



July 22, 1985

Licensing Branch
Division of Fuel Cycle and
Material Safety
United States Nuclear Regulatory
Commission, Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

RECEIVED
'85 AUG -8 P1:20
U.S. N.R.C.
LIC. FEE MGMT. BRANCH

Dear Sirs,

Please amend our license Number 34-16654-01 MD, Toledo, Ohio to include as authorized users under Condition 12A the following:

| Name | Previous Authorization |
|--------------------|--|
| George Hinkle, RPh | 34-00293-02 Columbus, Ohio |
| John L. Hatch, RPh | See attached documentation of training and experience. |
| Tracey Bryant | See attached documentation of training and experience. |

Your consideration in this matter is appreciated.

Sincerely,

Frank M Comer

Frank M. Comer
Corporate Health Physicist
Syncor International Corp.

Applicant: *Key 274*
Check No. *1480* \$ *230*
Amount, Fee Category
Type of Fee *3C*
Date Check Rec'd *8/8/85*
Received By *[Signature]*

FMC/jm

Enclosure

8510030158 850912
REG3 LIC30
34-16654-01MD PDR

Syncor International Corporation
Health Physics Group
7586 Trade Street
San Diego, California 92121
(619) 578-8400

RECEIVED
JUL 29 1985
REGION III

CONTROL NO. 7 943 0

Figure 1.

TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES

NAME John L. Hatch

| Location of Training | Date(s) of Attendance | Course Title | Total Clock Hours of Course | Breakdown of Course Content in Clock Hours* | | | | |
|--|-----------------------|----------------------------------|-----------------------------|---|----------------------|----------------------------------|-------------------|-------------------------------|
| | | | | Radiation Physics & Instrumentation | Radiation Protection | Math Pertaining to Radioactivity | Radiation Biology | Radiopharmaceutical Chemistry |
| Massachusetts College of Pharmacy | 9/80 to 5/85 | Radiation Physics | 45 | 20 | 15 | 10 | | |
| | | Radiation Biology | 30 | | | | 25 | 5 |
| | | Nuclear Medicine Instrumentation | 30 | 20 | | 10 | | |
| | | Radiopharmaceuticals | 45 | | 15 | | | 30 |
| | | Applied Radiopharmacy | 30 | | 10 | 5 | | 15 |
| Harvard Joint Medical School Program in Nuclear Radiopharmacy | 2/85 to 3/85 | Non Credit Labs | 50 | 20 | 10 | 10 | | |
| *Note: Show a breakdown of hours by institutions, dates, and subjects. List each hour only once (i.e., under the most applicable subject category) | | | TOTAL HOURS | 60 | 50 | 35 | 25 | 50 |

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DOCUMENTING RADIOISOTOPE HANDLING EXPERIENCE

NAME John L. HatchEXPERIENCE WITH RADIOACTIVE MATERIAL. (Actual Use of
Radioisotopes Under the Supervision of an Authorized User)

| ISOTOPE | MAXIMUM AMOUNT USED AT | WHERE EXPERIENCE WAS GAINED | DURATION OF EXPERIENCE (actual clock hours) | TYPE OF USE 1,2,3,4,5,6 |
|---------|------------------------------|---|--|----------------------------|
| Mo-99 | 3 Ci | Harvard Medical School Joint Program in Nuclear Medicine Radiopharmacy | 2/84 to 3/85 | 1,6 |
| Tc-99m | 2 Ci | | | 3,4,5,6 |
| I-131 | 10 mCi | | | 1,3,4,5 |
| Xe-133 | 400 mCi | | | 1,3,4,5 |
| Se-75 | 1 mCi | | | 1,3,4,5 |
| I-125 | 100 uCi | | | 1,3,4,5 |
| Cr-51 | 500 uCi | | | 1,3,4,5 |
| Yb-169 | 2 mCi | | | 1,3,4,5 |
| Ga-67 | 50 mCi | | | 1,3,4,5 |
| Tl-201 | 10 mCi | | | 1,3,4,5 |
| Co-57 | 5 mCi | | | 2 |
| Cs-137 | 250 uCi | | | 2 |

