SCHOOL OF NUCLEAR MEDICINE TECHNOLOGY

Department of Veterans Affairs
Edward Hines, Jr. VA Hospital

PROGRAM CATALOG

REQUIREMENTS - PROCEDURES - COURSEWORK

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Program Director

EDWARD HINES Jr. VA HOSPITAL SCHOOL OF NUCLEAR MEDICINE TECHNOLOGY
PROGRAM CATALOG

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St. Francis University; Joliet, IL
St. Mary's University of Minnesota; Winona, MN
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SCHOOL OF NUCLEAR MEDICINE TECHNOLOGY
DEPARTMENT OF VETERANS AFFAIRS - EDWARD HINES, JR. VA HOSPITAL

HISTORY AND ACCREDITATION

Before the Hines VA Hospital training program began, few facilities existed for the professional training of Nuclear Medicine Technologists. The few facilities which did exist offering formal training were largely of the preceptor (on the job training) type. A study of the situation revealed that the needs for adequately trained technologists within the Veterans Affairs Hospital system and the community at large were not being met. It was realized that Edward Hines Jr. VA Hospital was uniquely situated and qualified to formally train these technologists because of its position in the medical health field, its diversified professional staff and its up-to-date technical equipment and clinical facilities. Therefore, the **EDWARD HINES Jr. VA SCHOOL OF NUCLEAR MEDICINE TECHNOLOGY** was established.

The Joint Review Committee on Educational Programs in Nuclear Medicine Technology (JRCNMT) evaluates the Nuclear Medicine Technology Internship Program at Hines Hospital. The program has met the accepted standards of educational quality established in the JRCNMT "Essentials and Guidelines of an Accredited Educational Program for the Nuclear Medicine Technologist." This program had its inception in July 1969 and has had its accreditation since September 1970.

INTERNSHIP YEAR: DATES AND TIME

Up to eight students are admitted during each twelve-month period. The program begins July 1st of each year. Graduation is on June 30th upon completion of twelve months training. **Successful graduation from the program and completion of all requirements of the academic affiliate authorizes students to sit for the National Certification Examinations: (NMTCB) or the (ARRT(N)).**

There is 192 hours (4.8 weeks) of leave granted during the year, which is to be used for vacation, sick, personal and interviewing purposes. The exact dates and times of leave usage are arranged by mutual agreement of student and faculty.

PROGRAM'S STATEMENT OF MISSION

The mission of Edward Hines, Jr. Hospital, School of Nuclear Medicine Technology, is to provide and promote academic and clinical excellence through a learning environment that ensures high quality instruction to achieve educational goals and provide compassionate healthcare. Our mission calls us to encourage a course design and instruction to provide the student with a comprehensive body of knowledge and skills to prepare them for successful completion of the program and lifelong learning. Learning is achieved through didactic instruction, clinical experience, self-instruction, evaluation, and testing.

THE NUCLEAR MEDICINE TECHNOLOGIST

DEFINITION (What is a Nuclear Medicine Technologist)

The Nuclear Medicine Technologist is a certified allied health professional who, under the direction of an authorized user, is committed to applying the art and skill of diagnostic imaging and therapeutics through the safe and effective use of radionuclides. Responsibilities include but are not limited to direct patient contact, the preparation and administration of radioactive processing and image enhancement, laboratory testing, patient preparation for radioactive tracers and radioactive therapy, quality control and radiation safety. The technologist's growth and development is maintained through ongoing medical and technical education and research and ultimately contributes to the delivery of quality patient care.

PROGRAM OUTCOMES & COMPETENCIES

The nuclear medicine technologist must develop effectively and competently in three major areas:

*** Patient care**
*** Technical/Radiation Safety Skills**
*** Administrative functions & Clinical Operations**

Completion of Training in **PATIENT CARE** prepares the technologist to:

***** Accept and understand the primary responsibility and concern is **PATIENT WELFARE.**

***** Acquire adequate knowledge of the patient's medical history to understand and relate to their illness and pending diagnostic procedures or therapy.

