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**HIGHER EDUCATION COMMISSION**  
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TO: Randy Boyd  
President, University of Tennessee

FROM: Mike Krause

A handwritten signature in black ink, appearing to read "Mike Krause", is placed to the right of the printed name.

SUBJECT: University of Tennessee, Health Science Center  
Letter of Notification: Biomedical Human Health Sciences, Bachelor of Science

DATE: October 12, 2020

Thank you for the revised submission of the Letter of Notification (LON) for the Bachelor of Science in Biomedical Human Health Sciences (BHHS) program. Per THEC Policy A1.0 *New Academic Programs: Approval Process*, the LON is evaluated on the following criteria: alignment with state master plan and institutional mission, need, sustainable demand, program costs and revenues; institutional capacity to deliver the proposed academic program; and avoidance of duplication.

After reviewing the revised LON, I approve University of Tennessee Health Science Center's plan to develop the New Academic Program Proposal (NAPP) for the Biomedical Human Health Sciences, Bachelor of Science program. It is understood the proposed program will be developed in accordance with the mission of UTHSC and will meet the Master Plan for Tennessee Postsecondary Education 2015-2025 degree completion and workforce development objectives.

The LON projects implementation of an approved Biomedical Human Health Sciences, Bachelor of Science in Fall 2021. Please be advised that the Letter of Notification will be posted on the THEC website for public disclosure.

Attachment

cc: Linda Martin  
Karen Brinkley Etzkorn  
Lori Gonzalez  
Stephen Alway  
Betty Dandridge Johnson

The evaluation of the Letter of Notification (LON) is in accordance with the *THEC Policy A1.0 New Academic Programs: Approval Process*. The evaluation is conducted by interested parties and THEC staff. The LON is posted on the THEC website for a 15 day period of comment by interested parties. Based on the internal and external evaluation, THEC will make a determination of the LON to support, not to support, or defer a decision based on a revised LON.

<b>Institution:</b> University of Tennessee, Health Science Center	<b>LON Submission Date:</b> May 13, 2020 <b>Revised Submission Date:</b> July 21, 2020 and October 2, 2020
<b>Academic Program, Degree Designation:</b> Biomedical Human Health Sciences, Bachelor of Science (BS)	
<b>Concentrations:</b> (1) Health Information and Informatics and (2) Clinical Research	
<b>Proposed CIP Code:</b> 51.0000 (Health Services/Allied Health/Health Sciences, General)	
<b>CIP Code Definition:</b> A general, introductory, undifferentiated, or joint program in health services occupations that prepares individuals for either entry into specialized training programs or for a variety of concentrations in the allied health area. Includes instruction in the basic sciences, research and clinical procedures, and aspects of the subject matter related to various health occupations	
<b>Proposed Implementation Date:</b> Fall 2021	
<b>Time Period Posted on Website for Public Comment:</b> May 13–27, 2020	

**Note:** *Comments in italics within this document should be addressed in the revised LON submission.*

Criteria	Comments
<b>Letter of Support from President/Chancellor</b>	<ul style="list-style-type: none"> <li>Letter of support from Chancellor Schwab (dated April 20, 2020).</li> <li>Letter of support from Vice President of Academic Affairs Dr. Linda Martin (dated April 22, 2020).</li> </ul>
<b>Overall Comments</b>	<ul style="list-style-type: none"> <li>The College of Health Professions (COHP) proposes a new undergraduate program in Biomedical Human Health Sciences (BHHS) with concentrations in (1) Health Information and (2) Informatics and Clinical Research leading to a Bachelor of Science (BS) degree.</li> <li><i>The communication with Jillette Battle at TBR is referenced in the revised document, but it is not included – please add to the NAPP.</i></li> </ul>
<b>Background on Academic Program Development</b>	<ul style="list-style-type: none"> <li>The proposed program aligns with American Medical Association (AMA) recommendations by combining basic science training, meaningful clinical experiences, and interprofessional education.</li> <li>COHP currently offers various undergraduate coursework in the Allied Health fields including Speech Pathology, Diagnostic and Health Sciences, Occupational Therapy, and Physical Therapy.</li> <li>A pivotal aim of the proposed BHHS is to provide an “academic home” for undergraduate students interested in the health sciences. The BHHS will provide both experiential and service-learning opportunities for students, in addition to on-site training through internships and practica.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ UTHSC has confirmed the proposed program aligns with existing TN Transfer Pathway Programs such as “pre-health”.</li> </ul>
<p><b>Purpose and Nature of Program</b></p>	<ul style="list-style-type: none"> <li>▪ The proposed program is intended to be interdisciplinary and interprofessional and fill a niche for students who aspire for careers in the health fields – particularly in healthcare information management and clinical research. The proposed program will also offer an education that helps students prepare for graduate or professional study in the health sciences.</li> <li>▪ The proposed program is intended to be interdisciplinary with two concentrations in healthcare information management and clinical research. In 2016, the Health Informatics &amp; Information Management bachelor’s program was terminated. The LON focuses heavily on the HIIM concentration along with corresponding letters of support.</li> <li>▪ The program is intended to be a completion program where students complete general education requirements at another institution and complete junior and senior level coursework at UTHSC. Existing Tennessee Transfer Pathways will generate a direct pipeline of students into the proposed BHHS program at the UT Health Science Center.</li> <li>▪ Each BHHS student will be required to complete 21 credit hours in one of the following concentrations: Health Informatics and Information Management (CIP 51.2706 Medical Informatics) or Clinical Research (CIP 51.1005 Clinical Laboratory Science/Medical Technology/Technologist).</li> <li>▪ Graduates from the BHHS program will acquire a comprehensive knowledge of healthcare and related issues, an understanding of current research findings, experience in research data collection, experience in working with clinical populations, and competencies crucial for a successful career in healthcare.</li> <li>▪ Students in the Health Informatics and Information Management will have the option of completing the program completely online.</li> </ul>
<p><b>Alignment with State Master Plan and Institutional Mission</b></p>	<ul style="list-style-type: none"> <li>▪ The proposed program aligns with the state master plan by creating an undergraduate degree program for immediate entry in health and interdisciplinary services, meeting economic, workforce, and research needs.</li> <li>▪ The proposed program will help the State of Tennessee to address the deficit of trained health professionals identified in the Academic Supply and Occupational Demand in Tennessee report.</li> <li>▪ The proposed BHHS program is consistent with the institutional mission of the university to “Improve the health and well-being of Tennesseans and the global community by fostering integrated, collaborative, and inclusive education, research, scientific discovery, clinical care, and public services.”</li> </ul>
<p><b>Institutional Capacity to Deliver the Proposed Program</b></p>	<ul style="list-style-type: none"> <li>▪ The proposed BHHS will be housed within the Department of Diagnostic and Health Sciences and share faculty, courses, educational resources, laboratory equipment, clinical placement, and integrated research opportunities.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Three additional faculty members will be hired to support the proposed program to be phased in 2021. One of these faculty positions will also serve as the program director.</li> <li>▪ UTHSC has faculty and staff experienced in educational pedagogy that will allow the program to be delivered remotely where needed.</li> <li>▪ The College and UTHSC expects net gains in enrollment due to the increased demand for health professions both locally and nationally.</li> </ul>
<b>Existing programs offered at public and private Tennessee institutions</b>	<ul style="list-style-type: none"> <li>▪ Similar programs are currently available at Tennessee State University (Health Sciences, BS) and East Tennessee State University (Allied Health, BS).</li> </ul>
<b>Student Interest</b>	<ul style="list-style-type: none"> <li>▪ In a national survey of 490 adults who had completed, at a minimum, a high school degree, 8 percent reported to be very interested and an additional 32 percent reported some interest in a degree in BHHS at UTHCS.</li> <li>▪ Thirty-five (35) students in the Allied Health Sciences, AAS program at STCC completed a survey to measure their interest in the proposed degree. The vast majority (27) representing 84% of the respondents were very interested in the program. An additional 3 students were somewhat interested.</li> <li>▪ UTHSC has identified possible transfer programs which could serve as a pipeline for this program including TN Transfer Pathway programs and several AAS programs offered at TN Community Colleges.</li> </ul>
<b>Local and regional need</b>	<ul style="list-style-type: none"> <li>▪ The BHHS program is proposed to graduate highly skilled professionals prepared to enter the job market during a recession or recovering economy.</li> <li>▪ The Health Information and Informatics concentration will prepare graduates to work as Medical and Health Services Managers and Technicians which are expected to increase by 20 percent and 13 percent, respectively, from 2016 to 2026 (U.S. Bureau of Labor Statistics).</li> <li>▪ The Clinical Research concentration will prepare students for employment as Medical and Clinical Laboratory Technologists/Technicians and Medical Records and Health Information Technicians, both expected to grow faster than average at 13 percent 2016 to 2026 (BLS).</li> </ul>
<b>Employer need/demand</b>	<ul style="list-style-type: none"> <li>▪ The U.S. Department of Labor predicts that healthcare, in general, will be a recession-proof, high-growth industry well into the next decade.</li> </ul>
<b>Future sustainable need/demand</b>	<ul style="list-style-type: none"> <li>▪ The BLS projects 5.0 million new jobs will be generated in health care and social assistance between 2012 and 2022, primarily to serve the aging population. Many of these jobs provide excellent pay, job security, and job portability.</li> <li>▪ The BHHS degree will provide a four-year degree as well as prepare students for advanced professional degrees in a graduate training program.</li> <li>▪ Letters of support were received from Southwest Tennessee Community College, TN Health Information Management Association, UTHSC Vice Chancellor for Research, the UTHSC Executive Director for Healthcare Simulation, Seth Johnson (an industry consultant), Roane State Community College, West TN Healthcare, MRO Corporation,</li> </ul>

	Chattanooga Area Health Information Management Association, and BMHCC Corporate.
<b>Program costs/revenues and THEC Financial Projection Form</b>	<ul style="list-style-type: none"> <li>▪ Planning year costs include one full-time program director at an annual salary of \$117,000 to include a three percent increase annually, faculty curriculum development consultants (\$10,000), and equipment (\$35,000).</li> <li>▪ Starting in year one, two faculty members will be hired with an annual salary of \$80,000, to include a three percent increase annually.</li> <li>▪ Program costs will be met with institutional reallocation and tuition fees based on initial enrollment of 30 students per cohort. Annual enrollment will increase to a cohort of 45 students by year four.</li> </ul>
<b>Public comments</b>	<ul style="list-style-type: none"> <li>▪ No public comments were received.</li> </ul>

## Letter of Notification (LON)

**Institution:** University of Tennessee Health Science Center

**College:** College of Health Professions

**Department:** N/A

**Title of Degree:** Bachelor of Science in Biomedical Human Health Sciences

**Formal Degree Abbreviation:** BHHS

**CIP/THEC Code:** 51.0000

**CIP Code Title:** Health Professions, General

**Proposed Implementation Date:** Fall 2021

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## Background Concerning Academic Program Development

The College of Health Professions (COHP) at the University of Tennessee Health Science Center (UTHSC): (a) educates competent health professionals to provide services that address the health care needs of the people of Tennessee, (b) trains professionals to lead in their respective health professions, (c) contributes to the knowledge bases of the respective health fields, and (d) promotes lifelong learning through continuing education. The COHP houses the departments of Audiology and Speech Pathology, Diagnostic and Health Sciences, Occupational Therapy, and Physical Therapy.

The college proposes a new undergraduate program in Biomedical Human Health Sciences (BHHS), leading to a Bachelor of Science (B.S.) degree. The degree offers two concentrations: (1) Health Informatics and Information Management and (2) Clinical Research. The proposed program will complement the college's current educational offerings and research goals. The rapid development in healthcare is shaping the need for prepared clinicians to fill advanced practice roles. Moreover, a growing need for allied health professionals is significantly changing the academic degrees needed for careers in healthcare, requiring greater emphasis on entry into health information management and clinical research training at much earlier stages.

A pivotal aim of the proposed BHHS is to provide an “academic home” for undergraduate students interested in the health sciences. The BHHS will provide both experiential and service-learning opportunities for students, in addition to on-site training through internships and practica. The BHHS will prepare students for employment in a variety of venues, including health care delivery systems (proprietary and non-profit), health insurance companies, pharmaceutical companies, assisted living communities, and health service research organizations. Undergraduates who earn the degree would be prepared for entry-level positions in the health services sector, admission to a graduate program for which they prepared, or career advancement in their current health care positions.

Existing Tennessee Transfer Pathways will generate a direct pipeline of students into the proposed BHHS program at the UT Health Science Center. For instance, pathways offered in the Health Sciences (Pre-Health<sup>1</sup>) and STEM (Information Systems<sup>2</sup>) are examples of the two-year degrees that could align well with the proposed program.

We contacted the Tennessee Board of Regents (TBR) to ensure compatibility with the suggested transfer pathways. UTHSC and TBR have confirmed that the Pre-Health area focus follows the requirements of the undergraduate degrees at UTHSC. A copy of our communication with Ms. Jillette Battle (Academic Initiatives Coordinator, Office of Academic Affairs TBR- College Systems of Tennessee) as supporting evidence of our efforts in this endeavor.

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<sup>1</sup> <https://www.tntransferpathway.org/majors/pre-health>

<sup>2</sup> <https://www.tntransferpathway.org/majors/information-systems>

This proposed degree will not replace other traditional pathways to healthcare careers, such as human nutrition, exercise science, biology, chemistry, psychology, or others. Instead, the proposed academic program will offer a unique alternative for those who seek new and exciting careers in healthcare and the health professions by combining strong basic science training with meaningful clinical experiences with persons of all ages who have various health concerns or disabilities.

The American Medical Association (AMA) provided recommendations for optimizing the medical education environment, and interdisciplinary practice, more recently described as interprofessional education (IPE), as one area identified as needing substantial attention. Other areas for improvement included continuous quality improvement, advocacy, information management, and cultural competence.