Key for "Type of Use"

The number or numbers entered under "Type of Use" correspond to experience in the following activities:

1. Ordering, receiving, and unpacking radioactive materials safely, including performance of related radiation surveys.
2. Calibration of dose calibrator, scintillation detectors, and survey meters.
3. Calculation, dispensing, and calibration of patient doses, including proper use of radiation shields.
4. Appropriate internal control procedures to prevent mislabeling errors.
5. Emergency procedures to handle and contain spilled materials safely, including related decontamination procedures, surveys, and wipe tests.
6. Elution of Technetium-99m generator systems, assay and testing of the elute for Molybdenum-99 contamination, and processing the elute with reagent kits to prepare Technetium-99m labeled radiopharmaceuticals.

Nuclear Medicine Technology Certification Board

HEREBY CERTIFIES THAT

TRACY MICHELE BRYANT

HAS MET THE REQUIREMENTS THROUGH EXAMINATION BY THIS BOARD
AND IS HEREBY QUALIFIED TO PRACTICE THE SPECIALTY OF
NUCLEAR MEDICINE TECHNOLOGY



Shirley Rosenfeld CNMT
CHAIRMAN

George H. Alexander, Jr. CNMT
SECRETARY

Lucas A. Klein CNMT
TREASURER

Douglas Henderson CNMT

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Marcia R. Boyd CNMT

Ann M. Stines CNMT

Vincent N. Chevies CNMT

James A. General CNMT

James C. Trainor CNMT

St. John's Mercy Medical Center
School of Nuclear Medicine Technology

St. Louis, Missouri



This certifies that
Tracy Michele Bryant

has completed the program required by St. John's Mercy
Medical Center School of Nuclear Medicine Technology,

this 30 day of June in the year 1983

John F. Lindeman, M.D.
Medical Director

Janette Block CNMT
Director of School
C. E. Shue
President

CONTROL NO. 7 9 4 3 0

The Society of Nuclear Medicine

Founded 1954

This is to certify that

Tracy M. Bryant, CNMT

has been elected a Member by the Technologist Section of

The Society of Nuclear Medicine

In Witness Whereof, we have affixed our signature

November 1, 1984



Richard J. Welch Ph.D.
President of the Society of Nuclear Medicine

Maria V. Nagel, CNMT
Chairman of Section

THE AMERICAN REGISTRY OF RADIOLOGIC TECHNOLOGISTS

MINNEAPOLIS, MINNESOTA

Representative of
The American College of Radiology and
The American Society of Radiologic Technologists

HEREBY CERTIFIES THAT

Tracy M. Bryant

has pursued an approved educational program in Nuclear Medicine Technology, has met certain standards and qualifications and has passed the examinations conducted under authority of this Registry, and is thus qualified as a

Registered Technologist

Nuclear Medicine Technology

and by virtue of this certificate is authorized to use the title Registered Technologist and its abbreviation R.T. (N) (ARRT) as long as this certificate is in force as is indicated by the date appearing on the seal hereon attached.

