Graduate Council Program Review Committee
October 22, 2008
1:30 p.m., 327 MH
Agenda

1. Welcome and call to order
2. Approval of minutes from the October 8 meeting
3. Review of the M.S. in Health Care Informatics new degree proposal, COHPA
4. Other business
5. Adjournment

Committee Members

Kenneth Adams, COHPA
TBD, COM
Tosha Dupras, COS
Richard Harrison, Libraries
Robert Jones, CAH
Alain Kassab, CECS
Patrick LiKam Wa, COP
Walter Milon, CBA
Anne Norris, CON
H. G. Parsa, RCHM
Stephen Sivo, COE
Max Poole, Liaison for GS
Patricia Bishop, Ex Officio for AA

Florida Board of Governors

Request to Offer a New Degree Program

University of Central Florida University Submitting Proposal	Summer 2009 Proposed Implementation Date
College of Health and Public Affairs Name of College or School	Health Management and Informatics Name of Department(s)
Health Care Informatics Academic Specialty or Field	Master Program in Health Care Informatics (51.0706) Complete Name of Degree (Include Proposed CIP Code)

The submission of this proposal constitutes a commitment by the university that, if the proposal is approved, the necessary financial resources and the criteria for establishing new programs have been met prior to the initiation of the program.

Date Approved by the University Board of Trustees		President	Date
Signature of Chair, Board of Trustees	Date	Vice President for Academic Affairs	Date

Provide headcount (HC) and full-time equivalent (FTE) student estimates of majors for Years 1 through 5. HC and FTE estimates should be identical to those in Table 1. Indicate the program costs for the first and the fifth years of implementation as shown in the appropriate columns in Table 2. Calculate an Educational and General (E&G) cost per FTE for Years 1 and 5 (Total E&G divided by FTE).

Implementation Timeframe	Projected Student Enrollment (From Table 1)		Projected Program Costs (From Table 2)		
	HC	FTE	Total E&G Funding	Contract & Grants Funding*	E&G Cost per FTE
Year 1	20	15	$25,935		$1,729
Year 2	40	22.5			
Year 3	40	22.5			
Year 4	40	22.5			
Year 5	40	22.5	$318,934		$14,175

*Note: External funds from student continuing fees through continuing education

Note: This outline and the questions pertaining to each section must be reproduced within the body of the proposal to ensure that all sections have been satisfactorily addressed.

INTRODUCTION

I. Program Description and Relationship to System-Level Goals

A. Briefly describe within a few paragraphs the degree program under consideration, including (a) level; (b) emphases, including concentrations, tracks, or specializations; (c) total number of credit hours; and (d) overall purpose, including examples of employment or education opportunities that may be available to program graduates.

The University of Central Florida proposes the adoption of a M.S. program in Health Care Informatics. This program will serve the community by educating students to deliver healthcare with equity, efficiency, quality, and cost-effectiveness. The target audience for this program consists of three subsets of students 1) working professionals; 2) new graduates from the bachelor's programs in health services administration and health information management programs; 3) other current graduates looking for a career change. All courses will be offered online through the Division of Continuing Education at the University of Central Florida and taught by full time and affiliate UCF faculty.

The Health Care Informatics program will be entirely self-sufficient and will not affect any existing program at the University of Central Florida or any other State of Florida University. Students will pay $778.63 per credit hour with a total of $27,995 for the entire degree program. Each faculty member teaching in the program will do so in addition to their contracted teaching schedule and will be compensated accordingly. Faculty will be compensated at a rate of $1,750 per credit hour, with a total of $7,000 per 4 credit hour course via dual compensation.

The Program in Health Care Informatics will position the University of Central Florida and the Department of Health Management & Informatics to comply with and support the 21st

Century Technology, Research, and Scholarship Enhancement Act ("the Act"). Established during the 2006 Florida Legislative Session and amended during the 2007 Legislative Session, the Act provides for the establishment of university-based Centers of Excellence. The goal of these centers is to give Florida a clear position of leadership in key emerging technology areas with the unique potential for economic and societal impact in the years to come. (Board of Governors, 2008) The Act also includes the 21st Century World Class Scholars Program, which provides matching funds to state universities in order to attract nationally-recognized faculty in the areas of the sciences, technology, engineering, and mathematics ("STEM"). In identifying programs in STEM, health science programs and in particular, Medical Technology, are listed as key strategic areas of emphasis in the State University System in the future.

In line with The ACT, the College of Health and Public Affairs Department of Health Management and Informatics proposes the creation of the Master of Science in Health Care Informatics (HCI). Upon completion of this degree students will be able to work in a competitive environment where health service delivery and administrative systems are driven to achieve equity, cost-effectiveness, quality and efficiency for all people.

The MS Program in Health Care Informatics will provide a practical curriculum that integrates multiple domains of health information technology and management and allows students to develop leadership skills for making informational technology (IT) decisions within a healthcare delivery system. The use of collaborative and practical learning of healthcare informatics and management research will enable graduates to serve the information needs of service organizations and function efficiently and effectively on the basis of an evidence-based knowledge management approach. More specifically, the Program's goals are:

- To develop in students the necessary skills and basic knowledge to be successful in the field of healthcare informatics.
- To increase underlying knowledge of healthcare informatics initiatives and programs.
- To perform cutting edge research in the field of healthcare informatics.
- To prepare students for a successful career in healthcare informatics.

The HCI Program is designed to meet the demand for highly trained healthcare informatics professionals or informaticians by drawing on the experience and expertise of several disciplines: the Institute for Simulation and Training's Simulation, the Computer Science program in the College of Engineering & Computer Science, the MS in Health Services Administration, the BS in Health Information System Management, and the Health Care Informatics Research Lab (Public Affairs) in the College of Health and Public Affairs. The curriculum covers several areas including: systems analysis and design, database and project management, decision support, information network design, and health care applications and procurement.

The program is designed primarily for full-time students who seek employment as health care informatics professionals within health care delivery systems, managed care organizations, and with health care computer vendors. Part-time students will be considered on the limited basis. The proposed program is unique in that it will focus on providing students a thorough grounding in the clinical, management, and business aspects of the health informatics field. If a student wishes to specialize in clinical research management, additional courses may be selected to complement the healthcare informatics course of study. In the future, a sub-specialty track may be designed to allow students who are interested in pursuing clinical research & enterprise management.

The Master of Science in Health Care Informatics degree will be awarded upon completion of appropriate prerequisite course work and 36 credits of prescribed graduate study in each of the following areas; Health Care Informatics, Health Care Management, and Research of Practicum.

Graduates of the program will have opportunities for employment as practitioners, analysts, researchers, and managers. A recent job search within the state of Florida listed numerous openings for individuals with a health informatics degree in health centers, hospital systems, and health insurance organizations (see Appendix for detailed listings of job opportunities).

B. Describe how the proposed program is consistent with the current State University System (SUS) Strategic Planning Goals. Identify which goals the program will directly support and which goals the program will indirectly support. (See the SUS Strategic Plan at http://www.flbog.org/StrategicResources/)

In addition to supporting the goals of the The 21st Century Technology, Research, and Scholarship Enhancement Act established by the Florida Legislature, the MS Program in Health Care Informatics will also support the Strategic Planning Goals of the Florida Board of Governors.

The proposed MS Program in Health Care Informatics will directly support Goal 1 of the State University System: Access to and production of degrees. This goal will be met by providing individuals in Florida with the first comprehensive degree program in health informatics.

The proposed MS Program in Health Care Informatics will directly support Goal 2 of the State University System: Meeting statewide professional and workforce needs. As there is currently no program in the State of Florida to train health informatics professionals, this program will fill that gap. There is a growing demand for professionals with degrees in health

informatics to develop and implement information systems to enable healthcare professionals to make more efficient and effective diagnoses and treatments.

It is estimated that if the healthcare industry continues to grow in its current pattern, the demand for healthcare information professionals will increase by 40,000 jobs (Yeager, 2008). The demand of Health Care Informatics professionals is growing not just in the United States, but also internationally. An English workforce study found that 25,000 professionals were working in the area of health informatics, growing rapidly from only 20,000 in 2002 and 6,000 in 1993 (Department of Health, 2002; Association for ICT Professionals in Health and Social Care, 2006).

The proposed MS Program in Health Care Informatics will directly support Goal 3 of the State University System: Building world-class academic programs and research capacity. The core faculty using the facilities of the informatics research lab will provide students with the expert knowledge and resources to become premier professionals in the field of health informatics.

The proposed MS Program in Health Care Informatics will directly support Goal 4 of the State University System: Meeting community needs and fulfilling unique institutional responsibilities. The MS Program in Health Care Informatics will train professionals in the field of healthcare information technology. The skills that these students will possess upon graduation will help to ensure patient safety, quality outcomes, decreased billing times, and a variety of other information system issues. These graduates will then be able to apply their knowledge of healthcare informatics outside of the university, benefitting the community through their expert knowledge in evidence-based diagnosis and treatment. The program will fulfill the institutional

responsibility to serve the community of Central Florida through providing access to a professional degree in healthcare informatics as well as through producing degreed experts in the field.

INSTITUTIONAL AND STATE LEVEL ACCOUNTABILITY

II. Need and Demand

A. Need: Describe national, state, and/or local data that support the need for more people to be prepared in this program at this level. Reference national, state, and/or local plans or reports that support the need for this program and requests for the proposed program which have emanated from a perceived need by agencies or industries in your service area. Cite any specific need for research and service that the program would fulfill.

In 2007, the United States House of Representatives passed a bill referred to as "10,000 Trained by 2010 Act" calling for the need to educate more individuals in health informatics and develop more programs in electronic health information management (American Health Information Management Association, 2007). This move signifies the current need within the healthcare field to adequately train future health professionals to use technology to best serve the needs of the patient population now and in the future. With the recent explosion of evidence-based health care, the use of health informatics gives organizations the ability and advantage of using technology to make informed decisions about individual and collective health (Wan, 2003).

Revere, Turner, Madhavan, Rambo, Bugni, Kimball, and Fuller (2007) note the critical need for comprehensive informatics to guide decision-making in healthcare. In 2007, the Robert Wood Johnson Foundation awarded funding to the American Medical Informatics Association to develop documents serving as the foundation of informatics as a medical subspecialty. It appears as if this trend will continue to gain speed in the future as technology increasingly is incorporated

into healthcare provision, making it essential that healthcare professionals be trained and prepared to utilize information and technology in the workplace.

The American Health Information Management Association (2006) highlights the need for a workforce trained in information technology and health communications, while also articulating that the limited number of professionals trained in health informatics is not keeping up to pace.

A recent survey of Chief Information Officers conducted by Health Data Management (2008) showed that 81% of the responding organizations, plan to increase their budget by 5-10% in the next fiscal year. The number one priority for this increased budgetary allocation is the implementation of electronic medical records. Informatics professionals are integral to the implementation, and maintenance of electronic medical records. The electronic medical records movement will provide excellent career opportunities for students with an academic background in informatics.

A systematic plan is also not in place to ensure an adequate number of professionals are trained to meet the needs of individuals seeking healthcare services in the future. Developing an online MS Program of Health Care Informatics at the University of Central Florida would begin to fill the gap, educating professionals and conducting much needed research in this evolving field.

Several quotations from the field of healthcare informatics in the Central Florida region are presented as follows (Appendix A):

- **Dr. Stephen Schuler, President of DSHI Systems (an innovative health information technology firm),** wrote: "I would like to provide my strongest encouragement for the planned creation of an MS in Health Care Informatics program, in the Department of Health Management and Informatics, at UCF. As you well know, the challenges facing health care today in the area of electronic medical records is at a critical point. We face an already daunting challenge to integrate a variety of disparate hospital-based systems; we

are simultaneously presented with new innovations in health care services. The creation of free-standing emergency rooms, nurse retail clinics, and urgent care facilities promise more silos of data. Your decision to offer this program is not only wise, but mission critical, as health care finds itself in need of people with the proper qualifications to address these new challenges…I look forward to seeing the University of Central Florida continue to play an expanding role in the education of healthcare informatics professionals."

- **Mr. Blake Dickeson, President of the Virtual Health Solutions Company,** stated that "…informatics is the key to effective health care in our time. I would be honored to provide support now through any representation and affiliation possible. In the future, I believe I speak for Lee and Steve that we would enjoy an even deeper commitment."

- **Ms. Judy Gizinski, President/CEO of the Palm Bay Community Hospital, wrote: "**I would be honored to serve on the Advisory Committee of the Health Care Informatics program. I developed the Clinical Informatics department here at Health First in 2001 and I remain passionate about the value of a trained informaticist in relation to the success of the electronic health record… As we know the field of IT changes so rapidly, I feel I will be of extreme value in the initial phase of this program development just leaving the oversight of our Clinical Informatics department but after being away awhile that will have to be reevaluated by you and your committee to determine continued worth and time commitment. I may not be as well suited to serve as a preceptor in my new role as I would have in my prior role, upon review of the course curriculum I guess that could be determined. I look forward to hearing more about the program and the curriculum. Please let me know how I can assist as I know this will be a huge success!"

- **Ms. Kelly McLendon, President of the Health Information Xpert,** stated: "My HIM and Informatics consultancy requires the use of trained professionals at all levels of education from AS to Masters levels. I don't believe the Central Florida area is of yet well served in Informatics with a curricula and program oriented towards the latest trends, as well as the legacy system basis, therefore I believe it to be very appropriate to have UCF create this program. I believe the entire state and region can benefit from more professionals with this type of background. I certainly entertain utilization of these resources as my business requirements present opportunities to do so."

B. Demand: Describe data that support the assumption that students will enroll in the proposed program. Include descriptions of surveys or other communications with prospective students.

The Health Information Management baccalaureate program currently has 52 students. Of those student graduating in 2006-2007, 80% indicated a desire to pursue a masters degree or higher upon graduation. Meaning that, it is feasible for the BS in HIM

to provide at least 17 applicants to the MS in Health Care Informatics program.

In addition to the Health Information Management program, the Health Services Administration Baccalaureate program will be a source of students. The BS- HSA program currently has over 600 active students and is the largest program of its kind in the Nation. Of those students graduating in the 2006-2007 academic year (n=181), 61% indicated on their graduating senior survey that they plan to pursue a Masters Degree. If just half of those students apply to the MS in Health Care Informatics degree program, the program would net an applicant pool of over 50 students.

In addition to the applicant pool generate by current students, the high job prospects for graduates will generate demand as well. According to U.S. News and World Report (2008) health informatics is one of the fastest growing specialties within the area of healthcare, making it one of the ten fastest growing occupations in healthcare in the United States. Back in 1996, the United States Government Accounting Office noted the increase in demand for health information by both consumers and providers to guide healthcare decisions. In addition, it has been noted that while the demand for general informatics training has leveled off, the desire for health informatics education has increased.

In 2004, the Office of the National Coordinator for Health Information Technology (ONCHIT) was formed by the US Department of Health and Human Services, under the executive orders of the President of the United States, with the goal of expanding the use of electronic health records and information within the United States. The support and growth of health informatics is also occurring throughout Europe, Asia, and Australia. Students graduating with health informatics degrees can

expect a desirable position awaiting them (U.S. News and World Report, 2008).

The number of open positions vastly exceeds program graduates, with more than 6,000 open health informatics positions each year and only 2,600 graduates entering the field (American Health Information Management Association, 2007). A telephone survey of chief information officers of several central Florida hospitals suggests vibrant opportunities for healthcare informatics graduates. Just among 31 hospitals surveyed there were more than 70 positions available with salaries ranging from $57,000 to $84,000 per year.

In addition, anecdotal evidence including conversations with prospective students have demonstrated the interest and desire for such programs. There are no other degrees offered in the State of Florida that compare to this program in Health Care Informatics. The nearest competitor is the University of Alabama at Birmingham and their program focuses on managing informatics programs rather than serving in a capacity in which one can actually develop the needed applications to make this program effective and useful and then serve in a leadership position within such a program. Given the lack of educational opportunities in healthcare informatics, it appears to be an opportune time to implement such a program at the University of Central Florida.

C. If similar programs (either private or public) exist in the state, identify the institution(s) and geographic location(s). Summarize the outcome(s) of any communication with such programs with regard to the potential impact on their enrollment and opportunities for possible collaboration (instruction and research). Provide data that support the need for an additional program.

The online MS program in Health Care Informatics would be the first of its kind in the Florida State University System. Other universities in Florida, including Florida

State University, the University of South Florida, Florida Atlantic University, and the University of Miami offer some courses in informatics through either a health or nursing program. However, no other state university has a degree program designed to educate and train students in healthcare informatics.