The BHHS, in part, responds to the recommendations provided by the AMA over the past decade. The degree will provide graduates with a strong foundation in the competencies necessary to deliver high-quality cross-disciplinary healthcare in a dynamic environment. Moreover, it will respond to the rapid and ongoing changes in healthcare priorities and needs by providing an integration of training in science, research, and clinical applications in health care.

The BHHS degree focuses on the development of knowledge and skills that include, but are not limited to

- Ethical behavior in the provision of all healthcare activities and services
- Active participation within interprofessional teams
- Provision of culturally sensitive healthcare services
- Effective oral and written communication and use of information technology
- Attention to patient safety and healthcare quality
- Leadership and advocacy for improved healthcare
- Understanding the role and gaining experience in basic and clinical research
- Gaining experience working with clinical populations

## **Purpose and Nature of the Program**

The Curriculum of the BHHS will emphasize critical thinking, information literacy, and additional skills required by students to become lifelong learners. The curriculum is interdisciplinary, incorporating natural sciences and mathematics, social and behavioral sciences, and professional studies. The BSBS curriculum includes a focus on health informatics and information management components of healthcare, as well as cultural competence and multicultural education. Additionally, the BSBS will provide opportunities for faculty and students to collaborate in research, service learning, and internship experiences in healthcare.

The BHHS interdisciplinary and interprofessional program will fill a niche for students who aspire to careers in the medical and healthcare fields in general and, more specifically, in healthcare

information management and clinical research. Additionally, the proposed degree will provide students with access to the needed prerequisites for professional study and provide a solid background in new fields in health sciences.

Although the proposed BHHS program (*CIP 51.000 Health Professions and Related Programs*) will provide a four-year degree option with overall exposure to and entry into a variety of health professions or lead to graduate or professional health care programs, each enrollee will be required to complete 21 credit hours in one of the following two concentrations:

1. ***Health Informatics and Information Management*** (*CIP 51.2706 Medical Informatics*)
2. ***Clinical Research*** (*CIP 51.1005 Clinical Laboratory Science/Medical Technology/Technologist*)

Graduates from the BHHS degree program will acquire a comprehensive knowledge of healthcare and related issues, an understanding of current research findings, experience in research data collection, experience in working with clinical populations, and competencies crucial for a successful career in healthcare.

The proposed program is designed much like a traditional baccalaureate program. However, due to the nature of the University of Tennessee Health Science Center and the lack of course offerings in General Education, students will complete the first 2 years at community colleges or other universities and then transfer to UTHSC to enroll in this program. Therefore, from the perspective of the Health Science Center, the BHHS is a form of a completion degree to any eligible student who has completed his or her general education requirements at another institution. General education coursework covers English composition, literature, humanities or fine arts, social/behavioral sciences, natural science, mathematics, American history, a science sequence with labs. General education competencies for all UTHSC baccalaureate degrees are as follows:

- ***Critical Thinking***  
Students will demonstrate their ability to solve problems, construct and present cogent arguments in support of their views and understand and evaluate arguments presented by others.
- ***Communication***  
Students will demonstrate appropriate skills in planning, preparing, and presenting effective oral and written presentations.
- ***Interprofessionalism***  
Students will be able to explain interprofessional practice to patients, clients, families, and/or other professionals, describe the areas of practice of other health professions, and express professional pinions competently, confidently, and respectfully while avoiding discipline specific language.

General education competencies will be assessed through tools and strategies such as student performance on oral presentations, written critiques of research papers, and papers written in capstone courses.

## Alignment with State Master Plan and Institutional Mission

The 2015-2025 State Master Plan<sup>3</sup> holds higher education institutions accountable for increasing the educational attainment levels of Tennesseans, addressing the state’s economic development, workforce development, and research needs, and ensuring increased degree production within the state’s capacity to support higher education. Additionally, minimizing redundancy in degree offerings is another aspect of the State Master Plan. The proposed degree program directly aligns with the State Master Plan for Higher Education. Specifically, it aims to increase education attainment levels in Tennessee by creating an undergraduate degree program for immediate entry in health and interdisciplinary services, meeting economic, workforce, and research needs, and increasing degree production in the following ways:

- “Drive to 55” is the principal tool at Tennessee’s disposal for achieving the Governor’s bold goal — that, in contrast to Tennessee’s current postsecondary attainment rate of 38 percent, a decade from now 55 percent of the state’s working-age population (ages 25-64) will have earned a college degree or other high-value postsecondary credential.
- The newly proposed program will increase the number of postsecondary degrees in Tennessee by adding an attractive undergraduate professional program in a high demand discipline.
- The newly proposed degree program aligns with the postsecondary outputs and outcomes with the current and future workforce and economic development needs of the state.
- Considering the lucrative job prospects and the dire demands for this degree, the new program will enhance the percentage of Tennesseans with a college degree.
- The proposed degree program does not belong to the “overly supplied” academic programs.

The proposed program will align directly with the 2015-2025 State Master Plan for Higher Education in two ways. First, it will increase the number of postsecondary degrees in Tennessee by adding an attractive graduate program in a high demand discipline. Second, it will support a direct link between the state’s economic development and educational system.

Per the “Academic Supply and Occupational Demand in Tennessee” report by the Tennessee Higher Education Commission, health professions are on the top of the most in-demand career paths. The newly proposed degree program will help the State of Tennessee to meet the deficit of individuals trained to work in these areas throughout Tennessee. The proposed program also aligns with the mission of the university and COHP.

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<sup>3</sup> <https://www.tn.gov/thec/article/statewide-master-plan>

**The mission of the university is to:**

*Improve the health and well-being of Tennesseans and the global community by fostering integrated, collaborative, and inclusive education, research, scientific discovery, clinical care, and public service.*

As the preeminent Health Science Center in the state, the program embodies the spirit of excellence in teaching, research, scholarship, and outreach and engagement.

**The mission of the COHP is to:**

*Provide the people of Tennessee with access to quality higher education, economic development, and enhanced quality-of-life opportunities.*

This mission brings the benefits of the health sciences to the achievement and maintenance of human health, with a focus on the citizens of Tennessee and the region, by pursuing an integrated program of education, research, clinical care, and public services. The college educates competent health professionals to provide services that address the health care needs of the people of Tennessee. Our graduates supply a workforce that provides leadership in healthcare, contributes to the knowledge bases of their respective health disciplines, and promote lifelong learning through continuing education, the pursuit of knowledge, and research to address the health needs of our citizens. The program also aligns well with the college's mission by focusing on an emerging area to which graduates will be able to contribute their acquired skills, and faculty will be able to pursue new directions of scholarship. A primary goal of the program is to create social and physical environments that enhance the quality of life, resulting in a considerable influence on population health outcomes.

**The mission of the BHHS program is to:**

*Offer the highest quality medical education and clinical skills in a learning environment that fosters critical thinking encourages professional leadership, inspires research, and instills a strong appreciation of ethical values and human diversity.*

The proposed program will accomplish this mission by utilizing rigorous academic preparation, research experience, and guided practice to enhance future careers in the field. Explicitly, the curriculum of the degree will prepare graduates to:

- Provide adequate scientific and clinical training to pursue healthcare careers available to students with a B.S. degree.
- Cultivate within students the ability to analyze health policies and interventions, assessing their effectiveness, and proposing alternatives.
- Achieve distinguished careers in clinical research.

- Enter advanced degree programs in Health Professions or pursue graduate degrees in health science.

## Institutional Capacity for Program Delivery

The College of Health Professions is dedicated to educating students in the health professions. Today, it is one of the largest and most diversified health education institutions in the country, offering both graduate and undergraduate programs. The college is committed to excellence in health education. Students in health professions must acquire knowledge and skills that were not necessary for success even in recent years, such as possessing an understanding of managed care and the business of efficient, cost-effective health care delivery. The college incorporates both discipline-specific and interdisciplinary education to prepare students to work in a rapidly changing and diverse health care system. Students benefit from access to patients and staff in a variety of training settings, ranging from prevention to chronic care. For example, the college has affiliations with community and rural health care facilities throughout the state, which include acute and subacute care, psychiatric and medical rehabilitation, and long-term care.

There will be a need to develop new courses before beginning the proposed program. There is also a need to develop an organizational structure and corresponding resources (e.g., Program Director) to oversee the program. The College and UTHSC are committed to investing the necessary resources to offer the proposed program.

Students must complete general education coursework at any accredited university or community college. Students in this program can complete the junior year 100% online. The senior year of the Health Informatics and Information Management is completed online. Students in the Clinical Research track are required to perform lab exercises and, thus, require campus attendance while taking the remaining courses online.

The outbreak of the COVID-19 pandemic has become a major disruption to colleges and universities across the country, with most institutions canceling in-person classes and moving to online-only instruction. The pandemic also threatens to significantly alter nearly every aspect of college life, from admissions and enrollment to graduation. These concerns extend to the financial future of higher education institutions in a time of considerable financial instability, both in the form of unexpected costs and potential reductions in revenue. The proposed program can be held remotely. The faculty and staff have been utilizing this educational pedagogy for many years and they are considered pioneers in the field. Therefore, the delivery of the curriculum will not pose any considerable challenges.

Bans on large gatherings on campus have forced many colleges to postpone campus tours and admissions events. The college has begun planning and using virtual webinars and tours to support prospective students in the admissions process. We are adding video conferences and social media platform live events.

There should be minimal impact on other UTHSC undergraduate academic programs. The College of Health Professions at UTHSC offers one undergraduate degree in medical laboratory science

(MLS). The MLS is a biology/chemistry-based bachelor's degree that prepares students for careers in places such as hospital labs and clinics, forensic labs, veterinary clinics, industrial research labs, and molecular biotechnology labs. Professionals in this field analyze blood, urine, tissue, and other body specimens. These test results play a significant role in the detection, diagnosis, and treatment of disease. The MLS degree is significantly different than the proposed BHHS degree and will not be in any competition with the proposed degree. Prospective students interested in MLS usually complete a science prerequisite coursework to prepare them to the MLS curriculum. Health Informatics and Information Management is a graduate degree.

Currently, the vision is to house the BHHS program in the Department of Diagnostic and Health Sciences at COHP. The department offers graduate and undergraduate degrees in medical laboratory sciences and health informatics and information management (HIIM). This degree will complement the other programs in the department and COHP by sharing faculty, courses, educational resources, laboratory equipment, clinical placement, and integrated research opportunities. All COHP laboratory science and HIIM programs have agreed to collaborate to achieve the successful implementation of the proposed program once approved. We expect net gains in terms of enrollment due to the increased demands for this profession, both locally and nationally.

The HIIM bachelor's program was deactivated when the master's program was approved in 2007. This action was taken in response to the plan for the HIIM profession to transition to the master's degree as entry to the field. The Master of Health Informatics and Information Management (MHIIM) was part of the campus and college strategic plans to develop professional graduate education across the College of Health Professions. It was the only master's degree Health Informatics and Information Management program in the state. The MHIIM aligned with THEC's Statewide Master Plan objective 2.3, to: "Consider master's programming primarily for regional universities that have accomplished bachelor's programs in related areas and in which the programs are targeted to meet demonstrated service area needs."

The Health Information Management (HIM) professional association is The American Health Information Management Association (AHIMA). This organization is the credentialing body for HIM, which supports the development of master's programs. The AHIMA developed a Curriculum Model for a master's degree in Education in Health Information Management in 1998 (and later updated in 2003). Mary McCain, Chair of the Department of Health Information Management at UTHSC at the time, served on the workgroup that developed this model. This curricular model identified content and subject matter for advanced practice in the HIM field.

The field of HIM and AHIMA perceived a need for progressively higher-level education in this area. Specifically, they:

- Anticipated that demand would increase over time, as health records moved from paper to electronic systems
- Saw a need for more advanced skills in data analysis, database and data integrity management, compliance with information regulations, and the protection and security of health information

- Believed that a skilled and knowledgeable workforce would be critical to achieving the return on the technology investment in electronic health record systems and health information exchange
- Argued that academically prepared health information managers would be better equipped to lead the planning and implementation of new technologies, and that electronic health records would generate new and broad employment opportunities
- Posited that new regulations, such as privacy and security (HIPAA), as well as a new emphasis on outcomes management and evidence-based medicine, would create the need for advanced education in health informatics.

Unfortunately, that transition in the marketplace never occurred.

AHIMA differentiates masters-level curriculum in HIM from the baccalaureate-level curriculum in (a) areas of focus and (b) competency outcomes, as described in the *HIM Educational Framework: Initial Description of Roles for HIM in and Electronic Workplace*. Nevertheless, a core set of competencies and skills are applicable at both the baccalaureate and master levels of education. These competencies and skills encompass the following:

- (1) a broad understanding of information technology, its applications, and uses;
- (2) health care data;
- (3) biomedical sciences; and
- (4) healthcare delivery systems.

However, there are also unique differences in the competency outcomes and curricular intensity between the baccalaureate- and masters-level curricula. On the one hand, the baccalaureate level focuses on the comprehension of concepts and a detailed understanding of core concepts that facilitate the application of knowledge in a structured or controlled context. On the other hand, the master's level focuses on problem analysis, synthesis of information, and evaluation of new situations.

The University of Tennessee Health Science Center has an excellent Health Information Management program, which has been the primary supplier of HIM professionals in both the state and the region for 50 years. However, there is a current need for working baccalaureate-level Health Information Management professionals to enhance their knowledge and skillset in new and emerging information technologies to fill higher-level HIM positions in the healthcare industry.

The HIM Advisory Committee at the UTHSC recommended implementing a bachelor's program and actively encourage a broader scope beyond HIM professionals. Indeed, many healthcare professionals would need these skills in the future with the growing use of information technologies across healthcare. The Clinical Research track in the BHHS program is a natural addition to this degree. Clinical Research is in high demand.