Certificate Number 177628

Roland C. McGowan
EXECUTIVE DIRECTOR



ST. JOHN'S SCHOOL OF NUCLEAR MEDICINE TECHNOLOGY

1982-83 DIDACTIC CURRICULUM

| | |
|-------------------------|--------------------|
| STUDENT ORIENTATION | 5 HOURS |
| MEDICAL TERMINOLOGY | SELF INSTRUCTIONAL |
| PATIENT CARE AND CPR | 10 HOURS |
| RADIATION SAFETY | 10 HOURS |
| MATHEMATICS | 15 HOURS |
| STATISTICS | 10 HOURS |
| PHYSICS | 10 HOURS |
| RADIOPHARMACY | 15 HOURS |
| INSTRUMENTATION | 20 HOURS |
| CHEMISTRY | 15 HOURS |
| RADIOIMMUNOASSAY | 15 HOURS |
| COMPUTER SCIENCE | 15 HOURS |
| RADIATION BIOLOGY | 5 HOURS |
| GASTROINTESTINAL SYSTEM | 10 HOURS |
| HEMATOPOIETIC SYSTEM | 10 HOURS |
| RESPIRATORY SYSTEM | 5 HOURS |
| ENDOCRINE SYSTEM | 10 HOURS |
| CARDIOVASCULAR SYSTEM | 10 HOURS |
| SKELETAL SYSTEM | 5 HOURS |
| OTHER IMAGING | 5 HOURS |
| CENTRAL NERVOUS SYSTEM | 5 HOURS |
| GENITOURINARY SYSTEM | 5 HOURS |
| RADIONUCLIDE THERAPY | 5 HOURS |
| | <hr/> |
| | 215 HOURS |



ST. JOHN'S MERCY SCHOOL OF NUCLEAR MEDICINE TECHNOLOGY

1982-83 CLINICAL CURRICULUM

| | |
|---------------------------|------------|
| IMAGING ROTATION | 1000 HOURS |
| RADIOPHARMACY ROTATION | 75 HOURS |
| RADIOIMMUNOASSAY ROTATION | 125 HOURS |
| OFFICE ROTATION | 25 HOURS |

SCHOOL BROCHURE

JANUARY 1983

INTRODUCTION TO FIELD, DUTIES, ETC.

Radiology is the branch of medicine that deals with the use of ionizing radiation in the diagnosis and treatment of disease and trauma.

A Radiologic Technologist or Radiographer is essentially a medical photographer using X-Radiation to produce images of human structures. The following is a "Description of the Profession" and the level of performance expected of a graduate technologist as listed by the Joint Review Committee on Education in Radiologic Technology.

"The radiographer is a skilled person qualified by technological education to provide patient services using imaging modalities as directed by physicians qualified to order and/or perform radiologic procedures."

The Radiographer shall perform effectively by:

- A. Applying knowledge of the principles of radiation protection for the patient, self and others.
- B. Applying knowledge of anatomy, positioning and radiographic techniques to accurately demonstrate anatomical structures on a radiograph.
- C. Determining exposure factors to achieve optimum radiographic technique with a minimum of radiation exposure to the patient.
- D. Examining radiographs for the purpose of evaluating technique, positioning and other pertinent technical qualities.
- E. Exercising discretion and judgment in the performance of medical imaging procedures.
- F. Providing patient care essential to radiologic procedures.
- G. Recognizing emergency patient conditions and initiating life-saving first aid.

To insure educational quality, schools of Radiologic Technology are periodically surveyed by the Joint Review Committee on Education in Radiologic Technology, in collaboration with the American Medical Association. In addition, graduates of these schools are tested by the American Registry of Radiologic Technologists. This national examination is given three times annually in the months of January, July and September at various locations throughout the United States including Springfield. It consists of 250 multiple choice questions covering all aspects of the field including: Radiographic Exposure, Radiographic Positioning and Procedures, Anatomy and Physiology, Physics and Equipment of

Radiographic Imaging, and Radiation Protection.

Lester E. Cox Medical Center offers such a program.

In order to obtain this high degree of knowledge and to develop the necessary clinical skills and responsibility, a person must first complete a two year AMA approved educational program of Radiologic Technology.



ORGANIZATION OF THE PROGRAM

The Lester E. Cox Medical Center School of Radiologic Technology is a 24 month hospital based program that has been in existence for over 25 years. The school is fully approved by the Joint Review Committee on Education in Radiologic Technology.

The primary goal of our program is the development of the necessary clinical skills and knowledge for the student to become a competent technologist.

The academic curriculum and clinical assignments are designed to facilitate student development.

During the first year students concentrate more on the basic academic courses. Clinical experience is begun under close and direct supervision and includes laboratory demonstration and practice on phantoms and simulated patients.