D. Use Table 1 (A for undergraduate and B for graduate) to categorize projected student headcount (HC) and Full Time Equivalents (FTE) according to primary sources. Generally undergraduate FTE will be calculated as 40 credit hours per year and graduate FTE will be calculated as 32 credit hours per year. Describe the rationale underlying enrollment projections. If, initially, students within the institution are expected to change majors to enroll in the proposed program, describe the shifts from disciplines that will likely occur.

Table 1 outlines the projected student enrollment for the MS Health Care Informatics program. These estimations are based on evidence of current student interest in the program, as well as an aggressive marketing campaign to recruit working professionals. The largest single group of students entering the program in years 1-5, is students that recently graduated from UCF. These students will primarily come from the Health Information Management and Health Services Administration programs where the demand for a master's degree is high.

In addition, students with an undergraduate degree from another University will also be targeted for enrollment. These students will come from a variety of backgrounds, including both instate and out of state Universities.

The projected enrollment also includes students returning to complete a master's degree. These students will include current healthcare professionals, as well as, working professionals looking for a career change.

TABLE 1-B

PROJECTED HEADCOUNT FROM POTENTIAL SOURCES

(Healthcare Informatics Master of Science Degree Program)

SOURCE OF STUDENTS (Non-duplicated headcount in any given year)*	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
	HC	FTE	HC	FTE	HC	FTE	HC	FTE	HC	FTE
Individuals drawn from agencies/ industries in your service area (e.g., older returning students)	2	1.50	4	2.25	4	2.25	4	2.25	4	2.25
Students who transfer from other graduate programs within the university**	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Individuals who have recently graduated from preceding degree programs at this university	10	7.50	14	6.75	14	9.00	14	6.75	14	9.00
Individuals who graduated from preceding degree programs at other Florida public institutions	4	3.00	14	9.00	14	6.75	14	9.00	14	6.75
Individuals who graduated from preceding degree programs at non-public Florida institutions	2	1.50	4	2.25	4	2.25	4	2.25	4	2.25
Additional in-state residents***	2	1.50	4	2.25	4	2.25	4	2.25	4	2.25
Additional out-of-state residents***	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Additional foreign residents***	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Other (Explain)***	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Totals	**20**	**15.00**	**40**	**22.50**	**40**	**22.50**	**40**	**22.50**	**40**	**22.50**

E. Indicate what steps will be taken to achieve a diverse student body in this program, and identify any minority groups that will be favorably or unfavorably impacted. <u>The university's Equal Opportunity Officer should read this section and then sign and date in the area below.</u>

A key part of the mission of the University of Central Florida's College of Graduate Studies is to recruit minority students and promote a more diverse graduate student

population. The College of Graduate Studies will collaborate with the MS in Health Care Informatics program to develop and execute effective recruiting plans to ensure a high-quality and more diverse graduate student population.

In addition to University based resources, the American Health Information Association seeks to enhance diversity within the field and has developed a diversity task force. The Association encourages student minority membership and seeks to recruit and retain diverse students within the field.

The current MS program in Health Service Administration at the University of Central Florida has a diverse student body, with 12.5% Black, 6.25% Asian, 10% Hispanic, 5% Non-resident Alien, and 66.25% White. The program faculty is also diverse, with 17% Asian, 17% Hispanic, and 77% White.

For the undergraduate program in Health Information Management at the University of Central Florida the racial distribution is 17% Black, 10% Asian, 12% Hispanic, 1% Indian and 60% White. The proposed program will recruit from the HIM undergraduate program for students.

The proposed MS Program in Health Care Informatics will continue to develop a diverse set of faculty and students within the College of Health and Public Affairs at the University of Central Florida.

_____ _____

Equal Opportunity Officer Date

III. Budget

A. Use Table 2 to display projected costs and associated funding sources for Year 1 and Year 5 of program operation. Use Table 3 to show how existing Education & General funds will be shifted to support the new program in Year 1. In narrative form, summarize the contents of both tables, identifying the source of both current and new resources to be devoted to the proposed program. (Data for Year 1 and Year 5 reflect snapshots in time rather than cumulative costs.)

TABLE 2

PROJECTED COSTS AND FUNDING SOURCES

Instruction & Research Costs (non-cumulative)	Year 1						Year 5				
	Funding Source						Funding Source				
	Reallocated Base * (E&G)	Enrollment Growth (E&G)	Other New Recurring (E&G)	New Non-Recurring (E&G)	Contracts & Grants (C&G)+	Subtotal E&G and C&G	Continuing Base** (E&G)	New Enrollment Growth (E&G)	Other*** (E&G)	Contracts & Grants (C&G)+	Subtotal E&G and C&G
Faculty Salaries and Benefits	$25,935	$0	$0	$0	$0	$25,935	$40,867	$214,067	$0	$0	$254,934
A&P Salaries and Benefits	$0	$0	$0	$0	$26,666	$26,666	$0	$64,000	$0	$0	$64,000
USPS Salaries and Benefits	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Personnel Services	$0	$0	$0	$0	$21,000	$21,000	$0	$0	$0	$28,000	$28,000
Assistantships and Fellowships	$0	$0	$0	$0	$12,900	$12,900	$0	$0	$0	$12,900	$12,900
Library	$0	$0	$0	$0	$5,000	$5,000	$0	$0	$0	$7,500	$7,500
Expenses	$0	$0	$0	$0	$124,467	$124,467	$0	$0	$0	$182,865	$182,865
Operating Capital Outlay	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Special Categories	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Costs	$25,935	$0	$0	$0	$190,033	$215,968	$40,867	$278,067	$0	$231,265	$550,199

*Identify reallocation sources in Table 3.

**Includes recurring E&G funded costs ("reallocated base", "enrollment growth", and "other new recurring") from Years 1-4 that continue into Year 5.

***Identify if non-recurring.

"+ External funds from student fees charged through Continuing Education

Faculty and Staff Summary

Total Positions (person-years)	Year 1	Year 5
Faculty	0.24	0.49
A&P	1	1
USPS	0	0

Calculated Cost per Student FTE

		Year 1	Year 5
Total E&G Funding		$25,935	$318,934
Annual Student FTE		15.00	22.5
E&G Cost per FTE		$1,729	$14,175

Table 2 summarizes the projected costs and funding sources for the MS in Health Care Informatics program. Approximately $26,000 will be reallocated from the Health Management and Informatics program to assist with faculty salary and benefits in the initial year of the program (see Table 3). In year 1, an additional $195,315 will be generated by student fees charged through continuing education and applied to the administrative and academic functions of the program. These costs include salaries for an A&P employee and adjuncts, as well as assistantships, library materials, and other expenses. One additional faculty member will be hired during years 3 and 4 of this program as well.

TABLE 3
ANTICIPATED REALLOCATION OF EDUCATION AND GENERAL FUNDS

Program and/or E&G account from which current funds will be reallocated during Year 1	Base before reallocation	Amount to be reallocated	Base after reallocation
18 85 0001 Health Management and Informatics	$173,054	$25,935	$147,119
Totals	$173,054	$25,935	$147,119

B. If other programs will be impacted by a reallocation of resources for the proposed program, identify the program and provide a justification for reallocating resources. Specifically address the potential negative impacts that implementation of the proposed program will have on related undergraduate programs (i.e., shift in faculty effort, reallocation of instructional resources, reduced enrollment rates, greater use of adjunct faculty and teaching assistants). Explain what steps will be taken to mitigate any such impacts. Also, discuss the potential positive impacts that the proposed program might have on related undergraduate programs (i.e., increased undergraduate research opportunities, improved quality of instruction associated with cutting-edge research, improved labs and library resources).

The proposed MS Program in Health Care Informatics will not directly influence existing instructional programs. It is anticipated that the new program will foster an interdisciplinary approach to healthcare information management with emphases on a health care management core, a healthcare informatics course, and an applied informatics/research practicum.

In 2007, the American Health Information Management Information Association (AHIMA) announced that they are considering a move from bachelors programs to masters programs due to the quantity and complexity of material that is currently covered in bachelor's degree programs. Although this master's program is not meant to replace the current Health Information Management (HIM) program, it will enhance it by providing more in-depth coverage of informatics topics important for HIM professionals.

Undergraduate students will be positively impacted by the addition of this master's program since the undergraduate students in the Health Information Management Program will have more opportunities to work on research projects with faculty and graduate students, enhancing their capabilities and preparation. Current HIM students will also be able to continue their education in healthcare informatics at the University of Central Florida.

Students in all of the current Health Services and Health Information Management programs will be able to utilize the computer lab developed by AHIMA via Internet. This will certainly

enhance the quality of our undergraduate HIM program. The cost for instructor and student accounts set up per year for 41-100 students is $5,250 annually. The $5,250 annual fee will be generated by fees assessed to the students in the program as a portion of their tuition.

C. Describe other potential impacts on related programs or departments (e.g., increased need for general education or common prerequisite courses, or increased need for required or elective courses outside of the proposed major).

This online graduate program is a self-sustaining program that will not directly affect other instructional programs in the Department of Health Management and Informatics or at the university. Only three courses will be taught solely by other affiliated or adjunct faculty members who bring additional expertise to the program.

D. Describe what steps have been taken to obtain information regarding resources (financial and in-kind) available outside the institution (businesses, industrial organizations, governmental entities, etc.). Describe the external resources that appear to be available to support the proposed program.

External resources are not required, nor requested. However, it is anticipated that local healthcare organizations, such as the seven local hospitals within the Florida Hospital System, the six local hospitals within the Orlando Health System, medical technology firms, and Florida Blue Cross-Blue Shield, will provide research practicum opportunities for students. Healthcare executives from local hospitals and healthcare organizations express a strong interest in serving as preceptors and offering opportunities for students to complete their practicum in their work sites. The table below summarizes their names and organizations:

Contacts for Health Information Management and Informatics in Florida

Organization Name	Preceptor/Title	Address	Specialty Areas
Orlando Health	Steve Margolis, MD CIO	65 Sturtevant Street,MP5, Orlando, FL 32806	Medical informatics
Good Health Network, Inc.	James Kragh President	218 Jackson Street, Maitland, FL 32751	Health information management & networks
Rosen Medical Center	Kenneth A. Aldridge	7600 International Drive, Orlando, FL 32819-8293	Ambulatory care management & informatics
Enterprise Technology Partners, LLC	Josha High CEO	37 North Orange Ave., Suite 412, Orlando, FL 32801	Health information technology & planning
St. Vincents & Scension Health	Phil C. Perry, MD Senior VP & Chief Medical Officer	1800 Barrs Street, Suite 1302, Jacksonville, FL 32204	Medical informatics
Orange County Health Department	Kevin M. Sherin, MD, MPH, Director	6101 Lake Ellenor Drive, Orlando, FL 32809	Public health informatics
Florida Hospital Association	Kim Streit, MBA, MHS, Vice President of Healthcare Research and Information Services	307 Park Lake Circle, Orlando, FL 32803	Hospital informatics
Orlando VA Healthcare Center	Michael Doukas, MD, MPA, Chief of Staff	5201 Raymond Street, Orlando, FL 32803	Electronic medical record management
Virtual Health Solutions	Blake H. Dickeson, MHA, President	1601 East Amelia Street, Orlando, FL 32803	Healthcare informatics
Quest Diagnostics	Patrick Howard Technology Consultant	4225 East Fowler Avenue, Tampa, FL 33617	Clinical informatics & software development
Science Applications International	Brian Levine Division Manager	7380 Sand Lake Road, Suite 120, Orlando,	IT project management

Corporation		FL 32819	
Florida Hospital	Andy Crowder CIO		Health Information Technology Management
Health-First	Judy Gizinski, Hospital CEO		Health Technology Innovation and Management
Blue Cross Blue Shield_ Florida	Brad Jordan Director, Marketing Analytics	4800 Deerwood Campus Parkway Building 300, 3rd Floor, Jacksonville, FL 32246	Healthcare Informatics and Consumer Informatics
Cogon Systems	Huy B. Nguyen, MD CEO	17 S. Palafox Place, Suite 300 Pensacola, FL 32591	Medical Informatics & Health Information Technology Development
Health Information Xpert, LLC	Kelly McLendon, President	Titusville, FL	Health Information Technology
MedSynergies	Steve Corso, President	National Organization	Healthcare Informatics and Physician Billing Service
Galvanon	Raj Toleti	Orlando, FL	Healthcare Informatics

Notes: Letters of support can be found in Appendix B.

Both the undergraduate HIM program and the BS and MS programs in Health Services Administration have relationships with health care providers for possible internship and/or practicum sites throughout the state of Florida. These sites include acute care hospitals as well as other providers of health services. The other potential sites include the following:

1. Health Central
2. Orlando Health System
3. Florida Hospital System
4. Health First System
5. East Central Florida Health Planning Council
6. Orlando Veterans Medical Center
7. Gainesville Veterans Medical Center
8. West Palm Veterans Medical Center

9. Miami Veterans Medical Center
10. VA Integrated Service Network VIII in St. Petersburg
11. Naval Hospital Jacksonville FL
12. WellMed Inc.
13. MedSynergies
14. Galvanon
15. MedAdvantage

IV. Projected Benefit of the Program to the University, Local Community, and State

Use information from Table 1, Table 2, and the supporting narrative for "Need and Demand" to prepare a concise statement that describes the projected benefit to the university, local community, and the state if the program is implemented. The projected benefits can be both quantitative and qualitative in nature, but there needs to be a clear distinction made between the two in the narrative.

Benefit to UCF

The specific benefits of the program for UCF are to: 1) design and implement an interdisciplinary specialization in healthcare informatics and clinical research enterprise management; 2) form a close collaboration and partnership with the health service sector that will enhance the development of innovative curricula and research projects; and 3) establish sponsored research and program activities in informatics that will enhance the reputation of the University of Central Florida.

Benefit to the Community

The specific benefit to the greater Orlando area is to 1) produce highly trained and professional informaticians and clinical research managers for the health sector; and 2) transfer knowledge developed from interdisciplinary research, pertaining to healthcare informatics and performance improvement, to evidence-based health service management and practice.

This program will also help to alleviate the impending shortage of healthcare informatics professionals. It is estimated that 80 to 100 professionally trained healthcare

informaticians are needed in the Greater Orlando Area. This program will supply 40 students per year in high paying jobs that will assist our healthcare partners in Central Florida. In addition, the growth of medical care enterprises located in the Lake Nona Area will need a large number of healthcare informaticians and clinical research managers in the future.

Broader Impacts

The broader impacts of the proposed activity include: 1) the integration of the principles and methodological approaches of diverse disciplines in conducting scientific studies that lead to the creation of evidence-based knowledge for improving clinical and health services; and 2) to enhance the effectiveness and efficiency of service organizations. The proposed program will provide resources for curriculum development, course implementation, student mentoring, traineeship, and research program development in collaboration with the public and private service sectors. In addition, a research practicum or thesis will be required to foster the interdisciplinary and collaborative work between students and affiliated faculty/preceptors. By disseminating and applying research findings to the service sectors, we hope to promote improvement in performance and productivity and then, in turn, to improve the well-being of diverse populations at the local, region and state levels.

The program stresses the long-term goal of enhancing the health service delivery system through the application of information technology, data warehousing, data mining, and an evidence-based approach to performance improvement. The program will train students to mobilize the institutional and technological factors needed to support clinical and

executive decision making and performance improvement through the development of a cadre of healthcare informaticians to enhance organizational performance in the health sector and to improve the well-being of diverse populations.

Unique Nature of the Program

The MS degree in Health Care Informatics will be a unique program that will allow students to learn applied skills that will directly translate to the work environment. By applying data warehousing, guided by a systems framework, and data mining techniques to problem areas in the public sector, researchers compile multiple databases and apply computer software to find best practice models to optimize the performance or output of health service agencies.

Informatics research has a broad perspective when it applies to the investigation of determinants and consequences of health services and management. The interdisciplinary collaboration will contribute to the theoretical and knowledge base for improving the performance of service organizations and, in turn, generate evidence-based management and practice. We anticipate generating scientific knowledge on how to enhance equity, efficiency, quality, and effectiveness of health service organizations.

V. Access and Articulation – Bachelor's Degrees Only

A. If the total number of credit hours to earn a degree exceeds 120, provide a justification for an exception to the policy of a 120 maximum and submit a request to the BOG for an exception along with notification of the program's approval. (See criteria in BOG Regulation 6C-8.014)

Not applicable.

