**New Application: Nuclear Radiology**

**Review Committee for Radiology**

**ACGME**

**Oversight**

**Participating** **Sites**

1. Provide the name and 10-digit program ID of the ACGME-accredited diagnostic radiology program with which the fellowship program is associated. [PR 1.2.a.]

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**Resources**

1. Will the program have access to a nuclear pharmacy? [PR 1.8.a.] [ ]  YES [ ]  NO
2. Will there be office space provided for nuclear radiology faculty members, program administration, and fellows. [PR 1.8.b.] [ ]  YES [ ]  NO
3. Briefly describe the facilities and space for the education of the fellows. [PR 1.8.c.-1.8.c.2.] (Limit response to 200 words.)

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1. Will the program have access to routine nuclear imaging equipment including [PR 1.8.e.]:
2. Thyroid Probe [ ]  YES [ ]  NO
3. Single photon emission computed tomography (SPECT) and SPECT/computed tomography (SPECT/CT) [ ]  YES [ ]  NO
4. Positron emission tomography/CT (PET/CT) [ ]  YES [ ]  NO

Explain any NO responses. (Limit response to 200 words.)

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**Other Learners and Other Care Providers**

1. Briefly explain how the program director will ensure the fellows in nuclear radiology will not dilute or detract from the educational opportunities available to residents in the diagnostic and nuclear medicine residency programs? [PR 1.11.a.] (Limit response to 200 words.)

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1. Briefly explain the distinction between the diagnostic radiology residents and the nuclear radiology fellows in terms of clinical activities and lines of responsibility. [PR 1.11.b.]

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**Personnel**

**Program Director**

1. What percentage of time does the program director devote to clinical contributions in nuclear radiology? [PR 2.4.d.]
 # %

**Other Program Personnel**

1. Is there a program coordinator available to the program with the dedicated time and support specified in the program requirements? [PRs 2.11. and 2.11.b.] [ ]  YES [ ]  NO

Briefly explain if “NO.” (Limit response to 200 words.)

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**Educational Program**

**ACGME Competencies**

For the competency tables below, examples of evaluation methods for competence may include: direct observation; global assessment; multisource assessment; practice/billing audit; patient survey; record/chart review; review of patient outcomes; simulations/models; structured case discussion; in-house written examination; in-training examination; oral examination; and computer-based learning.