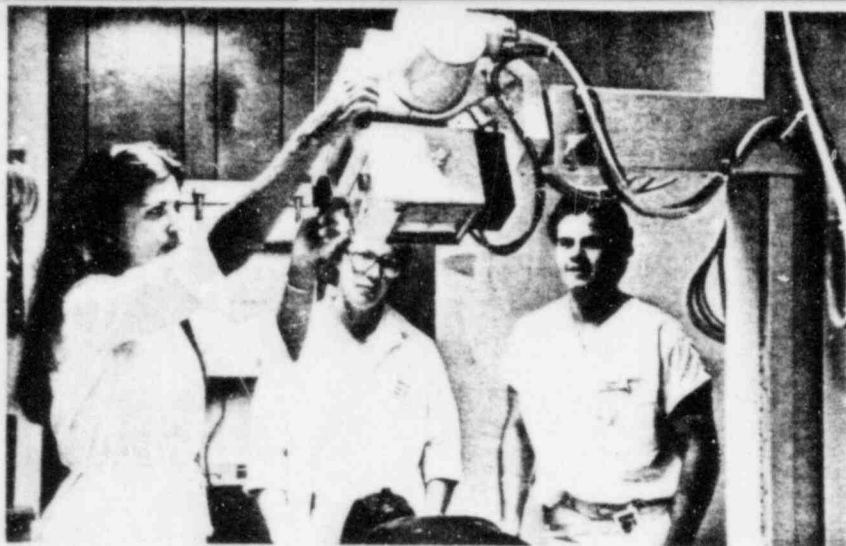
Second year students focus on the more advanced academic studies with clinical experience becoming more independent and clinical lab sessions and experiments geared to the more specialized examinations and procedures.



COURSE DESCRIPTION, GRADING SYSTEMS AND EVALUATIONS

The following is a listing and brief description of the courses taken during the first and second years of the program.

- RAD 110 — Introduction to Radiologic Technology — 1
An introduction to the field, orientation to the hospital and school policies, history and fundamentals of radiology, basic radiation protection, professional ethics, nursing procedures, and general office procedures.
- RAD 120 — Radiologic Anatomy — 2
Normal structure and function of the bony skeleton; emphasis on topographic and radiographic anatomy.
- RAD 130 — Radiographic Procedures I — 2
Fundamentals of radiographic procedures and terminology. This course includes all routine positions and a discussion of the resulting radiographic projections.
- RAD 140 — Medical Technology — 1
A survey of medical terms as applied to radiologic technology to include a structural analysis of root words, suffixes, and prefixes.
- RAD 150 — Radiologic Physics I — 3
The fundamentals of atomic theory, basic electricity, construction of x-ray tubes, the production of x-radiation, interactions of x-radiation with matter, and basic x-ray circuitry.
- RAD 160 — Radiographic Procedures II — 2
Advanced positioning techniques with emphasis on special views of bony anatomy, trauma, pelvimetry, and pediatrics.
- RAD 170 — Darkroom Chemistry — 1
The fundamental chemical composition of radiographic film and processing solutions, construction and design of radiographic darkroom, and manual and automatic processing techniques.
- RAD 180 — Radiographic Exposure I — 3
A study of the formation of the latent image, exposure factors and the geometric properties of the x-ray beam. Also included are the methods of improving image quality and reducing patient exposure to ionizing radiation.



RAD 190 — Practicum I — 7

First year students clinical training to include most duties performed by a practicing technologist, film critiques and student evaluations.

RAD 210 — Radiologic Physiology — 3

Normal structure and function of the various human systems; emphasis on related radiographic examinations.

RAD 220 — Procedures III — 2

A comprehensive study of examinations utilizing contrast agents to visualize various aspects of the digestive and urinary systems. This course will include lab demonstrations and practice.

RAD 230 — Radiographic Procedures IV — 1

A more general overview of examinations requiring contrast agents or the use of special technologies.

RAD 240 — Contrast Agents — 1

A comprehensive study of the various types, uses, patient reactions to, and emergency treatment of reactions to contrast agents.