B. List program prerequisites and provide assurance that they are the same as the approved common prerequisites for other such degree programs within the SUS (see Common Prerequisite Manual http://www.facts.org). The courses in the Common Prerequisite Counseling Manual are intended to be those that are required of both

native and transfer students prior to entrance to the major program, not simply lower-level courses that are required prior to graduation. The common prerequisites and substitute courses are mandatory for all institution programs listed, and must be approved by the Articulation Coordinating Committee (ACC). This requirement includes those programs designated as "limited access."

If the proposed prerequisites are not listed in the Manual, provide a rationale for a request for exception to the policy of common prerequisites. NOTE: Typically, all lower-division courses required for admission into the major will be considered prerequisites. The curriculum can require lower-division courses that are not prerequisites for admission into the major, as long as those courses are built into the curriculum for the upper-level 60 credit hours. If there are already common prerequisites for other degree programs with the same proposed CIP, every effort must be made to utilize the previously approved prerequisites instead of recommending an additional "track" of prerequisites for that CIP. Additional tracks may not be approved by the ACC, thereby holding up the full approval of the degree program. Programs will not be entered into the State University System Inventory until any exceptions to the approved common prerequisites are approved by the ACC.

C. If the university intends to seek formal Limited Access status for the proposed program, provide a rationale that includes an analysis of diversity issues with respect to such a designation. Explain how the university will ensure that community college transfer students are not disadvantaged by the Limited Access status. NOTE: The policy and criteria for Limited Access is identified in BOG Regulation 6C-8.013. Submit the Limited Access Program Request form along with this document.

Not applicable.

D. If the proposed program is an AS-to-BS capstone, ensure that it adheres to the guidelines approved by the Articulation Coordinating Committee for such programs, as set forth in Rule 6A-10.024 (see Statewide Articulation Manual http://www.facts.org). List the prerequisites, if any, including the specific AS degrees which may transfer into the program.

Not applicable.

INSTITUTIONAL READINESS

VI. Related Institutional Mission and Strength

A. Describe how the goals of the proposed program relate to the institutional mission statement as contained in the SUS Strategic Plan and the University Strategic Plan.

The MS Program in Health Care Informatics supports the SUS Strategic Plan and the University of Central Florida's Strategic Plan by addressing the key issue of how to advance health care information and technology research and meet the workforce demand for well-trained professionals who are able to manage healthcare information and clinical research enterprise. The MS Program in Health Care Informatics complements the SUS Strategic Plan by enhancing innovation and student access to advanced technological learning.

The program supports the mission statements of the University of Central Florida's College of Graduate Studies and the College of Health and Public Affairs, the program develops and supports an emerging trend in graduate learning and works to train graduate students through educational excellence for a competitive workforce. The program also supports the goals of the newly formed College of Medicine and will offer invaluable linkages for healthcare informatics professionals.

The MS Program in Health Care Informatics will serve the surrounding community, and thus support UCF's mission to be a research university, by educating professionals in health informatics, thereby providing the region with healthcare workers with advanced knowledge to improve the quality, delivery, and cost effectiveness of the region's healthcare system. The program will also advance the understanding of the technology

related to information in healthcare and enhance the knowledge base of the profession by providing students with a high quality education in this important field.

B. Describe how the proposed program specifically relates to existing institutional strengths, such as programs of emphasis, other academic programs, and/or institutes and centers.

The proposed MS Program in Health Care Informatics will have the support of current faculty with expertise in healthcare information and research and will utilize the existing Informatics Lab. Other institutional bodies that will enhance the program include the Department of Health Management and Informatics within the College of Health and Public Affairs as well as the still developing M.D. program in the University of Central Florida's College of Medicine, leading to opportunities for collaboration in health informatics research and innovation. In addition, the Health Informatics Research Lab located at the IST Building within the Doctoral Program in Public Affairs will foster further development of practice-based research, using health information technology and informatics systems, to improve the efficiency and quality of health services. Students in the proposed program will have access to large data sets and to the faculty and technical support staff to conduct research pertinent to applied health informatics such as the development of executive and clinical decision support systems and simulation.

C. Provide a narrative of the planning process leading up to submission of this proposal. Include a chronology (table) of activities, listing both university personnel directly involved and external individuals who participated in planning. Provide a timetable of events necessary for the implementation of the proposed program.

The College of Health and Public Affairs is leading the development of applied healthcare informatics through its establishment of the Health Care Informatics Research

Lab. In 2007, Dr. Wan began the process of developing a concept paper on Healthcare Informatics. After the initial concept was established, Dr. Wan collaborated with several key researchers (Duane Steward, Jackie Zhang, Sam Marathe, Peggy Meli, Morgan Wang, and Khalid Moidu) in the development of healthcare informatics research. In May 2008 the planning committee for the MS in Health Care Informatics was formed and includes Thomas Falen, Alice Noblin, Thomas Wan, and Jackie Zhang. During the summer of 2008, the curriculum design for the program was formed and the proposal was reviewed.

The remaining parts of the planning process include securing approval for the proposal and the budget planning process.

Planning Process

Date	Participants	Planning Activity
September 2007	Wan	Develop concept paper on Healthcare Informatics
November 2007	Wan,and Liberman	White paper submitted and accepted
May 2008	Wan, Noblin, Falen, Zhang, and Liberman	Develop an institutional effectiveness matrix Identify student outcomes Develop a five year course schedule Establish headcount and FTEs Identify average faculty salary
June 2008	Falen and Noblin	Conduct needs assessment
June 2008	Wan, Liberman, Poole, Holmes, and Hajdenberg (ORMC)	Revision of the curriculum design that includes an option for clinical research and enterprise management. Discussions with MD Anderson and other community healthcare organizations to establish support for the program.
July 2008	Walker, Liberman, Holmes, and Wan	Budget proposal review and revision
July 2008	Cortelyou-Ward, Wan and Liberman	Identify program mission Develop program description Create program quality indicators
August 2008	Wan and Liberman	Identify program faculty

		Establish faculty productivity
September 2008	Cortelyou-Ward, Liberman,and Holmes	Create program budget
September 2008	Liberman	Meet with HIM Advisory Board
October 2008	Cortelyou-Ward and Liberman	Approval of departments/colleges
November 2008	Cortelyou-Ward and Liberman	Approval of graduate council
December 2008	Cortelyou-Ward and Liberman	Complete final proposal draft
January 2009	Cortelyou-Ward and Liberman	Send proposal to board of trustees
March 2009		BOT approval sought

Events Leading to Implementation

Date	Implementation Activity
Feb. 2009	Prepare marketing materials
March 2009	Form an advisory board to guide the program development
April 2009	Perform admissions review and recruitment activities
May-July 2009	Prepare the online courses
May 2009	First cohort of students begin program
December 2010	First cohort of students graduate from program

VII. Program Quality Indicators - Reviews and Accreditation

Identify program reviews, accreditation visits, or internal reviews for any university degree programs related to the proposed program, especially any within the same academic unit. List all recommendations and summarize the institution's progress in implementing the recommendations.

Accreditation reviews of professional programs in health management and informatics are essential part of credentialing and recognizing the program success. Currently, there are several organizations that are responsible for accreditation. The Commission on Accreditation of Healthcare Management (CAHME) is responsible for the accreditation of graduate health services administration programs. The Association of University Programs in Health Administration (AUPHA) is responsible for the accreditation of undergraduate health administration programs. The Commission for Accreditation of Health Information Management (CAHIIM) is responsible for accrediting health information and informatics programs. The accreditation process

includes very elaborate documentations of self-study reports, internal and external reviews, and accreditation site visit reports.

The Department of Health Management and Informatics has three programs: 1) the undergraduate program in Health Information Management (HIM); 2) the undergraduate program in Health Services Administration (HSA); and 3) the graduate program, in Health Services Administration (HSA).

Accreditation of BS in Health Information Management

The BS HIM program has been recently reviewed by the Association of Health Information Management. Their external consultant was very complimentary without any specific program recommendations. A detailed report is attached in Appendix C. Annual program accreditation reports are submitted, as part of the accreditation process, but no site visits are required by the Commission for Accreditation of Health Information Management (CAHIIM). The program was granted full accreditation status for six years.

Accreditation of BS and MS in Health Services Administration

The MS in Health Services Administration was reaccredited by the Commission on Accreditation of Healthcare Management Education (CAHME) in November 2007. Details of the reports are attached in Appendix D. The program was given a full accreditation status for six years. The accreditation was thorough and the program received compliments for its outstanding performance with no significant weaknesses noted. The accreditation report states: "The MSHS-HSA program enrolls full- and part-time students and prepares them to function in a wide variety of managerial and supervisory health care environments, ranging from rural to metropolitan, from integrated

delivery systems to free-standing clinical organizations, and from operational activities to educational pursuits. The program has expanded in recognition of, and in response to, the fast-paced and dynamic changes in health care and the health services field. More recent additions include long-term care, post acute care management, behavioral health, and ambulatory care."

Several strengths were noted: 1) The program is able to capitalize on a practicing health attorney with current healthcare examples; 2) the capstone course demonstrates an exceptional integration of the program learning objectives; 3) internship program demonstrates an exceptional integration of diverse opportunities within the community, matching student goals and preceptors/site needs; and 4) the Faculty Center for Teaching and Learning and the Course Development Web Services Departments are outstanding resources for assisting faculty and teaching.

Of the forty-five criteria evaluated by the Accreditation Commission, only three areas were considered partially met. The criteria related concerns and recommendations are summarized as follows:

- "Some information about the program intended to inform the general public, current and prospective students, employers, preceptors and other interested parties is not consistent. The recommendation for this concern is: 'To ensure that all information portals are consistent with respect to the decision analysis course. The current mission statement should be consistent throughout all material.'" **Response: The program has amended the inconsistencies in the mission statement. Program information has been streamlined in the catalog and marketing flyers.**
- "The required curriculum must include a body of knowledge, understanding, skills and values relevant to healthcare management and the Program's mission and goals. Accounting and Financial Management is not adequately covered with the required curriculum. The recommendation is: 'To ensure curriculum includes an increased content in Accounting and Financial Management.'" **Response: A new required course covers managerial accounting and financial management was developed.**

- "Healthcare information systems to support administrative and clinical decision-making and performance improvement are not adequately covered within the required curriculum. The recommendation is: 'To ensure curriculum includes healthcare information system content such as strategic information system planning; the process of system acquisition including selection, implementation, and evaluation; clinical and administrative information systems, and the security and privacy of healthcare information.'"
  Response: The program has been strengthened when a new department was created on July 1, 2008. The Department of Health Management and Informatics has consolidated both health services administration and health information management. New courses are planned to cover the content areas of health information technology and informatics. The establishment of a new MS in Healthcare Informatics Program will strengthen the content areas of health information system management.

The undergraduate HSA program is preparing its initial full accreditation in 2010 by the Association of University Programs in Health Administration (AUPHA).

The MS Program in Health Care Informatics plans to seek accreditation in 2011 from the Commission of Accreditation for Health Informatics and Information Management Education (CAHIIM).

UCF Program Review:

BS in Health Information Management: BS-HIM program was reviewed in January 2007. An external consultant participated in the review process. An executive summary of major findings was presented below.

"The B.S program in Health Information Management reflects the University's strategic plan. The program's design is consistent with theme "pathways to prominence" – the program contributes to the promotion of undergraduate education, it serves Central Florida, and it reflects the strategic initiative to strengthen UCF's services and processes. The program's curriculum reflects AHIMA's model curriculum, as such it encompasses the HIM body of knowledge. With input from its Advisory Committee, the program makes curriculum adjustments as necessary to reflect current practice. The program is offered in a flexible format – allowing students to enroll in the program throughout the academic year, and it is primarily offered online which meets scheduling needs of students. A curricular strength is the rich professional practice experience (PPE) courses; the program requires 13 hours of PPEs. The PPE courses are rich not only in quantity of hours required, but also in the planned experiences and requirements of the courses. Students have the opportunity to participate in experiential learning in a variety of health

care settings. Another strong point of the program is that faculty expertise is matched to course instruction, thus ensuring that courses have both depth and breadth. Student accomplishments, (including the pass rate on the national credentialing examination), are external evidence that the program is achieving the goal of preparing competent health information management professionals. This is further validated by employer satisfaction with graduate job performance. No substantive weaknesses were observed by this consultant or noted in reports/documents provided to this consultant. It is the opinion of the consultant that UCF and the program should consider the opportunities presented by the establishment of a new School of Medicine at UCF. This creates the unique opportunity to build a curriculum for medical students which incorporates health information management. Additionally, collaborative research in the area of health information management and systems is timely given the national mandates to improve health record processes and reduce medical errors. Expansion to master's level education is also timely; this consultant suggests that UCF begin the evaluation of this potential. "

Responses: The HIM program has been integrated into the Department of Health Management and Informatics. The proposed MS in Health Care Informatics is timely to address the need for upgrading HIM into the graduate education. Joint faculty appointments with the College of Medicine were made.

MS in Health Services Administration: MS-HSA program was reviewed by the University on April 29, 2005. An executive summary report is presented in Appendix D. The review concluded that the program should be enhanced. Specific recommendations and the responses are documented below.

- Need to enhance reputation of program and achieve national ranking.
  Reponses: The preparation of accreditation has substantially changed the image of the program. First, the program earned a three-year accreditation and then was reaccredited for six years in 2007.
- Program needs clearer mission and focus.
  Responses: The program has recruited several new research-oriented faculty members in 2003 (Dr. Wan and Dr. Zhang) and 2005 (Dr. Lee). The curriculum has been strengthened with an emphasis on strategic management, healthcare financing, and health information management.
- Develop plan to secure additional resources or cut program costs to ensure faculty have competitive teaching load.
  Responses: New instructors were recruited to offer courses covering epidemiology, health care quality, health economics, and research methods. The addition of faculty members to the program has enabled the program to offer more courses without increasing teaching loads.
- Stabilize funding for faculty at East Coast campuses.

Responses: Two faculty members were recruited for the area campuses. A part-time instructor was also hired to strengthen course offerings in healthcare finance.

- Maximize research opportunities for students and faculty in the Public Affairs Ph.D. program.
  Responses: Dr. Thomas Wan was recruited in 2003 with a joint appointment with the MS-HSA program. He and Dr. Lynn Unruh have successfully generated a large NIH grant to study nursing home staffing and quality. In addition, a new healthcare informatics research lab was established in 2004. This lab offers numerous opportunities for student and faculty research.

VIII. Curriculum

A. Describe the specific expected student learning outcomes associated with the proposed program. If a bachelor's degree program, include a web link to the Academic Learning Compact or include the document itself as an appendix.

The goal of this program is to develop health care informaticians who will contribute to the theoretical and empirical knowledge base for identifying policy and informatics programs that will improve the performance of health service organizations. The proposed training will involve students in graduate courses and a practicum to foster interdisciplinary and team work in healthcare management. In addition, a unique option is available for students who are interested in clinical research and enterprise management through their participation in a specially designed research practicum in a clinical setting such as a tertiary care hospital or medical center.

Learning Outcomes: The measurable learning outcomes of the MS Program in Health Care Informatics include the following three objectives: Health Information Technology knowledge, project management, and applied healthcare informatics. In addition, students graduating with a masters degree in health care informatics will be employable in their chosen field. Each objective has multiple quantifiable indicators.

Objective 1. The successful student will understand the contextual, process and outcome aspects of healthcare management that requires the effective application of healthcare informatics.

Indicator 1-a: Students will earn an 80% or higher on the course project assigned in Health Information Applications during the Spring 2010 semester.

Indicator 1-b: 100% of the students enrolled in the research practicum or thesis in Fall 2009 will earn a score of 80% or higher on their thesis or practicum project that measures their ability to assemble theoretical, empirical, and tacit knowledge regarding the application of information technology in performance improvement of healthcare organizations (direct/performance based).

Indicator 1-c: 100% of employers completing the employer survey in Fall 2010 will agree or strongly agree that the graduates from the program are able to apply key principles of informatics in the work environment (indirect/survey).

Objective 2. The successful student will be able to formulate a comprehensive study design for using health information technology and implement it in a pertinent organizational setting.

Indicator 2-a: 90% of the students completing the graduating survey in Fall 2010 will indicate that they agree or strongly agree that the program provided them with key principles of healthcare informatics including the preparation of a project management report (indirect/survey).

Indicator 2-b: 80% of the students will report that their peers showed leadership in team work in their project management course in Fall 2010.