***** Recognize emergency patient condition and initiate lifesaving first aid prior to arrival of advanced life support personnel.

***** Provide patient education prior to and during procedures.

***** Evaluate the satisfactory preparation of the patient prior to commencing a procedure.

Completion of Training in **TECHNICAL SKILLS** prepares the technologist to:

***** Apply knowledge of radiation physics and safety regulations- to practice radiation safety, thereby limiting the radiation exposure of the patient, public, fellow workers, and self to as low a level as reasonable achievable **(ALARA).**

***** Prepare and administer radiopharmaceutical and study related drugs, where permitted, to patients by intravenous, intramuscular, subcutaneous and oral methods.

***** Understand and utilize imaging instrumentation and other laboratory equipment that measures the quantity and distribution of radionuclides deposited in the patient or a patient specimen, including processing of acquired data.

***** Perform **In-Vivo** and **In-Vitro** diagnostic procedures, understanding these tasks sufficiently well to exercise judgement in the performance of these examinations and procedures for the benefit of the patient and to improve the diagnostic quality of the data produced.

***** Utilize quality control techniques as a part of a quality assurance program for all procedures and products in the laboratory.

***** Participate in the research activities that demand thorough knowledge of the many facets of nuclear medicine.

Completion of Training in **ADMINISTRATIVE FUNCTIONS** prepares the technologists to:

***** Supervise other nuclear medicine technologists, students, and laboratory assistants and other personnel.

***** Participate in the procurement of supplies and equipment required to operate the facility. Perform day-to-day record keeping tasks.

***** Document all operations of the laboratory including the receipt and disposition of radioactive materials, instrument and procedural quality control data, patient procedures, and medical records, understanding these tasks sufficiently well to exercise judgment in the scheduled performance of these examinations and procedures.

***** Participate in departmental inspections conducted by various licensing, regulatory and accrediting agencies.

***** Participate in informatics based duties, including patient scheduling.

* Integrate Performance Improvement (PI) activities into performance related duties.

APPLICATION AND ADMISSIONS GUIDELINES

Inquiries are addressed to:

Program Director
School of Nuclear Medicine Technology
Nuclear Medicine Service (115F)
Department of Veterans Affairs
Edward Hines, Jr. Hospital
Hines, Illinois 60141-5115
Or, email at; gary.eastman@va.gov

All applications materials must be submitted, and a personal interview conducted no later than March 1, for consideration for each July class. **Applications materials received near the above deadline (After February 15th) will not be considered if incomplete or if personal interviews cannot be scheduled and conducted before the deadline, at the Program Director's discretion**. Factors in selection include academic record, letters of recommendation, work and volunteer experience, university affiliation and a personal interview. Acceptance letters are mailed by April 1st. Upon acceptance, a reply from the student is expected within ten days.

ADMISSION REQUIREMENTS

There are two distinct paths that a student may take to be accepted into the program. **Path #1** is a 3+1 student in a B.S. Degree Program in Nuclear Medicine Technology at an affiliated University. **Path #2** is a Certificate student who has completed a B.S. Degree in a science related field. ***See #4a and #4b below for a more complete explanation.***

The following explains the requirements an applicant must meet to be competitively considered for admission to the School of Nuclear Medicine Technology.

1. The Applicant must be 18 years of age or older.

2. The Applicant **must** be a citizen of the United States at the time of application. **Note:** Graduates from foreign universities must have their transcripts evaluated by a professional credential evaluation, for translation of grades into U.S. equivalents. This evaluation should be submitted with the application package.

3. The Applicant must submit official copies of college transcripts with completed application forms.

4a. PATH #**1: For 3+1 Bachelor's Degree Affiliate University Students;** Applicants must have completed at least three years of academic study in the Basic Sciences and Radiation Based courses, as well as other general education requirements as specified by the affiliated College or University.

