Name: Ram L Kumar	UNCC ID: 800203015

Position Title/Rank: Professor

Department Name: Business Info Systems/Operations

College: College of Business (Col)	Date Submitted/Revised: 05/15/2012

EDUCATION

Doctor of Philosophy, University of MD-College Park, 1993, Business and Management
Master of Science, University of MD-College Park, 1991, Business and Management
Master-Business Administration, Indian Institute of Technology, 1984, Business and Management
Bach-Technology, Indian Institute of Technology, 1981, Mechanical Engineering

POSITIONS AND HONORS

2004 - Now: Professor, University of North Carolina at Charlotte, Charlotte, North Carolina
1999 - 2004: Associate Professor, University of North Carolina at Charlotte, Charlotte, North Carolina
1993 - 1999: Assistant Professor, University of North Carolina at Charlotte, Charlotte, North Carolina
1989 - 1993: Graduate Assistant, University of Maryland, College Park, Maryland
1988 - 1989: Applications Specialist, University of Maryland, Database application development and
supporting faculty members on issues related to software evaluation and selection, College Park, Maryland
1987-1988- Marketing Support Executive, International Computers (Fujitsu).
1984-1986- Planning and Support Executive, TI of India.
1981-1982- Engineer, Eicher Tractors India Ltd.

HONORS
Frank T Paine Award for Academic Merit, University of Maryland, College of Business and Management, 1993.

COURSES TAUGHT

INFO3234 - Business Systems Development
INFO8200 - Business Information Systems: Analysis, Design, and
Management
INFO8202 - Business Information Systems: Analysis Design and Management
INFO8203 - Information
Systems Economics, Strategy and Policy
INFO8900 - Directed Individual Study in Business Information
Systems
MBAD6124 - Business Information Systems Development
MBAD6202 - Business Information Systems:
Analysis, Design, and Management
MBAD6203 - Information Systems Economics, Strategy and Policy
MBAD6207 -
Business Project Management

PUBLICATIONS

Kumar, R., Park, S., Subramaniam, C. (Fall, 2008) Understanding the Value of Security Countermeasure
Portfolios in IS Security. Journal of Management Information Systems. 25 (2), 241-280.
Peer Reviewed
Journal Articles Kumar, R., Ajjan, H., Niu, Y. Information Technology Portfolio Management: Literature
Review, Framework and Research Issues. Information Resources Management Journal. 21 (3), 64-87.
Peer
Reviewed Journal Articles Dardan, S., Kumar, R., Stylianou, A. (October, 2007) The Diffusion of
Customer-Related IT among Large and Mid-Sized Companies. Information Resources Management Journal. 20 (4),
12-24.
Peer Reviewed Journal Articles Darden, S., Stylianou, A., Kumar, R. (Winter, 2006) The Impact of
Customer-Related IT Investments on Customer Satisfaction and Shareholder Returns. Journal of Computer
Information Systems. 47 (2), 100-111.
P

PUBLICATIONS - Cont.

eer Reviewed Journal Articles Khouja, M., Kumar, R. (February,
2005) Acquisition of Telecommunications Bandwidth Under Economies of Scale in Size and Duration of
Contracts. Decision Sciences (Journal of). 35 (1), 135-158.
Peer Reviewed Journal Articles Stylianou, A.,
Kumar, R., Robbins, S. (Fall, 2005) Pricing on the Internet and In Conventional Retail Channels: A Study
of Over-The-Counter Pharmaceutical Products. International Journal of Electronic Commerce. 10 (1),
135-148.
Peer Reviewed Journal Articles Smith, M., Kumar, R. (November, 2004) A Theory of Application
Service Provider (ASP) Use from a Client Perspective. Information & Management. 41 977-1002.
Peer
Reviewed Journal Articles Kumar, R., Smith, M., Banerjee, S. (January, 2004) User Interface Features
Influencing Overall Ease of Use and Personalization. Information & Management. 41 289-302.
Peer Reviewed
Journal Articles Kumar, R. (Fall, 2004) A Framework for Assessing the Business Value of Information
Technology Infrastructures. Journal Of Management Information Systems. 21 (2), 11-32.
Peer Reviewed
Journal Articles Kumar, R. (September, 2002) Managing Risks in IT Projects: An Options Perspective.
Information & Management. 40 (1), 63-74.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

Khan, S., Kumar, R. (November, 2010) Understanding Time-Inconsistent Preferences in Real Options Based
Investment Justification. INFORMS Annual Conference.   Austin, Tx.
Zaffar, M., Kumar, R., zhao, K.
(December, 2009) Group-based adoption of open source software: an economics of social networks
perspective. Workshop on e-business.   Phoenix, Arizona.
Zaffar, M., Kumar, R., Zhao, K. (December, 2009)
Investigationof group-based adoption ofopen source software:economics of social networks perspective.
Workshop on e-business.   Phoenix, Arizona.
zaffar, M., Kumar, R. (December, 2007) An Agent-Based
Simulation Model for Understanding the Diffusion Dynamics of Open-Source Software in the Presence of
Upgrades.. Diffusion Interest Group on Information Technology (DIGIT).   Montreal, Canada.
Pardasani, B.,
Kumar, R., Smith, M. An Empirical Study of Important User-Interface Characteristics for On-Line Shoppint.
Workshop on Information Technologies and Systems.   Brisbane, Australia.
Kumar, R., Bannerjee, S.
Managing Electronic Business Document Interchange. Decision Sciences Institute Annual Meeting.   New
Orleans, Louisiana.
Temizkhan, O., Kumar, R., Park, S., Subramaniam, C. Software vendors patch release
behaviors: impact of vulnerability characteristics. Workshop on e-business.   Phoenix, Arizona.
Ajjan, H.,
Kumar, R. Improving Project Management Through a Shared Understanding of Project Risk and Return.
Americas Conference on Information Systems.

RESEARCH SUPPORT

• IT Portfolio Management ($58,000). Duke Energy. January 1987-June 1988

EXTERNAL SERVICE

2010-2011 - Reviewer: Conference Paper (International) International Conference on Information
Systems
2010-2011 - Reviewer: Article / Manuscript (International) Journal of Global IT
Management
2010-2011 - Editorial Board Member (International) Journal of Global IT Management
2010-2011 -
Editor: Associate Editor (International) Journal of Database Management
2009-2010 - Editor: Associate
Editor (Local) Journal of database management
2009-2010 - (Local) Drexel University, Reviewed Dr. Qizhi
Dai's credentials for promotion and tenure
2009-2010 - Reviewer: Ad Hoc Reviewer for a Journal (Local)
Journal of MIS, international Journal of electronic commerce
2007-2008 - Editor: Associate Editor Journal
of Database Management
2007-2008 - Speech / Presentation at a Community Meeting (Regional) Project
Management Institute, Invited Speaker for the Professional Development Symposium- Topic- Managing Troubled
Projects- I received outstanding evaluations and have been invited to speak again.
2007-2008 - Reviewer:
Conference Paper Americas Conference on Information Systems

EXTERNAL SERVICE - Cont.

SERVICE TO THE UNIVERSITY

2010-2011 - Committee Chair (College) Search committee for Economics Department Chair
2010-2011 -
Mentoring Activities (Department) Peer Evaluation fo Dr. Monica Johar and Dr. Kexin Zhao
2010-2011 - Other
Institutional Service Activities (Department) BISOM Phd, Provided Information Regarding the Program to
prospective students
2010-2011 - Committee Member (University) -University IT Portfolio Advisory
Board
2010-2011 - Committee Member (College) MBA   Task Force, Volunteered to serve on the committee due
to my interest in the program and the fact that the BISOM department did not have a representative to this
committee. Participated in several meetings regarding curriculum redesign and reviewing other
programs
2010-2011 - Writing Student Recommendations (Department) Wrote letters to help students get
jobs
2009-2010 - Faculty Sponsor (University) Worked with Dr. Subaramaniam and Dr. Daryl Kerr to estabish
a chapter of the Association for Informaton Systems, student chapter at UNC-Charlotte.
2009-2010 -
Committee Member (Department) Business administration, doctoral program committee, Participate in the
evaluation of doctoral programs and proposals
2009-2010 - Committee Chair (Department) Department RPT
committee-Co-Chair, Evaluated Reappointment cases, and
Organized Peer Evaluation of Teaching at the
request of the Interim Department Chair
2009-2010 - Committee Member (University) University IT Portfolio
Advisory Board, I am serving on this committee at the request of the Associate Provost (IT) along with
senior University officials such as Dr. Johnna Watson (Graduate School), Dr. Jay Raja (Academic Affairs)
and other. This committee is charged with coming up with ways to better manage IT at UNC-Charlotte

SUPERVISED ACADEMIC WORK

2010-2011: Thesis / Dissertation Committee - Member, I am a committee member on Xioaran Wu' s dissertation
committee
2010-2011: Thesis / Dissertation Committee - Chair, I am working with Orcun Temizhan and will possibly
Co-Chair his dissertation
2010-2011: Thesis / Dissertation Committee - Chair, Dissertation Co-Chair (Sarah Khan)- She is expeted to
defend her proposal in early May
2010-2011: Thesis / Dissertation Committee - Chair, Dissertation Co-Chair (Su Dong). He has defended his
dissertation in May 2011.
2010-2011: Thesis / Dissertation Committee - Member, I am a committee member (Graduate School Rep.) on
Shannon Alpert's dissertation committee (Education). Her topic is Project Management.
2009-2010: Directed Study supervisor, Fall 2009, Sarah Khan - ITSC8990
2009-2010: Thesis / Dissertation Committee - Member, Bong-Keon Jeong
2009-2010: Thesis / Dissertation Committee - Chair, Su Dong successfully defended his proposal in
November, 2009 to
2009-2010: Thesis / issertatio Committee - Chair, Muhammad Zaffar successfully defended his dissertation
in March, 2010
2008-2009: Directed Study supervisor, Supervised Directed Doctoral Student Study (Sarah Khan), Spring
2009
2008-2009: Thesis / Dissertation Committee - Member, Bong-Keun Jeong
2008-2009: Thesis / Dissertation Committee - Chair, Su Dong,
2008-2009: Thesis / Dissertation Committee - Chair, Muhamad Zaffar, Dissertation Defense planned, Spring
2009
2008-2009: Thesis / Dissertation Committee - Chair, Haya Ajjan, Defended her dissertation, March 2009
2007-2008: Thesis / Dissertation Committee - Member, Dissertation committee member for Matt Campbell and
Beth Vergara
2007-2008: Thesis / Dissertation Committee - Chair, I am currently working with Haya Ajjan, Adeel Zaffar
and Dong Su. Ms. Ajjan's proposal defense is planned for the week beginning April 21.
2006-2007: Thesis / Dissertation Committee - Chair, Haya Ajjan
2006-2007: Other Teaching Activities, Worked with 3 doctoral students (Haya Ajjan, Su Dong and Adeel
Zaffar) in preparing student papers for their qualifying exams
2006-2007: Thesis / Dissertation Committee - Member, Tanusree Pai
2006-2007: Directed Study supervisor, Su Dong
2006-2007: Thesis / Dissertation Committee - Member, Frances Vergara
2006-2007: Directed Study supervisor, Haya Ajjan
2005-2006: Directed Study supervisor, Doctoral Student (Haya Alchaar)
2005-2006: Thesis / Dissertation Committee - Chair, Haya Alchaar
2005-2006: Thesis / Dissertation Committee - Member, Tanusree Pai
2005-2006: Thesis / Dissertation Committee - Member, Beth Vergara
2005-2006: Thesis / Dissertation Committee - Member, Tanusree Pai
2005-2006: Thesis / Dissertation Committee - Chair, Haya Alchaar

BIOGRAPHICAL SKETCH

Faculty Name: Rob Roy McGregor	UNCC ID: 800014092

Position Title/Rank: Professor

Department Name: Economics

College: College of Business (Col)	Date Submitted/Revised: 05/11/2012

EDUCATION

Doctor of Philosophy, University of SC-Columbia, 1991, Business Economics
Master of Arts, Clemson University, 1984, Business Economics
Bachelor of Arts, Clemson University, 1982, Business Economics

POSITIONS AND HONORS

2006 - Now: Professor of Economics, University of North Carolina at Charlotte, Charlotte, North Carolina
1997 - 2006: Associate Professor of Economics, University of North Carolina at Charlotte, Charlotte, North Carolina
2000 - 2001: Visiting Associate Professor of Economics, Clemson University, Clemson, South Carolina
1991 - 1997: Assistant Professor of Economics, University of North Carolina at Charlotte, Charlotte, North Carolina
1984 - 1987: Lecturer in Economics, University of North Carolina at Charlotte, Charlotte, North Carolina