The curriculum requirements for academic programs in clinical research build upon the Core Competency Framework developed by the Joint Task Force for Clinical Trial Competency (JTF). There are eight competency domains, which include:

- (1) Scientific Concepts and Research Design
- (2) Ethical and Participant Safety Considerations
- (3) Investigational Products Development and Regulation
- (4) Clinical Study Operations Good Clinical Practice (GCP)
- (5) Study and Site Management
- (6) Data Management and Informatics
- (7) Leadership and Professionalism
- (8) Communications and Teamwork

UTHSC will provide technical support, including information technology and facilities. Additional technical support will be available for faculty teaching equipment through the technician services of the Department of Diagnostic and Health Sciences.

### **Existing Programs in Tennessee and the Region**

Three B.S. programs are offered at 2 institutions in Tennessee with a CIP code of 51.9999. East Tennessee State University offers a BS degree in Health Sciences with a focus on public health and leadership in Allied health. Tennessee State University offers a BS degree in general health sciences or with preparatory coursework for physical therapy, occupational therapy or communication disorders. Six community colleges offer an associate degree for CIP 51.9999, Health Science degrees. These programs are designed for students planning to continue their education to earn a bachelor's degree in health sciences related fields. These programs serve as optimal feeder institutions for the proposed BHHS program. No program provides a research opportunity or a basic science and clinical science hands-on training experience, nor internship experiences with the same type or level of training as will be offered through the unique exposure to varied health care careers as available at the UTHSC. Four community college offer associate degree programs in medical or health informatics (CIP 51.2706) that can be feeder to this degree as well. Although the CIP 51.1005 used for the Clinical Research concentration is the same as Medical Laboratory Science, graduates of the two degrees pursue different career paths.

To the best of our knowledge, a similar BS program is not available at any private university in Tennessee. Upon searching the academic offerings at all private universities, one can find BS programs in biomedical sciences or health administration. However, such programs target students

pursuing a career in specific healthcare disciplines, including medicine, pharmacy, dentistry, physical therapy, optometry, physician assistant studies, occupational therapy, or other health-related fields. Students in these programs complete courses such as histology, immunology, epidemiology, endocrinology, and genetics. These programs aim directly to increase the acceptance rates for the students into graduate schools and job placement.

The proposed BHHS is unique four important ways.

- (1) It is an interdisciplinary and interprofessional program that will fill a niche area for students who aspire to careers in the medical and healthcare fields in general, rather than a specific route.
- (2) Will prepare students with practical knowledge and skills in healthcare information management and clinical research.
- (3) Will provide graduates with a strong foundation in the competencies necessary to deliver high-quality cross-disciplinary healthcare in a dynamic environment.
- (4) The curriculum will emphasize critical thinking, information literacy, and additional skills required by students to become lifelong learners. The curriculum includes a focus on cultural competency and multicultural education.

<b>Table 1</b>					
<i>Similar Programs in Tennessee and the Region</i>					
<i>Institution Name</i>	<i>Program Title and Degree</i>	<i>CIP Code</i>	<i>Description/ Focus of Program</i>	<i>Miles from Memphis</i>	<i>3-Year Degrees Awarded</i>
Tennessee State University	BS Health Sciences	51.9999	General Health Sciences or concentrations in (a) Physical Sciences, (b) Therapeutic Studies, or (c) Communication Sciences and Disorders	210	102
East Tennessee State University	BS Allied Health	51.9999	Public Health Leadership	495	

<i>Proposed Pipeline/Feeder Programs</i>					
<i>Institution Name</i>	<i>Program Title and Degree</i>	<i>CIP Code</i>	<i>Description/ Focus of Program</i>	<i>Miles from Memphis</i>	<i>3-Year Degrees Awarded</i>
Cleveland State Community College	AAS Medical Informatics	51.2706	Medical Informatics Pre-Allied Health	367	3
Columbia State Community College	AAS Medical Informatics	51.2706	Medical Informatics	195	12
Dyersburg State Community College	AAS Health Sciences	51.9999	<u>The degree provides a pathway for students who are currently enrolled in or have completed a certificate-level program in a Health Sciences discipline or who are currently credentialed as allied health/nursing practitioners and wish to continue their formal education via an AAS degree.</u>	77	24
Jackson State Community College	AAS Health Sciences	51.9999	The degree is designed for students pursuing a career in the medical field who desire added certifications to enable them to enter the job market equipped with multiple skills.	90	17
Southwest Tennessee Community College	AAS Allied Health Sciences	51.9999	The degree is designed for students pursuing a career in the medical field who desire added certifications to enable them to enter the job market equipped with multiple skills.	1	10
Northeast State Community College	AAS Dental Assisting	51.0000	<u>Dental Assisting</u>	489	9
Chattanooga State Community College	AAS Health Sciences	51.9999	The degree program is designed to foster the potential for career advancement into supervision and management positions in healthcare by expanding management. knowledge with guided electives and Allied Healthcare courses	318	
Roane State CC	AAS Health Sciences	51.9999	The degree provides a pathway for students currently (a) enrolled in or have completed a certificate-level program in a Health Sciences discipline or (b) credentialed as allied health/nursing practitioners and wish to continue their formal education and earn an AAS.	374	
	AAS Medical Informatics	51.2706	Medical Informatics		

### *Community College Alignment*

Tennessee community college students who select an AS major within a Tennessee Transfer Pathways must complete all required courses and earn an associate's degree can transition seamlessly as a junior to any Tennessee public university, or at participating Tennessee independent colleges and universities. All earned credit hours will apply toward a bachelor's degree in the same discipline.

However, AAS students must complete any additional general education coursework at an accredited university or community college. For admission as a transfer student, an applicant must have completed the appropriate coursework for the curriculum at UTHSC. Grades for all previous coursework determine eligibility for admission. An applicant seeking to transfer with fewer than 60 hours of semester credit must have met the minimum general education requirements. An applicant whose records do not meet the stated admission standards will be denied admission. Credits earned in previous coursework will apply toward the degree requirements, including general education and degree requirements for the 120-hour graduation requirement. The University may deny admission to applicants who have deficiencies in any of these general education requirements. Students admitted with deficiencies must complete the missing courses before graduation. These courses will apply toward the student's college degree(s) and will fulfill the minimum credit hours required for graduation.

A search of American Institutions of Higher Learning as described in Barron's 2018 Profile of American Colleges resulted in identifying the following academic programs with a similar degree. Multiple measures were used to capture various dimensions of academic quality at each college, including graduation and retention; graduation rate performance; social mobility; faculty resources; expert opinion; financial resources; student excellence; and alumni giving. The indicators include both input measures, which reflect the quality of students, faculty and other resources used in education, and outcome measures, which capture the results of the education an individual receives.

- Northeastern University – Boston, MA
- University of Illinois at Urbana-Champaign – Urbana and Champaign, IL
- California State University, Long Beach – Long Beach, CA
- Boston University – Boston, MA
- University of South Florida – Tampa, FL
- Arizona State University – Tempe, AZ
- University of Missouri – Columbia, MO
- San Jose State University – San Jose, CA
- University of Texas at Dallas – Richardson, TX
- University of Michigan – Flint, MI

- DePaul University – Chicago, IL
- Stephen F. Austin State University – Nacogdoches, TX
- New York Institute of Technology – Long Island Campus, NY
- University of Florida – Gainesville, FL
- Nova Southeastern University – Fort Lauderdale, FL
- Western Kentucky University – Bowling Green, KY

## Feasibility Study

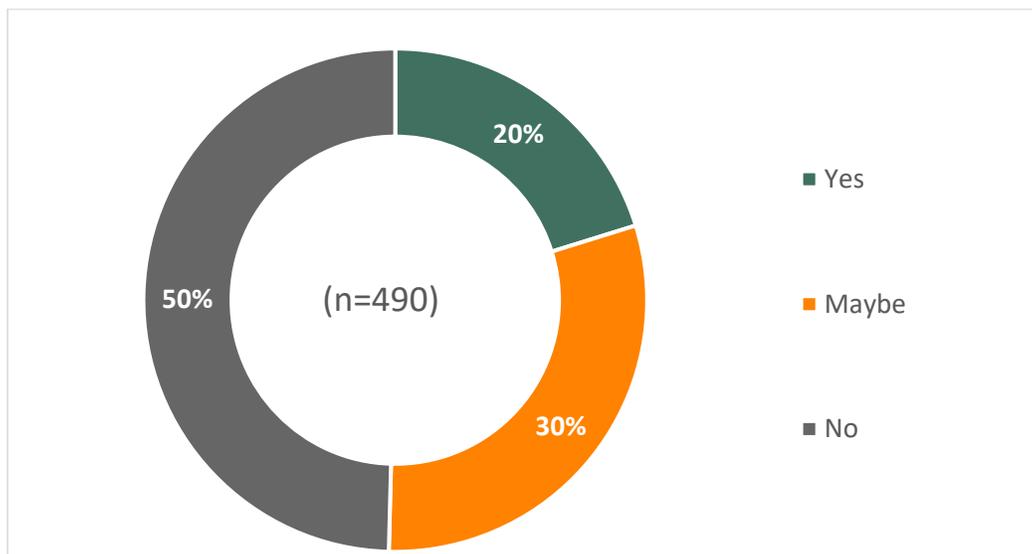
UTHSC, specifically the COHP, retained MGT Consulting to assist in gathering external data and stakeholder input regarding changes in the profession, the short and long-range occupational outlook, and other information to inform the development of this new program in the state's health professions academic catalog. The report (Appendix B) supplements the LON documentation.

### *Student Interest for the Proposed Academic Program*

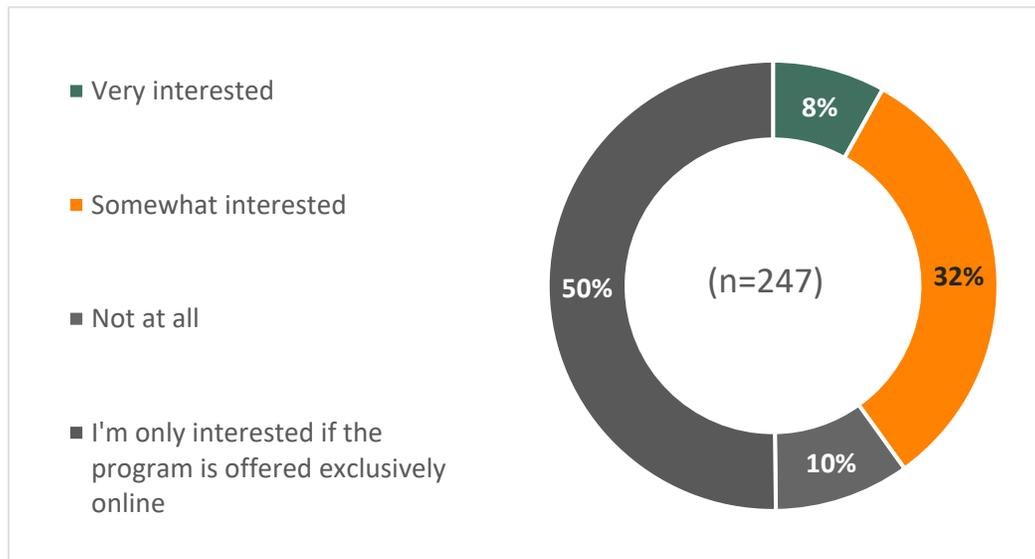
To gauge general interest in the health professions, as well as assess specific interest in pursuing UTHSC programs from a broad geographic pool of individuals eligible to pursue a college degree, the consultants initiated a web-based national survey of approximately 500 adults who had completed, at a minimum, a high school degree.

In response to a general question, half of the national sample reported possible interest in pursuing the BHHS degree as a possible career, especially as it offers several unique programmatic concentrations in high growth areas, approximately 20% were more definitive in their level of interest. Almost 50% of respondents reported some interest in this degree.

ARE YOU INTERESTED IN PURSUING AN ACADEMIC DEGREE LEADING TO A CAREER IN BIOMEDICAL HUMAN HEALTH SCIENCES IN THE NEXT FIVE YEARS?

