

NUCLEAR MEDICINE TECHNOLOGY

REV. 2016

IS NUCLEAR MEDICINE TECHNOLOGY THE RIGHT CHOICE FOR YOU?

Why was the Nuclear Medicine concentration developed?

This concentration was designed to educate students to meet a growing need for highly trained technologists who utilize rapidly developing technologies to image the distribution of radioactive agents in the body.

Successful completion of the concentration and the post-baccalaureate year provide eligibility to take the national registry exam in nuclear medicine and entry-level clinical employment in the field.

What is the role of the nuclear medicine technologist?

Nuclear medicine technologists administer radiopharmaceuticals to patients; they also operate equipment that maps drugs in the body and creates diagnostic images. After explaining test procedures to patients, technologists prepare

a dosage of the radiopharmaceutical and administer it by mouth, injection, inhalation, or other means. They also are responsible for positioning patients for procedures. All of the images are produced on a computer screen or on film for a physician to interpret.

Since safety is always an issue when working with radioactive substances, technologists follow strict protocols to keep levels of exposure within safe margins for themselves, other workers, and patients.

Where do nuclear medicine technologists work?

While 7 out of 10 technologists work in hospitals, while other opportunities are found in physicians' offices and diagnostic laboratories.

Is there a demand for nuclear medicine technologists?

Our program graduates have been highly successful in gaining employment following graduation, and are employed by most major hospitals in the metropolitan region. Opportunities will arise from technological advancement, the development of new nuclear medicine treatments, and an increase in the number of middle-aged and older persons, who are the primary users of diagnostic procedures.

What is the salary range for nuclear medicine technologists?

Nationally, the median annual earnings for nuclear medicine technologists in 2015 was \$73,360. Salaries are dependent upon location and length of experience. According to the New York Workforce and Industry Data the average salary for nuclear medicine technologists in the State of New York is \$80,920.



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What is the Admission Policy for the Nuclear Medicine Technologist program?

Pre-Requisites include: chemistry with laboratory, general physics, and college mathematics, two semesters of human anatomy and physiology with lab, medical terminology. Students are recommended to have an above average mid semester grade in HAN 395. Preference is given to students who document an overall G.P.A. of 2.5 in college level coursework; a strong science and math background (minimum "C" grade in each course and an overall natural science G.P.A. of 2.5.) Preference is also given to students who can document health care experience (paid or volunteer) and/or community service.

What are the requirements for acceptance to the post-baccalaureate year?

Health Science students apply to the post-baccalaureate program during the fall semester of the senior year. In order to enter the concentration during the spring, a student must have been granted a seat in the post-baccalaureate program. Preference is given to students who have strong academic background in mathematics and the natural sciences, and a G.P.A. of 2.5 or better. Health care experience and/or community service are also recommended.

In preparation for the post-baccalaureate year, seniors in the major must successfully complete HAN 395 Imaging Physics during the fall semester and the following courses during the spring semester:

- Radiology and Health Physics:** Provides an overview of the biological effects of radiation and an examination of the interaction of radiation with matter, macromolecules, cells, tissue and the whole body. The course includes the clinical impact of radiation response. Radiation safety is introduced.
- Radiographic Anatomy and Pathology:** Provides basic radiographic anatomy from the projection and cross sectional points of view. Also an introduction to basic disease processes, including the nature and causes of disease and injury. The appearance of these diseases and injuries are examined on medical images acquired through all current methods.
- Nuclear Medicine Instrumentation:** This course expands on the Imaging Physics course, specifically in the area of nuclear medicine technology. The physical basis, construction, operation, and quality control of radiation detection, pulse height analysis, planar imaging, Single Photon Emission Tomography (SPECT) imaging, Positron Emission Tomography (PET), and Computed Tomography (CT) imaging devices are studied.
- Nuclear Medicine Procedures:** This course covers the methods, principles, and instrumentation employed for nuclear medicine imaging. The examination of the preparation and performance of planar, SPECT, and hybrid imaging studies such as PET/CT and SPECT/CT are also included. This course also provides information needed to perform liver, spleen, hepatobiliary, gastric reflux, gastrointestinal bleeds, lung, endocrine, central nervous system imaging, and/or functional studies. In-vitro nuclear medicine procedures are also presented. Principles of sensitivity, specificity, accuracy, and predictive values of diagnostic testing are also examined.
- Radiopharmacy and Therapy:** This course examines production, labeling, quality control, clinical biodistribution, and application of radionuclide tracers for nuclear medicine imaging. Radionuclide and radiopharmaceutical characteristics which provide suitable imaging or therapeutic properties are studied. Lab procedures. Pathologies, radiopharmaceuticals, dose calculation, administration, a patient management related to radionuclide therapy are also covered.

"There are nuclear weapons, nuclear energy and even the nuclear family, but today, one of the most exciting and timely "nuclear" is nuclear medicine. This allied health specialty is on the verge of an unprecedented chapter in its long and prestigious history. The field is set to take on amazing changes in technology and awesome career opportunities, all at a record pace."

- Anne Baye Erkson,
Diversity Allied Health
Centers

To declare Health Science as your major, you are required to attend an Advising Workshop. To schedule an appointment, please email Jennifer Jimenez at jennifer.jimenez.1@stonybrook.edu.

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OR VISIT OUR WEBSITE AT:

<http://healthtechnology.stonybrookmedicine.edu/programs/hs>

HOW TO BECOME A HEALTH SCIENCE STUDENT

Students can declare the Health Science major at any time during their academic career. All major courses are taken during the senior year. In order to begin your senior year courses in the major, you must have:

- * a G.P.A. of at least 2.0 and have successfully completed 91 credits and have met all D.E.C/S.B.C requirements
- * except TECH SBC requirement which will be satisfied during the senior year
- * at least 16 credits in sciences, which must include HAN 200 and HAN 202 sequence, or equivalent sequence (ask advisor for information)
- * 21 credits of related electives, which must include HAN 251 and HAN 312
- * 10 upper division credits.

Successful completion of the following courses during the fall semester of your senior year is required:

- Health Care Issues**
- Professional Ethics**
- Communication Skills**
- Professional Writing**
- Health Informatics**

If you are interested in applying to the Nuclear Medicine concentration, an additional course must be taken:

HAN 395: Radiation Physics in Medicine



FOR ADDITIONAL INFORMATION REGARDING RADIATION SAFETY, PROFESSIONAL ORGANIZATIONS AND JOB LISTINGS, PLEASE VISIT THE FOLLOWING WEBSITES

- **Professional Organizations**
- Society of Nuclear Medicine and Molecular Imaging
 - www.snmni.org
- Nuclear Medicine Technologist Certification Board
 - www.nmtcb.org
- American Registry of Radiologic Technology
 - www.arrt.org
- American Society of Radiologic Technologists
 - www.asrt.org

Occupational and Employment Information

www.bls.gov
www.rtjobs.com
www.comphealth.com

FACTS ABOUT POST-BACCALAUREATE YEAR

- Tuition will be due two weeks prior to the 1st day of the post-baccalaureate program.
 - Health Assessment Forms must be submitted one month prior to the start of the program.
 - The student is responsible for transportation during the post-baccalaureate year.
 - Clinical sites are located anywhere from Manhattan to eastern Long Island.
 - Financial Aid does not cover tuition for the post-bacc program. You may take out a career loan from various financial institutions.
 - Students may incur additional costs (materials, books, drug tests, background checks, etc.) during the post-baccalaureate program.
 - \$50 application fee
 - Campus housing may not be available.
- Tuition Costs—
\$7,200.00
- Number of Seats:
12