**Request for Authorization to Establish a
Master of Professional Science (M.P.S.) in Biomedical and Health Informatics (CIP 51.2706) at
University of North Carolina at Chapel Hill**

I.   Program Highlights

- 35 credit hours
- Tracks in Clinical Informatics, Public Health informatics
- Clinical Informatics track can lead to certification in the American Board of medical Specialties Subspecialty in Clinical Informatics
- Industry practicum and capstone project required (for all Professional Science Master's programs)
- 30 full-time, 15 part-time students projected at steady state
- Minimal start-up costs include partial salaries and benefits for PSM Director, academic administrative support, and Carolina Health Informatics Program (CHIP) academic director, some supplies and advertising.

II.   BOG Academic Program Planning Criteria (UNC Policy 400.1)

1. **Existing Programs (Number, Location, Mode of Delivery).** Two master's level programs exist in CIP 51.2706 (Medical Informatics): East Carolina University's M.S. in Health Information and Informatics Management, and UNC Charlotte's M.S. in Professional Science Master's in Health Informatics. ECU also offers a post-baccalaureate certificate in Health Informatics. ECU's degree and certificate offerings are online. Duke University's Fuqua School of Business offers the Master of Management in Clinical Informatics, and its School of Nursing offers an informatics concentration in the MSN program.

2. **Relation to Campus Distinctiveness and Mission.** UNC Chapel Hill's 2011 Academic Plan emphasizes interdisciplinary teaching and scholarship as a key strategic aim. The proposed program is highly interdisciplinary and collaborative between UNC Chapel Hill's School of Information and Library Science, Gillings School of Global Public Health, School of Nursing, School of Medicine, Eshelman School of Pharmacy, and School of Dentistry with additional input from other research and service departments, such as RENaissance Computing Institute (RENCI) and the Cecil G. Sheps Center for Health Services Research. The partnering Schools, with the UNC Chapel Hill Provost, have committed $1M for 4-7 faculty hires to grow and develop health informatics research and teaching on campus. The program would also build on the success of the Carolina Health Informatics Program (CHIP) which offers graduate certificates in clinical, nursing and public health informatics.

3. **Demand (Local, regional, state).** Professional Science Master's programs are developed to meet industry-identified areas of workforce need and attract working professionals by providing useful skills in a time-efficient manner. Enrollment in medical-related PSM programs nationally has grown about 40% since 2009-2010. To meet local needs, the proposed program was planned with input from an advisory board including representatives from NC DHHS, IBM, Allscripts, NC Division of Public Health, RTI International, and Family Health Network. UNC

Chapel Hill's CHIP certificate program enrollment, currently 35 students, is another indicator of strong student demand in health informatics at the campus. Many CHIP students have expressed interest in a master's degree that would provide more preparation for leadership roles.

4. **Potential for Unnecessary Duplication.** The UNC Charlotte and proposed UNC Chapel Hill programs, being place-based, should draw from a different applicant pools that are geographically close to those campuses. Additionally, UNC Online analyses have shown that online learners often select programs at institutions that are close to their home; therefore, we anticipate little overlap with ECU's online master's applicant pool as well.

5. **Employment Opportunities for Graduates.** In recent years, Health IT jobs have grown from 0.75% to 2.5% of all healthcare jobs. A May 2013 workforce focus report by Burning Glass notes significant growth in Health Informatics job postings (53% compared to 6% for all Health Care jobs), particularly for data analysts and clinical application developers. The October 2011 report of the UNC Sheps Center for Health Services Research, shows high demand for health information management and technology job roles, with the highest percentage of these job vacancies in the Triangle area of the state. The program proposal also cites employability of its CHIP certificate graduates as evidence of employment opportunities.

6. **Faculty Quality and Number.** Sixteen faculty members comprise the core faculty to support the program; an additional thirteen faculty will be affiliated through teaching and student advising activities. These faculty span the eight aforementioned partnering units. Faculty qualifications and ability to deliver the program were found acceptable during the review process.

7. **Availability of Campus Resources (library, space, etc.).** No new library resources, facilities, or information technology infrastructure and services are needed to launch the program.

8. **Relevant Lower-level and Cognate Programs.** Applicants are expected to come from diverse backgrounds including medicine, nursing, engineering, information technology, and biotechnology. The program is expected to attract new graduates as well as mid-career professionals.

9. **Impact on Access and Affordability.** The addition of the program will provide access to mid-career professionals in the Triangle area who are not seeking an online degree experience. The program is seeking a $4,000 per student per year differential tuition amount, which was determined to be consistent with tuition charged for other Professional Science Master's programs nationwide and with existing professional graduate degree programs at UNC Chapel Hill.

10. **Expected Quality.** Several of the UNC Chapel Hill partnering schools (nursing, public health, etc.) are nationally ranked.

11. **Feasibility of Collaborative Program.** The proposed program is a highly collaborative endeavor that spans the resources and expertise resident in eight partnering units within UNC Chapel Hill. UNC Chapel Hill, ECU and UNC Charlotte collaborate regularly through the NC Health Information & Communications Alliance (NCHICA) which is dedicated to the future direction of

health informatics education and training in the state. Multi-campus initiatives include the annual Health Informatics Career Fair and a weekly seminar series.

12. **Other Considerations.** *Our Time Our Future* identifies Professional Science Master's programs, which meet identified industry needs, as an area of targeted growth in graduate education.

III.   Summary of Review Processes

Campus Review Process and Feedback.   UNC Chapel Hill follows a two-stage review similar to the system requests to plan and to establish; therefore, the proposed program was reviewed and approved twice by the faculty bodies and deans offices of each participating School, the Graduate School, Provost, and Chancellor. All reviews for the program were favorable. No opposition was stated against the proposal. The campus review process allows for the Provost or Chancellor to forward new degree proposals to the Faculty Council for further discussion if warranted, but that step was not deemed necessary in this case. Throughout the two-stage review process, the proposal was strengthened to include additional detail about industry ties and career preparation, to confirm curricular structures and degree requirements, to clarify the administrative support of the Graduate School and budget needs, to detail collaborative efforts with other informatics degree programs in the state, and to provide market data related to student demand and employment prospects.

UNC General Administration Review Process and Feedback. Prior to UNC Graduate Council review, UNC Chapel Hill responded to questions from UNC General Administration staff on demand evidence, collaborative opportunities, enrollment projections, and resource needs. The proposal was then reviewed by twenty-four faculty and graduate program administrators from ten UNC campuses. Reviews consistently noted strong program alignment with UNC Chapel Hill's mission. Reviews in all categories were either "acceptable" or "acceptable with some considerations." UNC Chapel Hill responded to concerns that the informatics component of the proposed program should be strengthened. Reviewers were mixed on whether enrollment projections were either "optimistic" or "understated." Reviewers requested more accurate descriptions of the similar existing programs at ECU and UNC Charlotte.   Finally, reviewers sought more information on the adequacy of administrative and other support structures for students.

Benefits of program approval include addition of an industry-responsive program that leverages collaboratively the vast biomedical and information science expertise across UNC Chapel Hill. ECU and UNC Charlotte provided letters of support for the proposed program. For these reasons, we do not recommend any alternatives to implementing the degree program. UNC Chapel Hill anticipates that both the proposed degree program and the CHIP certificates will attract different applicants and remain viable paths in the future. The institution will need to monitor enrollment trends and impact of the new program on certificate enrollments and vice versa.

IV.   Recommendation

It is recommended that the Board of Governors approve University of North Carolina at Chapel Hill's request to establish a Master of Professional Science (M.P.S.) in Biomedical and Health Informatics degree program (CIP 51.2706) effective February 2014.