RAD 250 — Radiographic Physics II — 2

A continuation of Physics I to include a study of ionizing radiations, radiobiology, and radiation protection.



RAD 260 — Radiographic Exposure II — 2

An indepth review of Radiographic Exposure I with emphasis on image formation and exposure factors. Also included is a study of alternate imaging technologies.

RAD 270 — Radiographic Procedures V — 1

An introduction to advanced procedures such as vascular radiography, computerized tomography, diagnostic ultrasound, nuclear medicine and digital subtraction angiography.

RAD 280 — Practicum II — 8

Second year clinical training continuation with increased responsibilities. Also includes an introduction to vascular angiography, computerized tomography, diagnostic ultrasound and digital vascular angiography.

Grading System

Grades are figured on a 4.0 accumulative GPA system. Listed beside each course title is the semester hour equivalent. All students are expected to maintain at least a 2.0 or a "C" Average.

Evaluations

Periodic evaluations are held by the school director with each student at 3, 6, 12, 18, and 24 months to discuss the students progress in the program. Clinically the students are evaluated on an ongoing basis for the entire two year program on simulated and real patients. Satisfactory progress is expected of each student.

Faculty

Technical Staff

Paul M. Lankford, B.S., R.T.
Director, School of Radiologic Technology

Laura Murney, B.S., R.T.
Instructor, School of Radiologic Technology

John D. King, B.S., R.T.
Administrative Director, Department of Radiology

Bob Foley, R.T.
Chief Technologist

Jean Mayfield, L.P.N.
Vascular Procedures Nurse

Medical Staff

Lyle D. Litton, M.D.
Medical Director of the School of Radiologic Technology

Frank C. Giddings, M.D.

Henry C. Krahn, M.D.

Lanny R. Brent, M.D.

David E. Nelson, M.D.

John E. Bartlett, M.D.

Patrick Schoenfelder, M.D.

ADMISSION REQUIREMENTS AND PROCEDURES

Lester E. Cox Medical Center School of Radiologic Technology is open to all people over 17 years of age regardless of their race, age, sex, religion or national origin.

Minimum entrance requirements are:

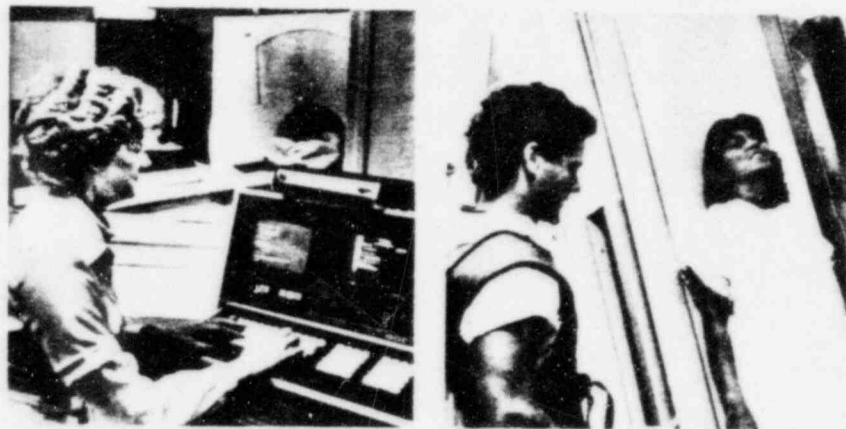
- A. Completion of an accredited High School with at least a "C" average.
- B. All students applying must submit ACT results. School code # 2351.
- C. Courses in Physics, Chemistry, Biology, Algebra and Geometry are strongly recommended.

The following admission procedures must be adhered to by all applicants. Persons interested in attending this school must complete an application form and return it along with all information requested including transcripts of all High School and College courses.

After all necessary information has been received, the school director will arrange for a personal interview with the prospective student.

Classes begin in July of each year and no applications will be processed later than March 31 of that year. Applications received later than March 31 will be kept on file for consideration the following year.