COURSES TAUGHT

BPHD8120 - Econometrics I
ECON3115 - Money and Banking
ECON3123 - Intermediate Macroeconomics
ECON4117 - Business and Economic Forecasting
ECON6112 - Graduate Econometrics
ECON6201 - Advanced Macroeconomic Theory
ECON6218 - Time Series Econometrics
ECON6235 - Monetary and Financial Theory
ECON6901 - Co-taught Liner/McGregor
ECON6902 - Co-taught Liner/McGregor

PUBLICATIONS

Wagner, N., Khouja, M., Michalewica, Z., McGregor, R. (March, 2008) Forecasting Economic Time Series with the DyFor Genetic Program Model. Applied Financial Economics. 18 (5), 357-378.
Chappell, H., McGregor, R.,
Vermilyea, T. (June, 2008) Regional Economic Conditions and Monetary Policy. European Journal of Political Economy. 24 (2), 283-293.
Connaughton, J., Madsen, R., McGregor, R. (July, 2008) Estimating the Economic
Impact of Local Cultural Organizations: The Charlotte Arts and Science Council Example. Journal of Business and Economics Research. 6 (7), 15-25.
Chappell, H., McGregor, R., Vermilyea, T. (June, 2007) The
Role of the Bias in Crafting Consensus: FOMC Decision-Making in the Greenspan Era. International Journal of Central Banking. 3 (2), 39-60.
Chappell, H., McGregor, R., Vermilyea, T. (July, 2007) The Persuasive
Power of a Committee Chairman: Arthur Burns and the FOMC. Public Choice. 132 (1-2), 103-112.
McGregor, R.
(December, 2007) Federal Reserve Transparency: The More Things Change, the More They Stay the Same?. Public Choice. 133 (3-4), 269-273.
Chappell, H., McGregor, R. (November, 2004) Did Time Inconsistency
Contribute to the Great Inflation? Evidence from the FOMC Transcripts. Economics and Politics. 16 (3), 233-251.
Chappell, H., McGregor, R., Vermilyea, T. (June, 2004) Majority Rule, Consensus Building, and the
Power of the Chairman: Arthur Burns and the FOMC. Journal of Money, Credit, and Banking. 36 (3), 407-422.
M

PUBLICATIONS - Cont.

cGregor, R., Liner, G. (December, 2003) Municipal Economic Growth, 1960-1990. Quarterly Journal
of Business and Economics. 41 (1 & 2), 105-116.
Liner, G., McGregor, R. Optimal Annexation. Applied
Economics. 34 (12), 1477-1485.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

McGregor, R. (November, 2009) Does the Fed Chairman Campaign for Reappointment?. Southern Economic
Association.   San Antonio, Texas.
Chappell, H., McGregor, R., Vermilyea, T. (November, 2009) An
Econometric Model of Monetary Policy Decision-Making with Applications to the United Kingdom and Sweden.
Southern Economic Association.   San Antonio, Texas.
Connaughton, J., Madsen, R., McGregor, R. (March,
2007) The Economic Impact of the Affiliated Members of the Charlotte Arts & Science Council. Southern
Regional Science Association.   Charleston, SC.
McGregor, R., Liner, G. (October, 1999) Municipalities,
Economic Growth, and Convergence. Clemson University.

RESEARCH SUPPORT

N/A

EXTERNAL SERVICE

2010-2011 - Reviewer: Article / Manuscript (National) Southern Economic Journal, Served as a reviewer for
one manuscript
2010-2011 - Board of Directors: Moderate Involvement (Local) Charlotte Economics Club
(local chapter of National Association for Business Economics), Member of the CEC Board and the Board's
program committee
2009-2010 - Reviewer: Article / Manuscript (National) Contemporary Economic Policy,
Served as a reviewer for one manuscript
2009-2010 - Reviewer: Article / Manuscript (National) Journal of
Macroeconomics, Served as a reviewer for one manuscript
2009-2010 - Reviewer: Article / Manuscript
(National) Public Choice, Served as a reviewer for one manuscript
2009-2010 - Board of Directors: Moderate
Involvement (Local) Charlotte Economics Club (local chapter of National Association for Business
Economics), Member of the CEC Board and the Board's program committee
2007-2008 - Reviewer: Article /
Manuscript (International) International Journal of Central Banking, Served as a reviewer for one
manuscript
2007-2008 - Other Community Service Activities (Local) Charlotte Federal Reserve Office, Served
as judge for the 2008 Fed Challenge competition
2007-2008 - Reviewer: Article / Manuscript (National)
Journal of Economic Education, Served as a reviewer for one manuscript
2007-2008 - Reviewer: Article /
Manuscript (National) Journal of Macroeconomics, Served as a reviewer for one manuscript

SERVICE TO THE UNIVERSITY

2010-2011 - Committee Member (Department) Department Review Committee
2010-2011 - Committee Member
(Department) Search Committee for Clinical Professor and Lecturer positions
2010-2011 - Committee Member
(Department) Graduate Advisory Committee, Ex officio member as coordinator of the MS in Economics
program
2010-2011 - Committee Chair (College) Search and Screen Committee for the Finance Department Chair
Position
2010-2011 - Committee Chair (University) Graduate Council
2010-2011 - Program Director
(Department) MS in Economics Program
2009-2010 - Committee Chair (University) Graduate Council
2009-2010
- Committee Member (Department) Graduate Advisory Committee, Ex officio member as coordinator of the MS in
Economics program
2009-2010 - Program Director (Department) MS in Economics Program
2008-2009 - Program
Director (Department) MS in Economics Program

SUPERVISED ACADEMIC WORK

2010-2011: Thesis / Dissertation Committee - Member, Anne Hannusch, MS in Economics, completed Summer
2010.
2010-2011: Thesis / Dissertation Committee - Member, Morten Nielsen, MS in Economics, completed

Summer 2010.
2010-2011: Thesis / Dissertation Committee - Chair, Pinar Calis, MS in Economics, expected
completion Spring 2011.

BIOGRAPHICAL SKETCH

Faculty Name: Richard M Souvenir	UNCC ID: 800405418

Position Title/Rank: Assistant Professor

Department Name: Computer Science

College: College of Computing & Informatics	Date Submitted/Revised: 05/14/2012

EDUCATION

Doctor of Science, Washington University, 2006, Computer Science
Master of Science, Washington University, 2003, Computer Science
Bachelor of Science, Washington University, 2001, Biology, General
Bachelor of Science, Washington University, 2001, Computer Science

POSITIONS AND HONORS

Assistant Professor
University of North Carolina at Charlotte
8/06 – present

Graduate Research Assistant
Washington University in St. Louis
6/01 – 8/06

COURSES TAUGHT

ITCS 6010/8010 Learning for Computer Vision
ITCS 6156/8156 Machine Learning
ITCS 4152/5152 Computer Vision
ITCS 2215 Design & Analysis of Algorithms
ITCS 6114/8114 Algorithms & Data Structures
ITCS 6010/8010 Computational Photography

PUBLICATIONS

Kyle Parrigan and Richard Souvenir. Aggregating low-level features for human action recognition. In International Symposium on Visual Computing (ISVC), volume 1, pages 143–152, November 2010.

Scott Spurlock, Remco Chang, Xiaoyu Wang, George Arceneaux IV, Daniel F. Keefe, and Richard Souvenir. Combining automated and interactive visual analysis of biomechanical motion data. In International Symposium on Visual Computing (ISVC), volume 2, pages 564–573, November 2010.

Nathan Jacobs, Richard Souvenir, and Robert Pless. Passive vision: The global webcam imaging network. In Applied Imagery Pattern Recognition Workshop (AIPR), October 2009. Best Student Paper Award.

Richard Souvenir and Kyle Parrigan. Viewpoint manifolds for action recognition. EURASIP Journal on Image and Video Processing, 2009:13 pages, September 2009.

Robert Pless and Richard Souvenir. A survey of manifold learning for images. IPSJ Transactions on Computer Vision and Applications, 1:83–94, March 2009.

Stephen Schmugge, Steve Keller, Nhat Nguyen, Richard Souvenir, Toan Huynh, Mark G. Clemens, and Min C. Shin. Segmentation of vessels cluttered with cells using a physics based model. In Medical Image Computing and Computer-Assisted Intervention (MICCAI), volume 1, pages 127–134, New York, NY, 2008.

Manfred Georg, Richard Souvenir, Andrew Hope, and Robert Pless. Manifold learning for 4D CT reconstruction of the lung. In IEEE Computer Society Workshop on Mathematical Methods in Biomedical Image Analysis (MMBIA), 2008.

Richard Souvenir and Justin Babbs. Learning the viewpoint manifold for action recognition. In Proc. I

PUBLICATIONS - Cont.

EEE Conference on Computer Vision and Pattern Recognition (CVPR), 2008.

Manfred Georg, Richard Souvenir, Andrew Hope, and Robert Pless. Simultaneous data volume reconstruction and pose estimation from slice samples. In Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2008.

Richard Souvenir and Robert Pless. Image distance functions for manifold learning. Image and Vision Computing, 25(3):365 – 373, March 2007.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

N/A

RESEARCH SUPPORT

Title of Grant: Towards Real-time, High throughput Insect Behavior Analysis
PIs: Min Shin, Richard Souvenir
Funding Agency: NSF
Amount Requested: $223,825
Dates of Funding Period: 12/1/10 - 11/30/12

Title of Grant: Automated Analysis of Echocardiography in a Critical Care Setting
PIs: Richard Souvenir, Toan Huynh
Funding Agency: Charlotte Research Institute
Amount Requested: $28,861
Dates of Funding Period: 8/15/10 - 7/30/12

EXTERNAL SERVICE

Chair, AAAI Fall 2010 Symposium on Manifold Learning and its Applications

Program Committee, IEEE Workshop on Motion and Video Computing (WMVC 2009)

Chair, AAAI Fall 2009 Symposium on Manifold Learning and its Applications

Program Committee, International Symposium on Visual Computing (ISVC 2009)

Area Chair, Manifolds in Medical Imaging: Metrics, Learning and Beyond

Program Committee, IEEE Workshop on Applications of Computer Vision (WACV 2008)

SERVICE TO THE UNIVERSITY

CS Ad Hoc Graduate Recruiting Committee, 2006-2011

Faculty IT Services Committee, 2009-2010

CCI Dean Search Committee, 2009

Honors College Review Committee, 2011

SUPERVISED ACADEMIC WORK

Current Ph.D. Students
Thomas Fasciano (co-advised with Min Shin)
Ayman Hajja
Scott Spurlock
Hui Wu

Current M.S. Students
Kyle Parrigan

Graduated Students
Jerrod Kraftchick (co-advised with Min Shin), May 2008, "Motion Behavior Analysis and Visualization of NKT Cells"
Justin Babbs, May 2008
Christopher Sinclair, May 2010

Instructions: *A biographical sketch is required of all faculty and staff that teach credit courses at the University of North Carolina at Charlotte. SACS (the University accrediting agency) requires that we provide evidence that the teaching faculty and staff have the appropriate credentials and other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes. Please provide the following information in the format described. If a section does not apply to you, note by using N/A.*

Faculty Name: Srinivas Akella	UNCC ID: 800565089

Position Title/Rank: Associate Professor

Department Name: Computer Science

College: College of Computing & Informatics	Date Submitted/Revised: 05/15/2012

EDUCATION

Doctor of Philosophy, Carnegie Mellon University, 1996, Robotics
Master of Science, Carnegie Mellon University, 1993, Robotics
Bach-Technology, Indian Institute of Technology, 1989, Mechanical Engineering

POSITIONS AND HONORS

2009-present UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE, Charlotte, NC.
Associate Professor, Department of Computer Science.

2000-2008 RENSSELAER POLYTECHNIC INSTITUTE, Troy, NY.
Assistant Professor, Department of Computer Science.
Senior Research Scientist, Department of Computer Science, and Center for Automation Technologies & Systems.

1996-1999 UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN, Urbana, IL.
Beckman Fellow, Beckman Institute for Advanced Science and Technology.

1989-1996 CARNEGIE MELLON UNIVERSITY, Pittsburgh, PA.
Research Assistant, The Robotics Institute.

Summer 1992 ELECTROTECHNICAL LABORATORY, MITI, Tsukuba, Japan.
Summer Intern, Intelligent Systems Division.