Objective 3. Students enrolled in the MS Program in Healthcare Informatics will demonstrate a successful execution of an evaluation of IT product and its application in healthcare informatics research.

Indicator 3-a: 90% of students enrolled in the research practicum or thesis course in the Fall 2010 will earn a 80% or higher on their thesis or practicum case study which requires students to effectively conduct a management audit or evaluation of HIT products that have been applied in a healthcare setting (direct/performance based).

Indicator 3-b: 80% of students will participate in a regional or national professional meeting to demonstrate their analytical and research skills relevant to healthcare informatics during the 2009-2010 academic year.

Objective 4. Students enrolled in the MS Program in Healthcare Informatics will express satisfaction with the learning opportunities offered by this program.

Indicator 4-a: 90% of students will agree or strongly agree that this degree program is preparing them for a successful career in healthcare informatics.

Indicator 4-b: 90% of graduates in the program will be gainfully employed in the HIT or management field within 6 months of graduation.

B. Describe the admission standards and graduation requirements for the program.

An applicant must meet Graduate College requirements and all recommended and required deadlines plus the following requirements to be considered for admission to the program:

1. Completion of the following foundation requirements or equivalents prior to admission into the program.* HCI foundation courses provide a basis for subsequent coursework:
    - **HSA 3111:** US Healthcare Systems, 3 credits
    - **HIM 3006:** Foundations of Health Information Management, 3 credits
    - **HSC 3531:** Medical Terminology, 3 credits
    - **HSC 4500:** Introduction to Epidemiology, 3 credits
    - **HIM 4506,** Quality Management, 3 credits
    - *Individual course exemptions will be determined on a case-by-case basis. Credits earned in these courses do not count toward the degree. Basic proficiency in the use of word processing, spreadsheet, and database software.

Graduate College Requirements

1. **Degree**: Bachelor's degree from a regionally accredited institution or recognized foreign institution.
2. **Grades**: A minimum undergraduate GPA of 3.0 or its equivalent from a recognized foreign institution. This calculation includes both attempts in repeated coursework.
3. **Work Experience**: For this executive program, it is imperative to attract applicants who have practical work experiences in health care and health information management. Practical work experience will supplement grade point average in admissions decisions.
4. **Transcripts**: One official transcript, sent directly to the Graduate School from each undergraduate and graduate school attended. If the student attended UCF as an undergraduate, the College of Graduate Studies will obtain transcripts from the Registrar's Office.
5. **English Proficiency**: See the Center for International Education's Graduate Application Requirements.
6. **Reasons Statement**: An essential part of the application, the Reasons Statement is used to determine the appropriateness of the applicants' educational and professional goals and serves as an example of their ability to express his/herself in writing. In the statement they must:
    - Explain their reasons for pursuing graduate study.
    - Describe specific interests and their background in the field.
    - List any relevant skills or training they have acquired.
    - List relevant academic awards or honors they have received.
7. **Fee/s**: a $30 base application fee is required of all applicants.

International Applicants

Please see the International Service Center's International Student Admission page.

Program Requirements

Contact the program director for additional requirements for the specific program.

- An advanced degree with a cumulative GPA of 3.0 or higher.

Applicant's proposed graduate program unit may have further requirements for provisional admission and removal of provisional status. If admitted, the program director is responsible for communicating the conditions for removal of provisions. This must be done in the first nine hours of course work.

Requirements for Graduation

The Master of Science in Health Care Informatics degree will be awarded upon completion of appropriate prerequisite course work and 36 credits of prescribed graduate study. Credits must be taken in core content areas and in the research practicum or thesis course.

Program Completion Time Limit

The student must complete all degree requirements within seven years of initial enrollment.

C. Describe the curricular framework for the proposed program, including number of credit hours and composition of required core courses, restricted electives, unrestricted electives, thesis requirements, and dissertation requirements. Identify the total numbers of semester credit hours for the degree.

The MS Program in Health Care Informatics is a lockstep online program that has a unique curriculum design structured as a cohort-based program that offers two four-credit

courses in each of the summer, spring and fall semesters. Students will enroll in a research practicum or thesis for six credit hours, a seminar on current issues in healthcare informatics and enterprise management for two credit hours, and one four-credit course on a symposium with special emphasis on research enterprise management in the second summer semester. Students will graduate in four semesters (16 months).

The program is specially designed for working professionals, former undergraduate health administration and health information management students, and other students looking for a career change. The Master of Science in Health Care Informatics degree will be awarded upon completion of appropriate prerequisite course work and 36 credits of prescribed graduate study. Credits must be taken from the core content areas or modules.

Core Content

Students will complete 36 total credit hours to earn a MS in Health Care Informatics.

Health Care Informatics Module: 12 credit hours

HCI6XXX:	HealthCare Informatics & Information Technology Procurement	4 credit hours
HCI6XXX:	Health Information Systems Analysis and Design	4 credit hours
HCI6XXX:	Health Informatics Applications – Administrative, Financial & Clinical Project Management	4 credit hours

Healthcare Management Module: 12 credit hours

HCI6XXX:	Health Care Financing & Economics	4 credit hours
HCI6XXX:	Epidemiology, Analytics, & Quality Management	4 credit hours
HCI6XXX:	Biostatistics & Decision Analysis in Health Care	4 credit hours

Other Requirements:

HCI 6XXX:	Seminar on Current Issues in Healthcare Informatics & Enterprise Management	2 credit hours
HCI6XXX:	Symposium in Clinical Research & Enterprise Management	4 credit hours

Research Practicum Module: 6 credit hours

HCI6XXX:	Healthcare Informatics Practicum	6 credit hours
	OR	
HCI 6XXX:	Thesis	6 credit hours

Thesis/Project Options

Option A: Thesis Option

The thesis option requires students to plan, design, execute and report results of original applied or basic research. Students who choose the thesis option are responsible for identifying a HCI major professor and a thesis committee. The thesis committee should consist of the major professor and at least two other graduate faculty. The student must pass an oral examination in defense of the completed thesis. Six credits of research practicum (HCI 6XXX) may be applied toward the required 36 graduate credit minimum.

Option B: Research Practicum Option

The practicum option requires students to apply healthcare informatics research and theory to a professional situation and consists of a variety of academic and professional activities under the supervision of a preceptor and a designated faculty member. The project must be written in compliance with program format requirements and should include

progress reports, a final research report, management audit report, and oral presentations of the practicum experience as part of the practicum course. Students are also required to identify a preceptor from a list of approved healthcare organizations or facilities.

A. Provide a sequenced course of study for all majors, concentrations, or areas of emphasis within the proposed program.

Five Year Curriculum for MS in Health Care Informatics

Yr.	Summer	Fall Semester	Spring Semester	Summer*
1	Health Care Informatics & Information Technology Biostatistics & Decision Analysis in Health Care	Health Information Systems Analysis and Design Epidemiology, Analytics, & Quality Management	Health Care Financing & Economics Health Informatics Applications	Practicum (8 credits) Thesis (8 credits) Symposium (4 credits) Seminar (2 credits)
2	Health Care Informatics & Information Technology Biostatistics & Decision Analysis in Health Care	Health Information Systems Analysis and Design Epidemiology, Analytics, & Quality Management	Health Care Financing & Economics Health Informatics Applications	Practicum (8 credits) Thesis (8 credits) Symposium (4 credits) Seminar (2 credits)
3	Health Care Informatics & Information Technology Biostatistics & Decision Analysis in Health Care	Health Information Systems Analysis and Design Epidemiology, Analytics, & Quality Management	Health Care Financing & Economics Health Informatics Applications	Practicum (8 credits) Thesis (8 credits) Symposium (4 credits) Seminar (2 credits)

4	Health Care Informatics & Information Technology Biostatistics & Decision Analysis in Health Care	Health Information Systems Analysis and Design Epidemiology, Analytics, & Quality Management	Health Care Financing & Economics Health Informatics Applications	Practicum (8 credits) Thesis (8 credits) Symposium (4 credits) Seminar (2 credits)
5	Health Care Informatics & Information Technology Biostatistics & Decision Analysis in Health Care	Health Information Systems Analysis and Design Epidemiology, Analytics, & Quality Management	Health Care Financing & Economics Health Informatics Applications	Practicum (8 credits) Thesis (8 credits) Symposium (4 credits) Seminar (2 credits)

Note * Select one of the two options (practicum or thesis) for 8 credit hours.

B. Provide a one- or two-sentence description of each required or elective course.

Cr Hr	Course # & Name	Description	Instructor(s)
4	Health Care Informatics & Information Technology	Overviews the role of information systems in healthcare from historical as well as future perspectives. Emphasis is on the role of information technology and computer applications in medical decision making. Social, ethical and legal issues of informatics in healthcare are explored	Dr. Duane Steward Dr. Kendall Cortelyou-Ward
4	Biostatistics & Decision Analysis in Health Care	Introduces biostatistics and its application to health care research. Emphasis on development of a general systematic approach to solving problems under uncertainty. The role of informatics and application of information technology in improving managerial decision making process will be presented.	Dr. Jackie Zhang Dr. Reid Oetjen

4	Health Care Information Systems Analysis & Design	Focuses on electronic health record applications to provide the tools for successful system implementation. Includes creating a comprehensive planning document; assessing system requirements; developing design specifications; understanding criteria for vendor selection (including cost issues); and planning for installation requirements (including personnel and infrastructure). Use of current and future state analysis, along with gap analysis will be incorporated.	Dr. Sam Marathe
4	Health Informatics Applications – Administrative, Financial and Clinical Project Management	Integrates clinical, financial and administrative data to resolve managerial and patient care problems. Organizational theory and change management are considered in terms of system planning, implementation and evaluation. Patient safety and improved outcomes are emphasized in the design and use of informatics solutions through data collection, consolidation and analysis. Organizes and develops infrastructure to support an enterprise system design for patient care. Components of architecture are developed in a project team approach for integration of applications that address organizational goals and functional requirements, while following the patient along the entire continuum of care. Covers the procurement process, vendor selection and evaluation criteria, and other decision support and management systems.	Dr. Khalid Moidu Dr. Dawn Oetjen
4	Health Care Financing & Economics	Admission to graduate program in HSA or C.I. Preparatory course for	Dr. Timothy Rotarius Dr. Lynn Unruh

		graduate students who are not prepared to take the required health care finance course.	
4	Epidemiology, Analytics & Quality Management	Introduces epidemiological principles & analytics for enhancing utilization management, quality improvement and outcome assessment in the service delivery system.	Dr. Thomas Wan Dr. Bernardo Ramirez
4	Symposium	Covers multiple topic areas such as clinical trial design, ethics, research & regulatory compliance, pharmaco-vigillance, research enterprise management, etc.	Dr. Ana V. Hajdenberg Dr. Donna Malvey
6	Practicum* .	Covers the transformations of data to information, knowledge and practice in healthcare. Identifies an operations management problem that is amenable to IT intervention in a healthcare organization. Explores the IT solutions or knowledge information strategies for improving the quality and efficiency of health services.	Dr. Aaron Liberman
2	Seminar on Health Care Informatics & Enterprise Management	Covers current issues and provides a guided term project to perform a management audit for a functional health information management system	Dr. Thomas Wan
6	Thesis*	Prepares a thesis	Dr. Thomas Wan

*Select one option (practicum or thesis).

C. For degree programs in the science and technology disciplines, discuss how industry-driven competencies were identified and incorporated into the curriculum and identify if any industry advisory council exists to provide input for curriculum development and student assessment.

To develop the competencies for the MS Program of Health Care Informatics, an extensive review of existing closely related accredited informatics programs was conducted, identifying and incorporating common competencies across programs into a comprehensive

set. The American Health Information Management Association and the American Medical Informatics Association, the two leading organizations in this area, were also utilized to gather information related to competencies within the field of health informatics.

The common consensus in evaluating the competencies of health care informaticians includes: 1) knowledge in health information management and technology including epidemiology and biostatistics; 2) applied informatics and project management; 3) employability competencies including professional ethics, human subject protection, legal issues, team work, and communication; and 4) health systems and information analysis.

D. For all programs, list the specialized accreditation agencies and learned societies that would be concerned with the proposed program. Will the university seek accreditation for the program if it is available? If not, why? Provide a brief timeline for seeking accreditation, if appropriate.

The Commission on Accreditation for Healthcare Informatics and Information Management Education (CAHIIM) is responsible for accrediting the master's program in Health Informatics. The University of Central Florida MS program in Health Informatics will seek this accreditation in 2011. Graduate programs applying for CARIIM Approval must complete the following steps:

Step 1: Letter of Intent (December, 2012)

A letter of intent to apply for Approval accompanied by a brief one page synopsis of the curriculum should be sent by the sponsoring educational institution to the attention of CAHIIM staff. Many programs find **it** helpful to form their Advisory Committee of community experts in the earliest stages of program planning. The committee members'

insights will help to ensure that the needs and interests of your healthcare community are reflected in the design of the graduate program.

Step 2: Report for Approval (April, 2013)

The graduate program sponsoring educational institution will be notified by CAHIIM of the timetable to proceed to Step 2. A formal written report for a graduate program in Health Information Management and/ or Applied Health Informatics must be submitted to the CAHIIM. Programs must review and incorporate the minimum curriculum requirements for the development and evaluation of the program.

Programs must demonstrate and document compliance with the following criteria.

Approval Criteria for Graduate Level Programs:

A. The Health Information Management/Applied Health Informatics program is established as a (1) core concentration or specialized track within a graduate level program of study, (2) culminates with a master's degree, or (3) a doctoral degree.

B. The sponsoring educational institution is currently accredited by a regional accrediting body and (if applicable) a specialized accrediting agency that is recognized by CHEA or the US Department of Education.

Other learned societies concerned with the proposed MS Program in Health Care Informatics include the American Health Information Management Association and the American Medical Informatics Association though they do not serve an accreditation function.

E. For doctoral programs, list the accreditation agencies and learned societies that would be concerned with corresponding bachelor's or master's programs associated with the proposed program. Are the programs accredited? If not, why?

Not applicable

F. Briefly describe the anticipated delivery system for the proposed program (e.g., traditional delivery on main campus; traditional delivery at branch campuses or centers; or nontraditional delivery such as distance or distributed learning, self-paced instruction, or external degree programs). If the proposed delivery system will require specialized services or greater than normal financial support, include projected costs in Table 2. Provide a narrative describing the feasibility of delivering the proposed program through collaboration with other universities, both public and private. Cite specific queries made of other institutions with respect to shared courses, distance/distributed learning technologies, and joint-use facilities for research or internships.

The program will be offered through an online, distance learning format to offer greater access to the program. Students are expected to meet with the course instructors twice per semester on the Orlando campus. In light of the online nature of the program and the availability of the laboratory facilities, the cost per credit hour will be higher than standard University tuition. This increased tuition costs will allow the program to provide access to the informatics laboratory and increased student services.

Even though the program is delivered primarily online, the laboratory facilities in the Healthcare Informatics Research Laboratory are essential for all students to gain familiarity with software. It is expected that students will make 4 trips to the Orlando campus per year in order to use the facility.

There are no existing programs in the State of Florida in healthcare informatics at the master's level so no collaboration with other Florida institutions is anticipated.

IX. Faculty Participation

A. Use Table 4 to identify existing and anticipated ranked (not visiting or adjunct) faculty

who will participate in the proposed program through Year 5. Include (a) faculty code associated with the source of funding for the position; (b) name; (c) highest degree held; (d) academic discipline or specialization; (e) contract status (tenure, tenure-earning, or multi-year annual [MYA]); (f) contract length in months; and (g) percent of annual effort that will be directed toward the proposed program (instruction, advising, supervising internships and practica, and supervising thesis or dissertation hours).

The healthcare informatics core faculty and affiliated members of the Department of Health Management and Informatics serve as primary mentors for graduate students in the MS Program in Health Care Informatics.