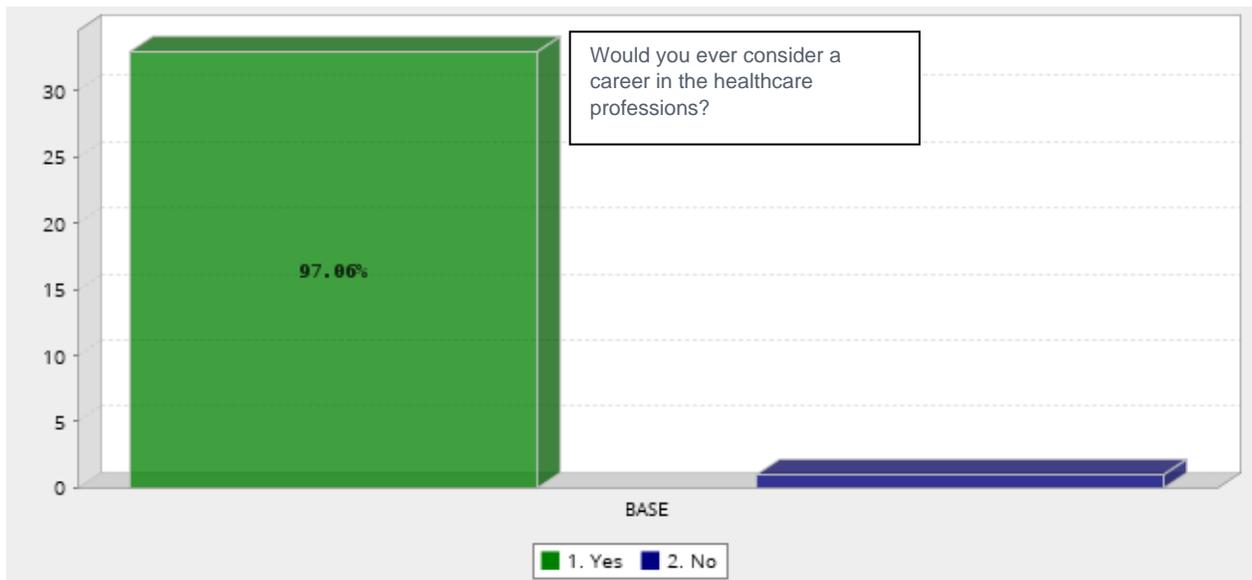


## LEVEL OF INTEREST IN BACHELOR'S IN BIOMEDICAL HUMAN HEALTH SCIENCES AT UTHSC

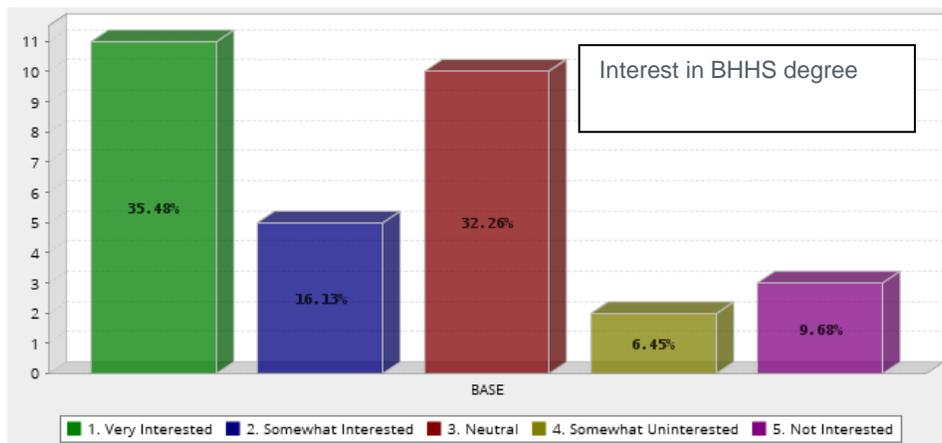


The student survey results confirm strong student interest in this program of study. These data are commensurate with data from the Bureau of Labor Statistics that the projected job growth will increase much faster than the average for all occupations.

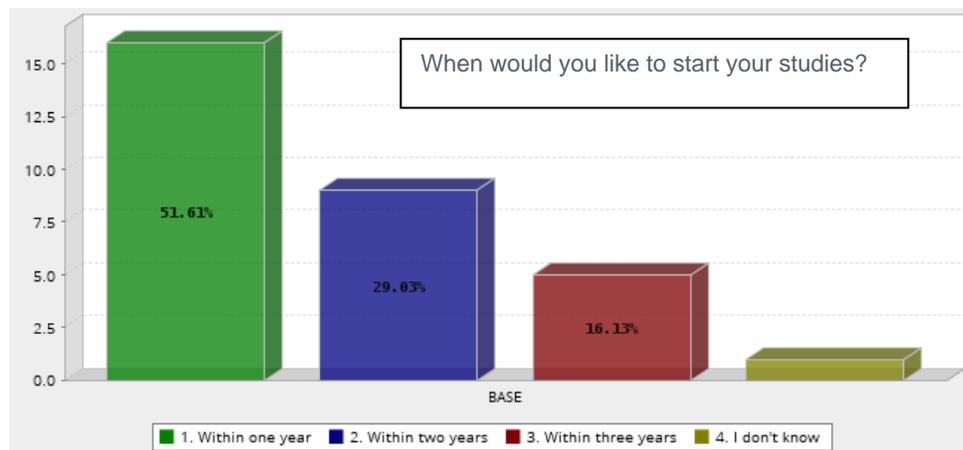
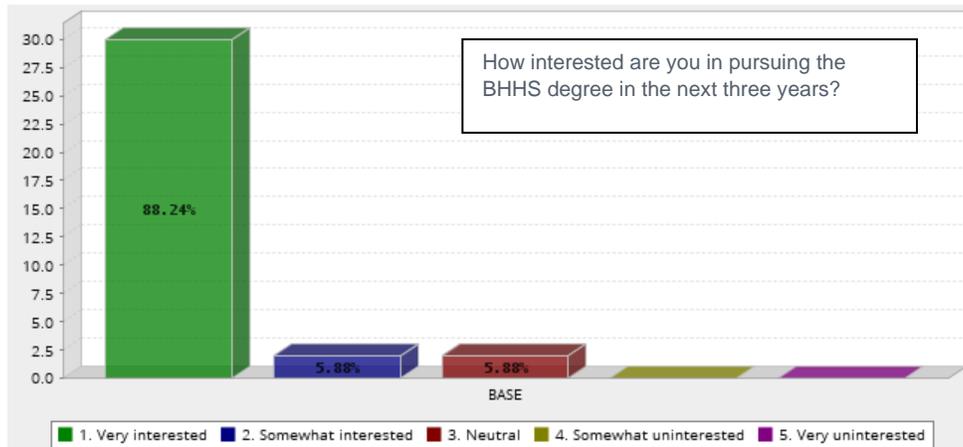
Due to the nature of the UTHSC and the very limited number of students enrolled in undergraduate programs, we approached the University of Tennessee – Martin to survey a sample of their students. Fifty-eight (58) senior students majoring in Biological Sciences at the UT-Martin were invited to participate in a survey to evaluate their interest in the proposed BHHS degree. Thirty-four (34) students completed the survey with a response rate of 59%. Almost all of the students surveyed (97%) expressed an interest in pursuing a career in healthcare professions.



A significant number of students showed interest in the BHHS degree. Eighteen (18) students representing 52% of the sample surveyed expressed an interest in the degree.

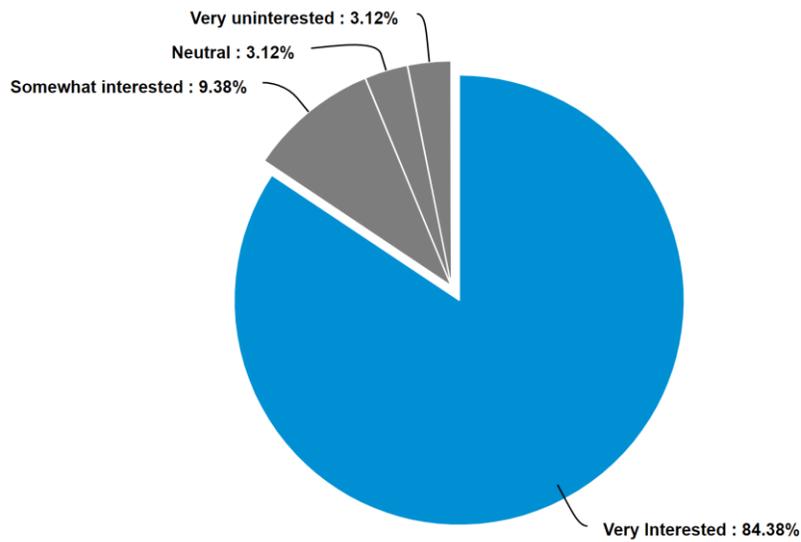


The vast majority (94%) of students responded favorably when asked if they would start in the next three years. More than half of the surveyed students expressed an interest in starting within one academic year, 29% within two years, and 16% within three years.

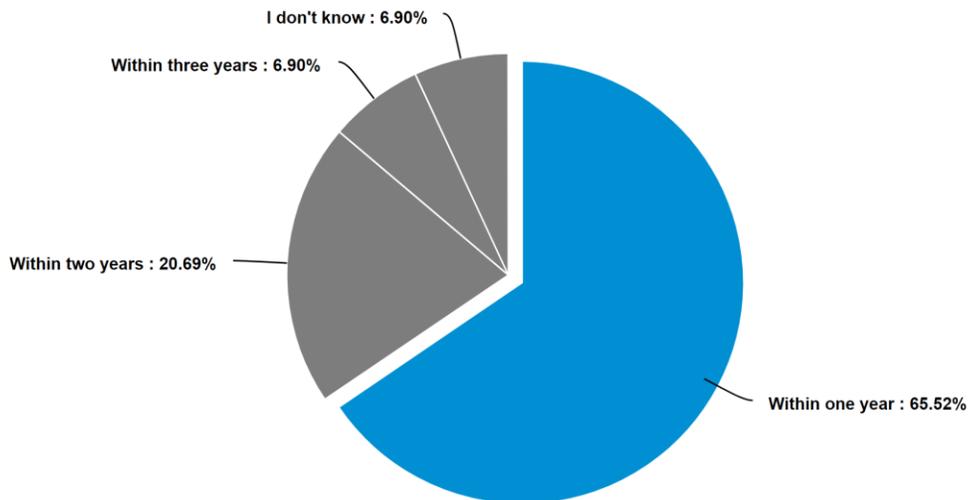


Administrators from UTHSC and Southwest Tennessee Community College (STCC) are engaged in ongoing discussions that will allow for a seamless transfer into the new degree. Specifically, an affiliation agreement between the two institutions is planned once this proposal is approved. Other community colleges expressed a similar interest as can be seen in various support letters. STCC and other Tennessee community colleges offer a gateway to higher education for many students. While recent initiatives have focused on the important role community colleges play in technical workforce development, the fact is that most students entering community college aim to earn a bachelor’s degree. For a variety of financial and other reasons, many are unlikely to enter through a four-year college or university. Thus, the two- to four-year transfer process, when it functions well, represents a critical means for upward mobility.

Thirty-five (35) students in the Allied Health Sciences AAS program at STCC completed a survey to measure their interest in the proposed degree. The vast majority (27) representing 84% of the respondents were very interested in the program. An additional 3 students were somewhat interested.



Those interested in the program (30 students) were asked when would they like to start their studies. Nineteen students (66%) said they would start within one year and 6 students (21%) would start within 2.



The interest in the Health Informatics and Information Management and Clinical Research tracks were 62% and 64%, respectively.

The survey was completed by one community college in the state, validating enrollment assumptions and sustainability of the program. Other colleges (and universities) have expressed

an interest once this degree is offered. The below table depicts a list of possible community college programs which could serve as a pipeline to this program.

Table 2

*Possible Two-year Pathways to the Proposed BHHS*

<b>Community College</b>	<b>Potential Programs or Pathways to BHHS at UTHSC</b>
Chattanooga State	Health Information Management Health Sciences AAS
Cleveland State	Medical Informatics Pre-Health Professions (Dentistry, Medicine, Optometry, Pharmacy, Veterinary Medicine) TTP Pre-Occupational Therapy TTP Pre-Physical Therapy TTP
Columbia State	Medical Informatics Pre-Allied Health Sciences Respiratory Care, AS
Dyersburg State	Health Information Management Health Sciences Pre-Health Professions Pre-Occupational Therapy Pre-Physical Therapy
Jackson State	Health Sciences Pathway, AS Occupational Therapy Assistant, AS Physical Therapist Assistant, AS Respiratory Care, AS
Motlow State	Pre-Health Professions (Dentistry, Medicine, Optometry, Pharmacy, Veterinary Medicine) TTP Pre-Occupational Therapy TTP Pre-Physical Therapy TTP
Nashville State	Healthcare Management A.A.S. Occupational Therapy Assistant A.A.S.

Northeast State	None
Pellissippi State	Pre-Health Professions: Dentistry, Medicine, Optometry, Pharmacy, Veterinary Medicine, A.S.
Roane State	Pre-Health Professions AS Pre-Occupational Therapy AS Pre-Physical Therapy AS Pre-Allied Health Sciences AS
Southwest Tennessee	Allied Health Sciences (A.A.S.)
Volunteer State	Health Information Management - A.A.S. Health Sciences - A.S. Physical Therapist Assistant - A.A.S. Respiratory Care Technology - A.A.S.
Walters State	Health Information Management, A.A.S. Occupational Therapy Assistant, A.A.S. Physical Therapist Assistant, A.A.S. Respiratory Care, A.A.S.

### ***Local and Regional Need/Demand***

In 2017, 28,700 non-farm jobs were created across the state of Tennessee. The second-largest increase (next to the leisure and hospitality industry) in Tennessee was education and health services. Since 2011, 391,300 net new private-sector jobs have been created in Tennessee, and the jobless rate in Tennessee for December 2017 was 3.2%, suggesting a statewide healthy growth market, but the health care field continues to have more job vacancies than trained employees to fill them. Thus, the BHHS program will be ideally suited to address this need by training more students with a 4-year (B.S.) degree to either enter the workforce directly or to gain admission to a professional school and complete the training needed for high paying and high need jobs in the health care field.

The Tennessee Department of Labor & Workforce Development reported that the unemployment rate remains high in several counties and now approaches 5% in several counties<sup>4</sup>. This finding suggests that additional training of citizens in these counties might provide the means to improve health care needs and fill jobs that are available by increasing training opportunities in the health care fields.

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<sup>4</sup> <https://www.tn.gov/workforce/general-resources/news/2018/1/25/tennessee-counties-end-2017-with-continues-low-unemployment.html>

The December 2017 statistics from the Tennessee Department of Labor & Workforce Development lists unemployment for the Memphis TN-MS-AR area as 3.7% with surrounding areas ranging from 3.6% to 4.1% unemployment. There remains room for improvement in preparing the workforce, and the BHHS program is well positioned to meet this need.



Lowest County Unemployment Rates			Highest County Unemployment Rates		
Rank	County	Dec, 2017 Pre. Rate (%)	Rank	County	Dec, 2017 Pre. Rate (%)
1	Williamson	2.2	95	Rhea	5.6
2	Davidson	2.3	94	Houston	5.5
3	Rutherford	2.3	93	Bledsoe	5.2
4	Cheatham	2.3	92	Benton	5.1
5	Wilson	2.4	91	Lauderdale	5.1
6	Moore	2.5	90	Hardeman	5.0
7	Sumner	2.5	89	Lake	4.9
8	Knox	2.6	88	Clay	4.8
9	Macon	2.6	87	Haywood	4.8
10	Bradley	2.7	86	McNairy	4.7

Due to massive economic fallout, graduates are at risk of graduating into a recession. A struggling economy has important implications for more than 1.3 million students expected to graduate from a two-year or four-year college. The social distancing that has upended business is causing a wave of layoffs and furloughs, with an unprecedented 3.3 million new unemployment claims filed by end of March.