COURSES TAUGHT

Design and Analysis of Algorithms (ITCS-2215): Spring 2011, UNCC

Algorithms and Data Structures (ITCS 6114/8114): Fall 2010, Fall 2011, UNCC

Cloud Computing for Data Analysis: Spring 2009, Spring 2010, UNCC

Robot Motion Planning: Fall 2001, Fall 2003, Fall 2005, RPI; Spring 2010, UNCC

3D Computer Graphics: Fall 2000, Fall 2002, Fall 2004, Fall 2006, RPI

Data Structures & Algorithms: Spring 2001, Spring 2002, Spring 2003, Spring 2004, Spring 2006, RPI

Geometric Algorithms: Spring 2000, RPI

PUBLICATIONS

1. L. Luo and S. Akella, ``Optimal Scheduling for Biochemical Analyses on Digital Microfluidic Systems,'' IEEE Transactions on Automation Science and Engineering, Vol. 8, No. 1, pages 216-227, January 2011.

2. N. Chakraborty, S. Akella, and J. T. Wen, "Coverage of a Planar Point Set with Multiple Robots subject to Geometric Constraints," IEEE Transactions on Automation Science and Engineering, Vol. 7, No. 1, pp. 111-122, January 2010.

3. J. G. Martin, M. Gupta, Y. Xu, S. Akella, J. Liu, J. S. Dordick, R. J. Linhardt,, ``Towards an Artificial Golgi: Redesigning the Biological Activities of Heparan Sulfate on a Digital Microfluidic C

hip," Journal of the American Chemical Society, Vol. 131, No. 31, 11041-11048, July 2009.

4. N. Chakraborty, J. Peng, S. Akella, and J. Mitchell, ``Proximity Queries between Convex Objects: An Interior Point Approach for Implicit Surfaces," IEEE Transactions on Robotics, Vol. 24, No. 1, pp. 211-220, February 2008.

5. E. J. Griffith and S. Akella, "Coorinating Multiple Droplets in Planar Array Digital Microfluidic Systems," International Journal of Robotics Research, Vol. 24, No. 11, pp. 933--949, November 2005.

6. J. Peng and S. Akella, "Coordinating Multiple Robots with Kinodynamic Constraints along Specified Paths," International Journal of Robotics Research, Vol. 24, No. 4, pp. 295-310, April 2005.

7. S. Blind, C. C. McCullough, S. Akella, and J. Ponce, "Manipulating Parts with an Array of Pins: A Method and a Machine," International Journal of Robotics Research, Vol. 20, No. 10, pp. 808-818, October 2001.

8. S. Akella and M. T. Mason, "Orienting Toleranced Polygonal Parts," International Journal of Robotics Research, Vol. 19, No. 12, pp. 1147-1170, December 2000.

9. L. Lu and S. Akella, "Folding Cartons with Fixtures: A Motion Planning Approach," IEEE Transactions on Robotics and Automation, Vol. 16, No. 4, pp. 346-356, August 2000.

10. S. Akella, W. H. Huang, K. M. Lynch, and M. T. Mason, "Parts feeding on a conveyor with a one joint robot," Algorithmica (Special Issue on Robotics), Vol. 26, No. 3/4, pp. 313-344, March/April 2000.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

February 2011 Robotics and Energetic Systems Group, Oak Ridge National Lab, TN.
 Proximity Queries, Kinodynamic Motion Planning, & Coordinating Multiple Robots.

January 2011 Dept. of Computer Science and Information Science, BITS Hyderabad, India.
 Coordinating Multiple Moving Objects: From Robots to Microdroplets.

January 2011 Dept. of Computer Science and Engineering, IIT Hyderabad, India.
 Coordinating Multiple Moving Objects: From Robots to Microdroplets.

January 2011 Dept. of Computer Science and Engineering, IIIT Hyderabad, India.
 Coordinating Multiple Moving Objects: From Robots to Microdroplets.

March 2010 Dept. of Ind. Engg. and OR, Univ. of California, Berkeley, CA.
 Coordinating Multiple Moving Objects: From Robots to Microdroplets.

April 2009 Dept. of Computer Science, Univ. of North Carolina, Chapel Hill, NC.
 Coordinating Multiple Moving Objects: From Robots to Microdroplets.

March 2009 RSS 2009 Area Chairs Workshop, Univ. of Washington, Seattle, WA.
 Coordinaing Multiple Moving Objects: From Robots to Microdroplets.

RESEARCH SUPPORT

Z. Su (PI) and S. Akella (Co-PI), "CiC (SEA): Large Scale Prediction of Transcription Factor BindingSites for Gene Regulation using Cloud Computing," NSF, $425,000, April 2011-March 2013.

S. Akella (PI), "Power Line Carrier (PLC) Signal Analysis," Duke Energy, $48,300, April 2010-February 2011.

S. Akella (PI), "Fully-Implicit Time Stepping Methods with Integrated Proximity Queries for Accurate Simulation of Multi-Rigid-Body Systems with Intermittent Contact," $35,000, Oct 2010--Aug, 2011, NSF Award CCF-0729161 (Subaward No. A11888).
(Originally: S. Akella (PI) and J. C. Trinkle (co-PI), ``Fully-Implicit Time Stepping Methods with Integrated Proximity Queries for Accurate Simulation of Multi-Rigid-Body Systems with Intermittent Contact'', NSF, $200,000, September 2007-August 2010.)

S. Akella (PI), ``III-CXT: Enabling Automated Digital Microfluidic Biochips for Combinatorial Biosynthesis and Screening," NSF, $331,260, February 2010-July 2010.
(Originally: S. Akella (PI) and R. J. Lihardt (Co-PI), ``III-CXT: Enabling Automated Digital Microfluidic Biochips for Combinatorial Biosynthesis and Screening," NSF, $449,995, August 2007-July 2010.)

S. Akella (Co-PI), J. S. Dordick (PI), R. J. Linhardt (Co-PI), ``Digital Microfluidic Artificial Golgi for Glycan Synthesis'', NSF, $300,000, June 2007-May 2010.

S. Akella (PI), C. Busch (co-PI), J. S. Dordick (co-PI), R. J. Linhardt (co-PI), ``CRI:IAD: A Digital M

RESEARCH SUPPORT - Cont.

icrofluidic Testbed for Combinatorial Biosynthesis and Screening'', NSF, $299,960, August 2007-July 2010.

S. Akella (PI), ``Quattro Optimization'', Electro Scientific Industries, $60,000, July 2006-June 2007.

S. Akella (PI) and M. K. Goldberg (co-investigator), ``SGER: Towards Automated Droplet Coordination in Digital Microfluidic Systems,'' NSF, $100,000, July 2005-December 2006.

S. Akella (PI), ``CAREER: Manipulation and Motion Planning of Articulated Objects,'' NSF, $399,793, May 2001-April 2007.

EXTERNAL SERVICE

Associate Editor IEEE Transactions on Automation Science and Engineering, July 2003-May 2007

Guest Editor International Journal of Robotics Research, Special issue from the 2006 Workshop on Algorithmic Foundations of Robotics (WAFR 2006) , Vol. 27, No. 11-12, November 2008

Area Chair 2009 Robotics Science and Systems Conference (RSS 2009)

Co-chair 2006 Workshop on the Algorithmic Foundations of Robotics (WAFR 2006)

Associate Editor IEEE Robotics and Automation Society Conference Editorial Board, 2007 IEEE International Conference on Robotics and Automation (ICRA 2007)

Program Committee:
IEEE International Conference on Robotics and Automation (ICRA 2006, ICRA 2004)
Robotics Science and Systems Conference (RSS 2006, RSS 2010, RSS 2011)
IEEE International Conference on Automation Science and Engineering (IEEE CASE 2006, IEEE CASE 2005)
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2007, IROS 2005, IROS 2004, IROS 2003)
  Ninth Workshop on Algoritmic Foundations of Robotics (WAFR 2010)
  Fourth Workshop on Algorithmic Foundations of Robotics (WAFR 2000)
  SPIE Mechatronics for Agile Manufacturing Conference, 1999.

Reviewer:
        National Science Foundation
        IEEE Transactions on Robotics and Automation,
  IEEE Transactions on Robotics,
  International Journal of Robotics Research,
  IEEE Conferences on Robotics and Automation,
  NSF panels on Robotics and Human Augmentation; Computer Graphics; Manufacturing Machines and Equipment,
  ASME Design for Manufacturing Conference,
  ACM Symposium on Computational Geometry,
  Robotica, International Journal of CAD/CAM,
  IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, IEEE Transactions on Systems, Man, and Cybernetics.

SERVICE TO THE UNIVERSITY

Chair, CCI Reappointment, Promotion, and Tenure Committee, 2010 – 2011
CCI Reappointment, Promotion, and Tenure Committee, 2009 – 2012
Chair, IT Ph.D. Steering Committee, 2010 – 2012
IT Ph.D. CS Track Coordinator, 2009 - present
Health IT Program Committee (CCI and CHHS), April 2009 – present

SUPERVISED ACADEMIC WORK

Dissertation advisor at UNCC:

Zhiqiang Ma, Ph.D. student in Computer Science, Design of Experiments for Digital Microfluidic Systems, UNC Charlotte, August 2009-present.

Vasanthsekar Shekar, M.S. student in Electrical and Computer Engineering, Hardware Platform for Digital Microfluidics, UNC Charlotte, August 2009-present.

Rakesh Rao, M.S. student in Computer Science, PLC Signal Analysis, UNC Charlotte, July 2010-present.

Y

SUPERVISED ACADEMIC WORK - Cont.

oujie Zhou, Ph.D. student in Computer Science, Cloud Computing for Bioinformatics, UNC Charlotte, August 2010-present.

Junjie Shan, Ph.D. student in Computer Science, Robotic Aids for Nursing, UNC Charlotte, August 2011-present.

Advisor, Best Student Paper Awardee, 2007 Robotics Science and Systems Conference.

Instructions: *A biographical sketch is required of all faculty and staff that teach credit courses at the University of North Carolina at Charlotte. SACS (the University accrediting agency) requires that we provide evidence that the teaching faculty and staff have the appropriate credentials and other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes. Please provide the following information in the format described. If a section does not apply to you, note by using N/A.*

Faculty Name: Stephen Bradley Billings	UNCC ID: 800585620

Position Title/Rank: Assistant Professor

Department Name: Political Science

College: Col Liberal Arts & Science (Col)	Date Submitted/Revised: 05/15/2012

EDUCATION

Doctor of Philosophy, University of CO-Boulder, 2008, Business Economics
Master of Arts, University of CO-Boulder, 2005, Business Economics
Master of Arts, UNC Chapel Hill, 2001, Urban & Environmental Engr
Bachelor of Arts, Georgetown University, 1997, Business Economics
Bachelor of Arts, George Washington University, 0000, Business Economics

POSITIONS AND HONORS

Assistant Professor of Economics, University of North Carolina at Charlotte, 2012-
Lincoln Scholar, Lincoln Institute of Land Policy, 2011
Research Fellow, Belk Real Estate Center, University of North Carolina at Charlotte, 2009-current
Assistant Professor of Political Science, University of North Carolina at Charlotte, 2008-2011
Best Graduate Student Paper, North American Regional Science Council, 2008
James C. Campbell Graduate Fellowship, 2006
Leslie Whittington Memorial Prize for Excellence in Economics, 2005

COURSES TAUGHT

University of North Carolina at Charlotte:
• Senior Seminar: The Financial Crisis and Macroeconomic Policy (x2), 2011
•   Economic Analysis of Public Policy II (PhD level) 2010
• Advanced Program Evaluation (PhD level) 2009, 2010
• Applied Economics (MA/PhD) 2009, 2010
• Introduction to Public Policy (Undergraduate) 2008, 2010

University of Colorado at Boulder:
• Principles of Macroeconomics 2006-2008
• Principles of Microeconomics 2005-2007
• Teaching Assistant, Principles of Microeconomics and Macroeconomics 2004-2005

PUBLICATIONS

Billings, Stephen. 2011."Estimating the Value of a New Transit Option" Regional Science and Urban Economics (Forthcoming).

Billings, Stephen and J. Scott Holladay. 2011. "Should Cities go for the Gold? The Long-Term Impacts of Hosting the Olympics" Economic Inquiry (Forthcoming).

Billings, Stephen and Thomas G. Thibodeau. 2011. "Financing Residential Development with Special Districts" Real Estate Economics (Forthcoming)

Billings, Stephen B., Suzanne Leland and David Swindell. 2011 "The Effects of the Announcement and Opening of Light Rail Transit Stations on Neighborhood Crime" Journal of Urban Affairs (Forthcoming)

Billings, Stephen and Craig Depken III. 2011. "Sports Events and Criminal Activity: A Spatial Analysis," in Chapter 11 of R.T Jewell (ed.) Violence and Aggression in Sporting Contests: Economics, History, and Policy, Springer Publishing. (Forthcoming)

Billings, Stephen and Thomas G. Thibodeau. 2011. "Intrametropolitan Decentralization: Is Government Structure Capitalized in Property Values?" Real Estate Finance and Economics 42, 2011:416-450

PUBLICATIONS - Cont.