**Patient Care and Procedural Skills**

| **Core Curriculum** | **Learning Activities and Settings Used to Address the Core Knowledge Areas for Patient Care and Procedures (list in bulleted form)** | **Method(s) Used to Evaluate Fellow Competence (list in bulleted form)** |
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| Demonstrate competence in providing consultation with referring physicians/providers or services[PR 4.4.a.] | * Click here to enter text.
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| Demonstrate competence in following standards of care for practicing in a safe environment, attempting to reduce errors, and improving patient outcomes[PR 4.4.b.] | * Click here to enter text.
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| Demonstrate competence in the performance and interpretation of all specified exams and/or invasive studies under close, graded responsibility and supervision[PR 4.4.c.] | * Click here to enter text.
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| Demonstrate competence in selecting, protocoling, and interpreting planar, single-photon emission computerized tomography (SPECT) and SPECT/computed tomography (CT), positron emission tomography (PET), and PET/CT imaging, including for the following organs and organ systems: [PR 4.4.d.] | * Click here to enter text.
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| neurologic system, to include imaging of cerebral perfusion for viability and cerebrovascular disease, dementias and movement disorders, seizures, and cistemography and cerebrospinal fluid (CSF) leaks;[PR 4.4.d.1.] | * Click here to enter text.
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| cardiovascular and lymphatic systems to include:[PR 4.4.d.2.] | * Click here to enter text.
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| myocardial perfusion imaging (including electrocardiogram (ECG) gating) in association with treadmill and pharmacologic stress;[PR 4.4.d.2.a.] | * Click here to enter text.
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| myocardial imaging for metabolism and viability;[PR 4.4.d.2.b.] | * Click here to enter text.
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| radionuclide ventriculography with gating for ventricular function; and,[PR 4.4.d.2.c.] | * Click here to enter text.
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| imaging of vascular patency and lymphatic patency.[PR 4.4.d.2.d.] | * Click here to enter text.
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| pulmonary system, to include perfusion and ventilation with radioactive gas or aerosol and quantitative assessment of perfusion and ventilation;[PR 4.4.d.3.] | * Click here to enter text.
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| gastrointestinal system, to include imaging of the salivary glands, esophagus, stomach, liver, and biliary system, including pharmacologic interventions, gastrointestinal bleeding and Meckel diverticulum, and gastrointestinal motility;[PR 4.4.d.4.] | * Click here to enter text.
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| genitourinary system (including breast), to include imaging of renal perfusion and function, pharmacologic interventions, cortex, transplants, urinary leaks, and vesicoureteral reflux;[PR 4.4.d.5.] | * Click here to enter text.
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| musculoskeletal system (including integument), to include imaging of tumor-like, metabolic and vascular, traumatic, and extraskeletal conditions;[PR 4.4.d.6.] | * Click here to enter text.
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| endocrine system, to include thyroid, parathyroid, and adrenal imaging;[PR 4.4.d.7.] | * Click here to enter text.
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| infection and inflammation, to include radiolabeled leukocytes and other relevant radiopharmaceuticals involving all organs and organ systems; and,[PR 4.4.d.8.]  | * Click here to enter text.
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| neoplasms, to include all relevant gamma camera/SPECT/CT and PET/CT radiopharmaceuticals involving all organs and organ systems, including sentinel lymph node localization[PR 4.4.d.9.] | * Click here to enter text.
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| Demonstrate competence in educating diagnostic and interventional radiology residents, and if appropriate, medical students and other professional personnel, in the care and management of patients[PR 4.4.e.] | * Click here to enter text.
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| Demonstrate competence in applying low-dose radiation techniques in both adults and children[PR 4.5.a.] | * Click here to enter text.
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| Demonstrate competence in performing pediatric nuclear radiology cases to include the performance of a minimum of 100 pediatric cases[PR 4.5.b. and 4.5.b.1.] | * Click here to enter text.
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| Demonstrate competence by participating in diagnostic and therapeutic procedures requiring medical use of unsealed byproduct material (radiopharmaceuticals) for which a written directive is required, including patient selection, informed consent, understanding and calculating of the administered dosage, counseling of patients and their families on radiation safety issues, pregnancy-related issues, and patient follow-up after therapy[PR 4.5.c.] | * Click here to enter text.
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| Documentation of specific applications should include participation in a minimum of 10 hyperthyroid cases treated with administration of oral sodium iodide I-131 less than or equal to 1.22 gigabecquerels (33 millicuries) for which a written directive is required;[PR 4.5.c.1.] | * Click here to enter text.
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| Documentation of specific applications should include participation in a minimum of five thyroid cancer cases with administration of oral sodium iodine I-131 greater than 1.22 gigabecquerels (33 millicuries), for which a written directive is required[PR 4.5.c.2.] | * Click here to enter text.
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| Documentation of specific applications should include participation in a minimum of five benign or malignant cases treated with parenteral administration of any radioactive drug that contains a radionuclide that is primarily used for its electron emission, beta radiation characteristics, alpha radiation characteristics, or photon-energy of less than 150 keV for which a written directive is required[PR 4.5.c.3.] | * Click here to enter text.
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1. Briefly describe how fellows will provide consultation with referring physicians/providers or services.
[PR 4.4.a.]

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1. Briefly describe how fellows will be educated in and apply low dose radiation techniques in both adults and children and how they become skilled in the prevention and treatment of complications of contrast administration. [PR 4.5.a., 4.6.d.] (limit 200 words)