Students in Affiliated University Nuclear Medicine Technology Programs are given priority in the selection process. Affiliated Students are defined as those students who have completed at least 30 credit hours at the Affiliated University. **PLEASE NOTE; if affiliate student applications outnumber our available authorized number of positions, we reserve the right to limit or not consider non-affiliate students.**

Students from an **Affiliated** University may earn a Baccalaureate Degree from that university upon graduation from the School of Nuclear Medicine Technology. All students graduating from the NMT program will receive a certificate of completion, allowing them to sit for the national board exams administered by the NMTCB and the ARRT.

For 3+1 Affiliate Students; All requirements from both the affiliated university and the **NMT program must be fulfilled prior to being authorized to sit for the national board exams.**

4b. **PATH #2: For Students Seeking a Certificate; a B.S. Degree** in another scientific based field may also qualify the student for the program. The prospective certificate student must have completed courses in the science based disciplines (below) **within the past seven (7) years,** and have the required number of semester hours to qualify (some substitutions may be accepted at the discretion of the Program Director). **Proof of this coursework must be submitted on an official transcript from an accredited college or university.** Work history or experience in a medically related field may substitute for some academic requirements at the discretion of the Program Director.

*** Biology;** 12 semester hours, including Human Anatomy and Physiology
*** Chemistry;** 12 semester hours
*** Mathematics;** 6 semester hours, (Algebra and Statistics is emphasized)
*** Physics;** 6 semester hours

Applicant **may** also be qualified if certified and/or accredited as a:

***** Medical Technologist
***** Radiologic Technologist **(with B.S. Degree including prerequisite coursework)**
***** Registered Nurse
***** Physician's Assistant

The above healthcare personnel are presumed to have the necessary educational credentials (B.S. Degree) and/or work history to meet the program entrance requirements. Competitive selection is required, and will be based on clinical experience, education, letters of recommendation and a personal interview.

5. Applicant must submit three letters of recommendation from qualified persons familiar with the applicant's educational background (faculty member, an advisor, a dean, clinical supervisor etc). In cases in which the student is distantly removed from an academic setting, letters of recommendation are acceptable from business or professional associates who can provide an accurate assessment of the

candidate's abilities.

6. Applicant must participate in a personal interview with the Program Director and/or one or more members of the selection committee.

7. **Applicants must possess the following general personal qualities:**

- Strong critical thinking skills
- Sound judgment
- Ethical and moral conduct
- Emotional Stability and maturity
- Empathy
- Physical and mental stamina
- Ability to learn and work in a diverse medical setting
- Ability to interact in a team environment
- Ability to follow orders and work in a safe manner

- Applicant must undergo a full physical (medical) exam by a licensed medical practitioner after acceptance into the program prior to the start date of the program.

Basic technical, physical & medical requirements are:

- Reasonable visual acuity to discriminate between black and white and subtle shades of gray/color scale. Must be able to provide patient assessment and monitoring duties.
- Reasonable hearing to assure safe working conditions including understanding instructor and supervisors instructions and hearing medical equipment alarms.
- The ability to lift at least 50 pounds independently and the ability to safely transfer patients up to 400+ pounds (with other staff assistance) from wheelchair or stretcher to an imaging table.
- Appropriate range of motion, dexterity, and coordination of reflexes to manipulate instrumentation and safety devices and perform radiopharmaceutical preparation and administration duties including intravenous injections.
- Ability to perform technically challenging functions, possibly standing or walking for prolonged periods sometimes with minimal breaks for eight or more hours on duty.
- Ability to organize workload and tolerate stressful situations in which multiple tasks are required to be performed simultaneously or successively.
- Hepatitis B vaccination series (three injection series) is required.
- A two phase Tuberculin Test (Mantoux) is also required. Documentation of other immunizations may be required.

8. **Appropriate English language skills are required** including; the ability to understand complex detailed written and spoken instructions, to communicate effectively with all levels of personnel, patients and guests and to apply those instructions while insuring the complete safety of patients and staff.

9. The final selection of applicants for training is made by the: Selection Committee consisting of individuals responsible for the program. This committee determines the relative merit of each of the applicant's qualifications and ranks each student. The student rankings are tallied, and the selection is made of the most highly ranked candidates on a competitive basis. **Applicants from Affiliated University Nuclear Medicine Technology Programs are given priority during the selection process**.