Billings, Stephen B. "Do Enterprise Zone Programs Work? An Analysis at the Borders" Public Finance Review 37, 2009: 68-93.

Billings, Stephen B. and Suzanne Leland "Examining the Logic Behind the Self-help, Self-taxing Movement: Business Improvement District Formation" Public Budgeting & Finance 29(4), 2009:108-124.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

1. A Nonparametric Test for Industrial Specialization
   a. Greater Boston Urban and Real Estate Economics Seminar. Boston, MA. October 2010.
      b. Skye Seminar on Real Estate and Urban Economics. Sleat, Scotland. August 2010.
      c. Workshop on Urban Economics I, Instit d'Economia at the University of Barcelona.
Barcelona, Spain. July   2010.

2. Local Option, Alcohol and Crime
   a. Southern Economic Association Annual Meeting. Atlanta, GA. November 2010.

3. Financing Residential Development with Special Districts
   a. American Real Estate and Urban Economics Association Midyear Meetings. Washington, DC. 2009

RESEARCH SUPPORT

N/A

EXTERNAL SERVICE

N/A

SERVICE TO THE UNIVERSITY

Undergraduate Senior Thesis Assessment Committee

Public Policy Qualifying Exam Review Committee, Quantitative Analysis. January 2009-current

Public Policy Qualifying Exam Review Committee, Economic Analysis. January 2009-current

SUPERVISED ACADEMIC WORK

Doctoral Dissertation Committees: Thomas Ludden (Geography); Alexandra Tsvetskova (Public Policy)

BIOGRAPHICAL SKETCH

Faculty Name: Sunil Erevelles	UNCC ID: 800211419

Position Title/Rank: Associate Professor

Department Name: Marketing

College: College of Business (Col)	Date Submitted/Revised: 05/11/2012

EDUCATION

Doctor of Philosophy, Ohio State University, 1992, Marketing
Master of Arts, Ohio State University, 1992, Marketing
Bach-Technology, Anna University, 1986, Gen Liberal Arts and Sciences

POSITIONS AND HONORS

2002 - Now: Faculty of Marketing, University of North Carolina at Charlotte, Charlotte, North Carolina
1992 - 2002: Faculty of Marketing, University of California, Riverside, Riverside, California
2000 - 2002: Marketing Area Coordinator, University of California, Riverside, Riverside, California
1987 - 1992: Graduate Research Associate / Graduate Teaching Associate, The Ohio State University, Columbus, Ohio

COURSES TAUGHT

MBAD6171 - Marketing Management
MBAD6176 - Consumer Behavior
MKTG3110 - Marketing Concepts
MKTG3216 - Consumer Behavior
MBAD6174 - Global Marketing
MKTG3800 - Directed Study

PUBLICATIONS

Erevelles, S., Roundtree, R., Zinkhan, G., Fukawa, N. (Winter, 2008) The Concept of Imaginative Intensity in Advertising. Journal of Advertising. 37 (4), 144-148.
Erevelles, S., Stevenson, T., Srinivasan, S., Fukawa, N. (November, 2008) An Analysis of B2B Ingredient Co-Branding Relationships. Industrial Marketing Management. 37 (8), 940-952.
Erevelles, S., Horton, V., Fukawa, N. (Fall, 2008) Understanding B2C Brand Alliances between Manufacturers and Suppliers. Marketing Management Journal. 18 (2), 32-46.
Erevelles, S., Horton, V., Fukawa, N. (December, 2007) Imagination in Marketing. Marketing Management Journal. 17 (2), 109-119.
Erevelles, S., Stevenson, T. (May, 2006) Enhancing the Business-to-Business Supply Chain: Insights from Partitioning the Supply Chain. Industrial Marketing Management. 35 (4), 481-492.
Erevelles, S., Horton, V., Marinova, A. (Fall, 2005) The Triadic Model: A Comprehensive Framework for Managing Country Risk in Marketing Strategy. Marketing Management Journal. 15 (2), 1-17.
Erevelles, S., Dutta, I., Galantine, C. (Spring, 2004) Salesforce Compensation Plans Incorporating Multidimensional Sales Effort and Salesperson Efficiency (Winner of the James Comer Award 2005- For Best Contribution to Selling and Sales Management Theory and Methodology). Journal of Personal Selling & Sales Management. 24 (2), 101-112.
Erevelles, S., Srinivasan, S., Rangel, S. (January, 2003) Consumer Satisfaction of Internet Service Prodivers: A Process Based Approach. Journal of Information Technology and Management. 4 (1), 69-89.
Erevelles, S., Morgan, F., Buke, I., Nguyen, R. Advertising Strategy in China: Cultural and Regulatory Factors. Journal of International Consumer Marketing. 15 (1), 91-123.
E

PUBLICATIONS - Cont.

revelles, S., Roy, A.,
Yip, L. (May, 2001) The University of the Signal Theory for Products and Services. Journal of Business Research. 52 (2), 175-187.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

Erevelles, S. The Use of Supply-Side and Transvectional Segmentation to Maximize Supply Chain Effectiveness in Mass Customization. International Mass Customization Conference.   Klagenfurt, Unknown.
Erevelles, S., Fukawa, N. A Two-Stage Distribution-Free Method to Compare Relative Predictors of the Order of Brand Recall. Joint Statistical Meeting.   Minneapolis, Minnesota.
Erevelles, S., Fukawa, N.
 Comparing the Recall Inhibition Effects of Affect and Cognition. Annual Conference of the Congitive Science Society.   Stresa, Unknown.
Erevelles, S., Fukawa, N. The Role of Affect in the Accessibility of Brands from Memory. Society of Consumer Psychology.

RESEARCH SUPPORT

N/A

EXTERNAL SERVICE

2010-2011 - Other Community Service Activities (Local) American Heart Association - Heart Walk, (With Rick Zuber)
2010-2011 - Editor: Special Issue of a PRJ (International) Journal of Personal Selling and Sales Management
2009-2010 - Other Community Service Activities (Local) American Heart Association- Heart walk, (With Rick Zuber)
2009-2010 - (Department) Journal of Personal Selling and Sales Management, All duties of an editor, including selecting reviewers, making publication decisions, etc. JPSSM is the leading journal in sales management.
2008-2009 - Other Community Service Activities (Local) American Heart Association- Heart Walk, (With Rick Zuber)
2007-2008 - Other Community Service Activities (Local) American Heart Association- Heart Walk, (With Rick Zuber)
2007-2008 - (National) Journal of Personal Selling and Sales Management, Special Issue, Editor of Special Issue of leading journal in sales management
2006-2007
- Other Community Service Activities (Local) American Heart Association- Heart Walk, (With Rick Zuber)
2005-2006 - Reviewer: Ad Hoc Reviewer for a Journal (International) International Journal of Research in Marketing, Ad-hoc Reviewer
2005-2006 - Other Community Service Activities (Local) American Heart Association- Heart Walk, (With Rick Zuber)

SERVICE TO THE UNIVERSITY

2010-2011 - Committee Member (University) Graduate Council, Chair of Sub-Committee
2009-2010 - Other Institutional Service Activities (Department) 4 faculty peer reviews
2009-2010 - Faculty Advisor (University) American Marketing Association
2009-2010 - Committee Member (University) University Graduate Council
2009-2010 - Committee Member (Department) Marketing Department Review Committee
2009-2010 - Committee Chair (Department) Chair of the Departmental Review Committee, I will be writing evaluation letters for this year's cases (2009-2010)
2008-2009 - Other Institutional Service Activities (Department) Coordinator of Distinguished Speaker Series in the Department of Marketing
2008-2009 - Other Institutional Service Activities (College) Introduction of EMBA program in Panama- Speech to Potential EMBA students
2008-2009 - Committee Member (Department) Department of Marketing Chair Evaluation Committee

SUPERVISED ACADEMIC WORK

2008-2009 - Student Thesis - Advisor (Thesis/Diss) Ph.D. Graduate Faculty Representative, Kendra March, Department of Education

BIOGRAPHICAL SKETCH

UNC CHARLOTTE

Instructions: *A biographical sketch is required of all faculty and staff that teach credit courses at the University of North Carolina at Charlotte. SACS (the University accrediting agency) requires that we provide evidence that the teaching faculty and staff have the appropriate credentials and other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes. Please provide the following information in the format described. If a section does not apply to you, note by using N/A. The form has been set up as a template so you should be able to cut and paste your information from other vitas or proposal submissions.*

Faculty Name:	**Sangkil Moon**	**UNCC ID#:**	**800823705**

Position Title/Rank: **Associate Professor and Cullen Scholar in Marketing**

Department Name: **Marketing**

College:	**Belk College of Business**	**Date Submitted/Revised : July 18, 2013**

EDUCATION

List in chronological order degrees, institution and location, dates, and field of study.

BBA in Business Administration, (1995) Seoul National University, Seoul, Korea,

MBA in Marketing, (1998) Seoul National University, Seoul, Korea

Ph.D. in Marketing (2003), University of Iowa, Iowa City, Iowa

POSITIONS AND HONORS

List in reverse chronological order previous positions held, beginning with the current position (include any honors).

POSITIONS
Department of Marketing, Belk College of Business (August 2013 – present)
　　　Associate Professor and Cullen Scholar in Marketing
Department of Business Management, Poole College of Management, North Carolina State University (July 2003 ~)
　　　Associate Professor of Marketing (August 2009 – June 2013)
　　　Assistant Professor of Marketing (July 2003 ~ August 2009)
Marketing Area, Kenan-Flagler Business School, University of North Carolina, Chapel Hill (June 2010 ~ April 2011)
　　　Visiting Scholar (June 2010 ~ April 2011)

HONORS
NC State University, 2009 University Alumni Association Research Award Nomination.
NC State University, 2009 University Outstanding Teacher Award Nomination.
Davidson Award, 2008 Winner, Journal of Retailing Best Article Award.
NC State University, 2007 University Outstanding Teacher Award Nomination.
NC State University, 2006 College of Management Teaching Excellence Award.
NC State University 2005 Undergraduate Research Award from the Division of Undergraduate Academic Programs (with Kristin Chaudoir) (Topic: Store Price Formats and Customers' Promotion Responsiveness).
Third Place Award in the Social Science Division, 2003 James F. Jakobsen Graduate Forum at University of Iowa.
Representative (Presenter), 2003 Haring Symposium, Indiana University.
Winner with $5,000 prize money, 2002 MSI Alden G. Clayton Dissertation Proposal Competition (out of 41 submissions).
Fellow, 2002 AMA-Sheth Foundation Doctoral Consortium, Emory University.

Representative (Presenter), 2002 Nebraska Symposium, University of Nebraska.
Recipient of the 2002 M. Bhanu Murthy Award for Teaching Excellence at University of Iowa.
Representative, 2001 Haring Symposium, Indiana University.
Representative, 2000 Nebraska Symposium, University of Nebraska.
Four-Time Scholarships in the Seoul National University MBA Program.

COURSES TAUGHT

Include a selected list of regularly taught courses (no more than 10) and provide the institution's name, if other than UNC Charlotte

Marketing Analytics (MBA 590, MBA 561): Graduate - NC State
Marketing Research (BUS 462): Undergraduate- NC State
Innovation Analytics (MBA 610): Graduate - NC State
Marketing Research (MBA 562): Graduate –NC State
Customer Analytics II: Graduate - NC State

PUBLICATIONS

Include a selected list of significant refereed publications (no more than 10) in reverse chronological order (do not list abstracts). Each publication identified must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. If the document is only available electronically, the website address should be identified.

Sangkil Moon and Kathryn Azizi (2013), "Finding Donors by Relationship Fundraising," Journal of Interactive Marketing, Forthcoming.

Yong Seog Kim and Sangkil Moon (2012), "Measuring the Success of Churn Management Models Built on Churn Probability, Retention Probability, and Expected Yearly Revenues," Expert Systems with Application, 39 (14). 11718-11727.

Sangkil Moon (2011), "An Empirical Investigation of Dual Network Effects in Innovation Project Development," Journal of Interactive Marketing, 25 (4), 215-225.

Sangkil Moon, Paul K. Bergey, and Dawn Iacobucci (2010), "Dynamic Effects among Movie Ratings, Movie Revenues, and Viewer Satisfaction," Journal of Marketing, 74 (January), 108-121.

Kamakura, Wagner A. and Sangkil Moon (2009), "Quality-Adjusted Price Comparison across Internet Retailers," International Journal of Research in Marketing, 26 (September), 189-196.

