WHAT WE’RE D.O.ING

Biomedical Informatics Program Continues to Lead the Way

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In 2006, the Master of Science in Biomedical Informatics (M.S.B.I.) degree program—the only biomedical informatics program in existence at an osteopathic medical school—was established in collaboration with NSU’s Graduate School of Computer and Information Science. Those eight years seem light years away when we consider the meteoric growth of the program—from 3 students in 2006 to nearly 200 today. NSU-COM’s Biomedical Informatics Program leads the profession in the evolution of the health care environment, uniting technological and medical advancements to maximize efficiency, deliver services, and develop research pathways.

The Biomedical Informatics Program—led by its director Jennie Q. Lou, M.D., M.Sc., professor of biomedical informatics, public health, and internal medicine—currently comprises 191 students and 31 faculty members. The program trains professionals in the development, dissemination, and evaluation of information technology as it relates to the health care environment—including hospitals, health care delivery systems, health information technology system vendors, ehealth companies, insurers, pharmaceutical companies, and academic institutions.

The program’s fully online format enables working professionals to earn a master’s degree without career disruption. Students may also pursue an M.S.N. in Nursing Informatics or Graduate Certificate in Public Health Informatics or Medical Informatics. A diverse student body hails from 23 nations, including the United States, Saudi Arabia, Pakistan, Puerto Rico, Bahamas, Colombia, Haiti, Jamaica, Brazil, Canada, Cuba, India, Mexico, Nigeria, Spain, Sudan, Sweden, Taiwan, United Kingdom, and Uzbekistan. For those
who prefer a face-to-face option, on-campus courses are also available.

Dr. Lou views biomedical informatics as the bridge between medicine and technology and expects the need for experts in the field "to skyrocket," especially with the development and acceptance of the Affordable Care Act (ACA). The far-reaching provisions for the ACA include gathering data and measuring quality of care, requiring an increase in health information careers expected to grow by 36 percent to deal with health disparities, epidemiology, and laboratory capacity.

Because collaboration is a key component of a program's success, NSU-COM's Biomedical Informatics Program continues to partner with the American Medical Informatics Association 10 x 10 Certificate Program, which aims to train 10,000 health care professionals in applied health and medical informatics. The prestigious honor keeps the college's program on par with several major academic institutions nationwide—including Stanford University Medical School, University of Alabama at Birmingham, Oregon Health and Science University, and the University of Illinois at Chicago.

"Through this partnership, the quality of our program is recognized nationally," Dr. Lou said. That national recognition increased in the past year, as three NSU-COM affiliates completed the inaugural clinical informatics subspecialty board exams administered by the American Board of Preventive Medicine in October 2013. Jacques Orces, D.O. ('96) is currently a student in the Biomedical Informatics Program and serves as the chief medical informatics officer and a pediatrician at Miami Children's Hospital. Danielle Oryn, D.O., M.P.H. ('02), chief medical informatics officer at Petaluma Health Center in California, received a graduate certificate in medical informatics, while James Seltzer, D.O., M.S.B.I., clinical assistant professor of obstetrics and gynecology, is a 2011 M.S.B.I. graduate.

Another organization, the Healthcare Information and Management Society (HIMSS), has also noticed and commended the strength of NSU-COM's Biomedical Informatics Program. The HIMSS Foundation awards annual scholarships to student members who have achieved academic excellence and demonstrate leadership potential in the health care information and management industry. Over the past several years, two NSU-COM Biomedical Informatics Program students were scholarship recipients: Mark Carnemolla, M.S.B.I., a 2013 graduate, and Mohammed Islam, M.S.B.I., a 2010 graduate.

The celebration of success continued in 2014 when the Biomedical Informatics Program awarded 29 Master of Science degrees and high-
lighted the group’s achievements with four awards for research, service, and recognition. The majority of the newest graduates earned their degrees with distinction as 12 attained highest honors and 10 finished with honors. This year, an additional accolade was created—the Director’s Award—to honor a student or students who have overcome significant challenges in the pursuit of their degree. Clarissa Alexander, M.S.B.I. ('14) overcame a brain tumor, pursued an internship, published a paper about her experiences while at the National Institutes of Health, and graduated with honors, while Stephen Amoah, M.S.B.I. ('14) suffered a stroke that impaired his physical and cognitive functions, especially his speech. Along with accommodations the program made to meet his particular needs, his tenacity and perseverance enabled him to attain his ambitions and earn his degree.

The remarkable achievements of those in the program, coupled with Dr. Lou’s guidance and goals for growth, have kept NSU-COM at the forefront of the field. “We want to build a very solid program that will provide students the skills they need to accomplish various health information technology implementation tasks,” she explained.