Enrollment in Education Programs of Radiologic Technology is limited. Through a very extensive process only the most qualified applicants to this school will be selected by our acceptance committee. All applicants will be notified no later than April 15 as to whether they have or have not been accepted for training.



SCHOOL FACILITIES AND EQUIPMENT

All radiographic equipment used by the students has been approved and is periodically surveyed by the Missouri State Department of Health in conjunction with H.E.W.

The following is a list of the types of equipment which the student will actually be using:

- General radiographic units
- Fluoroscopic units with multifunctions
- Specialized tomographic units
- Radiographic head unit
- Radiographic chest unit
- Urological units
- Dental panoramic unit
- Surgical units
- Mobile (portable) units
- Automatic film processors

The following is a list of highly specialized equipment to which the student will receive an introduction:

- Vascular Procedures Laboratory
- Cardiovascular Laboratory
- Computerized Tomography Units
- Nuclear Medicine Units
- Ultrasound Units
- Mammographic unit with Xero-radiographic Processor
- Digital subtraction angiographic laboratory

The school also has the following education training aids to enhance student learning:

- Energized laboratory with processor
- Whole body radiographic phantom
- Audiovisual equipment

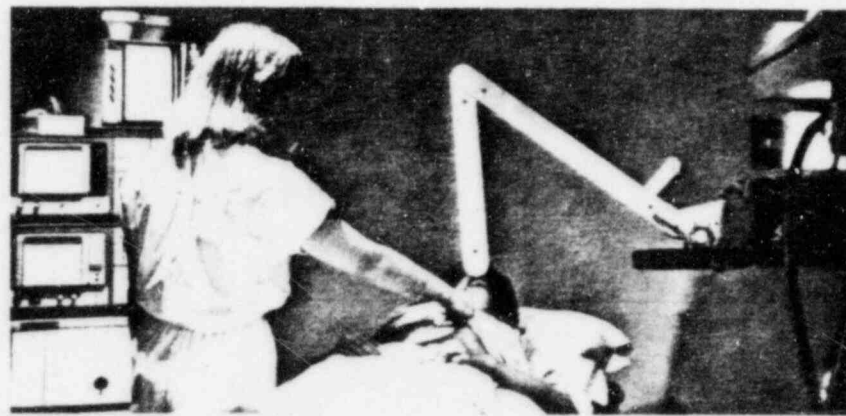
Classroom

Partially articulated and disarticulated skeleton

Life-size anatomical model

Simulated circuitry of an x-ray machine

In addition, all reasonable safety measures are used to minimize radiation hazards to the students, including the use of individual monitoring badges.



THE FUTURE AS A RADIOLOGIC TECHNOLOGIST

There is a constant demand for Registered Technologists in all regions of the country. Salaries for a newly graduated student start around \$14,000 to \$18,000 annually. Technologists with additional education and experience can work up to the \$30,000 a year category.

Opportunities for graduate Registered Technologists do not end at a job. Some students prefer to continue their education towards a Bachelor of Science Degree. We have initiated a program in cooperation with Southwest Missouri State University so that a graduate of our school will receive 42 semester hours towards a Bachelor of Science Degree in Radiologic Technology.

Other students choose to continue their training in specialized graduate schools in such fields as Ultrasonography*, Special Vascular Procedures*, Nuclear Medicine or Radiation Therapy.

Whatever your choice, you will find the field of Radiologic Technology to be challenging and interesting, a progressive field with room for personal growth.

*Advanced training on a limited enrollment basis is available at Lester E. Cox Medical Center.

YOUR CHOICE

Be inquisitive; if you are planning to spend the rest of your life in a career, be confident of the school you choose. Your success in this field will largely be dependent upon your initial training.

This school is committed to developing the necessary clinical skills and knowledge for you to become a competent technologist.

Choose your school wisely.



The following information is available upon receipt of a written request and a \$5.00 money order or check made payable to Lester E. Cox Medical Center.

Student Policy Manual

The Essentials of JRC

The Lester E. Cox Medical Center reserves the right to change any information in this brochure without notification.