Sangkil Moon and Glenn Voss (2009), "How Do Price Range Shoppers Differ from Reference Price Point Shoppers?" Journal of Business Research, 62 (1), 31-38.

Bergey, Paul K. and Sangkil Moon (2009), "Conditional Efficiency, Operational Risk and Electronic Ticket Pricing Strategies for the Airline Industry," International Journal of Electronic Marketing and Retailing, 2 (3), 239-255.

Woong-Kyu Lee and Sangkil Moon (2008), "Two-Way Effects of Offline Trust on Online Service Use: Comparative Analysis of Normal Users and IT Experts," Journal of the Korea Internet Electronic Commerce Association, 8 (3), 67-96.

Sangkil Moon and Gary J. Russell (2008), "Predicting Product Purchase from Inferred Customer Similarity: An Autologistic Model Approach," Management Science, 54 (1), 71-82.

Sangkil Moon, Wagner A. Kamakura, and Johannes Ledolter (2007), "Estimating Promotion Response When

Competitive Promotions Are Unobservable," Journal of Marketing Research, 44, 3 (August), 503-515.

Exhibitions, Performances, Presentations, and Readings

Include a reverse chronological listing, citing complete information regarding most significant exhibitions, performances, poetry readings, etc. (no more than 10)

"The Roles of Cultural Elements in International Diffusion of Entertainment Products," 2012 Marketing Science Conference at Boston, Massachusetts (June 7, 2012).

"Consumer Segmentation and Profiling in Forecasting New Movie Box-Office Performance Based on Dynamic Awareness and Preference (AP) Measures," 2011 Asia-Pacific Conference of the Association for Consumer Research at Beijing, China (June 18, 2011).

"Awareness and Preference-Based Consumer Segmentation in Forecasting Movie Box-Office Performance," 2011 Marketing Science Conference at Houston, Texas (June 11, 2011).

"The Impacts of Consumers' Awareness and Preference Patterns on New Product Sales: An Analysis of Movie Survey Data," NC State Department of Business Management Seminar (March 14, 2011).

"Would You Like an Imported Movie or a Domestic Movie?: Cultural Discount and Cultural Categorization in the Movie Competition," Marketing Seminar Series at University of North Carolina, Chapel Hill, NC (September 14, 2010).

"The Effects of Consumers' Text Product Review on New Product Success in the Movie Industry," 2010 Marketing Science Conference at Cologne, Germany.

"Critics, Amateurs, and Myself in Movie Ratings: Dynamic Effects on Movie Revenues and Viewer Satisfaction," 2008-09 NC State Marketing Area Research Seminar Series (April 30, 2009).

"Current and Future Economy: Marketing Cases," KSEA (Korean-American Scientists and Engineers Association) NC Regional Conference: Networking and Career Planning, Research Triangle Park, NC (March 28, 2009)

"Quality-Adjusted Price Comparison across Internet Retailers," INFORMS Annual Meeting, Washington, D.C. (October 14, 2008).

"Quality-Adjusted Price Comparison across Internet Retailers," Marketing Seminar Series at University of North Carolina, Chapel Hill, NC (March 20, 2008).

Research Support

Include a selected list of proposals and grants received from outside agencies in reverse chronological order (no more than 10). Indicate the amount of the grant and the dates of the project period.

The 2012 Research Innovation Grant Program by the Poole College of Management, North Carolina State University (May 2012 – June 2012): "The Positive Roles of Consumer Learning in Accepting Innovative Sustainability Products with Social Desirability and Economic Disadvantages" (With Paul Bergey; Total Amount $15,000)

The 2011 Research Innovation Grant Program by the Poole College of Management, North Carolina State University (January 2011 – June 2011): "Consumer Segmentation and Profiling in Forecasting New Movie Box-Office Performance Based on Dynamic Awareness and Preference (AP) Measures" (Total Amount $15,000)

The Services and Product Innovation (SPI) Initiative Research Fund, North Carolina State University: "Comparing Prices across Internet Retailers" (Total Amount $10,000)

The Faculty Research and Professional Development Fund by North Carolina State University (July 2006 – June 2007): "Dynamic Variety Seeking in Hedonic Consumption: Hidden Markov Probit Choice Model" (Total Amount $5,333)

The Edwin Gill Research Grants Supported by the College of Management at North Carolina State University (Summer 2006): "Competitive Price Analysis and Simultaneous Demand Estimation of Internet Travel Agents" (Total Amount $10,000)

The Edwin Gill Research Grants Supported by the College of Management at North Carolina State University (Summer 2005): "Dynamic

Variety Seeking and Promotion Responsiveness: Tracking Down Variety Seeking Changes Using a Hidden Markov Model" (Total Amount $10,000)

The Edwin Gill Research Grants Supported by the College of Management at North Carolina State University (Summer 2004): "Developing a Spatial Choice Model Based on Inter-Customer Similarities in Multiple Information Sources" (Total Amount $8,500)

Teradata Center for Customer Relationship Management at Duke University (2003-2005): "Spatial Choice Models for Product Recommendations" with Gary Russell (Total Amount $11,532)

EXTERNAL SERVICE

Include selected service and outreach to the profession, community entities, and engagement with the larger community (e.g. journal editorship, national grant review committees, positions in professional organizations)

Reviewer, International Journal of Electronic Marketing and Retailing
Reviewer, Journal of International Marketing
Reviewer, Journal of Media Economics
Reviewer, Journal of Marketing Research
Reviewer, Journal of Retailing
External Reviewer, Research Grant Council of Hong Kong (2012)
Reviewer, Journal of Marketing
Reviewer, Marketing Science
Reviewer, Journal of Product Innovation Management
Reviewer, Journal of Interactive Marketing
Reviewer, Service Industries Journal
Reviewer, Management Research Review
Reviewer, AMA/Howard Dissertation Competition (2010)
Reviewer, EMAC (European Marketing Academy) Conference (2009, 2010)
Reviewer, ACR (Association for Consumer Research) Annual North American Conference in Pittsburgh, PA (2009)
Reviewer, National Fund for Scientific & Technological Development (FONDECYT, Chile) (2008, 2009)
Reviewer, Levy and Weitz Doctoral Dissertation Proposal Awards on Retailing (2005, 2006)
Reviewer, AMA (American Marketing Association) Winter Marketing Educators' Conference in San Antonio, Texas (2005)
Reviewer, ACR (Association for Consumer Research) Asia-Pacific Conference in Seoul (2004)

SERVICE TO THE UNIVERSITY

Include a selected list of significant directed work (e.g. thesis/dissertation advisor, honors student research mentor, etc)

Department of Business Management, Chair of the Search Committee for Statistics Professor of Practice (Fall 2012)
Coordinator, Department of Business Management, Marketing Research Seminar Series (Spring 2008; Fall 2011 ~)
Poole College of Management (PCOM), Assessment Committee
Department of Business Management, Marketing Area Coordinator (July 2009 ~ June 2012)
Department of Business Management, Marketing Faculty Search Committee (Summer and Fall 2010)
Department of Business Management, Research Award Committee (October 2009)
College of Management International Task Force (2009 ~ 2010)
Nominating Students for the Most Outstanding MBA Graduate Award (Chris Caron – 2009, Part-Time Program, Winner; Vince Hamner – 2008, Part-Time Program; Jennifer Howard – 2008; Full-Time Program; Mike Joyner – 2007, Part-Time Program, Winner; Nicolas Dubus – 2006, Winner)
Faculty Mentor, Undergraduate Research Awards
•	Janine Largen, Undergraduate Student in Marketing, Spring 2009, Topic: The Impacts of Consumers' Internet Information Search Patterns on Their Purchase Decisions and Welfare (Award: $1,300)
•	Molly Schell, Undergraduate Student in Marketing, Spring 2009, Topic: Word-of-Mouth Effects in Internet Retailing (Award: $1,300)

- Kristin Chaudoir, Undergraduate Student in Marketing & Statistics, Spring 2005, Topic: Store Price Formats and Customers' Promotion Responsiveness (Award: $1,300)

Member, College of Management, College Leadership Survey Committee (2008-2009)

Nominating Students for the Most Outstanding Undergraduate Graduate Award (Peyton Holland – 2008; Jacqueline Barbitta – 2007)

Department of Business Management, Undergraduate Curriculum Committee, Member (2007-2008)

College of Management, AACSB Assessor (2008)

Member, Marketing Area Faculty Recruiting Committee (2007)

Judge, College of Management, Graduation Student Speaker Auditions (2007)

Department of Business Administration, Initiative for Advanced Analytics Committee (IAAC) Liaison (2006)

Judge, College of Management Graduate Symposium, Student Essay Competition (2004)

SUPERVISED ACADEMIC WORK

Include a selected list of significant directed work (e.g. thesis/dissertation advisor, honors student research mentor)

Independent Studies
- Kathryn Azizi, MBA Student, Summer 2008, Topic: Modeling Seemingly Unrelated Information for Relationship Fundraising
- Kristin Chaudoir, Undergraduate Student in Marketing & Statistics, Fall 2004 & Spring 2005, Topic: Store Price Formats and Customers' Promotion Responsiveness

Instructions: *A biographical sketch is required of all faculty and staff that teach credit courses at the University of North Carolina at Charlotte. SACS (the University accrediting agency) requires that we provide evidence that the teaching faculty and staff have the appropriate credentials and other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes. Please provide the following information in the format described. If a section does not apply to you, note by using N/A.*

Faculty Name: Martin William Ribarsky	UNCC ID: 800211148

Position Title/Rank: Distinguished/Titled Professor

Department Name: Computer Science

College: College of Computing & Informatics	Date Submitted/Revised: 05/11/2012

EDUCATION

Doctor of Philosophy, University of Cincinnati, 1974, Physics, General
Master of Science, University of Cincinnati, 1970, Physics, General
Bachelor of Science, University of Cincinnati, 1967, Physics, General

POSITIONS AND HONORS

Bank of America Endowed Chair in Information Technology

COURSES TAUGHT

Intro. to Info. Technology Research, ITCS8110
Logic and Algorithms, ITCS 2175
Logic and Algorithms, ITCS 2175

PUBLICATIONS

1. Wenwen Dou, Remco Chang, Xiaoyu Wang, and William Ribarsky. ParallelTopics: A Probabilistic Approach to Exploring Document Collections. Accepted for publication, IEEE VAST 2011.
2. "EventRiver: Interactive visual exploration of constantly evolving text collections," D. Luo, J. Yang, M. Krstajic, J. Fan, W. Ribarsky, and D. Keim. IEEE Trans. on Visualization and Computer Graphics (October, 2010).
3. "The Science of Analytical Reasoning," William Ribarsky, Brian Fisher, and William Pottenger. Information Visualization Journal (Special issue on "The Future of Visual Analytics"), Vol 8, pp. 254-262 (2009).
4. "Multi-Focused Geospatial Analysis Using Probes," Thomas Butkiewicz, Wenwen Dou, Zachary Wartell, William Ribarsky, and Remco Chang. IEEE Trans. On Visualization and Comp. Graphics, Vol. 14(6), pp. 1165-1172 (InfoVis 2008).
5. Li Yu, Aidong Lu, William Ribarsky, and Wei Chen. Digital Storytelling: Automatic Animation for Time-Varying Data Visualization. Computer Graphics Forum, Vo. 29 (7) pp. 2271-2280 (2010).

6. "A Two-stage Framework for Designing Visual Analytics System in Organizational Environments," Xiaoyu Wang, Eric Bier, Thomas Butkiewicz, Wenwen Dou, and William Ribarsky. Accepted for publication, IEEE VAST 2011.
7. "Value and Relation Display: Interactive Visual Exploration of Large Datasets with Hundreds of Dimensions," Jing Yang, Daniel Hubball, Matthew Ward, Elke Rundensteiner, and William Ribarsky. IEEE Trans. on Visualization and Computer Graphic, 13(3), pp. 494-507 (2007).
8. "Evaluating the Relationship Between User Interaction and Financial Visual Analysis," Dong Hyun Jeong, Wenwen Dou, Felesia Stukes, William Ribarsky, Heather Richter Lipford, and Remco Chang. Proc. IEEE VAST 2008, pp. 83-90.
9. "Legible Simplification of Large Textured Urban Models," Remco Chang, Thomas Butkiewicz, Caroline Ziemkiewicz, Zachary Wartell, Nancy Pollard, and William Ribarsky. IEEE Computer Graphics and Applications, Vol. 28(3) pp. 27-36 (2008).
10. "WireVis: Visualization of Categorical, Time-Varying Financial Transaction Data," Remco Chang, Mohammad Ghoneim, Robert Kosara, William Ribarsky, Jing Yang, Evan Suma, Caroline Ziemkiewicz, Daniel Kern, and Agus Sudjianto.. IEEE VAST 2007, pp. 155-162.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

Invited Participant, U.S. - German Workshop on Visual Analytics for Security Applications (Berlin, February, 2011)
1

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS - Cont.