1) Thomas T.H. Wan, Ph.D., M.H.S., is Professor of Public Affairs and Health Services Administration at the College of Health and Public Affairs and Professor of Medicine at the College of Medicine. Dr. Wan is a principal investigator of a four-year NINR-NIH grant to validate the measurement indicators of quality of nursing home care, using resident-based assessment and facility-based survey data of 17,000 nursing homes in the United States. Statistical modeling and simulation of best practice in nursing homes will be performed. Dr. Wan has an extensive track record in the design and evaluation of health care outcomes. He has published more than 120 scientific articles and 10 books. His recent work includes: 1) Analysis and Evaluation of Health Care Systems: An Integrated Managerial Decision Making Approach; 2) Evidence-Based Health Care Management: Multivariate Modeling Approaches; 3) Monitoring the Quality of Health Care: Issues and Scientific Approaches; 4) Creating Values for Health Services Organization: Integrated Care Delivery Systems; 5) Healing Environments: Design for Body, Mind, and Spirit; 6) Integrated Care and Management: Creating Values for Health Care Organization. Dr. Wan was a member of the NIH's Human Development and Aging Study Section, a member of the National Committee on Vital and Health Statistics and its three subcommittees (Minority Statistics, Mental Health Statistics, and Long-term Care Statistics), a member of the advisory board of the Veterans Integrated Service Network 6, and a member of the NIH's Nursing Science Study Section. He is an active member of the Health Services Organization and Delivery Study Section, NIH. At the Medical College of Virginia, Dr. Wan served as the founding director of the Ph.D. Program in Health Services Organization and Research (1982-1990), and as Chair of the Department of Health Administration at the Medical College of Virginia, Virginia Commonwealth University. His expertise in health services research and informatics research is exemplified by his publications and sponsored program activities.

2) Aaron Liberman, Ph.D., is Professor of Health Services Administration and Interim Chair of the Department of Health Management and Informatics. Dr. Liberman is a trained hospital administrator and worked actively in the field for more than 20 years managing hospitals and medical practice groups. Dr. Liberman has published more than 60 scholarly articles, five monographs, and two books. He is a co-author of a new book on medical coding to be published by Lippincott, Williams & Wilkins. Dr. Liberman's research expertise includes risk management, health care finance, and managed care. He was a principal investigator of several research projects funded by NIMH, Pew Memorial Trust, the Florida Board of Medicine, and Florida Hospital. In addition to his consulting

activities, Dr. Liberman serves as a member of the Governing Board of the Orlando Foot and Ankle Clinic and a member of the Advisory Board of MediVest, Inc. Dr. Liberman is chairing two doctoral dissertations in the Doctoral Program in Public Affairs.

3) Timothy Rotarius, Ph.D, MBA, is Professor of Health Services Administration. His expertise includes health care financing and strategic management. He has served as the BS-HSA Program Director, the MS-HSA program director, and as program director for HSA Internships. Dr. Rotarius has 60 peer-reviewed publications and has presented his research at 50 professional conferences. He has served as principal Investigator of several funded research projects.

4) Dawn Oetjen, Ph.D., is Associate Professor of Health Services Administration. Her expertise includes healthcare quality improvement and computer applications in the health field.

5) Lynn Unruh, Ph.D., RN, is Associate Professor of Health Services Administration. Dr. Unruh is a health economist who has published extensively on the subjects of nurse staffing and adverse patient outcomes, uncompensated care, nursing shortage and quality, and health policy. Her expertise in informatics includes econometric modeling and longitudinal analysis.

6) Donna Malvey, Ph.D., is Assistant Professor of Health Services Administration. Her expertise includes health services management, quality improvement, and human resources management.

7) Reid Oetjen, Ph.D., is Assistant Professor of Health Services Administration. His expertise includes public policy, long-term care research, and health services administration education.

8) Bernardo Ramirez, MD, MPH, is Assistant Professor of Health Services Administration. His expertise includes epidemiology, comparative health systems, and health services management.

9) Jackie Ning Zhang, Ph.D., M.D. is Assistant Professor of Public Affairs and Health Services Administration. His expertise includes data warehousing and data mining of clinical and administrative data. He is responsible for the Healthcare Informatics Research Laboratory.

10) Kendall Cortelyou-Ward, PhD is Instructor of Health Services Administration. Her expertise includes human resources management, healthcare workforce issues, health services education, and employee commitment.

In addition to the full time faculty slated to teach in the health care informatics program, there are several highly qualified part time faculty that will teach in the program.

11) Sam Marathe, MD, JD, MHA, MPH, Ph.D., is an affiliated assistant professor of health services research in the Doctoral Program in Public Affairs. He has an active

clinical practice and is interested in outcomes research and medical informatics.
12) Kevin Sherin, MD, MPH, is an affiliated assistant professor of Health Services Administration and the Doctoral Program in Public Affairs. He is a public health informatician and serves as Director of Orange County Health Department.
13) Khalid Moidu, MD, Ph.D., is an affiliated professor of healthcare informatics and the Doctoral Program in Public Affairs. His expertise includes healthcare informatics research and decision support systems. He was a founder of the healthcare informatics training program at Purdue University before he joined the Office of Medical Informatics, Orlando Regional Medical Center.
14)Duane Steward, DVM is an affiliated professor of healthcare informatics. His expertise lies in information systems.
15)Ana Hajdenberg is an affiliated professor of healthcare informatics. She is considered an expert in the field of informatics.

B. Use Table 2 to display the costs and associated funding resources for existing and anticipated ranked faculty (as identified in Table 2). Costs for visiting and adjunct faculty should be included in the category of Other Personnel Services (OPS). Provide a narrative summarizing projected costs and funding sources.

Table 2 outlines the projected costs and funding sources for years 1 and 5 of the proposed Health Care Informatics program. Faculty salaries account for approximately $26,000 in year one and increase to approximately $255,000 in year 5. Adjunct faculty, who bring specialized areas of expertise, will cost approximately $21,000 in year 1 and $28,000 in year 5. These salaries, in addition to other expenses, will be paid for by student tuition and fees though Continuing Education.

C. Provide the number of master's theses and/or doctoral dissertations directed, and the number and type of professional publications for each existing faculty member (do not include information for visiting or adjunct faculty).

Faculty Name	Theses	Dissertations	Professional Publications
Thomas T.H. Wan		9	110 scientific articles; 18 book chapters; and 10 books
Aaron Liberman		6	60 scientific articles; 3 monographs; and 2 books

Timothy Rotarius		1	64 scientific articles; 11 book chapters
Dawn Oetjen	2		12 scientific articles; 2 book chapters
Donna Malvey			8 scientific articles; 13 book chapters; and 1 monograph
Reid Oetjen			9 scientific articles, 3 book chapters, 1 book
Lynn Unruh			23 scientific articles; 1 book chapter; and 3 invited papers
Ning Zhang			12 scientific articles
Bernardo Ramirez			3 scientific articles
Kendall Cortelyou-Ward			1 scientific article

D. Provide evidence that the academic unit(s) associated with this new degree have been productive in teaching, research, and service. Such evidence may include trends over time for average course load, FTE productivity, student HC in major or service courses, degrees granted, external funding attracted, as well as qualitative indicators of excellence.

Teaching: There are three existing programs related to this proposal where faculty contribute- the BS and MS in HSA and the BS in HIM. The MS-HSA curriculum provides a course of study that includes an analysis of issues and trends in the health care industry, the study of the structure and leadership of health care organizations, strategic planning, financial management, and organizational strategies for change, research methods and statistics, managerial epidemiology, and information systems for solving problems in the health care industry. Most students in the MS-HSA program complete the required internship. Course work emphasizes oral communications, written communications, working in teams, and consultation with local healthcare organizations. The average course load for the faculty is 2-3 per semester. The FTE productivity in 2007-2008 is 104.

Total Number of Graduates and Headcounts by Program (2005-2008)

MS-HSA Degree Information

Year	Degrees Conferred	Headcount
2005-2006	52	146
2006-2007	51	110
2007-2008*	16	83

BS-HSA Degree Information

Year	Degrees Conferred	Headcount
2005-2006	166	483
2006-2007	186	535
2007-2008	170	590

BS-HIM Degree Information

Year	Degrees Conferred	Headcount
2005-2006	27	45
2006-2007	22	52
2007-2008	22	51

***The MS-HSA program adopted more stringent admission requirement due to increased accreditation standards. These requirements resulted in a decline in the number of graduates in the 2007-2008 academic year.**

Research: Faculty members are actively involved in the publication of articles, book chapters, and books. Below is a summary the scholarly work and productivity of the faculty in the period of three years (2005-2008).

Scholarly Productivity of the Faculty (2005-2008)

Name	**Book**	**Book Chapter**	**Peer-reviewed Articles**
Wan	3	2	26
Liberman	1*	1	20

Rotarius		2	21
Oetjen, D.	1*	3	15
Unruh	1	2	14
Malvey		4	6
Oetjen, R.	1*	2	8
Ramirez			
Zhang			12
Cortelyou-Ward+			
Total	7	16	122

+ Instructor level; * co-author

The average number of publications per faculty is 4.1 articles per year. Funded and sponsored research projects include multi-year support from: a) the National Institute of Nursing Research-NIH for $860,000 for four years(Drs. Wan & Unruh); b) the Robert Wood Johnson Foundation fund for $100,000 (Dr. Wan); c) the Florida Department of Agriculture for $35,000 (Dr. Wan); d) the Winter Park Health Foundation for $3,000 (Dr. Wan); and e) ORMC contracts for $87,000(Drs. Cortelyou-Ward, Liberman, Oetjen, & Rotarius).

Service: Many of the Health Management and Informatics faculty serve in leadership positions in their respective professional associations. Drs. Cortelyou-Ward, Malvey, D. Oetjen, R. Oetjen, and Ramirez are all actively engaged in professional activities with the Association of University Programs in Health Administration (AUPHA). Their leadership positions in AUPHA include chairing numerous faculty forums, the undergraduate program board, and several planning committees.

In addition to professional associations, several faculty members serve on numerous international committees. Dr. Wan works with the National Institute of Health (NIH) (Health Services Organization and Delivery System) to review grants and is an advisory committee member for the National Health Policy Research Center, and Taiwan's National Health Research Institutes. Dr. Ramirez participates in numerous international health program activities and plays an important role in program planning and development for health services administration and education in developing countries.

Program faculty are also actively involved in local community based service. Dr. Zhang serves on the Institutional Review Board for the Orlando Regional Medical Center. Drs. Liberman and Dr. Rotarius also actively participate in community service activities as well as consulting work.

TABLE 4

ANTICIPATED FACULTY PARTICIPATION

Faculty Code	Faculty Name or "New Hire" Highest Degree Held Academic Discipline or Speciality	Rank	Contract Status	Initial Date for Participation in the Program	Mos. Contract Year 1	FTE Year 1	% Effort for Prg. Year 1	PY Year 1	Mos. Contract Year 5	FTE Year 5	% Effort for Prg. Year 5	PY Year 5
A	Jackie Zhang	Assistant Prof	TE	2009	9	0.75	11%	0.08	9	0.75	11%	0.08
A	Reid Oetjen	Assistant Prof	TE	2010	9	0.75	0%	0.00	9	0.75	0%	0.00
A	Dawn Oetjen	Associate Prof	Tenured	2010	9	0.75	0%	0.00	9	0.75	0%	0.00
A	Timothy Rotarius	Professor	Tenured	2009	9	0.75	11%	0.08	9	0.75	11%	0.08
A	Aaron Liberman	Professor	Tenured	2010	12	1.00	0%	0.00	12	1.00	0%	0.00
A	Lynn Unruh	Associate Prof	Tenured	2010	9	0.75	0%	0.00	9	0.75	0%	0.00
A	Thomas Wan	Professor	Tenured	2010	12	1.00	0%	0.00	12	1.00	8%	0.08
A	Bernardo Ramirez	Assistant Prof	TE	2009	9	0.75	11%	0.08	9	0.75	11%	0.08
A	Donna Malvey	Assistant Prof	TE	2010	9	0.75	0%	0.00	9	0.75	0%	0.00
A	Kendall Cortelyou-Ward	Assistant Prof	TE	2009	9	0.75	0%	0.00	9	0.75	11%	0.08
C	New faculty 1	Assistant Prof	TE	2011	9	0.75	0%	0.00	9	0.75	100%	0.75
C	New faculty 2	Assistant Prof	TE	2012	9	0.75	0%	0.00	9	0.75	100%	0.75

+ Indicate, with superscript, whether:
1 = tenured,
2 = granted promotion in academic rank during Self-Study year,
3 = holds joint appointment (specify non-primary appointing unit).

****** This column must be consistent with data in Figure I.E.1

*** Specify percentage of teaching (T), research (R), Community Service (S), and Administration (A), devoted to the Program and to other activities by each listed faculty member.

Explain on additional pages if the distribution of time for any faculty member(s) does not represent a typical academic year.

X. Non-Faculty Resources

A. Describe library resources currently available to implement and/or sustain the proposed program through Year 5. Provide the total number of volumes and serials available in this discipline and related fields. List major journals that are available to the university's students. Include a signed statement from the Library Director that this subsection and subsection B have been reviewed and approved for all doctoral level proposals.

The University of Central Florida library system is well equipped to support the master's program in Health Care Informatics. The library has on-line subscriptions to the premier research journals in Health Informatics including but not limited to the Journal of the *American Medical Informatics Association, Health Informatics Journal, and the Journal of Medical Systems*. A search of the University of Central Florida's library site yields 236 hits for the phrase "health informatics". Library assistance is available via phone, live chat, and e-mail services for students and one on one research consultations with library staff are also available.

B. Describe additional library resources that are needed to implement and/or sustain the program through Year 5. Include projected costs of additional library resources in Table 3.

The University of Central Florida library system currently has all of the resources necessary to implement and sustain and Master Program in Health Informatics.

A formal report, submitted by Michael Arthur (Head of Acquisitions and Collection Services) at UCF Library, reveals that comparable library resources on health information/informatics and general health sciences are available at the library. However, in order to match with the collection in health sciences, particularly for a new graduate degree in Health Care Informatics, at other comparable research intensive universities in Florida, he recommends that UCF needs to provide additional funds ($15,000) in next three years to purchase books and journals for the proposed program (see Appendix E).

Library Director Date

C. Describe classroom, teaching laboratory, research laboratory, office, and other types of space that are necessary and currently available to implement the proposed program through Year 5.

The MS Program in Health Care Informatics will utilize the current Health Care Informatics Laboratory within the College of Health and Public Affairs via Internet. Other space is not necessary as the core program faculty are drawn from existing disciplines. All courses will be taught in an online format.

D. Describe additional classroom, teaching laboratory, research laboratory, office, and other space needed to implement and/or maintain the proposed program through Year 5. Include any projected Instruction and Research (I&R) costs of additional space in Table 2. Do not include costs for new construction because that information should be provided in response to X (J) below.

No additional classroom, laboratory, or office space will be needed to implement or maintain the MS Program in Health Care Informatics as it will utilize existing faculty, laboratory, and offices resources.

E. Describe specialized equipment that is currently available to implement the proposed program through Year 5. Focus primarily on instructional and research requirements.

The College of Health and Public Affairs at the University of Central Florida houses the Health Care Informatics Research Laboratory that utilizes sophisticated research and statistical software for data mining and data analysis purposes. The programs include, but are not limited to SPSS, SAS, DTREG, and AMOS statistical software.

F. Describe additional specialized equipment that will be needed to implement and/or sustain the proposed program through Year 5. Include projected costs of additional equipment in Table 2.

No additional specialized equipment will be needed to implement or sustain the proposed MS Program in Health Care Informatics through Year 5.

G. Describe any additional special categories of resources needed to implement the program through Year 5 (access to proprietary research facilities, specialized services, extended travel, etc.). Include projected costs of special resources in Table 2.

The program needs to utilize the Virtual Lab for student exercises. The annual charge for the program

(with 20 students) is estimated to be $3000. Students will be assessed fees as a part of their tuition for the Health Informatics program.

- **Virtual Lab Applications:** Link to the V-Lab links: http://campus.ahima.org/vlab/

- Through AHIMA's Virtual Lab, schools will have access to state-of-the-art software applications, including the following:

- **Master patient index**
  MPI software tools aid in monitoring, managing, and ensuring MPI data integrity. Exercises will allow students to gain hands-on skills in managing patient identity, designing cleanup procedures, and developing project proposals and estimates.

- **Encoder**
  An encoder allows coding professionals to easily find and assign codes. Students will use existing books and resources to gain exposure to this widespread coding tool and review their manual coding work.

- **Abstracting system**
  Abstracting systems streamline the process of data collection, thus improving data quality and coding/billing compliance. In the lab, students will gain knowledge of tools for data capturing and reporting.

- **EDMS / Document imaging**
  Electronic document management systems (EDMS) are electronic storage solutions based on scanning technologies that create digital images of documents. Students will gain exposure to the software tools available, and gain skills in areas such as developing policies and procedures for document management and creating effective workflows.

