ABOUT BIOMEDICAL INFORMATICS

Biomedical Informatics (BMI) is a field in which individuals create and apply computational and quantitative methods for biomedical research and healthcare. The recent explosion of high-throughput genomics technologies has created a critical demand for skilled BMI professionals.

The BMI Master’s program at NYU consists of three interconnected components:

- Bioinformatics focuses on computational and statistical methods for the analysis of molecular biology data.
- Medical Informatics deals with the storage and management of medical data and knowledge and evidence-driven application to patient therapies.
- Translational Bioinformatics connects Bioinformatics with Medical Informatics so that basic scientists are able to transfer results “from the bench to the bedside.”
WHY NYU SCHOOL OF MEDICINE?

Our program takes advantage of a real-life scientific environment consisting of the nexus of laboratories, institutes, centers, and departments at NYU Langone Medical Center and the NYU School of Medicine.

Students will have access to an environment of academic excellence in informatics and will be taught and mentored by faculty who play critical roles in cutting edge basic science and clinical research. Notable metrics indicative of the quality of the training environment at CHIBI include:

• Nationally and internationally recognized faculty;
• Informatics methods research labs;
• A PhD program in Biomedical Informatics;
• In-house High Performance Computing Facility;
• Best Practices Integrated Informatics Consulting and Collaborative Science core (BPIC);
• 40+ journal papers annually in the best peer-reviewed biomedical journals including Science, Nature, Cell, PNAS, etc.

BACKGROUND

Applicants for the BMI MS program will have a bachelor’s degree in one of the following fields: (1) computational or quantitative sciences or (2) basic sciences. Good oral and written communication skills, including command of the English language, is required. Prior exposure to research in Biomedical Informatics will not be required for admission, but will count positively toward consideration. Students who enter without requisite coursework in computer science may be required to take remedial coursework.

MASTER’S PROGRAM

The Master of Science (MS) program prepares individuals for practical, hands-on careers in informatics for students with backgrounds in basic sciences (e.g., Biology, Physics, Genetics, etc.), quantitative sciences (e.g., Computer Science, Mathematics, Statistics, etc.), or health-related fields (e.g., Medicine, Dentistry, Public Health, Clinical Genetics, Clinical Psychiatry, etc.).

After finishing the MS program there are several different career paths, including employment in academic research centers, medical centers, hospitals, insurance companies, pharmaceutical companies or the biotech industry as a member of management, a programmer, an informatics scientist, or a healthcare analyst.

GOALS

• Learn fundamental computer science and biostatistics skills needed for BMI.
• Develop necessary domain knowledge of molecular biology and medical science to facilitate communication and collaborative research with clinical and basic scientists.
• Study the history of important innovations in BMI and the algorithms underlying methods that are currently in use.
• Learn computational skills for the analysis of complex genomic and medical data.
• Develop skills for creating, validating, benchmarking, and deploying BMI methods.
• Enhance skills for consulting, communication, and teamwork to support professional work in BMI.

APPLICATION PACKAGE

A complete application package should include the following items:

• NYU BMI Application (available at www.nyulmc.org/chibi/ms-program)
• Exam scores (GRE, MCAT, TOEFL, as appropriate)
• Curriculum Vitae or Résumé
• Personal Statement
• Letters of recommendation (3)
• Official transcripts from all undergraduate and graduate institutions

DEGREE REQUIREMENTS

• Minimum of 32 units
• Mandatory research and/or consulting experience (6-12 units)

REQUIRED COURSES

• BMI Methods
• Bioinformatics Foundations
• Medical Informatics Foundations
• BMI Seminar

ELECTIVE COURSES

• Integrative Genomic Data Analysis
• Machine Learning
• Microbiomics Informatics
• Next Generation Sequencing Informatics
• Proteomics Informatics
• Biomedical Informatics Consulting
• High Performance Computing in Biomedical Informatics

OTHER REQUIREMENTS

All students must complete at least one of the following practica prior to graduation:

• Industry Practicum will engage the students for a summer semester in the real-life complexities of research in pharmaceutical companies and other appropriate NYU industry affiliates.
• Consulting Practicum will embed the students in the CHIBI consulting and collaborative science service for a semester so that they develop collaborative skills and are exposed to the plethora of real life projects in an academic medical center.

HOW TO APPLY

DEADLINES

The application deadline for Fall 2016 admission is January 15, 2016. Interested students are urged to submit their completed application and supporting materials as early as possible.

CONTACT FOR MORE INFORMATION

InformaticsMasters@nyumc.org

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