. Invited Speaker, "A Mixed-Initiative Visual Analytics Approach to Topic Modeling in Research Collections," AAAS-NSF Workshop on Science Policy (October, 2010)

2. Invited participant, National Academy of Sciences workshop to set the research agenda for the National Geospatial Intelligence Agency (NGA) (May, 2010)

3. Invited speaker, NSF Workshop on "Visualization of Scientific Discovery in a Federal Context", Washington, DC, August, 2008. Discussed the new capabilities that visual analytics, especially through its interactivity, can bring to this analysis of the Science of Science.

4. Invited speaker, "Tools for Analytical Thinking about Complex Problems", Analytical Methods Workshop, Central Intelligence Agency, Washington, DC (April, 2008)

5. "Thought leader" for Bank of America new senior executive training (senior vice-president level, some of whom run units that are the equivalent of Fortune 500 companies). Presentation, "What the Next 15 Years Will Bring in Computing and Visual Analytics, and Why It's Important to Know." (Charlotte, July, 2008).

6. Invited speaker, "The Science of Analytic Reasoning", American Association for the Advancement of Science (AAAS) Annual Meeting (February 20, 2005).

RESEARCH SUPPORT

"Modeling the Impact of Science Policies on Scientific Workforce Growth," National Institute of General Medical Sciences (NIH/NIGMS), co-PI with Antonio Sanfilippo, $800,000, August 1, 2011 to July 31, 2014.

"DAT: A Visual Analytics Approach to Science and Innovation Policy," NSF SciSIP, PI, $746,567, July 1, 2009 to June 30, 2012.

Mobile 3D GIS for Emergency Response Applications in Urban Environments," PI, National Institute of Justice, $399,995, PI, November 1, 2009 to February 28, 2012.

"Proposal to Establish the DHS Center of Excellence in Command, Control, and Interoperability," Co-PIs with David Ebert as lead PI, $1,200,000, June, 2009 to May, 2015.

"DHS Center of Excellence for Natural Disasters, Coastal Infrastructure, and Emergency Management," Co-PI (Rick Luettich, PI), $626,000, July 1, 2008 to June 30, 2014.

"Proposal to Establish the Southeastern Regional Visualization and Analytics Center," DHS, PI: William Ribarsky, $2,100,000 continuing funding, started January, 2006

EXTERNAL SERVICE

Overall Steering Committee, IEEE VisWeek, starting October, 2010
General Co-Chair, IEEE VAST 2007 (Visual Analytics Science and Technology Symposium)
Steering Committee, IEEE VAST Conference, starting January, 2006.
Associate Editor, IEEE Computer Graphics and Applications, starting July, 2006
Member, panel to establish a national visual analytics agenda and co-editor, NVAC report, 2005
Chair, Steering Committee, IEEE Virtual Reality Conference Series
Chair, Steering Committee, IEEE Visualization Conference Series, 2001—2006
Director, IEEE Technical Committee on Visualization & Graphics, starting Jan. 1, 2000
Chair (elected), IEEE Technical Committee on Visualization & Graphics (Jan. 1, 1997 to Dec. 31, 1999)
Associate Editor, IEEE Transactions on Visualization and Computer Graphics, 2000-2004
Editor, Data Visualization '99 (Springer, 1999)
Chair, Joint Eurographics IEEE Visualization Symposium, Amsterdam, May, 2000
Chair, Joint Eurographics IEEE Visualization Symposium, Vienna, May, 1999
General Co-Chair, IEEE Visualization '95 and IEEE Visualization '96

SERVICE TO THE UNIVERSITY

Member, Task Force to Consider Forming a College of Architecture and Arts

Member, First Citizens Bank Scholars Medal Selection Committee, 2005, 2006, 2008

Chair of the 2008 UNC Charlotte Arts & Science Council Campaign (UNC Charlotte exceeded its goal by over 20%.)

Member, Philosophy Department Chair Comprehensive Review Committee, College of Arts and Sciences

SUPERVISED ACADEMIC WORK

Ph.D. Dissertations Supervised

Craig Kenton. Physics, 1981, "Ab initio Calculations on Hydrogen-Bounded Silicon Clusters"

S

SUPERVISED ACADEMIC WORK - Cont.

teve Sutton, Physics, 1991, "Interfacial Phenomena in Bounded Simple Liquids"

David Krum, Computer Science, 2004, "Wearable Computers and Spatial Cognition"

Remco Chang, Computer Science, 2009, "Thinking Interactively with Visualization"

Dong Jeong, Computer Science, 2010, "Knowledge Visualization: From Theory to Practice"

Xiaoyu Wang, Computer Science, 2011, "A Two-stage Framework for Designing Visual Analytics Systems to Augment Organizational Analytical Processes"

![UNC Charlotte logo]	**BIOGRAPHICAL SKETCH**

Faculty Name: Wensheng Wu	UNCC ID: 800593948

Position Title/Rank: Assistant Professor

Department Name: Computer Science

College: College of Computing & Informatics	Date Submitted/Revised: 05/15/2012

EDUCATION

Doctor of Philosophy, University of IL-Urbana, 2006, Computer Science
Master of Science, Fudan University, 1994, Computer Science
Bach-Engineering in Technology, Tongji University, 1991, Computer Engineering

POSITIONS AND HONORS

- Assistant Professor, Computer Science, Univ. of North Carolina, Charlotte, Jun. 2008—present
- Postdoctoral Researcher, IBM Almaden Research Center, San Jose, CA, Aug. 2006—Jun. 2008
- Research & Teaching Assistant, Computer Science, University of Illinois, 1999—2006
- Research Intern, Shanghai Social Security Bureau, China, 1993—1995

COURSES TAUGHT

- ITCS 6160/8160, Database Systems, Fall 2011, Fall 2010.
- ITCS 6163/8163, Data Warehousing, Spring 2011, 2010, 2009.
- ITCS 6010/8010, Topics in Computer Science, Spring 2011, Fall 2008.
- ITCS 6265/8265, Advanced Topics in Knowledge Discovery in Databases, Fall 2009.

PUBLICATIONS

- Wensheng Wu, AnHai Doan, Clement Yu, and Weiyi Meng. Modeling & Extracting Deep-Web Query Interfaces. Studies in Computational Intelligence (Book Chapter). Springer, 2009.
- Wensheng Wu, Berthold Reinwald, Yannis Sismanis, and Rajesh P. Manjrekar. Discovering Topical Structures of Databases. In Proceedings of the 2008 ACM International Conference on Management of Data (SIGMOD), 2008.
- Wensheng Wu, AnHai Doan, and Clement Yu. WebIQ: Learning from the Web to Match Deep-Web Query Interface. In Proceedings of the 22nd IEEE International Conference on Data Engineering (ICDE), 2006.

- Eduard Dragut, Wensheng Wu, Prasad Sistla, Clement Yu, and Weiyi Meng. Merging Source Query Interfaces on Web Databases. In Proceedings of the 22nd IEEE International Conference on Data Engineering (ICDE), 2006.
- Wensheng Wu, AnHai Doan, and Clement Yu. WebIQ: Learning from the Web to Match Deep-Web Query Interface. In Proceedings of the 22nd IEEE International Conference on Data Engineering (ICDE), 2006.

- Wensheng Wu, Clement Yu, AnHai Doan, and Weiyi Meng. An Interactive Clustering-based Approach to Integrating Source Query Interfaces on the Deep Web. In Proceedings of the 2004 ACM International Conference on Management of Data (SIGMOD), 2004.
- Clement Yu, Weiyi Meng, Wensheng Wu, and King-Lup Liu. Efficient and Effective Metasearch for Text Databases Incorporating Linkages among Documents. In Proceedings of the 2001 ACM International Conference on Management of Data (SIGMOD), 2001.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

N/A

RESEARCH SUPPORT

• Duke Energy Envision Charlotte Startup Fund, $38,000, Lead Principal Investigator, Jan - May 2011

EXTERNAL SERVICE

• PC Member, The 2011 IEEE/WIC/ACM International Conference on Web Intelligence, 2011.
• PC Member, The 19th International Symposium on Methodologies for Intelligent Systems (ISMIS), 2011
• PC Member, 2011 IEEE International Conference on Data Mining (ICDM), 2011
• PC Member, 2010 IEEE International Conference on Data Mining (ICDM), 2010
• PC Member, 2009 IEEE International Conference on Data Mining (ICDM), 2009
• PC Member, International Conference on Web-Age Information Management (WAIM), 2009
• PC Member, International Conference on Web-Age Information Management (WAIM), 2008
• PC Member, The 21st National Conference on Artificial Intelligence (AAAI), the AI Nectar Track,
2007

SERVICE TO THE UNIVERSITY

• Graduate Curriculum Committee (Chair), Computer Science Dept., 2010, 2011.
• Ph.D. Admissions & Review Committee, Computer Science Dept., Fall 2009—Spring 2010
• Teaching Review Committee, Computer Science Dept., Spring 2009
• Ad Hoc Space Committee, College of Computing & Informatics, Spring 2009

SUPERVISED ACADEMIC WORK

Jieyan Kuang, Ph.D. dissertation advisor
 Tingting Zhong, Ph.D. dissertation advisor

BIOGRAPHICAL SKETCH

Instructions: *A biographical sketch is required of all faculty and staff that teach credit courses at the University of North Carolina at Charlotte. SACS (the University accrediting agency) requires that we provide evidence that the teaching faculty and staff have the appropriate credentials and other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes. Please provide the following information in the format described. If a section does not apply to you, note by using N/A.*

Faculty Name: Xiuli He	UNCC ID: 800591906

Position Title/Rank: Assistant Professor

Department Name: Business Info Systems/Operations

College: College of Business (Col)	Date Submitted/Revised: 05/15/2012

EDUCATION

Doctor of Philosophy, University of TX-Austin, 2007, Management Info Systems
Master of Science, Shanghai Jiao Tong University, 1998, Management Info Systems
Bach-Engineering in Technology, Tongji University, 1996, Mechanical Engineering

POSITIONS AND HONORS

2007 - 2008: University of Texas at Dallas, Visiting Assistant Professor

HONORS AND AWARDS
¿ PICMET Outstanding Student Paper Award, Cape Town, South Africa, July 2008
¿ Dean's Fellowship, The University of Texas at Austin, TX, 2006-2007
¿ INFORMS Future Academician Colloquium, Pittsburgh, PA, 2006
¿ DSI Doctoral Consortium, San Antonio, TX, 2006
¿ Dean's Fellowship, The University of Texas at Austin, TX, 2005-2006
¿ Preemptive University Fellowship, The University of Texas at Austin, TX, 2002-2003
¿ Department Fellowship, The University of Texas at Austin, TX, 2002-2003
¿ Guanghua Scholarship, Shanghai Jiao Tong University, China, 1997
¿ University Scholarship, Shanghai Tiedao University, China, 1992-1996

COURSES TAUGHT

MBAD5141 - Business Statistics
MBAD6890 - Directed Individual Study
OPER3100 - Operations Management

PUBLICATIONS

He, X., Krishnamoorthy, A., Ashutosh, P., Suresh, S. (January, 2012) Co-op Advertising in Dynamic Retail Oligopolies. Decision Sciences (Journal of). 43 (1), 923-955.
He, X., Khouja, M. (October, 2011) Pareto
Analysis of Supply Chain Contracts Under Satisficing Objectives.. European Journal of Operational Research. 214 (4), 53-66.
Gutierrez, G., He, X. (March, 2011) Life-Cycle Channel Coordination Issues in
Lauching an Innovative Durable Product. Production and Operations Management. 20 (2), 268-279.
He, X.,
Krishnamoorthy, A., Prasad, A., Sethi, S. (January, 2011) Retail Competition and Cooperative Advertising. Operations Research Letters. 39 (1), 11-16.
He, X., Prasad, A., Sethi, S. (January, 2009) Co-op
Advertising and Pricing in a Stochastic Supply Chain: Feedback Stackelberg Strategies. Production and Operations Management. 18 (1), 78-94.
Sethi, S., Prasad, A., He, X. (November, 2008) Optimal Advertising
and Pricing in a New Product Adoption Model. Journal of Optimization Theory and Applications. 139 (2), 351–360.
He, X., Sethi, S. (May, 2008) Dynamic Slotting and Pricing Decisions in a Durable
Product Supply
Chain. Journal of Optimization Theory and Applications. 137 (2), 363-379.
He, X., Prasad, A., Sethi, S.,
Gutierrez, G. (December, 2007) A Survey of Differential Game Models in Supply Chain and Marketing Channels. Journal of Systems Science and Systems Engineering. 16 (4), 385-413.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

"Channel Coordination in Two-Period Model with Production Cost Learning", INFORMS Annual Meeting, Charlotte, NC, November 2011.