- **Deficiency analysis**
  Deficiency analysis software tracks and reports elements of documentation that are missing from the health records of discharged patients. Students will get hands-on experience with these important HIM applications. Lab exercises will be developed to help students analyze the benefits of automating key workflow processes.

- **Chart tracking**
  Chart tracking software identifies the most current location of a record or information, even in the most complex facilities. In the lab, students will develop policies and procedures for automating chart requests and gain skills in data monitoring and data flow.

- **Release of information**
  Release of information systems allow for the tracking of disclosures of patient-identifiable information from the health record to other parties. Lab exercises will help students gain exposure to the disclosure tracking, monitoring, and reporting requirements under the HIPAA Privacy Rule.

- **Registration/ADT system**
  Registration-Admission/Discharge/Transfer software typically establishes a patient's presence in the HIS. Students will be able to step through the processes of these encounters and identify potential problem areas and solutions.

- **Transcription**
  Transcription software enhances the productivity of medical transcriptionists, allowing them to quickly decipher and type medical dictation. Exercises will cover a broad range from basic word processing skills to advanced editing and correcting of medical language.

- **Speech recognition**
  Advanced speech recognition software translates physician dictation into text, allowing transcriptionists to focus on editing activities. In the lab, students will learn advanced techniques for editing the computer-translated text.

- **Natural language processing**
  Natural language processing (NLP) software automatically extracts and structures valuable clinical data from medical documents. Exercises will expose students to database queries, data mining, and data analysis.

H. Describe fellowships, scholarships, and graduate assistantships to be allocated to the proposed program through Year 5. Include the projected costs in Table 2.

Graduate assistantships are requested for 1 student per year. The cost of this GA is $7,000/semester.

This student will be engaged in research with program faculty.

I. Describe currently available sites for internship and practicum experiences, if appropriate to the program. Describe plans to seek additional sites in Years 1 through 5.

The research practicum experience is an optional requirement for all students. Recent graduates of baccalaureate programs will be encouraged to complete the practicum experience. The site selection is based on the evaluation of existing residence or internship program sites and the availability of appropriate preceptors. Professor Larry Waters, Director of the MHA residency program, suggest several sites, such as the Florida Hospital System, the Orlando Health System, Veteran Medical Centers, Health Central, Health-First facilities that have already signed the collaborative agreement for the internship. In addition, several health informatics or health information management companies have agreed to participate in the development of research practicum or internship activities with the proposed program. It is anticipated that more sites will be created when the program is being implemented in the future.

J. If a new capital expenditure for instructional or research space is required, indicate where this item appears on the university's fixed capital outlay priority list. Table 2 includes only Instruction and Research (I&R) costs. If non-I&R costs, such as indirect costs affecting libraries and student services, are expected to increase as a result of the program, describe and estimate those expenses in narrative form below. It is expected that high enrollment programs in particular would necessitate increased costs in non-I&R activities.

There is no specific capital expenditure for instructional or research space needed for the program. The program will need to make special orders or requests for specific electronic journals available at the UCF Library for students such as the *Journal of American Medical Informatics, International Journal of Medical Informatics, Health Informatics*, etc. A formal response was requested from the Director of the UCF Library (Appendix E).

Appendix A. Letters from the Experts in the Field of Healthcare Informatics

Appendix B. Continuing Education Budget

Appendix C. Program Review Documents for the Health Information Management Program (undergraduate)

Appendix D. Accreditation Review Reports for the MS in Health Services Administration Program

Appendix E. UCF Library Certification

APPENDIX A

Thomas T.H. Wan, Ph.D.,MHS
Professor and Associate Dean for Research
College of Health and Public Affairs
University of Central Florida
3280 Progress Drive
Orlando, FL 32826

Dear Dr. Wan,

I am writing this letter in support of your proposed Healthcare Informatics Program at the University of Central Florida. The application of information technology to the healthcare delivery system will continue to grow in number and complexity. More and more data will be gathered electronically and will need to be viewed, stored, shared and secured. Developing the skills of professionals to meet the information needs of their organizations will improved healthcare's ability to function efficiently and effectively on the basis of an evidenced-based knowledge management approach.

Teaching the strategic application of information management with information technology will bridge the gap of information systems that create inefficiencies due to lack of workflow engineering and redesign needs with implementations. Healthcare informatics is an expensive asset and should be managed effectively to obtain the maximum benefit to our patients and institutions.

I therefore support your proposal for this Master of Science in Healthcare Informatics Program within the College of Health and Public Affairs Department of Health Management and Informatics. This degree and skill set will assist in meeting the future needs of our local and national healthcare industry.

Kind regards,

Cheryl R. Croft
Chair, Information Technology
Mayo Clinic, Jacksonville
4500 San Pablo Rd
Jacksonville, FL 32224

Health Information Xperts

Thomas T.H. Wan, Ph.D., MHS
Professor and Associate Dean for Research
College of Health and Public Affairs
University of Central Florida
3280 Progress Drive
Orlando, FL 32826

Dear Dr. Wan,

I am writing you to express my support for the University of Central Florida as you currently develop your Master of Science in Healthcare Informatics Program within in the College of Health and Public Affairs Department of Health Management and Informatics.

My HIM and Informatics consultancy requires the use of trained professionals at all levels of education from AS to Masters levels. I don't believe the Central Florida area is of yet well served in Informatics with a curricula and program oriented towards the latest trends, as well as the legacy system basis, therefore I believe it to be very appropriate to have UCF create this program. I believe the entire state and region can benefit from more professionals with this type of back ground. I certainly will entertain utilization of these resources as my business requirements present opportunities to do so.

I have denoted my prospective level of support, but these might change upon further definition.

1) support with no additional involvement __X____

2) program endorsement __X____

I also look forward to a dynamic ongoing partnership with UCF in both the HIM and Informatics areas going forward.

Sincerely,

Kelly McLendon, RHIA
President
Health Information Xperts
PO Box 758
Titusville, FL 32781

DSHI SYSTEMS

Expert Decisions. Better Care.

Confidential

July 28, 2008

Dear Doctor Wan,

I would like to provide my strongest encouragement for the planned creation of an MS in Healthcare Informatics program, in the Department of Health Management and Informatics, at UCF.

As you well know, the challenges facing health care today in the area of electronic medical records is at a critical point. We face an already daunting challenge to integrate a variety of disparate hospital-based systems; we are simultaneously presented with new innovations in health care services. The creation of free-standing emergency rooms, nurse retail clinics, and urgent care facilities promise more silos of data.

Your decision to offer this program is not only wise, but mission critical, as health care finds itself in need of people with the proper qualifications to address these new challenges.

Thomas, I look forward to seeing the University of Central Florida continue to play an expanding role in the education of healthcare informatics professionals.

Best,

Stephen J. Schueler MD
CEO, DSHI Systems, Inc

703 Rockledge Drive, Rockledge, FL 32955/ 321.637.0321 PH / 321.637.0021 FAX
http://www.DSHIsystems.com / info@DSHIsystems.com

APPENDIX B

UNIVERSITY OF CENTRAL FLORIDA
Division of Continuing Education
BUDGET FORM

ACCT NO					Enrollment deadline date:
Program Name:	Healthcare	Informatics			
Program Dates and times:	June 1, 2009-May 30, 2010				
LOCATION	On-campus				
		MAX ENROLL 20		MIN ENROLL 20	EST ENROLL 20

Cancelation Policy: If program does not meet the projected student breakeven (minimun enrollment), the department/college will cancel the program or revise budget.

REFUND POLICY : Refunds subject to administrative fee of 25%. Minimum administrative fee is $25. Request must be made in writing to CE business office one week prior to class start date.

	OPENING BUDGET :	CLOSING BUDGET	REVISION

GROSS INCOME

(projected)		(actual)	Projected	Actual
7,453.44	20	resident tuition for 24 credit hours- Su 2009, Fall 2009, Spr 2010- Group 1	149,068.80	0.00
			0.00	0.00
11,209.68	20	fees for 24 hours- Group 1	224,193.60	0.00
		TOTAL ALL INCOME	373,262.40	0.00

EXPENSES

EXPENSES — no expense budgeted to E/G

Instructional Cost:

Faculty	Faculty	$7000/course x 3 courses	21,000.00	
UCF Employee	A&P Program coordinator		20,833.00	
Fringe 8%			10,768.00	-
OPS Personnel	Adjuncts	$7000/course x 3 courses	21,000.00	
Graduate Assistant			12,900.00	
Tuition	$310.56/hr x 8 hrs per semester x 3 semesters x 20		149,068.80	
Marketing			6,666.00	
Postage/Mailing Lists/Mail House			2,000.00	
Computer data sets	5 x 1500		5,000.00	
Customized curriculum design/applications		1500 x 20 students	20,000.00	
DN Formatics Lab Usage		1600 x 20 students	21,333.00	
Tech Support			6,666.00	
A.V. Equipment, Taping		video stream (adobe)	3,333.00	
Licenses for data sets		10,000 x 2 sets	13,333.00	
Credit card fees 3% Visa, MC, Discover, Amex (*estimated)			4,000.00	
Other				
		Subtotal Expenses (subject to UCF overhead)	317,900.80	-

UCF DIRECT ANNUAL CHARGE	8% of total expenses	* estimated tuition exempt	13,506.56	-
Continuing Education Administrative Fee	15% of gross fees		33,629.04	
		TOTAL ALL EXPENSES	365,036.40	-

		NET INCOME	8,226.00	-
Any loss to be covered by the auxiliary account specified: 35180001		College	1,233.90	
Signatures for: Budget approval/ Date	**Budget closure/ Date**	Department	6,992.10	
DCE Budget Office:	DCE Budget Office:			
Dept.Chair	Dept.Chair			
College Dean or Designee	College Dean or Designee			
DCE Coordinator	DCE Coordinator			
DCE Director	DCE Director			

UNIVERSITY OF CENTRAL FLORIDA
Division of Continuing Education
BUDGET FORM

ACCT NO					Enrollment deadline date:
Program Name:	Healthcare	Informatics			
Program Dates and times:	June 1, 2010-May 30, 2011				
LOCATION	On-campus				
		MAX ENROLL 20		MIN ENROLL 20	EST ENROLL 20

Cancelation Policy: If program does not meet the projected student breakeven (minimun enrollment), the department/college will cancel the program or revise budget.

REFUND POLICY : Refunds subject to administrative fee of 25%. Minimum administrative fee is $25. Request must be made in writing to CE business office one week prior to class start date.

	OPENING BUDGET :	CLOSING BUDGET	REVISION

GROSS INCOME

(projected)		(actual)	Projected	Actual
3,726.72	20	resident tuition for 12 credit hours -Su 2010, Fall 2010- Group 1	74,534.40	0.00
7,453.44	20	resident tuition for 24 credit hours- Su 2010, Fall 2010, Spr 2011- Group 2	149,068.80	0.00
5,604.84	20	fees for 12 credit hours- Group 1	112,096.80	
11,209.68	20	fees for 24 credit hours- Group 2	224,193.60	0.00
		TOTAL ALL INCOME	559,893.60	0.00

EXPENSES

EXPENSES — no expense budgeted to E/G

Instructional Cost:

Faculty	Faculty	5 courses	47,091.00	
UCF Employee	A&P Program coordinator		50,000.00	
Fringe 8%			25,066.00	-
OPS Personnel	Adjuncts	$7000/course x 2 courses	14,000.00	
Graduate Assistant			12,900.00	
Tuition			223,603.20	
Marketing			10,000.00	
Postage/Mailing Lists/Mail House			3,000.00	
Computer data sets	5 x 1500		7,500.00	
Customized curriculum design/applications		1500 x 20 students	30,000.00	
DN Formatics Lab Usage		1600 x 20 students	32,000.00	
Tech Support			10,000.00	
A.V. Equipment, Taping		video stream (adobe)	5,000.00	
Licenses for data sets		10,000 x 2 sets	20,000.00	
Credit card fees 3% Visa, MC, Discover, Amex (*estimated)			6,000.00	
Other				
		Subtotal Expenses (subject to UCF overhead)	496,160.20	-

UCF DIRECT ANNUAL CHARGE	8% of total expenses	* estimated tuition exempt	21,804.56	-
Continuing Education Administrative Fee	15% of gross fees		50,443.56	
		TOTAL ALL EXPENSES	568,408.32	-

		NET INCOME	(8,514.72)	-
Any loss to be covered by the auxiliary account specified: 35180001		College	(1,277.21)	
Signatures for: Budget approval/ Date	**Budget closure/ Date**	Department	(7,237.51)	
DCE Budget Office:	DCE Budget Office:			
Dept.Chair	Dept.Chair			
College Dean or Designee	College Dean or Designee			
DCE Coordinator	DCE Coordinator			
DCE Director	DCE Director			

UNIVERSITY OF CENTRAL FLORIDA
Division of Continuing Education
BUDGET FORM

ACCT NO					Enrollment deadline date:
Program Name:	Healthcare	Informatics			
Program Dates and times:	June 1, 2011-May 30, 2012				
LOCATION	On-campus				
		MAX ENROLL 20		MIN ENROLL 20	EST ENROLL 20

Cancelation Policy: If program does not meet the projected student breakeven (minimun enrollment), the department/college will cancel the program or revise budget.

REFUND POLICY : Refunds subject to administrative fee of 25%. Minimum administrative fee is $25. Request must be made in writing to CE business office one week prior to class start date.

	OPENING BUDGET :	CLOSING BUDGET	REVISION

GROSS INCOME

(projected)		(actual)	Projected	Actual
3,726.72	20	resident tuition for 12 credit hours -Su 2011, Fall 2011- Group 2	74,534.40	0.00
7,453.44	20	resident tuition for 24 credit hours- Su 2011, Fall 2011, Spr 2012- Group 3	149,068.80	0.00
5,604.84	20	fees for 12 credit hours- Group 2	112,096.80	
11,209.68	20	fees for 24 credit hours- Group 3	224,193.60	0.00
		TOTAL ALL INCOME	559,893.60	0.00

EXPENSES

EXPENSES — no expense budgeted to E/G

Instructional Cost:

Faculty	Faculty	40,091.00	
UCF Employee	A&P Program coordinator	-	
Fringe 8%		9,421.00	-
OPS Personnel	Adjuncts $7000/course x 4 courses	28,000.00	
Graduate Assistant		12,900.00	
Tuition		223,603.20	
Marketing		10,000.00	
Postage/Mailing Lists/Mail House		3,000.00	
Computer data sets	5 x 1500	7,500.00	
Customized curriculum design/applications	1500 x 20 students	30,000.00	
DN Formatics Lab Usage	1600 x 20 students	32,000.00	
Tech Support		10,000.00	
A.V. Equipment, Taping	video stream (adobe)	5,000.00	
Licenses for data sets	10,000 x 2 sets	20,000.00	
Credit card fees 3% Visa, MC, Discover, Amex (*estimated)		6,000.00	
Other			
Subtotal Expenses (subject to UCF overhead)		437,515.20	-
UCF DIRECT ANNUAL CHARGE	8% of total expenses * estimated tuition exempt	17,112.96	-
Continuing Education Administrative Fee	15% of gross fees	50,443.56	
TOTAL ALL EXPENSES		505,071.72	-

NET INCOME		54,821.88	-
Any loss to be covered by the auxiliary account specified: 35180001	College	8,223.28	
	Department	46,598.60	

Signatures for: Budget approval/ Date	**Budget closure/ Date**
DCE Budget Office:	DCE Budget Office:
Dept.Chair	Dept.Chair
College Dean or Designee	College Dean or Designee
DCE Coordinator	DCE Coordinator
DCE Director	DCE Director

UNIVERSITY OF CENTRAL FLORIDA
Division of Continuing Education
BUDGET FORM

ACCT NO					Enrollment deadline date:
Program Name:	Healthcare	Informatics			
Program Dates and times:	June 1, 2012-May 30, 2013				
LOCATION	On-campus				
		MAX ENROLL 20		MIN ENROLL 20	EST ENROLL 20

Cancelation Policy: If program does not meet the projected student breakeven (minimun enrollment), the department/college will cancel the program or revise budget.

REFUND POLICY : Refunds subject to administrative fee of 25%. Minimum administrative fee is $25. Request must be made in writing to CE business office one week prior to class start date.