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**Medical Knowledge**

| **Core Curriculum** | **Learning Activities and Settings Used to Address the Core Knowledge Area (list in bulleted format)** | **Method(s) Used to Evaluate Fellow Competence (list in bulleted format)** |
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| Demonstrate knowledge of radiation safety rules and regulations, including those set by the Nuclear Regulatory Commission (NRC) and/or other agreements stating rules, local regulations, and the ALARA (as low as reasonably achievable) principle, as well as personnel occupational radiation exposure and radiation protection[PR 4.6.a.1.] | * Click here to enter text.
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| Demonstrate an understanding and application of the principles of radiotheranostics in evaluation and management of patients with malignant neoplasms[PR 4.6.b.] | * Click here to enter text.
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| Demonstrate knowledge of low dose radiation techniques in both adults and children[PR 4.6.c.] | * Click here to enter text.
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| Demonstrate knowledge of prevention and treatment of complications of contrast administration[PR 4.6.d.] | * Click here to enter text.
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| Demonstrate a knowledge of didactic curricular topics of instrumentation: principles used in detection, measurement, and imaging of radioactivity with special emphasis on gamma cameras, including SPECT/CT and PET/CT systems, as well as software image fusion methodologies[PRs 4.6.e.2.] | * Click here to enter text.
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| Demonstrate a knowledge of didactic curricular topics of physics: structure of matter, modes of radioactive decay, particle and photon emissions, and interactions of radiation with matter [PR 4.6.e.3.] | * Click here to enter text.
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| Demonstrate a knowledge of didactic curricular topics of radiation biology and protection: biological effects of ionizing radiation, means of reducing radiation exposure, calculation of the radiation dose, evaluation of radiation overexposure, medical management of persons overexposed to ionizing radiation, pregnancy issues, management and disposal of radioactive substances, and establishment of radiation safety programs in accordance with federal and state regulations [PR 4.6.e.4.] | * Click here to enter text.
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| Demonstrate knowledge of didactic curricular topics of radiopharmaceuticals: reactor, cyclotron, and generator production of radionuclides; radiochemistry; pharmacokinetics; and formation of radiopharmaceuticals[PR 4.6.e.5.] | * Click here to enter text.
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| Demonstrate knowledge of and skills in preparing and presenting educational material for medical students, residents, staff members, and allied health personnel[PR 4.6.f.] | * Click here to enter text.
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1. List the settings and activities in which fellows will be given opportunities to develop knowledge of the following didactic curricular topics diagnostic imaging and non-imaging nuclear radiology radio theranostics and radiopharmaceutical therapies . Also specify the method(s) that will be used to assess fellow competence in each area.

| **Core Curriculum** | **Learning Activities and Settings Used to Address the Core Knowledge Area (list in bulleted format)** | **Method(s) Used to Evaluate Fellow Competence (list in bulleted format)** |
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| Demonstrate a knowledge of the didactic curricular topic of: diagnostic use of radiopharmaceuticals, to include clinical indications, technical performance, and interpretation of in vivo imaging of the body organs and organ systems, and using external detectors and gamma cameras, including SPECT/CT and PET/CT systems, including techniques and applications of molecular and fusion imaging[PR 4.6.e.1.a.] | * Click here to enter text.
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| Demonstrate a knowledge of the didactic curricular topic exercise and pharmacologic stress testing, including the pharmacology of cardioactive drugs and physiologic gating techniques[PR 4.6.e.1.b.] | * Click here to enter text.
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| Demonstrate a knowledge of the didactic curricular topic non-imaging studies to include application of a variety of non-imaging procedures, including instruction in the principles of uptake measurements, and in-vitro studies[PR 4.6.e.1.c.] | * Click here to enter text.
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| Demonstrate a knowledge of the didactic curricular topic recognition and resolution of technical artifacts and quality issues [PR 4.6.e.1.d.] | * Click here to enter text.
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| Demonstrate a knowledge of the didactic curricular topic therapeutic uses of unsealed radiopharmaceuticals requiring a written directive, to include: patient selection and management, including dose administration and dosimetry, radiation toxicity, pregnancy issues; and radiation protection considerations in the treatment of primary and metastatic neoplasms[PR 4.6.e.1.e.] | * Click here to enter text.
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**Curriculum Organization**

**Didactic Experiences**

1. Are the following included in the educational program? [PR 4.11.a.-4.11.b.]:
2. Intradepartmental conferences [ ]  YES [ ]  NO
3. Multidisciplinary conferences [ ]  YES [ ]  NO
4. Peer-review case conference and/or morbidity and mortality conferences [ ]  YES [ ]  NO
5. Journal club [ ]  YES [ ]  NO

If YES, how frequently does this occur? Click or tap here to enter text.

Briefly explain any NO responses. 200 word max.

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1. Formal Didactic Experiences

For all formal didactic sessions, enter the schedule of planned didactic experiences. Include the specific title of each listed activity. Add rows as necessary. Use the same 12-month reporting period as in other tables throughout this application document.

 [PRs 4.11.c.]

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| Reporting Period (Most recent 12-month period): | From: Click here to enter a date. | To: Click here to enter a date. |

| **Type and Frequency** | **Title** |
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1. Will the regularly scheduled didactic activities include presentations by the fellows?[PR 4.11.c.1.]

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1. Briefly describe the policy for fellow attendance and participation at local conferences and at least one national meeting or medical education course in nuclear radiology during the program. [PR 4.11.d.]

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**Scholarship**

1. Briefly describe how fellows will be instructed in the fundamentals of research principles, experimental design, and performance and interpretation of results. [PR 4.15.]

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1. Briefly describe the opportunities fellows will have to engage in scholarly projects. [PRs 4.15.a. and 4.15.a.1.]

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1. Briefly describe how the program will ensure that the results of fellows’ research projects will be disseminated in the academic community. [PR 4.15.a.2.]

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