In a recession, new graduates may be hit the hardest. History and research also show that the looming economic downturn could have distinct consequences for the Class of 2020 that outlast the economic downturn itself. Prior research has found that U.S. college students who graduated during a recession earned 10% less the first year after they completed their studies than would otherwise be expected. And the negative effects lasted over the next seven years. Researchers attribute these losses to college graduates taking jobs that pay less right after they graduated.

It's noteworthy that the negative effects of graduating in a recession did not affect everyone the same. Highly skilled graduates, those graduating from more selective colleges and universities or

who majored in fields that usually lead to high salaries (such as graduates from this program), tend to recover early hits to their earnings by changing jobs and employers once the economy rebounds.

Despite dire short-run predictions for the labor market, economic improvement is expected throughout the second half of 2020 and into 2021. Although the full extent of layoffs and overall economic slowdown induced by COVID-19 is yet to be seen, analysts currently expect that the U.S. will get back to work once the virus is under control.

As part of this program needs assessment, the consultants, in collaboration with the leadership of the UTHSC College of Health Professions, identified and contacted representatives of the healthcare professions for further input and advisement as the new program planning and approval process goes forward.

Details of the two concentrations are as follows:

### ***1. HEALTH INFORMATION AND INFORMATICS***

One potential career track for graduates with the analytical skills derived from coursework in health information and informatics is to become a Health Information Manager. The U.S. Department of Labor's Bureau of Labor Statistics shares that these managers often have degrees that combine business-related courses with courses in health information systems. They are responsible for the maintenance and security of patient records and data, and they must keep up with technology trends in managing high volumes of complex data. The number Medical and Health Services Managers employed is expected to increase much faster than average, by 20% from 352,200 jobs in 2016 to 424,300 in 2026.

According to the BLS, many employers require these managers to have prior work experience in an administrative or clerical role, such as experience as a Medical Records and Health Information Technician. Health information managers may supervise the work of these technicians, making this choice a potential career path for graduates with less experience in the medical profession. Technicians manage health information data, ensuring its quality, accuracy, accessibility, and security. Technician employment is projected to grow faster than average, up 13% from 206,300 jobs in 2016 to 234,100 in 2026.

The American Health Information Management Association (AHIMA) offers voluntary certification in health information management. AHIMA surveyed more than 5,000 health information professionals in 2016 and found that more than half worked in Revenue Cycling Management, including coding professionals, clinical documentation improvement specialists, and insurance and billing coordinators. One-fourth is in Operations and Medical Records Administration, including health information managers and directors, consultants, administrators, registrars, and technicians. The remaining quarter work in Compliance and Risk Management, Education and Communication, Informatics and Data Analytics, and I.T. and Infrastructure.

In MGT's recent discussions with other higher education institutions, we have heard that Informatics is an area on which they focus for new degrees or concentrations. The field is rapidly evolving. One challenge identified is the need for increased computing power within their respective schools.

Salary Ranges: While the salary of a health informatics specialists varies based on location, experience, job specialty, and employer, PayScale.com (September 2016) found that these professionals had a median annual salary of \$60,692.

Salary estimates based on 2,081 employees, users, and past and present job advertisements on Indeed.com in the past 36 months (May 11, 2019) found the average salary for health informatics openings in Tennessee range from approximately \$50,875 per year for Clinical Specialist to \$123,073 for Data Scientists.

## ***2. CLINICAL RESEARCH***

The U.S. Department of Labor Bureau of Labor Statistics forecasts that employment for Medical and Clinical Laboratory Technologists and Technicians (or medical laboratory scientists) will grow faster than average at 13% from 335,700 jobs in 2016 to 378,400 in 2026. A bachelor's degree in medical technology or life sciences is usually required to be a technologist, while technicians often complete an associate degree program in clinical laboratory science.

Another entry-level path to a career in clinical trials may be as a Medical Records and Health Information Technicians, who organize and maintain information for clinical databases and registries. Technicians manage health information data, ensuring quality, accuracy, accessibility, and security. Technician employment is projected to grow faster than average, up 13% from 206,300 jobs in 2016 to 234,100 in 2026.<sup>2</sup>

The Association of Clinical Research Professionals has more than 13,000 members who work in clinical research in more than 70 countries. Nearly half of its members serve as clinical research coordinators and monitors, while project/site managers, research nurses, and other roles make up the remainder of occupations. Leading specialty areas include oncology/radiation, cardiology, pharmaceutical, and neurology.

Salary Range: According to BLS data, an entry-level job for technologists usually requires a bachelor's degree in medical technology or life sciences. The median annual wage for medical and clinical laboratory technologists and technicians was \$52,330 in May 2018.

### ***Employer Need/Demand***

An investment in educating students for the healthcare industry is critically important because healthcare careers are among the most robust and fastest-growing employment sectors. The U.S. Department of Labor predicts that healthcare, in general, will be a recession-proof, high-growth

industry well into the next decade. The health and allied health professions have long recognized the need to optimize the educational experience of graduates so that they may function effectively in the 21<sup>st</sup>-century healthcare environment. Nearly 20 years ago, the Pew Health Professions Commission published a report titled, *Recreating Health Professional Practice for a New Century*. They identified 21 competencies necessary for effective healthcare delivery. Competencies focused on preparing healthcare professionals to work within interdisciplinary teams to provide high quality, culturally sensitive healthcare to an increasingly diverse society. To that end, the report noted that professionals must meet high ethical standards, be able to communicate and use information technology effectively, contribute to the continuous improvement of healthcare, and provide leadership and advocacy for public policy that promotes and protects the health of the public. Five years later, the Institute of Medicine echoed the Pew Commission document in its report, *Health Professions Education: A Bridge to Quality*. The report provided a vision for the education of health professionals that stated, “All health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics.”

The COHP addresses the need for a well-prepared healthcare workforce by offering programs in Audiology & Speech Pathology, Cytotechnology & Histotechnology, Health Informatics and Information Management, Physical Therapy, Occupational Therapy. These programs prepare students to enter the workforce directly upon attainment of their degree or to seek advanced degrees in health professions necessary for specialized healthcare careers. Our graduates make an immediate positive impact on the economy of the state of Tennessee and beyond by improving the health of our citizens through direct patient care and through the ability to impact healthcare research, policy, and practice.

The BHHS program addresses the University of Tennessee’s goal to increase the enrollment, retention, and graduation rates for undergraduate students, particularly those who are high achieving. The program will likely attract students interested in healthcare who might not otherwise attend the University of Tennessee for a targeted program. Many students start college at a two-year institution. However, there is not always an easy option to transition from a community college into a professional program that will lead to a baccalaureate degree within two years. There is a clear need for programs that will prepare students for a highly competitive career and certification in a health care profession or that lead to the possibility of attending graduate school to study a health care specialty. The BHHS program will provide opportunities to collaborate with two-year institutions, such as Southwest Tennessee Community College, to provide a career ladder for students. Doing so will help students to transition seamlessly into a baccalaureate-level degree program in the health sciences.

The BHHS program will also bridge the gap between undergraduate and professional programs through careful and ongoing coordination with numerous other programs<sup>5</sup>, to ensure that BHHS

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<sup>5</sup> Including dentistry, pharmacy, physician assistants, occupational therapy, athletic training, health informatics and information management, cytotechnology and histotechnology, cytopathology and physical therapy programs

students are properly prepared to gain admission to the healthcare career they wish to pursue. The program will provide ongoing advising to ensure alignment between student interests and skills. The program's two tracks will lead to each of the health care options, thereby maximizing the potential for success in the program and in achieving future career goals.

### ***Future Sustainable Need***

UTHSC would be the first higher education institution in Tennessee to offer a degree in BHHS with two unique tracks. As evidenced in the letters from employers of increased need, preference for the proposed degree, willingness to pay increased salaries for graduates from the proposed degree, and that the demand for graduates is sustainable (i.e., exceeds beyond the two years of the program). The job market for BHHS is growing rapidly.

The health care and social assistant labor force has been one of few hires but many job openings. The health care industry had an exceptionally high demand for workers, with the employment of over 18 million and an average monthly job openings rate of 3.9 percent in 2014<sup>6</sup>. The Bureau of Labor Statistics projects 5.0 million new jobs will be generated in health care between 2012 and 2022. Health care workers will be needed primarily because of the aging population, meaning that the number of people needing health care and rehabilitation services will increase, as will the number of workers needed to replace retiring workers. Many of these jobs provide excellent pay, job security, and job portability. Most of the high-level occupations in health care delivery require many years of education, and even if more people begin training, the supply may lag the demand. Many positions in health care require a four-year college or professional degree, and the BHHS degree will provide a four-year degree as well as prepare students for advanced professional degrees in a graduate training program. One possible conclusion is that all health fields, including those covered by the appropriate preparation tracks, could increase the level and number of the workforce that are prepared by the BHHS program, which would help to reduce the gap between need and hire, thereby increasing the potential pool of health care workers.

### ***Additional Information on RHIA(s)***

A Registered Health Information Administrator (RHIA) credential is awarded by AHIMA. Respecting the boundaries of the patient-provider relationship, RHIAs use medical records to make organizational decisions on behalf of healthcare institutions. RHIAs are valuable to healthcare organizations for their skills in interpreting coded healthcare data for the purpose of improving institutional efficiency and supplying quality medical care. AHIMA described RHIAs as critical links between patients, providers, and payers,

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<sup>6</sup> Oslund C., "Which industries need workers? Exploring differences in labor market activity," Monthly Labor Review, U.S. Bureau of Labor Statistics, January 2016 <https://doi.org/10.21916/mlr.2016.1>

Individuals with the RHIA are experts at collecting and analyzing health data to make administrative decisions. They are expected to have a wide range of multifaceted knowledge about medical, administrative, ethical, and legal requirements to effectively manage the operational logistics of healthcare facilities. Becoming a registered health information administrator is more than just a job title; RHIA is an official title that can be earned by completing an approved academic program and earning a passing score on an exam given by the AHIMA.

## Program Costs and Revenues

Program costs will be met with institutional and tuition fees based on initial student annual enrollment of 30 students per cohort. Annual enrollment will gradually increase in each concentration of the degree, as described in Table 2.

A minimal initial investment in equipment to outfit the teaching laboratories, renovating space for teaching and research laboratories for the program, and hiring faculty to develop the curriculum before the ability to recruit students into the program will result in a deficit for the first three years. Due to the COVID-19 crisis, the college could defer the anticipated expenses in the foundation year to later years. The college would utilize existing faculty and current teaching laboratory spaces to accommodate incoming students in the first two years.

Tuition and revenue will begin in year one, pending enrollment of students. Institutional allocation will be necessary for the first three years and will come from the college. There will be no federal grants, private grants, or gifted funds for the establishment of this program.

Table 3

*Projected Enrollment, Attrition, and Graduation: Years 1-5*

Year	Students Admitted to in Fall	Total Enrollment	Attrition	Graduates
1 <sup>st</sup> Year	30	30	5	0
2 <sup>nd</sup> Year	30	55	5	25
3 <sup>rd</sup> Year	40	65	5	25
4 <sup>th</sup> Year	45	80	5	35
5 <sup>th</sup> Year	45	85	5	40

Reasons for attrition are either voluntary or compulsory pressures while controlling for demographic factors. The literature showed that these factors account for 12-15 percent of attrition likelihood.<sup>7</sup>

### ***Operating Expenses***

A program director will be selected from among the existing Health Professions faculty. The program director will initially have one course release each semester for the development of the program and one course release per academic year thereafter. The director will direct and supervise all aspects of the new program, including advertising, recruitment, application, admission, and student advising processes. He or she will also work closely with other departments, programs, and faculty to schedule courses, update curricula, advise and mentor students, and further develop the program as needed. The program director for BHHS will report to the department head and work closely with the Associate Dean for Academic and Faculty Affairs to ensure full academic and curricular compliance.

Two new faculty will be recruited and hired in 2021; along with the Program Director, there will be three faculty for the BHHS program. As the BHHS is an interprofessional degree, faculty from across the COHP and UTHSC will contribute to teaching in the BHHS program. [The permanent program director will be selected from among the existing Health Professions faculty. The cost of the PD already appears in the college budget. Two faculty members will join the program in 2021.](#)

The new faculty members will require an office and a computer, which is standard for new hires. The BHHS courses will require electronic classrooms because these are online. Specialized classrooms, such as wet labs, are not required. Students enrolled in the Clinical Research track will have access to existing research facilities on campus. The budget includes operating funds for travel, recruiting events, advertising, and software and computing. The program will remain budget neutral with the anticipated cohort of students enrolled each year.

[The BHHS courses will require electronic classrooms because these are online. Specialized classrooms, such as wet labs, are not required. Students enrolled in the Clinical Research track will have access to existing research facilities on campus. Therefore, there is no need to renovate teaching and research laboratories.](#)

### ***Revenues***

Revenue projections include tuition and fees, potential research and grant activity, expected gifts, and any other expected revenues. Tuition revenue is based on two-year enrollment. Students spend

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<sup>7</sup> shitani, T. (2006). Studying Attrition and Degree Completion Behavior among First-Generation College Students in the United States. *The Journal of Higher Education*, 77(5), 861-885. Retrieved July 11, 2020, from [www.jstor.org/stable/3838790](http://www.jstor.org/stable/3838790)

the first two years at another institution or a community college. The final program costs and revenues sheet appears in Appendix A.