10. **Upon acceptance into the program, an electronic fingerprint background check (against FBI files) must be completed 14 days prior to the entrance date. This fingerprinting will be performed at Hines VA Hospital or another approved VA Facility at no cost to the applicant.**

11. The Department of Veterans Affairs, Edward Hines, Jr. Hospital, complies with title VI of the Civil Rights Act of 1964, Title IX of the Educational Amendments of 1972, Section 504 of the rehabilitation Act of 1973, Title II of the older Americans Amendments of 1975, Americans with disabilities act (ADA) and all related regulations, and assures that it does not, and will not, discriminate against any person on the basis of race, color, sex, creed, national origin, age or handicap under any program or activity receiving Federal financial assistance.

12. Health Insurance is not provided by the program, and is the sole responsibility of the Applicant accepted into the program.

CURRICULUM – CLINICAL AND DIDACTIC PHASES

This program provides both didactic and practical clinical experience of sufficient quality and variety to result in a well-rounded entry-level nuclear medicine technologist. The course of study offered at Hines VA Hospital and Loyola University Medical Center is based on one year of full-time clinical internship (39 hours per week).

The innovative training that is provided allows each student to progress at an individual pace.

The program follows a planned outline, which includes:

***** Supervised clinical experience.

***** Classroom presentation, discussions and demonstrations.

***** Assignment of appropriate instructional and continuing education based materials.

***** Examinations and evaluations are given both in oral and written formats, for both the didactic and clinical phases of the program.

DIDACTIC COURSEWORK

a. ADMINISTRATIVE MANAGEMENT AND PATIENT CARE

Concepts of imaging service administration, management and communication issues are discussed. Career skills are developed through student participation and seminars. Communication, performance improvement, budgeting, medical ethics, patient care, and informatics are among the topics discussed.

b. CLINICAL CORRELATION; ANATOMY, PHYSIOLOGY, AND PATHOLOGY

A lecture series presented by nuclear medicine physicians with emphasis on clinical interpretation of organ systems and patho-physiology as applied to nuclear medicine.

c. APPLIED TECHNICAL AND BASIC MATHEMATICS

The mathematics as applied to nuclear medicine technology, radiation unit conversion, radioactive dose calculations, determination of specific activity, and solution concentrations. The topic is an extension of (d.) NUCLEAR PHYSICS AND INSTRUMENTATION.

d. NUCLEAR PHYSICS AND INSTRUMENTATION

Basic facts and physical principles associated with the atom, nucleus and quantum physics related to radioactive decay. The theory of electron shells and its relation to the properties of the elements and the production of characteristic X and gamma rays, anger electrons and Bremsstrahlung radiation. The nucleus and modes of nuclear decay; radiation dosimetry, interaction with ionizing radiation with matter,

and performance characteristics of gamma cameras are discussed.

e. INDEPENDENT STUDY

Oral and written communication skills developed as used by the nuclear medicine technologist. Emphasis on research based clinical articles, laboratory procedures, special patient case history, scientific research projects and attendance at scientific or imaging conferences.

f. COMPUTER APPLICATIONS IN CLINICAL DATA ACQUISITION AND PROCESSING

The course provides instruction in the application of nuclear medicine instrumentation and the associated computer hardware, and a practical introduction to the software processing used in the nuclear medicine laboratory. Emphasis is on the basic definition of computer concepts such as; devices, memory usage, SPECT and PET/CT imaging and introduction to the computer processing of digital images. **This is a two part course consisting of basic and advanced components.**

g. NUCLEAR IMAGING PRACTICUM (VA Hines Hospital and Loyola University Medical Center) This course involves supervised clinical practice to develop advanced Static Dynamic and Tomographic organ imaging techniques to produce planar and three-dimensional images of pathophysiological processes. Fundamental skills of patient care - preparation and positioning, radiopharmaceutical dose preparation and administration, film critique, image identification and evaluation, scintillation camera use and collimator selection, anatomy and physiology related radiopharmaceutical localization, patient scheduling and record keeping.