	OPENING BUDGET :	CLOSING BUDGET	REVISION

GROSS INCOME

(projected)		(actual)	Projected	Actual
3,726.72	20	resident tuition for 12 credit hours -Su 2012, Fall 2012- Group 3	74,534.40	0.00
7,453.44	20	resident tuition for 24 credit hours- Su 2012, Fall 2012, Spr 2013- Group 4	149,068.80	0.00
5,604.84	20	fees for 12 credit hours- Group 3	112,096.80	
11,209.68	20	fees for 24 credit hours- Group 4	224,193.60	0.00
		TOTAL ALL INCOME	559,893.60	0.00

EXPENSES

EXPENSES — no expense budgeted to E/G

Instructional Cost:

Faculty	Faculty	47,091.00	
UCF Employee	A&P Program coordinator	-	
Fringe 8%		11,066.00	-
OPS Personnel	Adjuncts $7000/course x 2 courses	14,000.00	
Graduate Assistant		12,900.00	
Tuition		223,603.20	
Marketing		10,000.00	
Postage/Mailing Lists/Mail House		3,000.00	
Computer data sets	5 x 1500	7,500.00	
Customized curriculum design/applications	1500 x 20 students	30,000.00	
DN Formatics Lab Usage	1600 x 20 students	32,000.00	
Tech Support		10,000.00	
A.V. Equipment, Taping	video stream (adobe)	5,000.00	
Licenses for data sets	10,000 x 2 sets	20,000.00	
Credit card fees 3% Visa, MC, Discover, Amex (*estimated)		6,000.00	
Other			
Subtotal Expenses (subject to UCF overhead)		432,160.20	-
UCF DIRECT ANNUAL CHARGE	8% of total expenses * estimated tuition exempt	16,684.56	-
Continuing Education Administrative Fee	15% of gross fees	50,443.56	
TOTAL ALL EXPENSES		499,288.32	-
	NET INCOME	60,605.28	-
Any loss to be covered by the auxiliary account specified: 35180001	College	9,090.79	
	Department	51,514.49	

Signatures for: Budget approval/ Date	**Budget closure/ Date**
DCE Budget Office:	DCE Budget Office:
Dept.Chair	Dept.Chair
College Dean or Designee	College Dean or Designee
DCE Coordinator	DCE Coordinator
DCE Director	DCE Director

UNIVERSITY OF CENTRAL FLORIDA
Division of Continuing Education
BUDGET FORM

ACCT NO					Enrollment deadline date:
Program Name:	Healthcare	Informatics			
Program Dates and times:	June 1, 2013-May 30, 2014				
LOCATION	On-campus				
		MAX ENROLL 20		MIN ENROLL 20	EST ENROLL 20

Cancelation Policy: If program does not meet the projected student breakeven (minimun enrollment), the department/college will cancel the program or revise budget.

REFUND POLICY : Refunds subject to administrative fee of 25%. Minimum administrative fee is $25. Request must be made in writing to CE business office one week prior to class start date.

	OPENING BUDGET :	CLOSING BUDGET	REVISION

GROSS INCOME

(projected)		(actual)				Projected	Actual
3,726.72	20	resident tuition for 12 credit hours -Su 2013, Fall 2013- Group 4				74,534.40	0.00
7,453.44	20	resident tuition for 24 credit hours- Su 2013, Fall 2013, Spr 2014- Group 5				149,068.80	0.00
5,604.84	20	fees for 12 credit hours- Group 4				112,096.80	
11,209.68	20	fees for 24 credit hours- Group 5				224,193.60	0.00
		TOTAL ALL INCOME				559,893.60	0.00

EXPENSES

EXPENSES — no expense budgeted to E/G

Instructional Cost:

Faculty	Faculty	33,091.00	
UCF Employee	A&P Program coordinator	-	
Fringe 8%		7,776.00	-
OPS Personnel	Adjuncts $7000/course x 4 courses	28,000.00	
Graduate Assistant		12,900.00	
Tuition		223,603.20	
Marketing		10,000.00	
Postage/Mailing Lists/Mail House		3,000.00	
Computer data sets	5 x 1500	7,500.00	
Customized curriculum design/applications	1500 x 20 students	30,000.00	
DN Formatics Lab Usage	1600 x 20 students	32,000.00	
Tech Support		10,000.00	
A.V. Equipment, Taping	video stream (adobe)	5,000.00	
Licenses for data sets	10,000 x 2 sets	20,000.00	
Credit card fees 3% Visa, MC, Discover, Amex (*estimated)		6,000.00	
Other			
Subtotal Expenses	(subject to UCF overhead)	428,870.20	-

UCF DIRECT ANNUAL CHARGE	8% of total expenses * estimated	tuition exempt	16,421.36	-
Continuing Education Administrative Fee	15% of gross fees		50,443.56	
	TOTAL ALL EXPENSES		495,735.12	-

		NET INCOME	64,158.48	-
Any loss to be covered by the auxiliary account specified: 35180001		College	9,623.77	
Signatures for: Budget approval/ Date	**Budget closure/ Date**	Department	54,534.71	
DCE Budget Office:	DCE Budget Office:			
Dept.Chair	Dept.Chair			
College Dean or Designee	College Dean or Designee			

APPENDIX C

UCF HIM Consultant's Report

1. Brief executive summary of major findings

The B.S program in Health Information Management reflects the University's strategic plan. The program's design is consistent with theme "pathways to prominence" – the program contributes to the promotion of undergraduate education, it serves Central Florida, and it reflects the strategic initiative to strengthen UCF's services and processes.

The program's curriculum reflects AHIMA's model curriculum, as such it encompasses the HIM body of knowledge. With input from its Advisory Committee, the program makes curriculum adjustments as necessary to reflect current practice. The program is offered in a flexible format – allowing students to enroll in the program throughout the academic year, and it is primarily offered online which meets scheduling needs of students. A curricular strength is the rich professional practice experience (PPE) courses; the program requires 13 hours of PPEs. The PPE courses are rich not only in quantity of hours required, but also in the planned experiences and requirements of the courses. Students have the opportunity to participate in experiential learning in a variety of health care settings. Another strong point of the program is that faculty expertise is matched to course instruction, thus ensuring that courses have both depth and breadth.

Student accomplishments, (including the pass rate on the national credentialing examination), are external evidence that the program is achieving the goal of preparing competent health information management professionals. This is further validated by employer satisfaction with graduate job performance.

No substantive weaknesses were observed by this consultant or noted in reports/documents provided to this consultant.

It is the opinion of this consultant that UCF and the program should consider the opportunities presented by the establishment of a new School of Medicine at UCF. This creates the unique opportunity to build a curriculum for medical students which incorporates health information management. Additionally, collaborative research in the area of health information management and systems is timely given the national mandates to improve health record processes and reduce medical errors.

Expansion to master's level education is also timely; this consultant suggests that UCF begin the evaluation of this potential.

2. Analysis of Undergraduate Program

a. Curriculum

The HIM curriculum is appropriate to the body of knowledge and is current. Graduates of the program will have the requisite knowledge and skill set for successful careers in HIM. The curriculum adheres to the model curriculum published by AHIMA and incorporates CAHIIM accreditation standards. The curriculum provides a basis for good core education in the discipline of HIM; this is strengthened by the required prerequisites in anatomy and physiology, statistics, and accounting (financial and managerial). The PPE's are especially tuned to the current professional wisdom of placing more emphasis on the electronic health record (EHR), patient case-mix analysis, and the hospital reimbursement cycle. The program utilizes the most recently published discipline-related textbooks.

The program has already successfully pursued curricular development opportunities with other disciplines by implementing pre-professional minors in health services administration and the health sciences. Additionally the program offers a minor in HIM.
In its self study, the program reported that collaboration with the School of Electrical Engineering and Computer Science is under consideration; the potential exists to develop an interdisciplinary minor in health informatics. It is the opinion of this consultant that this idea has merit. This illustrates the program's responsiveness to the needs of other disciplines and the interdisciplinary nature of the HIM curriculum.

This consultant also recommends that the HIM program consider the opportunities presented by UCF's launching of new the School of Medicine. It is the opinion of this consultant that the curriculum in the School of Medicine should include HIM and health informatics courses; this approach would better equip fledgling physicians in navigating the complex health care delivery system. Additionally, it would open up opportunities for the HIM faculty to engage in collaborative research with the School of Medicine.

Courses are available to students when they need them. This is accomplished through the use of online course delivery (approximately 73% of the curriculum is offered online). Furthermore, some courses are offered two and three times per year versus only annually.

The program provides opportunities for research and service learning primarily through its internships and student participation on the HIM Advisory Board and the COPHA Dean's Student Leadership Council. Students are also members of the Student Health Information Management Association which assists the Central Florida Health Information Management Association. As reported in the Self Study, one HIM student participated in undergraduate research through UCF's RAMP and one student participated in UCF's Honors in the Major program. Although these students were unable to complete the programs due to the demands of employment, it is noteworthy that the program fostered student interest in these research programs. Also as reported in the Self Study, two HIM students are currently working at a Florida hospital on a federally funded research grant.

The program meets the expectations of CAHIIM to incorporate appropriate software tools and

state-of-the-art technology. Software applications that are readily available to students include: 3M Coding and Software and CodeMaster, EduCode, HIPAA Training module, MS Visio, MS Project, and SPSS.

List strengths

- The curriculum addresses the current body of knowledge
- The curriculum provides outstanding opportunities for students to gain real world experience – the program requires 13 hours of internship experiences. The internship experiences expose the students to a wide variety of health care settings, ranging from acute care to long term care.
- HIM courses are offered as electives to the HAS and HS programs and a HIM minor is provided. This expands interdisciplinary opportunities and increases the number of students who become aware of the health information profession.
- The program is offered online which makes it available to a larger population of students.
- Faculty expertise is matched with course instruction assignments.
- Graduates are successful on the national exam.
- The program is responsive to its community of interest and regularly invites the community to provide input to the program's ongoing quality assessment process (The HIM Advisory Board is a prime example of this interaction)

List weaknesses

- No substantive weaknesses were noted by the consultant. The program faces challenges similar to any program that offers courses via distance education – maintaining quality online courses and finding ways to create a cohesive student body when faculty and students infrequently see each other face to face is a monumental task. It appears though the HIM program at UCF is successfully meeting the challenge.

b. Student Body

Course instruction is provided by: (a) two full time HIM faculty, (b) contributing faculty from other departments, and (c) adjuncts. This composition of faculty to the number of students majoring in HIM seems appropriate. Additionally, it exposes the students to the expertise of a wide variety of faculty. The number of students in the major appears stable at around 30-35.

As indicated in the Self Study, the student characteristics are appropriate to the major and the classes are diverse. The "credentials" of the incoming students are very good in that SAT scores average 1078. The HIM profession tends to attract primarily females; however, the program at UCF shows evidence of also attracting males. According to the Self Study, in 2004 male students made up 20.5% of the class. In terms of ethnicity, according the Self Study, the program traditionally enrolls a higher percentage of minority students than the University at large. For the Fall 2005 semester, the HIM program enrolled 48.6% minorities while the University at large had a minority enrollment of 29%. As a comparison, this consultant offers the following data regarding the enrollment of minorities at the Medical College of Georgia (MCG):

In 2005, 26% of the total MCG students were minorities; at the HIM program level, 60% of the students were minority. In the MCG School of Allied Health Sciences, 24.2% of its student population were male, and in the HIM program 23.3% were male.

A review of the course syllabi provides evidence that the students are being challenged. Furthermore, grading policies leave little room for grade inflation, so it is the opinion of this consultant that it is unlikely that grade inflation is occurring. An excellent example of a course where students are appropriately challenged to develop the skills critical to the HIM profession, is the HIM 4344C – HIM Department Management. In this course students are challenged to apply didactic principles to projects such as the design of a HIM department layout, equipment selection, construction of a Gantt chart, the creation of an employee work schedule, and the development of a department budget

The program reaches out to alumni. The most distinctive and important manner in which they accomplish this is the inclusion of alumni on its Advisory Committee. By inviting alumni to serve on the Advisory Committee, the program is providing the alumni the opportunity to give input to program direction and relevant student education issues. During this consultant's campus visit, the meeting agenda included a session with program alumni. Based on the interaction this consultant had with alumni, it is the opinion of this consultant that there is excellent rapport and respect between the program faculty and alumni.

This consultant also observed interaction between program faculty and students during a lunch meeting where students were introduced. Students were professional and seemed at ease interacting with the program faculty. This is evidence that the students are receiving the advisement and support they need. Additionally, the program faculty explained the process used to assign students to PPE sites – the process includes taking into account the students' career aspirations. This is another form of important student advisement and support.

List strengths

- The student/faculty ratio is appropriate and includes faculty with the appropriate expertise.
- The gender and diversity mix of the students is appropriate to the overall University mix and in fact exceeds the University-wide trend. It is also similar to the mix experienced by the HIM program at the Medical College of Georgia.
- Students admitted to the program have good SAT scores and course expectations challenge these students to excel.
- The program has excellent rapport with its alumni and regularly engages the alumni in the ongoing quest for program enhancements.

List weaknesses

- No substantive weaknesses were noted by this consultant

c. Student accomplishments

In section 4.D. of the Self Study the honors and awards received by students during the 2005-

2006 academic year were listed. The list included scholarships from state and national professional associations. Students also consistently graduate with academic honors.

The University provides support to faculty and students which contributes to successful outcomes. A noteworthy example of University support is the Faculty Center for Teaching and Learning. By supporting faculty with guidance and assistance with course design and delivery, the quality of instruction is enhanced; consequently, the opportunity for student success also increases. This consultant was impressed with the services provided by the Faculty Center for Teaching and Learning.

List strengths

- The quality of students enrolled in the program is evidenced by student accomplishments – students are the recipients of state and national scholarships and awards
- The Faculty Center for Teaching and Learning is a resource and support mechanism that is exceptional; it demonstrates the University's commitment to both faculty and student in ensuring quality education.

List weaknesses

- No substantive weaknesses were noted by this consultant.

d. Procedures

This consultant met with the COHPA Associate Deans and the Director of the Office of UG Students. Based on these meetings, it appears that appropriate procedures are in place for student advisement and record keeping. The COHPA Associate Deans explained some of the details provided in the Student Handbook. The procedures rely on due process and the Golden Rule. The Dean's Student Leadership Council is a mechanism used to obtain student feedback which is essential to the University's institutional effectiveness process. Student questionnaires are also used to evaluate faculty; this is another source of information by which the University can assess its effectiveness.

List strengths

- A Student Handbook is available which communicates University standards and procedures.
- A Dean's Student Leadership Council provides a communication link between senior academic administrators and the students.
- Student feedback on faculty is obtained.

List weaknesses

- This consultant did not note any substantive procedural weaknesses.

3. Evaluation of intended student outcomes

A copy of the program's Academic Learning Compact was provided to this consultant. The plan articulated in this document is appropriate to the discipline and compatible with the entry level skills expected of HIM graduates. The Compact places emphasis on discipline specific knowledge areas – proficiency in computer skills, management, and coding. Graduates are expected to apply critical thinking skills to the process of continuous quality improvement. This seems appropriate as continuous quality improvement is an ongoing effort in all areas of the US health care delivery system. Effective communication skills are especially important in the HIM field; the Compact emphasizes this importance by identifying three communication outcomes – business writing skills, effective health care communication, and proficient oral communication. The assessment method includes the use of national certification exam results, clinical evaluation, and student projects.

It is the opinion of this consultant that the evaluation of intended student outcomes is adequately planned, described, and assessed.

4. Reputation

This program is recognized within its professional community for the quality of its contributions. The HIM core faculty are well known among HIM educators for articles published in professional refereed journals and the publication of a textbook. Recently, both core faculty received a contract to write a second textbook. The Program Director serves as the President for the Central Florida Health Information Management Association. The Clinical Coordinator was recognized as the 2006 FHIMA Professional of the Year. An adjunct faculty member served as the 2005-2006 President of FHIMA. This record of scholarship, professional honors, and election to association roles is substantial evidence of the program's healthy reputation within its professional community.

This consultant would definitely advise a student to major in this program.

There is insufficient national benchmarking data to rate this program in comparison with similar programs. Because of the dearth of national benchmarking data it is not possible for this consultant to use data to indicate whether the program ranks in the top, middle or bottom percentile. However, it is the opinion of this consultant that the program has strong evidence of its effectiveness in terms of student outcomes, faculty reputation, and employer satisfaction.

List strengths

- Faculty are nationally recognized for scholarship accomplishments.
- Faculty are respected by their professional colleagues as evidenced by their election to professional association roles.

- Employers are satisfied with the performance of the program's graduates. In fact, graduates are sought by local area employers. Furthermore, alumni are employed in high level positions – two graduates now hold vice president positions in hospitals in Florida.
- **List weaknesses**

- No weaknesses were noted by this consultant.