"Channel Decision and Service-Product Bundling Strategy under Sequential Entry", INFORMS Annual Meeting, Charlotte, NC, November 2011.

Gutierrez, G., He, X. (June, 2011) Life-cycle Channel Coordination Issues in Launching an Innovative Durable Product. 33rd INFORMS Marketing Science Conference.   Houston, TX.

He, X., Li, T., Sethi, S. (April, 2011) Coordination in Two-period Stochastic Inventory Model with Production Cost Volume Learning. POM Annual Conference.   Reno, NV.

He, X., Krishnanmurthy, A., Prasad, A., Sethi, S. (May, 2010) Manufacturer's Promotional Support in a Dynamic Retail Duopoly. Production and Operations Management Annual Conference.   Vancouver, British Columbia, Canada.

He, X., Khouja, M. (October, 2009) Satisficing Objectives in a Supply Chain: Push, Pull, and Advance-purchase Discount Contracts. INFORMS Annual Conference.   San Die CA.

He, X., Prasad, A., Sethi, S. (May, 2009) Manufacture's Promotional Suport in Dynamic Retail Market Duoply. POMS Annual Meeting.   Orlando, FL.

He, X., Sethi, S. (October, 2008) Supply Chain Management with Production Cost Learning. INFORMS Annual Meeting.Washington, D.C..

He, X., Prasad, A., Sethi, S. (November, 2008) Manufacture's Promotional Suport in Dynamic Retail Market Duoply. DSI Annual Meeting.   Baltimore, MD.

He, X., Prasad, A., Sethi, S. (May, 2008) Co-op Advertising and Pricing in a Stochastic Supply Chain: Feedback Stackelberg Stra. POMS Annual Conference.   Lo Jolla, CA.

He, X., Prasad, A., Sethi, S. (April, 2008) Co-op Advertising and Pricing in a Stochastic Supply Chain: Feedback Stackelberg Strategies. INFORMS Regional Conference.   College Station, TX.

He, X., Sethi, S. (November, 2007) Slotting and Pricing Decisions in a Durable Product Supply Chain. DSI Annual Meeting.   Phoenix, AZ.

RESEARCH SUPPORT

N/A

EXTERNAL SERVICE

2011-2012- Editorial Board Member (National) Production and Operations Management

2011-2012 - Member: Committee / Task Force (National) INFORMS Interactice Session, I reviewed six conference papers for the session.

2011-2012 - Reviewer: Ad Hoc Reviewer for a Journal (International) European Journal of Operational Research, I reviewed two articles for EJOR.

2011-2012 - Reviewer: Ad Hoc Reviewer for a Journal (National) Annals of Operations Research, I reviewed one article for ANOR.

2011-2012 - Reviewer: Ad Hoc Reviewer for a Journal (National) Management Science, I reviewed one paper for Management Science.

2011-2012 - Reviewer: Ad Hoc Reviewer for a Journal (International) International Journal of Production Economics, I reviewed one paper for International Journal of Production Economics.

2011-2012 - Member: Committee / Task Force (National) Conference on Information Systems and Technology (CIST), I reviewed two conference papers for CIST.

2011-2012 - Reviewer: Ad Hoc Reviewe for a Journal (International) Journal of Systems Science and Systems Engineering, I reviewed two papers for JSSSE.

2011-2012 - Reviewer: Article / Manuscript (National) Production and Operations Management, I reviewed two articles POM.

2010-2011 - Reviewer: Ad Hoc Reviewer for a Journal (International) European Journal of Operational Research, I reviewed one article for EJOR.

2010-2011 - Chair: Conference / Track / Program (National) Production and Operations Management, I will be session chair for PMS 2011 annual conference.

2010-2011 - Reviewer: Ad Hoc Reviewer for a Journal (National) Operations Research, I reviewed a paper for OR.

2010-2011 - Reviewer: Ad Hoc Reviewer for a Journal (National) Information Systems Research, I reviewed a revised paper for ISR.

2010-2011 - Editorial Board Member (National) Production and Operations Management

SERVICE TO THE UNIVERSITY

2011-2012 - (Department) Coordinator for OPER3100

2011-2012 - Committee Member (Department) Course and Curriculum Committee

2011-2012 - Committee Member (University) Faculty Council

2010-2011 - Writing Student Recommendations (College) Recommendation letters for undergraduate and MBA students, I wrote a number of recommendation letters for students in my MBA course MBAD 5141 who applied for Professional Development Program (PDP) and those who applied for jobs.

2008-2009 - Other Institutional Service Activities (University) Department representative for Annual Majors Day Fair (Oct. 23, 2008)

2008-2009 - Writing Student Recommendations (College) Write recommendations for students in OPER 3100-003 (Fall 2008) who a

SERVICE TO THE UNIVERSITY - Cont.

pplied for scholarships.
2008-2009 - Other Institutional Service Activities (Department) IS/OM major talks

SUPERVISED ACADEMIC WORK

2010-2011: Directed Study supervisor, In Fall 2010, I supervised a MBA student, Ms. Valerie Meccia's directed study in Supply Chain Management.
2010-2011 - Student Thesis Committee - Member (Department) Ph.D. dissertation committee, I am on the dissertation committee of Dong Su.
2009-2010: Directed Study supervisor, In Fall 2009 and Spring 2010, I supervised a MBA student, Ms. Shalini Udayasuriyan's directed study in Supply Chain Management.
2009-2010 - Student Thesis Committee - Member (Thesis/Diss) Disseration Commmitte of Dong Su, I am on the dissertation committee of Dong Su.

BIOGRAPHICAL SKETCH

Faculty Name: Xintao Wu	UNCC ID: 800203475

Position Title/Rank: Associate Professor

Department Name: Software & Information Systems

College: College of Computing & Informatics	Date Submitted/Revised: 05/15/2012

EDUCATION

Doctor of Philosophy, George Mason University, 2001, Computer & Info Sci, General
Master of Science, Beijing Institute of Tech, 1997, Computer Engineering
Bachelor of Science, Univ Science And Technology, 1994, Information Sciences & Sys

POSITIONS AND HONORS

Associate Professor, Department of Software and Information Systems, University of North Carolina at Charlotte, Jan 2008 – present

Associate Professor, Department of Computer Science, University of North Carolina at Charlotte, July 2007 – Dec 2007

Assistant Professor, Department of Computer Science, University of North Carolina at Charlotte, Aug 2001 – June 2007

Graduate Research Assistant, Department of Information & Software Engineering, George Mason University, Aug 1998 – July 2001

COURSES TAUGHT

ITIS 5160 Applied Datbases
ITIS 6260/8260 Data Privacy

PUBLICATIONS

Xiaowei Ying, Leting Wu and Xintao Wu. "A Spectrum-based Framework for Quantifying Randomness of Social Networks". IEEE Transactions on Knowledge and Data Engineering (TKDE), 23(12): xx-xx, Dec 2011.

Xiaowei Ying and Xintao Wu. "On Link Privacy in Randomizing Social Networks". Journal of Knowledge and Information System (KAIS), 28(3):645-663, 2011.

Kai Pan, Xintao Wu and Tao Xie. "Generating Program Inputs for Database Application Testing", Proceedings of the 26th IEEE/ACM International Conference on Automated Software Engineering (ASE), Lawrence, Kansas, Nov, 2011

Leting Wu, Xiaowei Ying, Xintao Wu and Zhi-Hua Zhou. "Line Orthogonality in Adjacency Eigenspace and with Application to Community Partition". Proceedings of the 22nd International Joint Conference on Artificial Intelligence (IJCAI11), Barcelona, Spain, July 16-22, 2011, pp. 2349-2354.

Xiaowei Ying, Xintao Wu and Daniel Barbara. "Spectrum Based Fraud Detection in Social Networks". Proceedings of the 27th EEE International Conference on Data Engineering (ICDE11), Hannover, Germany, April 11-16, 2011, pp. 912-923.

Leting Wu, Xiaowei Ying and Xintao Wu. "Reconstruction from Randomized Graph via Low Rank Approximation". Proc. of the 10th SIAM Conference on Data Mining (SDM10), Columbus, Ohio, April 2010, pp. 60-71.

Xiaowei Ying, Xintao Wu. "Graph Generation with Prescribed Feature Constraints". Proc. of the 9th SIAM Conference on Data Mining (SDM09), Sparks, Nevada, April 2009, pp 966-977.

Xiaowei Ying, Xintao Wu. "On Randomness Measures for Social Networks". Proc. of the 9th SIAM Conference on D

PUBLICATIONS - Cont.

ata Mining (SDM09), Sparks, Nevada, April 2009, pp 709-720.

Ling Guo and Xintao Wu. "Privacy Preserving Categorical Data Analysis with Unknown Distortion Parameters". Transaction on Data Privacy 2(3):185-205, 2009.

Xiaowei Ying and Xintao Wu. "Randomizing Social Networks: a Spectrum Preserving Approach". Proc. of the 8th SIAM Conference on Data Mining (SDM08), Atlanta, Georgia, April 2008, pp. 739-750.

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

N/A

RESEARCH SUPPORT

EAGER:FODAVA:Spectral analysis for fraud detection in large-scale networks. PI: Xintao Wu, CoPI: Aidong Lu, CCF-1047621, Aug 1, 2010 to July 31, 2011, $100,000, NSF.

SHF:Small:Collaborative Research: Constraint-based generation of database states for testing database applications. PI: Xintao Wu, CCF-0915059, Sept 1, 2009 to Aug 31, 2012, $203,729, NSF.

CT-ER: Privacy and spectrum analysis in social network randomization. PI: Xintao Wu, CNS-0831204, Oct 1, 2008 to Sept 30,2011, $186,147, NSF.

CAREER: Towards privacy and confidentiality preserving databases. PI: Xintao Wu. IIS-0546027, Jan 1, 2006 to Dec 31, 2011, $439,700, NSF.

Privacy preserving database application testing. PI: Xintao Wu, CoPIs: Yongge Wang, Yuliang Zheng, CNS-0310974, Sept 15, 2003 to August 31, 2006, $203,800, NSF.

EXTERNAL SERVICE

Editorial Board of Journal of Intelligent Information Systems, Springer, since 2008

Editorial Board of Transactions on Data Privacy, Spanish Higher Research Council, since 2008

Editorial Board of International Journal of Social Network Mining, InderScience Publishers, since 2010

NSF CISE panelist, 2003,2006,2009 (twice)

Program Committee Chair of the 2nd International Symposium on Data, Privacy, and E-Commerce, 2010.

Steering Committee member of IEEE International Workshop on Privacy Aspects of Data Mining (PADM), since 2011

Program committee members (over 50 times) for data mining and data privacy conferences including KDD, ICDM, SDM, PKDD, and PAKDD.

SERVICE TO THE UNIVERSITY

Member of Faculty Council, 2011-.

Member of College Dean's Searching Committee, 2008-2009.

Member of Graduate Council, 2007-2009.

Chair of College Graduate Committee, 2007-2009.

SUPERVISED ACADEMIC WORK

Xiaowei Ying, Privacy and Spectral Analysis of Social Network Randomization, Ph.D. Dissertation, May 2011.

Ling Guo, Randomization Based Privacy Preserving Categorical Data Analysis, Ph.D. Dissertation, Dec 2010.

Songtao Guo (co-advised with Dr. Yuliang Zheng), Analysis of and Techniques for Privacy Preserving Data Mining, Ph.D. Dissertation, Dec 2007.

Yong Ye, Exploring Gene Interactions in DNA Microarray Data, Ph.D. Dissertation, Dec 2007.