Emphasis also on the use of scintillation detectors and integrated computer systems designed for use with planar gamma cameras, emission computed tomography systems to analyze gated acquisition of heart and lung studies, brain, liver and renal function, and bone pathology and tumor localization.

h. NUCLEAR MEDICINE QUALITY CONTROL PRACTICUM

Emphasis is placed on Elution of radioisotope generator systems, preparation and testing of radiopharmaceutical products. Gamma Camera uniformity, relative sensitivity, spatial linearity and resolution testing are also discussed. The use of flood field and bar phantoms on in vivo imaging detectors in the nuclear medicine imaging laboratory are discussed and laboratory practice is provided.

i. NUCLEAR MEDICINE CHEMISTRY

The theory and principles of radiochemistry of imaging and non-imaging nuclear medicine diagnostic studies are examined. Discussed are fundamental principles, and methods for good laboratory practice and quality assurance. In addition, the chemical composition of radiopharmaceuticals is also covered. Supervised clinical practice of in vivo and in vitro procedures is included. In vitro Non-Imaging function studies emphasize tests for thyroid evaluation, cell labeling, blood volume determination, diagnosis of pernicious anemia, and organ sequestration.

j. RADIATION DETECTION - INSTRUMENTATION

The basic principles of Radiation Detection are discussed. These include the design and function of instrumentation used in the nuclear medicine laboratory. Principles and theory of radiation measurement, event counting-activity, exposure, absorbed energy-dose, biological effects, unit analysis, absolute and comparative counting, detector types, scintillation detectors, pulse height spectra, detection efficiency, resolving time and statistics.

k. RADIATION SAFETY AND REGULATION

Supervised practice in the safe handling and development of proper working attitude for safe handling of radioactive materials. Emphasis on licensing; review of Federal, State and local agency regulations and protection requirements; procedures for the receipt, handling, transporting, storage, usage, record keeping and disposal of radioactive material are discussed and illustrated. Personnel and environmental monitoring, calibration/standardization of detecting and quantifying devices, proper disposal and decontamination methods of radioactive materials as governed by regulation and common practice.

l. RADIOBIOLOGY

Cellular and organ responses to the effect of ionizing radiation sources and radionuclides including units of exposure and dose, and their harmful effects on biological systems are discussed. Methods of organ dose calculation and body distribution. This course is an extension of Clinical Correlation (b) and Clinical Procedures Review (n) Courses.

m. RADIOPHARMACY/LABORATORY

The chemical, physical and biological properties of radiopharmaceuticals are discussed. Emphasis is given to radioactive properties, decay and half-life, tissue localization, production techniques, chemical impurities, generator systems, patient dose and preparation, regulatory agencies and S.I. units in radio pharmacy.

n. CLINICAL PROCEDURES REVIEW

Course consists of instruction in clinical practices utilized in nuclear medicine imaging. Outlines techniques used in planar, SPECT and PET/CT imaging. The fundamental skills of patient care, radiopharmaceutical preparation and administration as well as therapy procedures are covered. Emphasis is also on acquisition parameters and performance of variety of procedures.

o. GAMMA CAMERAS

This course consists of lectures and laboratory sessions relating to the gamma camera and PET/CT instrumentation from a physics and computer science point of view. To convey to the student the principles of gamma camera and PET/CT operation, methods of measuring and maintaining instrument performance, and the theory and practice of acquiring tomographic studies. **This is a two part course consisting of basic and advanced components and is a continuation of computer Applications (f).**

CLINICAL EXPERIENCE AND TRAINING

a. CLINICAL COMPUTER APPLICATIONS

The integration of computer science with nuclear medicine has generated the need for nuclear medicine technologists with expertise in computer systems, and their applications. Therefore, in training nuclear medicine technologists, computer technology has become an important part of the curriculum and is included as part of their training. With this training the student will acquire the following skills:

- ***** Operate computer systems for scientific applications.
- ***** Process nuclear medicine images for physician interpretation.
- ***** Become familiar with the operations and maintenance of peripheral devices of nuclear medicine imaging and archiving systems.
- ***** Have an understanding of applied computer principles.
- ***** Become familiar with computer applications in nuclear medicine and PET/CT imaging.
- * Become familiar with computer networking systems, and image archiving systems (PACS).