5. Overall analysis and recommendations for HIM

This consultant wishes to thank the University of Central Florida and the program faculty for the invitation to serve as a consultant; it was an honor to review this outstanding program.

The two core faculty for the HIM program are a significant strength of the program. The faculty are well-rounded in their expertise and they continue with their own professional development. Their commitment to excellence in education is evidenced by the curriculum design, course content, student expectations, and most importantly, student outcomes.

The program excels in meeting the essential responsibilities of an HIM academic program: student applicants are appropriately screened, the right applicants are enrolled, the proper body of knowledge is addressed in the curriculum, the students pass the national credentialing exam, and finally, employers hire the graduates.

The program has an opportunity to contribute to the education of the physicians. It is the recommendation of this consultant that the University examine ways in which the expertise of program faculty can by utilized by the new School of Medicine. Knowledge of health information systems and the health care delivery system is critical to physician ability to navigate the complex world of health care delivery. This knowledge can also contribute the reduction of medical errors.

The program may also want to consider the possibility of offering a master's program. There is potential that in future years undergraduate programs may face competition with graduate HIM programs.

APPENDIX D

Ms. Carla Sampson
Vice President of the Commission on the Accreditation of Health Management Education
2000 14th Street North, Suite 780
Arlington, VA 22201
TEL 703-894-0960
FAX 703-894-0941
csampson@cahme.org

Dear Ms. Sampson:

This letter and the attached appendices represent our first year Progress Report which is due September 1, 2008. In this report, I will review recent administrative changes in our College and Department, as well as respond to each of the issues raised by our site visit team. Our responses will relate to the three criteria-related concerns and the associated recommendations of the site visit team.

In Fall 2007 our previous Dean, Dr. Belinda McCarthy resigned her position as Dean of our College of Health and Public Affairs to become Provost of Missouri State University in Springfield, Missouri. During the past academic year, Joyce Dorner has been the acting Dean until July 2008 when Dr. Michael Frumkin assumed the Deanship of our College. Dr. Frumkin has previously held a number of administrative roles in higher education. Most recently he has been the Dean of the College of Social Work at Eastern Washington University.

In addition, the Health Services Administration faculty of the Department of Health Professions petitioned the Dean and Provost to become a separate Department of Healthcare Management and Informatics in Summer 2007. This change was approved by the President and Provost and became official as of July 1, 2008. One of our current Health Service Administration faculty members, Dr. Aaron Liberman, has been appointed Acting Chair of our new department. Dr. Liberman had previously been Chair of the Department of Health Professions from 1999-2002 when we were part of that Department. Faculty looks forward to charting our own course and adding an informatics component to our current curriculum beginning Summer of 2009.

Below we have outlined the three concerns noted by our site visit team and our efforts to address each.

> *I.B.7. Some information about the Program intended to inform the general public, current and prospective students, employees, preceptors, and other interested parties is not consistent.*

The faculty noted that some of the printed materials reviewed by the Site Visit Team were in preliminary draft form and had not yet been distributed to program stakeholders. As the Site Visit Report itself noted, these inconsistencies may be "possibly due to the lag time of updating materials reflecting changes." All program information including the Mission Statement, have now been reviewed and revised to ensure consistency from one information source to another. For example, we have assessed on-line materials and compared it to printed materials to make

sure there are no inconsistencies. Information on our M.S. Program in Health Services Administration may be accessed at any of the following three websites:

Departmental Website: http://www.cohpa.ucf.edu/hmi/index.cfm
Graduate CatalogueWebsite:
http://www.graduatecatalog.ucf.edu/Programs/Program.aspx?ID=1242&tid=526,
College of Health and Public Affairs Website: http://www.cohpa.ucf.edu/ .
In addition, students are provided a paper copy of the Master's of Science, Health Services Administration Graduate Student Handbook upon admission to the Program. The student handbook is provided in Appendix A of this letter.

III.B. 2. Accounting and financial management is not adequately covered in the required curriculum.

The original single course in Healthcare Finance has now been revised to include two courses, thus increasing program requirements from 48 to 51 credit hours. The two courses now cover both accounting and finance in more depth.

The first course in Health Care Finance I (PHC 6160) illustrates how to apply accounting and financial management principles to complex situations found in today's healthcare organization. The focus is on integrating various financial techniques to assist with the development of financial solutions to problems facing the U.S. health care industry. Both managerial protocols and regulatory constraints are examined including:

- Financial Accounting
- Cost Accounting
- Sources of Revenues
- Reimbursement Mechanisms
- Budgeting and Variance Analysis
- Controlling Resource Expenditures
- Pricing of Services and Products

The second course of the two required courses, Health Care Finance II (PHC 6164), illustrates how to apply and integrate advanced accounting and financial principles to develop solutions to specific problems encountered in today's healthcare organizations. Students are expected to have a thorough understanding of the basic accounting and financial techniques introduced in PHC 6160. The topics in this course include:

- Not-for-profit vs. for-profit healthcare entities
- Capital markets
- Interest rate issues
- Financing organizational cash needs using conventional debt instruments
- Stock valuation
- Financial leverage
- Time value of money

- Risk as a manageable commodity
- Capital budgeting

Syllabi for both of our Healthcare Finance courses may be found in Appendix B of this letter. Timothy Rotarius, Ph.D., MBA, a full professor in the program and a seasoned financial manager with several years experience in the field, has been designated as the lead instructor for these courses

III.B.5. Healthcare Information Systems to support administrative and clinical decision making and performance improvement are not adequately covered within the existing curriculum.

While we have not added a new course in health information systems or health informatics, additional course content in these areas has been added in 12 of our 17 courses. These courses address some of the specific areas mentioned on page 30 of the Site Visit Report, including strategic information systems planning, the process of system acquisition, clinical and administrative information systems, and the security and privacy of healthcare information. These courses are as follows:

- HSA5198- Decision Sciences and Knowledge Management (Administrative Information Systems, Strategic Information Systems Planning, Process of System Acquisition)
- HSA6108- Strategic Management (Systems Theory and Strategic Systems Planning)
- HSA6925- Capstone (Systems Theory, Strategic Information Systems Planning, Administrative Information Systems, Clinical Information Systems, and Security and Privacy of Healthcare Information)
- HSA6119-Organizational Studies (Systems Theory)
- HSA6128- Service Management (Administrative Information Systems)
- HSC6636- Issues and Trends (Security and Privacy of Healthcare Information)
- HSA6112- International Health Systems (Systems Theory and Strategic Systems Planning)
- PHC6000- Epidemiology (Clinical Information Systems)
- HSA6160- Healthcare Finance I (Administrative Information Systems)
- HSA6385- Health Care Quality and Outcomes Management (Administrative Information Systems, Clinical Information Systems)
- PHC6420- Health Care Law (Security and Privacy of Health Information)
- HSA6185/6342- Human Resources Management (Administrative Information Systems and Security and Privacy of Healthcare Information)

All of the above courses with the exception of HSA6112 are required of all students. Health information management/systems has been integrated across our curriculum as was done previously with material relevant to healthcare ethics. Detailed course syllabi for the above courses are available in Appendix C of this letter.

Although health information systems and management is covered in a wide variety of required

courses noted above, the most comprehensive coverage occurs in HSA 5198 (Decision Sciences and Knowledge Management). As noted in the attached Syllabus, the instructor covers information system material in almost every class because students use spreadsheet programming methods for modeling, forecasting, optimizing, and simulating cycles of operations management from product design, quality management, cost containment, scheduling, and queuing. This course focuses on decision-making using information system management.

Additionally, with the imminence of the new Masters Degree Program in Healthcare Informatics scheduled for implementation in May 2009, the subject of this concern will be fully addressed and satisfied through the planned curriculum of the new degree program. If during the course of reviewing the enclosed material, a copy of the draft proposal for the establishment of the Healthcare Informatics Program is deemed to be needed by the Commission, please let us know and we will share it with you. This new program has been authorized by the Provost and will be considered by the University Board of Trustees at their November meeting and the Florida State Board of Regents at their January meeting. We expect approvals at both levels and are on target for the May 2009 program launch. This new degree program will provide much more depth and detail in the areas of health information management and systems to the comprehensive coverage of our current Master's program.

We look forward to receiving feedback from the Commission regarding our responses to each of the concerns cited in the Site Visit Team's Final Report.

Sincerely,
Myron D. Fottler, Ph.D.
Professor and Executive Director
Programs in Health Services Administration
Department of Health Professions

APPENDIX E

MEMORANDUM

TO: Dr. Thomas T.H. Wan
Professor and Associate Dean for Research
College of Health and Public Affairs

FROM: Michael A. Arthur
Head, Acquisitions & Collection Services Department
University Libraries

DATE: August 12, 2008

SUBJECT: Program Proposal for Master of Science in Healthcare Informatics

As library resources are essential to any new degree program, an analysis of library holdings was conducted to determine current collection strength in support of the proposed Master of Science in Healthcare Informatics. This analysis was based on the goals of the proposed program that include:

- To develop in students the necessary skills and basic knowledge to be successful in the field of healthcare informatics.
- To increase underlying knowledge of healthcare informatics initiatives and programs.
- To perform cutting edge research in the field of healthcare informatics.
- To prepare students for a successful career in healthcare informatics

The following data compares the library holdings of the University of Central Florida against the holdings of the University of South Florida (USF), Florida State University (FSU), and Florida Atlantic University (FAU). The information contained in this proposal will support the total request of ($15,000), $5,000.00 per year for three years to be used for increasing the strength of the monograph collection. The library will use this funding to purchase approximately 50 books per year to support the program goals listed above and the materials will be selected after close consultation with the faculty. Elizabeth Killingsworth, Acting Head, Information Literacy & Outreach, University Libraries, and Nadine Dexter, Director, Health Sciences Library contributed to this collection review.

MONOGRAPH ANALYSIS

The University of Central Florida was compared to the benchmark institutions using OCLC WorldCat Analysis on August 11, 2008. The following chart provides details regarding how the collections compare in some areas that may provide materials in support of the proposed degree. The subject areas were chosen from Library of Congress Subject Headings after closely evaluating the

key research areas, and after consulting with Nadine Dexter.

These areas include:

- Communicable Diseases
- Computers, General
- Management Information Systems
- Modeling & Simulation
- Office Automation
- Online Data Processing
- Optical Data Processing
- Special Computers & Systems
- Health Facilities, Nursing & History
- Health Professions & Public Health
- Medicine
- Medicine By Body System
- Medicine By Discipline

The numbers in the chart below indicate the holdings from OCLC for the UCF Libraries and the three peer institutions in the selected subject areas.

Institutional Comparison	UCF	USF	FSU	FAU
Total Library Holdings	1009373	1666459	1786338	931209
Communicable Diseases	298	577	557	261
Computers, General	1436	1189	924	812
Management Information Systems	320	335	251	240
Modeling & Simulation	66	34	33	30
Office Automation	2207	2026	1309	1660
Online Data Processing	374	223	155	233
Optical Data Processing	1163	657	396	343
Special Computers & Systems	1229	746	528	624
Health Facilities, Nursing & History	4469	5995	6149	3841
Health Professions & Public Health	14479	29932	22996	11138
Medicine	33729	29515	30642	23362
Medicine By Body System	3277	6447	5092	2705
Medicine By Discipline	10374	26199	13594	8104

The chart confirms that the library has adequate monograph collections to support this program at a basic level as compared to our closest peer, FAU. However, changes both in the health sciences programs and the addition of a medical school require that the collections at UCF Libraries be improved so that they are more closely aligned with USF and FSU.

UCF is strong against the peer group in the specified areas under computer science as well as selected areas in health and medicine. It is recommended that approximately 150 new print or electronic monographs be added over a three year period in specific subject areas. The monographs would be purchased after close consultation with faculty teaching in the program. While 150 new monographs will not bring the UCF collection up to the level of USF and FSU in the selected areas, it will provide new and or updated content that will be relevant for students and researchers.

Contributing to the support for this proposed program within the library at UCF is the continued emphasis on print monographs, the foundation of a strong research library. However, budget reductions over the past year have drastically reduced the amount of current academic titles added to the collection. In addition, the library does not have funding available to add any new periodical titles or databases that would support this program. UCF does have related degree programs and the library collections that support those programs will also serve faculty and students in the new Master of Healthcare Informatics. Some of these programs include:

Doctor of Nursing Practice
Ph.D. in Nursing
Master of Health Sciences
Master of Public Administration
Ph.D. in Public Affairs
Ph.D. in Computer Science

Current print and online resources that could support the proposed curriculum:

Health Informatics Journals and Journal Packages

Journal Titles Owned by UCF Libraries (online access unless otherwise indicated)
BMC Medical Informatics and Decision Making (open access)
Cancer Informatics (open access)
Computer Methods and Programs in Biomedicine
Computers and Biomedical Research
Computers in Biology and Medicine
Computers, Informatics, Nursing: CIN
eJournal of Health Informatics
Health Informatics Journal
Healthcare Informatics (print only)
HMI: History of Medical Informatics

IEEE Transactions on Information Technology in Biomedicine
Informatics in Primary Care
International Journal of Biomedical Computing
International Journal of Medical Informatics
Internet Journal of Medical Informatics
Journal of Biomedical Informatics
Journal of Health Informatics in Developing Countries
Journal of Informatics, Education, and Research
Journal of Systemics, Cybernetics and Informatics
Journal of the American Medical Informatics Association
Medical Informatics and the Internet in Medicine
On-line Journal of Nursing Informatics
Open Medical Informatics Journal
Telematics and Informatics

Journal Packages Owned by UCF Libraries

ACM Digital Library contains full text of the Association for Computing Machinery journals magazines and proceedings
Science Direct package covers computer science, health sciences, medicine, health professions
SpringerLink package covers computer science, biomedical and life sciences
Wiley Interscience package covers information technologies, computer science (general), medicine and public health

The Chart below identifies titles requested by Dr. Wan and provides information regarding current access. Anticipated budget problems have the potential of impacting access to online and print titles. However, many of these titles are also a priority for the College of Medicine (COM) as noted in the table below.

Titles Requested by Dr. Wan	Current Access	COM Priority
BMJ Health Services Research	none	no
Health Services Research	online	no
Journal of American Medical Informatics Association	online	yes
International Journal of Medical Informatics	online	yes
Health Affairs	online	yes
American Journal of Public Health	online	yes
Health Policy	online	yes
International Journal of Public Policy	print + online	yes
BMC Bioinformatics	online	yes

Analysis Summary for New Degree Authorization

	Criteria	Proposal Response to Criteria
1.	The goals of the program are aligned with the university's mission and relate to specific institutional strengths.	
2.	If there have been program reviews or accreditation activities in the discipline or related disciplines pertinent to the proposed program, the proposal provides evidence that progress has been made in implementing the recommendations from those reviews.	
3.	The proposal describes an appropriate and sequenced course of study. Admissions and graduation criteria are clearly specified and appropriate. The course of study and credit hours required may be satisfied within a reasonable time to degree. In cases in which accreditation is available for existing bachelor's or master's level programs, evidence is provided that the programs are accredited or a rationale is provided as to the lack of accreditation.	
4.	Evidence is provided that a critical mass of faculty members is available to initiate the program based on estimated enrollments, and that, if appropriate, there is a commitment to hire additional faculty members in later years, based on estimated enrollments. For doctoral programs, evidence is provided that the faculty members in aggregate have the necessary experience and research activity to sustain a doctoral program.	
5.	Evidence is provided that the necessary library volumes and serials; classroom, teaching laboratory, research laboratory, office, and any other type of physical space; equipment; appropriate fellowships, scholarships, and graduate assistantships; and appropriate clinical and internship sites are sufficient to initiate the program.	

	Criteria	Proposal Response to Criteria
6.	Evidence is provided that there is a need for more people to be educated in this program at this level. For all degree programs, if the program duplicates other degree programs in Florida, a convincing rationale for doing so is provided. The proposal contains realistic estimates of headcount and FTE students who will major in the proposed program and indicates steps to be taken to achieve a diverse student body.	
7.	The proposal provides a complete and realistic budget for the program, which reflects the text of the proposal, is comparable to the budgets of similar programs, and provides evidence that, in the event that resources within the institution are redirected to support the new program, such a redirection will not have a negative impact on undergraduate education. The proposal demonstrates a judicious use of resources and provides a convincing argument that the output of the program justifies the investment.	
8.	The proposal provides evidence that the academic unit(s) associated with this new degree have been productive in teaching, research, and service.	