## *Appendices*

**Appendix A: THEC Financial Projection Form**

**Tennessee Higher Education Commission  
Appendix A: THEC Financial Projections Form  
University of Tennessee Health Science Center  
BS in BHHS**

Seven-year projections are required for doctoral programs.  
Five-year projections are required for baccalaureate and Master's degree programs  
Three-year projections are required for associate degrees and undergraduate certificates.  
Projections should include cost of living increases per year.  
Planning year projections are not required but should be included when appropriate.

	Planning Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>I. Expenditures</b>								
<b>A. One-time Expenditures</b>								
New/Renovated Space <sup>1</sup>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Equipment	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Library	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Consultants	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Travel	\$ 6,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Sub-Total One-time</b>	\$ 21,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>B. Recurring Expenditures</b>								
<b>Personnel</b>								
<b>Administration</b>								
Salary	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Sub-Total Administration</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Faculty</b>								
Salary	\$ -	\$ 160,000	\$ 164,000	\$ 169,744	\$ 174,836	\$ 180,081	\$ -	\$ -
Benefits	\$ -	\$ 48,000	\$ 49,440	\$ 50,923	\$ 52,451	\$ 54,024	\$ -	\$ -
<b>Sub-Total Faculty</b>	\$ -	\$ 208,000	\$ 213,440	\$ 220,667	\$ 227,287	\$ 234,105	\$ -	\$ -
<b>Support Staff</b>								
Salary	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Sub-Total Support Staff</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Graduate Assistants</b>								
Salary	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Tuition and Fees* (See Below)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Sub-Total Graduate Assistants</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Operating</b>								
Travel	\$ 4,000	\$ 8,000	\$ 8,000	\$ 8,000	\$ 8,000	\$ 8,000	\$ -	\$ -
Printing	\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000	\$ -	\$ -
Equipment	\$ -	\$ -	\$ 10,000	\$ 10,000	\$ 10,000	\$ 15,000	\$ -	\$ -
Other	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Sub-Total Operating</b>	\$ 6,000	\$ 10,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 25,000	\$ -	\$ -
<b>Total Recurring</b>	\$ 6,000	\$ 218,000	\$ 233,440	\$ 240,667	\$ 247,287	\$ 259,105	\$ -	\$ -
<b>TOTAL EXPENDITURES (A + B)</b>	\$ 27,000	\$ 218,000	\$ 233,440	\$ 240,667	\$ 247,287	\$ 259,105	\$ -	\$ -

**\*If tuition and fees for Graduate Assistants are included, please provide the following information.**

Base Tuition and Fees Rate	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Number of Graduate Assistants	-	-	-	-	-	-	-	-

	Planning Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>II. Revenue</b>								
Tuition and Fees <sup>2</sup>	\$ -	\$ 239,700	\$ 239,700	\$ 319,600	\$ 359,550	\$ 359,550	\$ -	\$ -
Institutional Reallocations <sup>3</sup>	\$ 27,000	\$ (21,700)	\$ (6,260)	\$ (78,933)	\$ (112,263)	\$ (100,445)	\$ -	\$ -
Federal Grants <sup>4</sup>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Private Grants or Gifts <sup>5</sup>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other <sup>6</sup>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>BALANCED BUDGET LINE</b>	\$ 27,000	\$ 218,000	\$ 233,440	\$ 240,667	\$ 247,287	\$ 259,105	\$ -	\$ -

**Notes:**

(1) Provide the funding source(s) for the new or renovated space.

**(2) In what year is tuition and fee revenue expected to be generated? Tuition and fees include maintenance fees, out-of-state tuition, and any applicable earmarked fees for the program. Explain any differential fees.**

**(3) Identify the source(s) of the institutional reallocations, and grant matching requirements if applicable.**

**(4) Provide the source(s) of the Federal Grant including the granting department and CFDA(Catalog of Federal Domestic Assistance) number.**

**(5) Provide the name of the organization(s) or individual(s) providing grant(s) or gift(s).**

**(6) Provide information regarding other sources of the funding.**

**Appendix B: Consultant Report and Feasibility Study Data**

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## BIOMEDICAL HUMAN HEALTH SCIENCES PROGRAM

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UTHSC is considering adding a bachelor's level program in **Biomedical Human Health Sciences** (BHHS). The occupational outlook for the profession, estimates of student interest, and guidance from the profession are provided in the sections which follow.

### OCCUPATIONAL OUTLOOK

Although the proposed Bachelor of Science degree in Biomedical Human Health Sciences (*CIP 51.000 Health Professions and Related Programs*) is geared to provide a four-year degree option with an overall exposure and entrée into a variety of health professions and/or lead to graduate or professional health care programs, each enrollee will be required to complete 21 credit hours in one of the following three concentrations:

***Health Informatics and Information Management** (CIP 51.2706 Medical Informatics)*

***Clinical Research** (CIP 51.1005 Clinical Laboratory Science/Medical Technology/Technologist)*

*Note: The above CIP Codes identified for each concentration are based on the 2010 U.S. Department of Education Classification of Instructional Program (CIP) Codes.*

Details of the three concentrations are offered below:

#### HEALTH INFORMATION AND INFORMATICS

One potential career track for graduates with the analytical skills derived from coursework in health information and informatics is to become a Health Information Manager. The U.S. Department of Labor's Bureau of Labor Statistics shares that these managers often have degrees that combine business-related courses with courses in health information systems. They are responsible for the maintenance and security of patient records and data, and they must keep up with technology trends in managing high volumes of complex data. The number Medical and Health Services Managers employed is expected to increase much faster than average, by 20% from 352,200 jobs in 2016 to 424,300 in 2026.<sup>8</sup>

According to the Bureau, many employers require these managers to have prior work experience in an administrative or clerical role, such as experience as a Medical Records and Health Information Technician. In fact, health information managers may supervise the work of these technicians, making this choice a potential career path for graduates with less experience in the medical profession. Technicians manage health information data, ensuring its quality, accuracy,

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<sup>8</sup> Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Medical and Health Services Managers, on the Internet at <https://www.bls.gov/ooh/management/medical-and-health-services-managers.htm> (visited April 25, 2019)

accessibility, and security. Technician employment is projected to grow faster than average, up 13% from 206,300 jobs in 2016 to 234,100 in 2026.<sup>9</sup>

Voluntary certification in health information management is offered by the American Health Information Management Association (AHIMA). AHIMA surveyed more than 5,000 health information professionals in 2016 and found that more than half worked in Revenue Cycling Management, including coding professionals, clinical documentation improvement specialists, and insurance and billing coordinators. One fourth are in Operations and Medical Records Administration, including health information managers and directors, consultants, administrators, registrars, and technicians. The remaining quarter work in Compliance and Risk Management, Education and Communication, Informatics and Data Analytics, and IT and Infrastructure.<sup>10</sup>

In MGT's recent discussions with other higher education institutions, we have heard that Informatics is an area they are focused on for new degrees or concentrations. The field is rapidly evolving, and one challenge identified is the need for increased computing power within their respective schools.

**Salary Ranges:** While the salary of a health informatics specialist varies based on location, experience, job specialty and employer, [PayScale.com](https://www.payscale.com) (September 2016) found that these professionals had a median annual salary of \$60,692. As they progress in their careers, health information specialists and managers receive higher salaries, as shown below:

- ◆ 10th percentile: \$41,000
- ◆ 25th percentile: \$50,000
- ◆ 50th percentile: \$60,692
- ◆ 75th percentile: \$78,000
- ◆ 90th percentile: \$96,000

Salary estimates based on 2,081 employees, users, and past and present job advertisements on Indeed.com in the past 36 months (May 11, 2019) found the average salary for health informatics openings in Tennessee range from approximately \$50,875 per year for Clinical Specialist to \$123,073 for Data Scientists.

## CLINICAL RESEARCH

The U.S. Department of Labor Bureau of Labor Statistics forecasts that employment for Medical and Clinical Laboratory Technologists and Technicians (or medical laboratory scientists) will grow faster than average at 13% from 335,700 jobs in 2016 to 378,400 in 2016. A bachelor's degree in medical technology or life sciences is usually required to be a technologist, while technicians often complete an associate degree program in clinical laboratory science.<sup>11</sup>

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<sup>9</sup> Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Medical Records and Health Information Technicians, <https://www.bls.gov/ooh/healthcare/medical-records-and-health-information-technicians.htm> (visited April 25, 2019).

<sup>10</sup> AHIMA 2016 Salary Snapshot, on the Internet at <https://my.ahima.org/careemap> (visited April 25, 2019).

<sup>11</sup> Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Medical and Clinical Laboratory Technologists and Technicians, <https://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-technologists-and-technicians.htm> (visited April 25, 2019).

Another entry-level path to a career in clinical trials may be as a Medical Records and Health Information Technician, where data are organized and maintained for clinical databases and registries. Technicians manage health information data, ensuring quality, accuracy, accessibility, and security. Technician employment is projected to grow faster than average, up 13% from 206,300 jobs in 2016 to 234,100 in 2026.<sup>2</sup>

The Association of Clinical Research Professionals has more than 13,000 members who work in clinical research in more than 70 countries. Nearly half its members serve as clinical research coordinators and monitors, while project/site managers, research nurses and other roles make up the remainder of occupations. Leading specialty areas include oncology/radiation, cardiology, pharmaceutical, and neurology.<sup>12</sup>

**Salary Range:** According to BLS data, an entry-level job for technologists usually requires a bachelor's degree in medical technology or life sciences. The median annual wage for medical and clinical laboratory technologists and technicians was \$52,330 in May 2018. Median salaries differ depending on type of employer:

- ◆ General medical and surgical hospitals; state, local, and private - \$55,040
- ◆ Outpatient care centers - \$50,520
- ◆ Medical and diagnostic laboratories - \$50,040
- ◆ Junior colleges, colleges, universities, and professional schools; state, local, and private - \$50,010
- ◆ Physicians' offices - \$47,060

EXHIBIT 5-1  
OCCUPATIONAL GROWTH PROJECTIONS FOR **BIOMEDICAL HUMAN HEALTH SCIENCES**  
RELATED POSITIONS: **TENNESSEE**

Occupational Match	2016	2026	Average of % change	Absolute Change	Average Annual Openings	TN Growth vs. US	TN Growth vs. Region
Computer and Information Systems Managers	5,720	7,260	26.90%	1,540	620	14.90%	11.02%
Medical and Clinical Laboratory Technicians	7,280	8,650	18.80%	1,370	620	4.80%	7.38%
Medical and Clinical Laboratory Technologists	4,470	5,280	18.10%	810	380	6.50%	7.98%
Medical Records and Health Information Technicians	5,200	6,510	25.20%	1,310	480	11.70%	11.38%

Note: Average Annual Openings include both new and replacement positions, according to the U.S. Bureau of Labor and Statistics.

<sup>12</sup> Association of Clinical Research Professionals, ACRP Member Snapshot, <https://acrpnet.org/about/our-members/> (visited April 25, 2019).

### EXHIBIT 5-2

#### OCCUPATIONAL GROWTH PROJECTIONS FOR BIOMEDICAL HUMAN HEALTH SCIENCES RELATED POSITIONS: SELECTED SOUTHEAST REGION\*

Occupational Match	2016	2026	Average of % change	Absolute Change	Average Annual Openings	Regional Growth vs. US
Computer and Information Systems Managers	14,840	17,620	15.88%	2,780	1,450	3.88%
Medical and Clinical Laboratory Technicians	14,600	16,690	11.42%	2,090	1,160	-2.58%
Medical and Clinical Laboratory Technologists	11,090	12,460	10.12%	1,370	840	-1.48%
Medical Records and Health Information Technicians	16,490	19,070	13.82%	2,580	1,310	0.32%

Notes: \*The selected region includes the following states: Alabama, Arkansas, Kentucky, Mississippi, and Tennessee. Average Annual Openings include both new and replacement positions, according to the U.S. Bureau of Labor and Statistics.

### EXHIBIT 5-3

#### OCCUPATIONAL GROWTH PROJECTIONS FOR BIOMEDICAL HUMAN HEALTH SCIENCES RELATED POSITIONS: TOTAL U.S.

Occupational Match	2016	2026	Average of % change	Absolute Change	Average Annual Openings
Computer and Information Systems Managers	367,600	411,800	12.00%	44,200	32,500
Medical and Clinical Laboratory Technicians	164,200	187,200	14.00%	23,000	12,900
Medical and Clinical Laboratory Technologists	171,400	191,200	11.60%	19,800	12,900
Medical Records and Health Information Technicians	206,300	234,100	13.50%	27,800	15,800

Note: Average Annual Openings include both new and replacement positions, according to the U.S. Bureau of Labor and Statistics.

## POTENTIAL STUDENT INTEREST

The opportunity to pursue education leading to a career in Biomedical Human Health Sciences garnished the highest level of interest from survey participants among all of the proposed new UTHSC programs. Half of the 490 respondents indicated they would be interested in pursuing BHHS as a possible career, especially as it offers several unique programmatic concentrations in high growth areas (**Exhibit 5-4**). When those with interest in the related career fields were asked if they were interested in taking such a program at UTHSC, about 40% (just under 100 individuals) expressed some level of interest (**Exhibit 5-5**). In addition, half (n=124) of those interested in this possible career path in health research were also interested in the new program at UTHSC, if it were fully offered via an online platform.

EXHIBIT 5-4  
 ARE YOU INTERESTED IN PURSUING AN ACADEMIC DEGREE LEADING TO A CAREER IN BIOMEDICAL HUMAN HEALTH SCIENCES IN THE NEXT FIVE YEARS?