This training is provided under the supervision of nuclear medicine physicians, and nuclear medicine technologists. An experienced Information Technology Manager provides oversight of this portion of the training.

b. RADIATION SAFETY

Radiation Safety is a major part of the educational experience. Knowledge of radiation physics and safety regulations to practice radiation safety techniques that will minimize radiation exposure to the patient, public, fellow workers and self to as low a level as reasonably achievable **(ALARA)** is an integral part of this training.

The training involves supervised practice under the supervision of the Hospital Radiation Safety Officer (HRSO). The practice includes but is not limited to; 1) Proper procedures for the receipt, storage, utilization, record keeping and documentation of radioactive materials to comply with Nuclear Regulatory (NRC) and Department of Transportation (DOT) regulations. 2) Surveying and wipe testing laboratories within the Nuclear Medicine Service and various Research facilities. 3) Radioactive waste disposal. 4) Decontamination procedures for both environment and personnel. 5) Proper use of radiation detection and counting instrumentation. 6) Instruction in Federal, State and local agency regulation involving radioactive materials.

c. CLINICAL AFFILIATE ROTATIONS

Four clinical rotations are completed at **Loyola University Medical Center.** These clinical rotations allow the student to gain experience in a computerized radio-pharmacy as well as routine and complex clinical procedures that may differ due to patient population and imaging instrumentation.

d. CLINICAL SPONSORING INSTITUTION ROTATIONS

A series of rotations at **Hines VA Hospital** involving various procedures both in imaging and "hot-lab." These rotations provide the student with supervised hands-on training in instrumentation, radiopharmaceutical preparation and administration, image acquisition and processing, quality control and physician interaction during image interpretation sessions.

Rotations at both the Clinical affiliate and the Sponsoring Institution provides Supervised clinical education that gives the student the opportunity to practice patient procedures on both conventional nuclear medicine instrumentation as well as Positron Emission Tomography (PET) imaging systems for a wide variety of diagnostic, therapeutic, non-imaging in-vivo and in-vitro protocols. Clinical competencies are developed in patient care procedures, positioning techniques, analyzing images, selection of imaging parameters and collimators, radiopharmaceutical administration and proper documentation of records.

Instrument quality control (QC), maintenance and troubleshooting are an intricate portion of these rotations. Hot-Lab techniques involving the elution of M099/Tc99m generator systems, the quality testing of the eluate, the preparation, QC and administration of radiopharmaceuticals is also taught with supervised "hands-on" direct patient care practice.

The types of procedures covered and practiced during the clinical rotations include but are not limited to; Cardiac Imaging (Myocardial Perfusion, Gated Blood Pool, First Pass), Bone Imaging, Renal Imaging, GI Imaging (GI Bleed, Hepatobiliary, Gastric Empty, Liver/Spleen Imaging), Endocrine Imaging (Thyroid and Parathyroid), Brain Imaging, PET tumor detection, Lung (Aerosol and Xenon ventilation imaging and Perfusion Imaging), Monoclonal Antibody Imaging, and Infection Imaging. Therapeutic procedures include those used in the treatment of; Thyroid disease, Polythycemia Vera, Painful bone metastasis, Lymphoma, etc.

Students complete their training in this series of rotations by rotating through the physician interpretation sessions to interact with the physician staff, and understand their roles in providing high quality images for interpretation.

STUDENT EVALUATION

a. CLINICAL EVALUATION

Each student is assigned a clinical rotation every 5 weeks. At the completion of each rotation, an evaluation is completed by a clinical instructor, documenting successful completion of procedures performed, as well as other clinical and work performance competencies. Each evaluation is signed by the clinical instructor, and then given to the student for review and correction of problems. The student is then responsible to present the evaluation to the Program Director for review and signature with counseling or other action as required. These evaluations are part of the student's permanent record.