The interprofessional pathways Dr. Lou builds throughout the university and nationwide foster collaboration with computer science, public health, business management, nursing, and education. The Biomedical Informatics Program offers an invaluable opportunity to work on the cutting edge of health care. “We want our students to have more hands-on experience before they graduate by establishing relationships for internships and practicum experiences at more than 100 sites, including Cleveland Clinic Florida, Palmetto General Hospital, the National Institutes of Health, and the Mayo Clinic,” Dr. Lou said proudly. “Where we once begged for spots, we now have the hospitals contacting us.”

Last year, Dr. Lou and her team collaborated with NSU’s Center for Psychological Studies and NSU-COM’s Area Health Education Centers Program on a poster

**Getting to Know...the Biomedical Informatics Team**

**Jennie Q. Lou, M.D., M.Sc.**, who serves as founding director for the Biomedical Informatics Program, is a professor of biomedical informatics, public health, and internal medicine. In addition to teaching and advising students, Dr. Lou oversees the recruiting and marketing for students and faculty members, curriculum development and quality assurance, research, and student practicum site establishment.

**Steve E. Bronsburg, Ph.D., M.S., M.H.S.A.**, assistant professor and academic adviser, is responsible for teaching courses, assigning student project practicums, and pursuing scholarly research. He is also involved in developing community relationships in an effort to recruit students and establish practicum sites.

**Jesse Singer, D.O., M.P.H.**, associate professor, joined the team in October. Most recently, he worked in New York City, serving as the assistant commissioner for the bureau of the Primary Care Information Project at the NYC Department of Health and Mental Hygiene. He is board certified in public health and preventive medicine.

**Christine Nelson, B.S.**, program manager, assists Dr. Lou with the daily workings of the program. She likes to say her job is to do whatever needs to be done in order to make the program run. In addition, she recently became an NSU-COM Biomedical Informatics Program student and hopes to someday expand her role into research and teaching.

**Mirlyn Hurry** serves as administrative assistant for the program, supports Dr. Lou, and works closely with the other team members.

Pictured (from left) are Drs. Lou and Bronsburg, Mirlyn Hurry, Christine Nelson, and Dr. Singer.
entitled "Self-Change: Randomized Control Trial of an iPhone App Using an Evidence-Based Alcohol Intervention" at the 47th annual meeting of the Association for Behavioral and Cognitive Therapies (ABCT) held November 21-24, 2013, in Nashville, Tennessee. The poster illustrated research on addictive or alcohol-related behaviors and received the prestigious ABCT Addictive Behaviors SIG Outstanding Student Poster Award. The project was funded by an NSU President's Faculty Research and Development Grant.

Recent graduate Troy Rubizovsky, M.S.B.I. (’14) also worked with Dr. Lou and Steve E. Bronsburg, Ph.D., M.S., M.H.S.A.—the co-primary investigators—to build the mobile app, which included developing story boards, producing a basic layout of the application, creating a detailed design, programming the initial app, field-testing the program, making adjustments based of the field-test results, and activating it for study participants.

Teamwork is paramount in the Biomedical Informatics program, and department members are dedicated to recruitment, creating new courses and practices, representation at health fairs, participating in professional presentations, and collaboration on research. In regard to research, Dr. Bronsburg said he is preparing a paper for publication to highlight details of the aforementioned mobile app.

With hopes to build a larger group of those ready to meet the future health care needs of a growing and aging population, Dr. Lou is working on a proposal to create a Ph.D. in Biomedical Informatics. Such development will enhance research and training in clinical informatics concepts, methods, and tools in order to analyze, design, implement, and evaluate information and communication systems that promote safer, more efficient, effective, timely, patient-centered, and equitable care.

Graduates already know the program is an investment that pays—and pays well. According to a national survey, the median salary in the health information technology field has increased in direct relation to the need of the specialty, with graduates starting at $85,000 and many physicians earning $250,000.

"We are constantly revamping the program by identifying what skills are most sought by employers," Dr. Lou said. "There is a tsunami of information out there."

With intelligence, talent, and technology, Dr. Lou and her team are committed to training students to ride the waves.

Alumni Testimonials

"NSU's Biomedical Informatics Program gave me the tools and knowledge to navigate the health informatics industry with confidence. It prepared me to provide meaningful contributions to seasoned professionals and organizations. Two years after graduating, my relationship with the program is still going strong." – Teresa Blanco, M.S.B.I. (’12), who is currently living in Kansas City, Missouri, and working for Cerner as a charge services support analyst

"The training is on target to meet a single goal: The right information, to the right person, at the right time." – April M. Green, M.S.B.I. (’13)

"This program allowed me to gain the experience I needed in order to follow the career path I wanted to take." – Anthony Meglino, M.S.B.I., NCP (’14), a Next-Gen EHR template developer consultant at Dell

"The program helped me turn an adversary into an opportunity. Tenacity and a strong drive led to my success in the Biomedical Informatics Program and in my world." – Stephen Amoah, M.S.B.I. (’14)