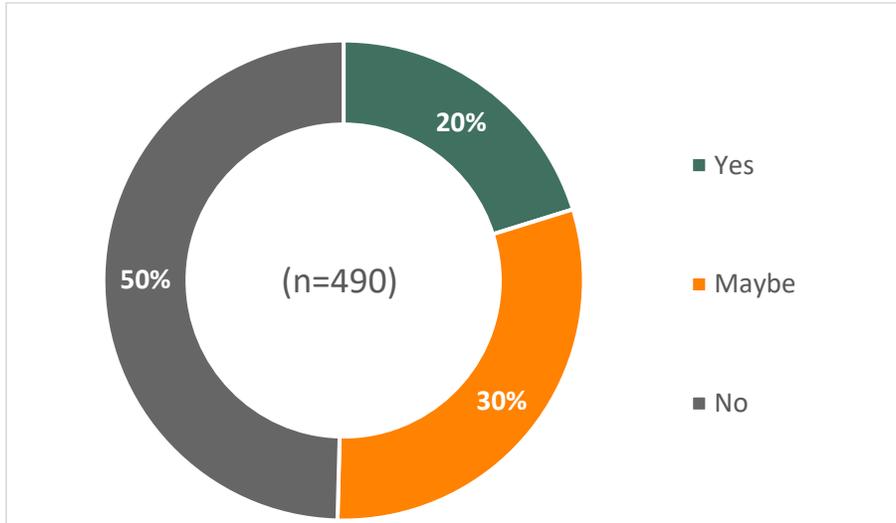
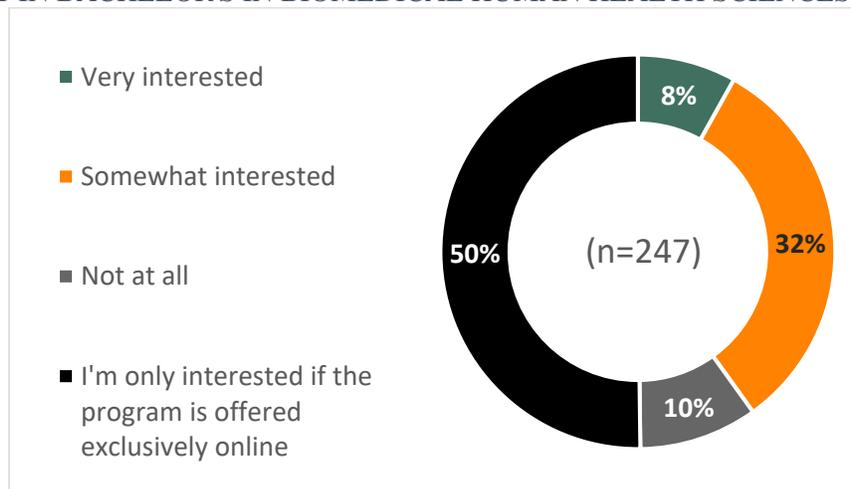
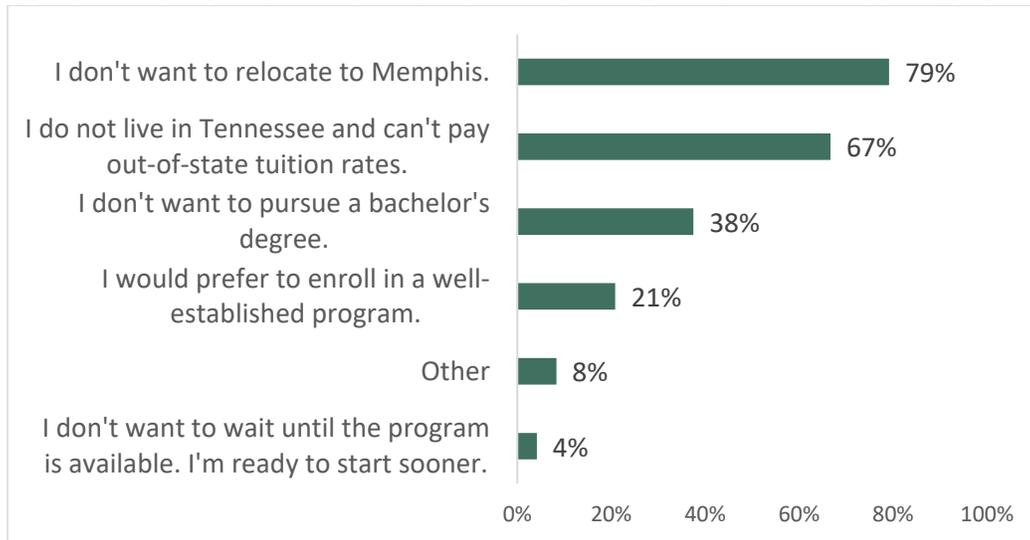


EXHIBIT 5-5  
 INTEREST IN BACHELOR'S IN BIOMEDICAL HUMAN HEALTH SCIENCES AT UTHSC



For the 25 survey respondents who originally declared an interest in a related BHHS career path, but who were not at all interested in a bachelor's degree from UTHSC, the majority cited location as a critical factor (**Exhibit 5-6**) influencing their response.

**EXHIBIT 5-6**  
**REASONS FOR LACK OF INTEREST IN BIOMEDICAL HUMAN HEALTH SCIENCES AT UTHSC**



Further information detailing survey respondent preferences regarding possible participation in the proposed UTHSC BHHS degree and its three concentrations are noted in **Exhibit 5-7**. A description of the survey process and responses to demographic and general questions are presented in **Appendix B**.

EXHIBIT 5-7  
NEEDS AND PREFERENCES FOR DEGREE PURSUIT

<b>Biomedical Human Health Sciences (n=247)</b>		
<b>When would you like to start your studies?</b>	<b>#</b>	<b>%</b>
I don't know	53	21%
More than five years from now	7	3%
Within five years	21	9%
Within four years	21	9%
Within three years	30	12%
Within two years	115	47%
<b>Would you be interested in enrolling part-time or full-time?</b>		
<b>#</b>	<b>%</b>	
Either	83	34%
Full-time only	51	21%
Part-time only	113	46%
<b>Please indicate your availability to participate in classes.</b>		
<b>#</b>	<b>%</b>	
Daytime - Monday through Friday	103	42%
Evenings - Monday through Friday	150	61%
Weekends	115	47%
Electronic access (distance/online)	174	70%
<b>Would you require financial assistance to pursue this degree?</b>		
<b>#</b>	<b>%</b>	
Maybe	91	37%
No	17	7%
Yes	139	56%
<b>How familiar are you with the University of Tennessee Health Sciences Center in Memphis?</b>		
<b>#</b>	<b>%</b>	
Extremely familiar	7	3%
Moderately familiar	20	8%
Not familiar at all	188	76%
Slightly familiar	26	11%
Very familiar	6	2%

Based on the survey results, the BHHS program would seem to be more attractive to a national audience if offered fully online. So, if UTHSC desires a national reach, offering a distance learning option for students could enhance the program's appeal, assuming it would conform to accreditation requirements. However, many survey respondents were unfamiliar with the UTHSC, so marketing of the institution and the specific program will be key to its success, irrespective of the delivery mode.

## GUIDANCE FROM THE PROFESSION

As part of this program needs assessment, the consultants in collaboration with leadership of the UTHSC College of Health Professions, identified and contacted representatives of the programs and the professions closely associated with the three concentrations offered as part of the proposed BHHS degree for further input and advisement as the new program planning and approval process goes forward. Considerable efforts were made to speak with one or more programs considered top-tier, as well as representatives of national and state professional organizations related to these specialties. After numerous attempts, the consultants were unable to obtain interviews with any representatives that closely align with the Clinical Research concentration. Information gleaned from those interviews related to Health Informatics and Health Simulation Technology are summarized in the following sections of this chapter.

Representatives of the profession expressed that the structure of the BHHS program, with its three concentrations, would be highly attractive to students who wish to pursue an entry-level healthcare occupation. The degree would also allow for continued educational credentialing at the graduate or professional degree level in a number of specialized health care fields.

## HEALTH INFORMATICS CONCENTRATION

### TOP-TIER ACADEMIC PROGRAMS

**University of Central Florida - College of Health and Public Affairs (Department of Health Management and Informatics) ---** The health management and information undergraduate program at UCF offers two BS degrees through a diverse curriculum. Much the same as the proposed BHHS degree at UTHSC, it serves as both a pre-professional pathway to further post-baccalaureate education (of which one option is an MS degree in Healthcare Informatics) or as direct entry into the health care workforce. Of particular interest to the proposed BHHS program, the UCF degree provides curriculum areas that intentionally mesh health information and health services management with various research elements. For those who pursue a Health Informatics and Information Management (HMI) curriculum at UCF, the major content is nearly identical for the BS and the MS degree, as both lead to various RHIA credentialing. Enrollment in the undergraduate program is restricted due to the student demand for admission to the major, limited clinical sites, and accreditation guidelines. In 2018, there were 63 undergraduate majors in the traditional delivery format. The program can be completed fully online (17 enrolled), but some electives may not be available. The master's degree (112 enrollees) is primarily focused on working professionals and can be fully accessed via an online platform. Although, the majority

of enrollees in both the BS and MS programs draw heavily from within the state, demand is quite high and admittance is competitive, particularly at the undergraduate level.

## PROFESSIONAL ASSOCIATIONS

**Tennessee Health Information Management Association ---** THIMA is a component state association of the [American Health Information Management Association](#) (AHIMA), and has approximately 2,600 members statewide across seven local chapters. Job possibilities are diverse, and include positions within the broad healthcare industry such as healthcare providers, clinical research, public health agencies, health services vendors and suppliers, legal and regulatory oversight entities, and third-party payers/insurers. Much of the HIM positions are associated with the financial side of an organization, related directly to billings and reimbursement or medical records. However, one of the fastest growing occupational sectors is in data analytics and population or bio-statistical research support, due to rapid advancements in technology for “big data” storage, retrieval, and operational and policy decision-making. It is believed the new UTHSC baccalaureate degree with a health informatics concentration would be an ideal entry point into a variety of occupational choices within the larger healthcare industry beyond the typical provider/patient care positions.

## Appendix C: Letters of Support

February 13, 2020

Stephen E. Alway, Ph.D., FACSM  
Dean, College of Health Professions  
Professor, Department of Physical Therapy  
The University of Tennessee Health Science Center  
College of Health Professions  
930 Madison Avenue, Suite 648  
Memphis, TN 38163-2243

Re: Support for the proposed Bachelor of Science degree in Biomedical Human Health Sciences with a concentration in Simulation Technology, Health Information Management, and Clinical Research

Dear Dean Alway:

This letter is to provide my strongest support for your proposed Bachelor of Science degree in Biomedical Human Health Sciences (BHHS) in the College of Health Professions with concentrations in Simulation Technology, Health Information Management, and Clinical Research to be offered at the University of Tennessee Health Science Center in Memphis. I am excited about your proposed degree because the mission of Health and Natural Sciences at Southwest Community College is consistent with your proposed new BHHS, and I fully support your degree. As Dean of Health and Natural Sciences at Southwest Community College, I embrace this collaborative effort between the College of Health Professions and Southwest Community College to provide students with a unique opportunity to obtain a B.S. degree after first obtaining their AS degree at Southwest Community College. It is also wonderful that your B.S. degree will include training opportunities at the Center for Healthcare Improvement and Patient Simulation (CHIPS), which is the only state-of-the-art facility in Tennessee with capabilities to provide simulation technology training in health care delivery. Furthermore, the proposed new BHHS undergraduate degree will complement the current educational offerings and research goals of the College of Health Professions and Southwest Community College. As you know, Southwest Tennessee Community College and the College of Health Professions have a shared goal to offer the highest quality medical, science education and clinical skills in a learning environment that fosters critical thinking, encourages professional leadership, inspires research, and instills a strong appreciation of human diversity and ethical conduct.

The BHHS degree will fill a unique role by training students who aspire to careers in clinical research, healthcare information management, and simulation technology. In addition, the BHHS program will provide students with access to the needed prerequisites for professional study and provide a firm background in established and emerging fields in health sciences. Your B.S. degree will provide students from Southwest the opportunity to pursue those long term career goals via additional and seamless training experiences. The BHHS degree program will also fill a need in the Mid-South for students who wish to pursue careers in the medical and healthcare fields, particularly in areas of technology, clinical treatments, and research. After reading your proposal, it is clear that the BHHS program will better prepare undergraduate students for advanced graduate or professional study, especially in emerging fields in health sciences or in

laboratory-based careers in research or clinics. It is my assessment that the proposed program will offer the highest quality science and clinical-based education that will complement the base that will be provided at Southwest Tennessee Community College and expose undergraduate students to research opportunities that will instill a strong appreciation of data collection and analysis that coexists with ethical values and behavior and the importance of understanding human diversity. At Southwest Tennessee Community College, we are excited to participate in educating students that can continue and complete the B.S. degree in your program. Furthermore, UTHSC is the leading State institution for research on the causes, treatment, and prevention of diseases, so students will receive excellent cross-disciplinary training while pursuing the BHHS degree program and, in doing so, build upon their training at our institution.

It is my assessment that students from Southwest Tennessee Community College can benefit from the additional training in the BHHS program. It is clear to me that this additional B.S. degree in BHHS will better prepare students for research, technical or clinical careers and additional professional training in fields related to health professions, basic science or clinical science and help to develop a stronger workforce for health care in the state of Tennessee. It is, therefore, with great enthusiasm that I offer my strongest support to you in your efforts to establish this new and innovative bachelor's degree.

Sincerely,



**Evan McHugh, Ph.D.**

Dean, Department of Allied Health & Natural Science  
Southwest Tennessee Community College – Union Campus  
Nursing, Biotechnology, and Natural Science Bldg.  
UNS - 116R  
737 Union Ave  
Memphis, TN 38103-3322  
Office Telephone: (901) 333-5474

Email: [ejmchugh@southwest.tn.edu](mailto:ejmchugh@southwest.tn.edu)



600 12<sup>th</sup> Ave S, #204  
Nashville, TN 37203

August 3, 2019

Hassan Aziz, PhD, FACSs, MLS(ASCP)cm  
Associate Dean for Academic, Faculty and Student Affairs  
Professor, Department of Clinical Laboratory Sciences  
The University of Tennessee Health Science Center  
College of Health Professions  
930 Madison Avenue, Suite 632  
Memphis, TN 38163-2243

Dear Dr. Aziz,

I write on behalf of the TN Health Information Management Association (THiMA), which represents more than 2,000 Health Information Management (HIM) professionals who manage health records in all formats in all healthcare settings for the citizens of TN. The need for HIM professionals in the healthcare industry is growing faster than the demand can be met.