BIOGRAPHICAL SKETCH

Faculty Name: Zbigniew W Ras	UNCC ID: 800201491

Position Title/Rank: Professor

Department Name: Computer Science

College: College of Computing & Informatics	Date Submitted/Revised: 05/14/2012

EDUCATION

Doctor of Philosophy, Warsaw University, 1973, Mathematics and Computer Sci
Master of Science, Warsaw University, 1970, Mathematics

POSITIONS AND HONORS

POSITIONS:

- Professor, Dept. of Computer Science, University of North Carolina at Charlotte (1987 - present)
- Foreign Associate, Institute of Computer Science, Polish Academy of Sciences, Warsaw, Poland (1994 - present)
- Associate Professor, Dept. of Computer Science, University of North Carolina at Charlotte (1983 - 1987)
- Visiting Associate Professor, Dept. of Mathematics, University of North Carolina at Charlotte (1981- 1983)
- Associate Professor, Dept. of Computer Science, University of Tennessee at Knoxville (1985 -1987)
- Visiting Professor, Dept. of Computer Science, Warsaw Univ. of Technology (Fall, 2009)
- Visiting Professor, Dept. of Computer Science, Warsaw Univ. of Technology (Spring, 1993)
- Visiting Professor, IASI-CNR, Rome, Italy (Summer, 1992)
- Visiting Professor, Dept. of Computer Science, University of Bonn, Germany (Summer, 1991)
- Visiting Professor, Universitat de les Illes Balears, Palma, Illes Balears (Summer, 1990, 1991, 1992)
- Summer Associate, Research Laboratory, Lockheed Missiles & Space Co., Palo Alto, CA (6/89 - 9/89)
- Visiting Professor, Dept. of Computer Science, Linkoping University, Sweden (Summer, 1980)
- Visiting Assistant Professor, Dept. of Mathematics, University of North Carolina, Charlotte (1979-1980)
- Visiting Assistant Professor, Dept. of Mathematics, University of Florida, Gainesville (1978-1979)
- Assistant Professor, Dept. of Computer Science, Jagiellonian University, Poland (1976-1978)
- Research Associate, Dept. of Mathematics, Columbia University, New York (8/75 - 7/76)
- Assistant Professor, Dept. of Mathematics, University of Warsaw, Poland (8/74 - 7/81)

HONORS:

- Recipient of the Harshini V. de Silva Graduate Mentor Award, UNC-Charlotte, 2009
- Finalist of the Bank of America Award for Teaching Excellence, UNC-Charlotte, 2008
- Recipient of the COIT Graduate Faculty Excellence in Teaching Award, UNC-Charlotte, 2003
- Recipient of the Alcoa Foundation Outstanding Faculty Award, UNC-Charlotte, 1999-2000
- Recipient of the third level prize from the Secretary of State for Higher Education and Technology (in Poland) for research concerning algebraic aspects of programs, 1974

COURSES TAUGHT

- ITCS6162/ITCS8162 Knowledge Discovery in Databases
- ITCS6155/8155 Knowledge Based Systems
- ITCS6161/8161 Advanced Topics in Database Systems
- ITCS6150/8150 Intelligent Systems
- ITCS6050/ITCS8050 Intelligent Query Answering Systems
- ITCS 6114/8114 Algorithms and Data Structures
- ITCS 2175 Logic and Algorithms
- ITCS 2215 Design and Analysis of Algorithms

PUBLICATIONS

"From Data to Classification Rules and Actions", Z. Ras, A. Dardzinska, International Journal of Intelligent Systems, Wiley, Vol. 26, Issue 6, 2011, 572-590

"Recognition of Instrument Timbres in Real Polytimbral Audio Recordings", E. Kubera, A. Wieczorkowska, Z.W. Ras, M. Skrzypiec, in Proceedings of 2010 ECML/PKDD Conference, LNCS, Springer, 2010, 97-110

"From Tinnitus Data to Action Rules and Tinnitus Treatment", X. Zhang, Z.W. Ras, P.J. Jastreboff, P.L. Thompson, in Proceedings of 2010 IEEE Conference on Granular Computing, Silicon Valley, CA, IEEE Computer Society, 2010, 620-625

"Clustering Driven Cascade Classifiers for Multi-Indexing of Polyphonic Music by Instruments", W. Jiang, Z.W. Ras, A. Wieczorkowska, in Advances in Music Information Retrieval, Studies in Computational Intelligence, Vol. 274, Springer, 2010, 19-38

"Action Rule Discovery From Incomplete Data", S. Im, Z.W. Ras, H. Wasyluk, in Knowledge and Information Systems Journal, Vol. 25, No. 1, Springer, 2010, 21-33

"On Reaching Consensus by a Group of Collaborating Agents", Z. Ras, A. Dardzinska, in Proceedings of the Eighth International Conference on Flexible Query Answering Systems (FQAS'09), (Eds. T. Andreasen et al), LNAI, Vol. 5822, Springer, 2009, 583-592

"Discriminant Feature Analysis for Music Timbre Recognition and Automatic Indexing", X. Zhang, Z.W. Ras, A. Dardzinska, in "Mining Complex Data", Post-Proceedings of 2007 ECML/PKDD Third International Workshop (MCD 2007), LNAI, Vol. 4944, Springer, 2008, 104-115

"Knowledge Discovery Based Identification of Musical Pitches and Instruments in Polyphonic Sounds", Lewis, R., Zhang, X., Ras, Z.W., Journal of Engineering Applications of Artificial Intelligence, Elsevier, Vol. 20, No. 5, 2007, 637-645

"Solving Failing Queries through Cooperation and Collaboration", Z.W. Ras, A. Dardzinska , Special Issue on Web Resources Access, (Editor: M.-S. Hacid), in World Wide Web Journal, Springer, Vol. 9, No. 2, 2006, 173-186

"Action rules mining", A. Tzacheva, Z.W. Ras, International Journal of Intelligent Systems, Wiley, Vol. 20, No. 7, 2005, 719-736

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS

PRESENTATIONS:

"Selection of the Optimal Electrode in Parkinson's Disease DBS Treatment", K. Ciecierski, Z.W. Ras, A. Przybyszewski, ISMIS 2011 Symposium, June 28-30, 2011, Warsaw, Poland

"Association Action Rules and Action Paths Triggered by Meta-Actions", A. Tzacheva, Z.W. Ras, 2010 IEEE Conference on Granular Computing, August 14-16, 2010, Silicon Valley, CA

"Action Rules and Meta Actions", (Invited Talk), Z.W. Ras, EGC 2010 Conference, January 26-29, 2010, Hammamet, Tunisia

"Detecting Emotion in Classical Music from MIDI Files", J. Grekow, Z. Ras, ISMIS'09 Symposium, September 14-17, 2009, Prague, Czech Republic

"Association Action Rules", Z.W. Ras, A. Dardzinska, L.-S. Tsay, H. Wasyluk, IEEE/ICDM Workshop on Mining Complex Data (MCD 2008), December 15, 2008, Pisa, Italy

"Action Rules Discovery without pre-existing classification rules", Z.W. Ras, A. Dardzinska, RSCTC 2008 Conference, October 23-25, 2008, Akron, Ohio

"Mining scalar representations in a non-tagged music database", R. Lewis, W. Jiang, Z.W. Ras, ISMIS'08 Symposium, May 20-23, 2008, Toronto, Canada

"ARAS: Action Rules discovery based on Agglomerative Strategy", Z.W. Ras, E. Wyrzykowska, H. Wasyluk, ECML/PKDD Third International Workshop (MCD 2007), September 17-21, 2007, Warsaw, Poland

"From Mining Tinnitus Database to Tinnitus Decision-Support System, Initial Study", P. Thompson, X. Zhang, W. Jiang, Z.W. Ras, IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT 2007), November 2-5, 2007, San Jose, Calif.

"Analysis of Sound Features for Music Timbre Recognition", (Invited Talk), X. Zhang, Z.W. Ras, International Conference on Multimedia and Ubiquitous Engineering (MUE 2007)", April 26-28, 2007, Seoul, South Korea

"MIRAI: Multi-hierarchical, FS-tree based Music Information Retrieval System", (Invited Talk), Z.W. R

EXHIBITIONS, PERFORMANCES, PRESENTATIONS, AND READINGS - Cont.

as, X. Zhang, Lewis, R., RSEISP 2007 Conference, June 28-30, 2007, Warsaw, Poland

RESEARCH SUPPORT

Grant I.
"EAGER: Automatic Indexing of Polyphonic Music by Cascade Classifiers", Z. Ras (PI), NSF Award No. IIS-0968647, 5/01/2010 - 4/30/2011, $35,934.00

Grant II.
 "Automatic Indexing of Audio with Timbre Information for Musical Instruments of Definite Pitch", Z. Ras (PI), A. Wieczorkowska (Co-PI), NSF Award No. IIS-0414815, 1/1/2005 – 12/31/2008, $315,000.00

Grant III.
"New Tools and Theories for Knowledge Discovery in Databases", Jan Rauch (PI), Z. Ras (Co-PI), AMVIS Program CONTACT, Award No. ME 913, 2007-2011, 1,225,000 KC

Grant IV.
"Processes for Reaching Consensus using Computer Support & Modern Information Technology", J. Kacprzyk (PI), W. Pedrycz, Z.W. Ras, S. Zadrozny (Co-PIs), State Committee for Scientific Research, Poland, Grant No. N N519 404734, 2008-2011, 450,000 PZ

Grant V.
"Knowledge Discovery and Chase – Tools to Impute Missing Values in Medical Databases", Faculty Research Enhancement Support Program (FRESH), O. Gurdal (PI), Z.W. Ras (Co-PI), NIH, Award No. 5G11HD38486-06 (at Johnson C. Smith Univ.), 2005-2006, $10,000.00

EXTERNAL SERVICE

Editor-in-Chief, Journal of Intelligent Information Systems (Springer), since 1992

Editor-in-Chief, International Journal of Social Network Mining (IJSNM) (InderScience Publishers), since 2010

Deputy Editor-in-Chief, Fundamenta Informaticae Journal (IOS Press), 1994-2009

Senior Editor, International Journal of Data Mining, Modelling and Management (InderScience Publishers)

Editorial Board Member, Fundamenta Informaticae Journal (IOS Press), since 2010

Editorial Board Member, Journal of Experimental and Theoretical Artificial Inteligence (Taylor & Francis), since 1992

Editorial Board Member, Electronic Journal of Information Technology and its Applications (EJITA)

Editorial Board Member, Advances in Information Technology Journal (Polish-Japanese Institute of IT Press)

Team Member, WIC US Research Center (since 2007)

Steering Committee Member, International Rough Set Society (since 2010)

Member of the Research Council, Research Institute of Understanding, The Queen Jadwiga Foundation, Australia (since 2002)

Member of the Senate, Polish-Japanese Institute of Information Technology, Warsaw, Poland (since 1994)

Member, Web Intelligence Consortium (since 2010)

SERVICE TO THE UNIVERSITY

- ADKD Graduate Certificate Program Director

- First Citizens Bank Scholars Award Selection Committee, Member [2010-2011]

- International Education Faculty Award Selection Committee, Member [2010 - 2011]

- CCI Faculty President [2008-2009]

- O. Max Gardner Award Selection Committee, Member [2008 - 2009]

SERVICE TO THE UNIVERSITY - Cont.

SUPERVISED ACADEMIC WORK

PhD Students graduated under my supervision (2004-2011):

- Agnieszka Dardzinska, Ph.D. Polish Academy of Sciences, Spring, 2004, Ph.D. Dissertation: "Chase Method Based on Dynamic Knowledge Discovery for Predicting Values in Incomplete Information Systems"

- Jacek Grekow, Ph.D. Polish-Japanese Institute of Information Technology, Fall, 2009, Ph.D. Dissertation: "Automatic Detection and Visualization of Emotions in Music"

- Seunghyun Im, Ph.D. University of North Carolina, Charlotte, Fall, 2006, Ph.D. Dissertation: "Data Safekeeping against Knowledge Discovery"

- Wenxin Jiang, Ph.D. University of North Carolina, Charlotte, Fall, 2009, Ph.D. Dissertation: "Polyphonic Music Information Retrieval Based on Multi-Label Cascade Classification System"

- Elzbieta Kubera, Ph.D. Polish-Japanese Institute of Information Technology, Spring, 2011, Ph.D. Dissertation: "The role of temporal attributes in identifying instruments in polytimbral music recordings"

- Rory Lewis, Ph.D. University of North Carolina, Charlotte, Spring, 2008, Ph.D. Dissertation: "Mining Emotions in a Non-Tagged Music Database"

- Li-Shiang Tsay, Ph.D. University of North Carolina, Charlotte, Fall, 2005, Ph.D. Dissertation: "Discovering Extended Action Rules (DEAR)"

- Angelina A. Tzacheva, Ph.D. University of North Carolina, Charlotte, Fall, 2004, Ph.D. Dissertation: "Action Rules: Feasibility and Lowest Cost Reclassification"

- Cynthia Xin Zhang, Ph.D. University of North Carolina, Charlotte, Fall, 2007, Ph.D. Dissertation: "Cooperative Music Retrieval Based on Automatic Indexing of Music by Instruments and Their Types"