The Program Director maintains a master list of completed clinical procedures and annotates additional data when documented on the rotation evaluation form. This Clinical Competency Log is also maintained as part of the student's permanent record.

Semi annually, a general evaluation of student performance is completed by each clinical instructor and sent to the Program Director for review. Any work or clinical performance issues are brought to the attention of the specific student by the Program Director for correction.

b. DIDACTIC EVALUATION

It is left to the discretion of each didactic instructor to evaluate each student's performance in the classroom. The grading system and method of evaluation is also left to the discretion of the instructor. Various methods are used in evaluation. These include; 1) formal testing, 2) "take home exams" with or without formal grading, 3) classroom participation, 4) completion of clinical based laboratories and 5) continuing education activities such as journal reviews etc.

A master syllabus is distributed to each student outlining monthly required textbook assignments and lecture schedules and topics. At the completion of each months lectures, an exam is given by the Program Director covering the topics from that month.

A comprehensive midterm and final exam is also required.

STAFF

The overall educational programs of the Nuclear Medicine Service is headed by the Medical Director, a qualified physician who is board certified by the American Board of Nuclear Medicine.

The operations management and supervision of the program is under the direction of the Program Director of the Nuclear Medicine Service. The director is responsible for the management of the classrooms and laboratories where the educational programs are conducted.

The instructional staff is qualified through academic preparation, training and experience to teach the subjects assigned. The instructional staff consists of:

* The Program Director
* Board Certified Physicians
* An IT Manager and a PACS Manager
* Twenty registered/certified Nuclear Medicine Technologists
* A Radio-chemist
* Two Hospital Radiation Safety Officers (Health Physicists)
* Two Medical Physicists
* A Nurse Practitioner (NP) and A Physician Assistant (PA)

FACILITIES AND RESOURCES

The VA Hines and Loyola University Medical Center nuclear medicine facilities are extensive. The Clinical Rotations are divided into four major areas of clinical specialty with a wide range of computer-based services providing an excellent opportunity for clinical, research, and instructional education.

* **In vivo** laboratories that consist of single, dual, and triple head gamma cameras capable of SPECT acquisitions, and equipped with the latest developments in Information Technology (IT) equipment. PET imaging instrumentation is also utilized.

* **In vitro** laboratories for radiochemical analysis of patient specimens performed to determine diagnosis and treatment.

* **Computer** laboratories, which have integrated imaging networks including PACS.

* **Radiation Safety** where knowledge of radiation physics and safety is taught and practiced to insure low level of radiation exposure of the patient, public, fellow workers and self.

STIPEND AND TUITION

No stipend is provided. There is no annual tuition fee.

HEALTH CARE AND MEDICAL COVERAGE

The student must provide evidence of a recent physical examination demonstrating evidence of good health and must be completed prior to commencement of training. Students while in a training status do not qualify to participate in any of V.A. Hines medical care plans; however, emergency treatment is available for illness or injury while in training. **Personal Health Insurance Coverage is highly recommended.**

PROFESSIONAL LIABILITY INSURANCE

Professional liability insurance is highly recommended. The Program Director can distribute applications for this insurance coverage.

COMPLETION OF TRAINING

Graduation is at the end of June each year. Upon the satisfactory completion of formal training at the School of nuclear Medicine Technology, VA Hines Hospital, the graduating technologists is awarded a certificate of qualification as a:

BOARD ELIGIBILE NUCLEAR MEDICINE TECHNOLOGIST

If all requirements of the affiliate and the program have been met, the student is now eligible to sit for national board exams administered by the **Nuclear Medicine Technology Certification Board (NMTCB)** and/or the **American Registry of Radiologic Technologists ARRT (N).**

FOR FURTHER INFORMATION: Please visit our website at:

www.gammaquality.com/snmt