The HIM educational programs offered over the past many years through the UTHSC have been a crucial contributor and in many ways a major underpinning of the HIM profession in TN. The faculty and their graduates are well known around the country as visionary, highly skilled, devoted to the profession, and possessing true leadership skills.

The news that a proposal for a bachelor's degree in Biomedical Human Health Sciences with a concentration in Health Information Management was being developed was met with overwhelming support from the THiMA Board of Directors. The Board consists of a diverse group of HIM professionals who represent all regions of TN and various health care settings, all of whom have benefited in one way or another by the educational programming and associated faculty at UTHSC.

It is therefore with great enthusiasm that we offer our support to you in your efforts to establish this new bachelor's degree. From the perspective of those who manage, utilize, and rely on health information for healthcare and/or critical business processes, this is excellent news!

Thank you for including us even in a small way in this initiative.

Sincerely,

Wanda G. McKnight, RHIT, CAE  
Executive Director, THiMA

Cc: Rebecca Reynolds, EdD, RHIA, CHPS, FAHIMA

Seth Johnson, MBA, RHIA  
1298 Timber Ridge Road  
Bluff City, TN 37618  
June 26, 2019

Hassan Aziz, PhD, FACSs, MLS(ASCP)  
Associate Dean for Academic, Faculty and Student Affairs  
Professor, Department of Clinical Laboratory Sciences  
The University of Tennessee Health Science Center  
College of Health Professions  
930 Madison Avenue, Suite 632  
Memphis, TN 38163-2243

Dr. Hassan Aziz, PhD, FACSs, MLS(ASCP):

I am writing this letter in support of developing a bachelor's degree in Biomedical Human Health Sciences, concentration in Health Information Management to be offered in the College of Health Professions at the University of Tennessee Health Science Center in Memphis

As a consultant on a global healthcare team, my view of the healthcare industry supports the need for a bachelorette option for students who aspire to careers in healthcare information management, simulation technology and clinical research. With the quality of medical education and clinical skills development provided by the University of Tennessee Health Science Center, students will be positioned well in the healthcare marketplace for immediate employment and/or the option of furthering their education with the post bachelorette programs offered.

Thank you for the opportunity to share my support for UTHSC to develop a bachelor's degree in Biomedical Human Health Sciences, concentration in Health Information Management

Sincerely,



Seth Johnson, MBA, RHIA

September 28, 2019

Stephen E. Alway, Ph.D., FACSM  
Dean, College of Health Professions  
Professor, Department of Physical Therapy  
Joint Professor, Department of Physiology  
The University of Tennessee Health Science Center  
College of Health Professions  
930 Madison Avenue, Suite 648  
Memphis, TN 38163-2243

Re: Support for the proposed Bachelor of Science degree in Biomedical Human Health Sciences

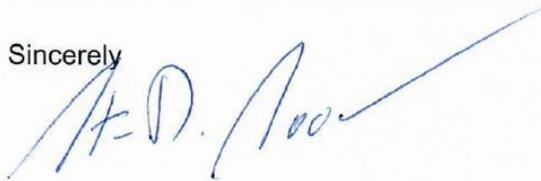
Dear Dean, Alway:

This letter is to provide my strongest support for your proposed Bachelor of Science degree in Biomedical Human Health Sciences (BHHS) in the College of Health Professions. The BHHS interdisciplinary program will fill a need in the Mid-South for students who aspire to careers in the medical and healthcare fields in general and more specifically in technology, basic and clinical research which is only available through a comprehensive Health Science Center like the University of Tennessee Health Science Center (UTHSC). After reading your proposal it is clear that the degree will provide students with access to the needed pre-requisites that will prepare them for additional graduate or professional study and provide a firm background in new and emerging fields in health sciences. This new undergraduate degree in Biomedical Human Health Sciences will be an important addition to the primary graduate student focus at UTHSC. Specifically, the BHHS degree will better achieve the goals of preparing students for the initial steps leading to science based careers including laboratory and clinical technicians who can support faculty research or participate in clinical laboratory assessments. Alternatively, students completing the BHHS will be better prepared to obtain additional training in graduate school in one of the existing programs at UTHSC or elsewhere, leading to research based careers in foundations, hospitals, scientific companies or higher education. The proposed program will offer the highest quality science based education and expose undergraduate students to research opportunities

that will instill a strong appreciation of data collection and analysis that coexists with ethical values and behavior and the importance of understanding human diversity. The BHHS is perfectly positioned in the College of Health Professionals at the University of Tennessee Health Science Center because UTHSC is the leading State institution for research on the causes, treatment, and prevention of diseases. The UTHSC research mission is linked with a mandate to train health care professionals and to provide state-of-the-art clinical care across the State and this BHHS degree provides the first steps in preparing students to meet these missions. Having more opportunities for capable students in our State, we will continue to strive to be competitive at the highest levels of education and research. The BHHS program is also ideally suited to expose students to a variety of research and training opportunities that include a wide range of health care needs and conditions, especially in fields of rehabilitation and this will provide the fundamental science training and make a natural bridge to training students who are interested in engaging in translational research seeks to move scientific discoveries from the basic science laboratory to human (clinical) testing and research. Students who complete the BHHS program will also have exposure to research strengths at UTHSC which intersects the UTHSC Operational Strategic Research Plan including prevention and rehabilitation, movement sciences impacted by neurological disorders, cancer cachexia, environmental exposures, and health outcomes and health disparities.

Thus, the BHHS program will provide a unique training opportunity for students in the state for research careers and additional professional training in fields related to health professions, basic science or clinical science, all of which will support and provide additional personnel to work towards the institution research goals to better provide the state of Tennessee with state of the art basic science and clinical research support. It is therefore with great enthusiasm that I offer my strongest support to you in your efforts to establish this new and innovative bachelor's degree.

Sincerely



Steven R. Goodman, PhD  
Vice Chancellor for Research  
The University of Tennessee Health Science Center  
Editor-in-Chief  
*Experimental Biology and Medicine*  
President and CEO  
The Clinical Trials Network of Tennessee (CTN2)



276 Patton Lane Harrison, TN 37748-5011  
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June 15, 2020

Dr. Hassan Aziz,

I think the addition of the Bachelor of Science in Biomedical Human Health Sciences with a track in Health Information will make an excellent addition to the current curriculum at the UH Health Science Center.

Many of the students in the Health Information Management program at Roane State have indicated a desire to continue their education but, many do not since there is currently not an online bachelor's program in the state of Tennessee that would allow them to sit for the RHIA. Currently, they would have to attend a school outside of the state. Adding this degree will give them that opportunity.

I do hope this degree is added as an option as this would not only help the Roane State students but would help the other accredited HIM Associate Degree programs by providing their students an option within the state to continue their education.

Sincerely,

April Inseo, RHIA, CHDA, CPHI, CCS  
HIM Program Director/Associate Professor  
Roane State Community College

Serving the counties of  
Roane ♦ Anderson ♦ Campbell ♦ Cumberland ♦ Fentress ♦ Loudon ♦ Morgan ♦ Scott  
(Know and Demand for Health Sciences)

June 22, 2020

University of Tennessee Health Science Center  
College of Health Professions  
930 Madison Avenue  
Memphis, TN 38163

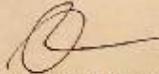
To whom it may concern:

My name is Seth Johnson, RHIA, FAHIMA and I am writing to you as an alumnus of UTHSC Health Information Management Program and an Industry Consultant serving healthcare in the State of Tennessee, the United States and Globally. In my travels and work with healthcare leaders, I find demand for graduates with the Health Information Management degree and RHIA certification. The education provided through this program provides highly valued individuals within all forms of healthcare and industries supporting healthcare.

As a graduate of the UT HIIM baccalaureate program, I am in full support of this degree option as it makes for a more affordable option than the entry-level masters. I have been a long time adjunct faculty and Advisory Committee member for the UT HIIM Program and I know UTHSC HIIM students are well prepared with the practical knowledge of the health information management field for success.

Thank you for the opportunity to share my thoughts with you. If you have any questions or would like to discuss further, I will make myself available to you.

Thank you,



Seth Johnson, RHIA, FAHIMA  
UT HIIM 2006 Graduate  
423-741-8299  
Seth.Johnson@lexmark.com

**From:** [Hickey, Tracy](#)  
**To:** [Aziz, Hassan](#)  
**Subject:** [Ext] UTHSC HIM Program: BS program  
**Date:** Monday, June 22, 2020 3:11:16 PM

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Dr. Aziz,

There is demand in our state for graduates with the health information management degree and the RHIA certification. As a graduate of the UT HIIM program, I am in full support of this degree option as it makes for a more affordable option than the entry-level masters. This track also allows these students to obtain their degree and credentials to begin working and filling a void in healthcare institutions much faster without sacrifice of a quality education.

Jackson-Madison County General Hospital has been a long time clinical site for the UT HIIM Program and I have hired numerous graduates from the program. I find they are well-prepared both with book-knowledge as well as practical knowledge of the health information management field. UTHSC students are usually top notch and well above any other graduates from other universities with health information management programs.

I am grateful to the UTHSC program and professors. They are so committed to the health information management field and the program and it shows in each student that passes thru the program.

Your support of their continued efforts in the health information management field and this degree option is greatly appreciated.

Thank you!

Tracy G. Hickey, MBA, RHIA, CPHI, CHTS - CP, FAHIMA  
Director, Health Information Management



620 Skyline Drive | Jackson, Tennessee | 38301  
731.541.7801 | [tracy.hickey@wth.org](mailto:tracy.hickey@wth.org)

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## Aziz, Hassan

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**From:** Rita Bowen <rbowen@mrocorp.com>  
**Sent:** Thursday, June 25, 2020 10:28 AM  
**To:** Aziz, Hassan  
**Subject:** [Ext] HIM Program

It is with great pleasure that I am writing a letter of support for the bachelor's track in health informatics and information management program.

As a HIM professional who is based in Tennessee but who works throughout the US, I see the need for HIM professionals. I have been involved in the UT HIM program for many years. I served as an adjunct instructor, on the program advisory committee as well as mentoring HIM students from the UT program over my years at Baptist in Nashville and Erlanger. This program will provide an avenue for students who want to enter the HIM profession and obtain the RHIA credential. I have worked with many UT HIM graduates and they are well prepared for leadership roles in HIM in various settings.

I continually encounter the need for students with the RHIA credential and analytics skills in the Chattanooga area and other locations throughout the US. I previously served as the Enterprise Director for HIM at Erlanger Health System whereby we were successful in integrating the HIM professional throughout the organization in various roles. Currently I serve as the Privacy Officer for an organization that has business throughout the US and I am in contact with health facilities who are in need of HIM professionals who can interpret data and translate it to meaningful information. This is important in all areas of healthcare.

I support the UT HIM Program, its graduates and encourage your support to continually enhance the program to meet the needs of the health care community.

Kind Regards,  
Rita Bowen  
VP Privacy, Compliance and HIM Policy  
MRO Corporation, Valley Forge, PA

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**From:** [lmcferrin@cephfi.com](mailto:lmcferrin@cephfi.com)  
**To:** [Aziz, Hassan](#)  
**Cc:** [Reynolds, Rebecca B](#); [Sharp, Marcia Y](#)  
**Subject:** [Ext] Modification to HIIM program  
**Date:** Friday, June 26, 2020 11:05:59 AM

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Hello, Dr. Aziz,

I am an 1974 alumnus of the UTHSC HIIM program, as well as a long-term member of the HIIM Program Advisory Committee. The program offered a bachelor's program from 1972 to 2009, but transitioned to a masters program to align with the AHIMA position that the entry level should be at the master's level. Since that time, AHIMA has reversed its position and has allowed many HIIM programs to maintain their bachelor's programs. As a result, our UTHSC program has had to compete with programs that offer quicker and less expensive alternatives for students.

I know the quality of the graduates from the program as I have been an instructor and a preceptor for many UT HIM students during my years as a HIM professional in various healthcare settings throughout the country. I know that our faculty are prepared to deliver the required bachelors curriculum to meet the workforce and student needs.

I request your consideration of this change.

Sincerely,

Lela McFerrin, RHIA  
President, Chattanooga Area Health Information Management Association  
Board member, Tennessee Health Information Management Association  
Retired HIIM professional

**From:** [Karen Miller](#)  
**To:** [Aziz, Hassan](#)  
**Cc:** [Reynolds, Rebecca B](#)  
**Subject:** [Ext] UT HIM Program  
**Date:** Friday, June 26, 2020 4:05:18 PM  
**Attachments:** [Code2-baptist-thumb-shield-32x32\\_7fa2aa18-5710-4992-9960-285c157e991d.png](#)  
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Dr. Aziz –

I am an alumni of the program as well as a long-term member of the HIIM Program Advisory Committee. The program offered a BS program from 1972 until 2009 when the program transitioned to the entry-level masters program. This was based from the AHIMA position that the entry-level degree for the profession would be at the master's level. Since then, AHIMA has left the entry-level at the bachelor's level and has made competing for potential applicants difficult as they seek the bachelor's degree for a quicker and less expensive option to enter the HIM field. I know the quality of the graduates from the program as I have been the preceptor for many UT HIM students during my years at Baptist and I know the faculty are prepared to deliver the required curriculum to meet the workforce needs.

Sincerely,  
Karen Miller

[Karen Miller](#) | Director | Health Infor Mgmt | BMHCC Corporate Office  
Phone: (901) 227-3830 | [Karen.Miller@BMHCC.org](mailto:Karen.Miller@BMHCC.org)  
*Opinions expressed above are not necessarily those of Baptist.*



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