CARDIOVASCULAR

Basic Science: Pre-clinical in vitro or in vivo studies in cardiac or vascular disorders using animal models; camera and computer development specific to the cardiovascular system; studies of novel radiopharmaceuticals and non-nuclear probes for molecular imaging or use of isotopes for therapeutic applications in vascular disorders, including initial evaluation of their potential therapeutic efficacy in pre-clinical models.

Clinical Science: Clinical cardiac and vascular studies. This category includes both PET and conventional instrumentation and radionuclides.

Young Investigator Award (YIA) symposium housed within this track

Cardiovascular Young Investigator Award Symposium: SNM-sponsored symposium and competition, in association with the SNM Cardiovascular Council, for the best scientific abstracts on basic or clinical cardiovascular nuclear medicine. The objectives of the award are to identify promising young investigators working in cardiovascular nuclear medicine. Applicants must be medical students, residents, fellows or graduate students, or be within 5 years of completing a Ph.D. or certified nuclear medicine training program or other residency or fellowship training program to be eligible for consideration (there is no age limit). All former first-prize winners are ineligible. To be considered for any YIA symposium, submitting authors must check the designated box during abstract submission. Only abstracts submitted to categories within the Cardiovascular track will be considered for this awards symposium.
**Neurosciences**

**Basic Science**: Evaluation of radiotracers and non-nuclear probes for molecular imaging for studying the CNS, including assessment of neuroreceptor systems, enzymes, gene expression, metabolic pathways and interaction of drugs with receptor systems (these may be in vitro or in vivo pre-clinical studies using animal models, or initial studies in humans); novel applications or methods of analysis in animals or humans which are not well-established or when the pathology is used as part of the validation of a method or a molecular imaging probe.

**Neurology**\(^1\,^2\): Clinical investigations of neurologic disorders with established radiopharmaceuticals; clinical studies using newer radiotracers for neuroreceptor systems, enzymes, metabolic pathways, etc., to investigate disease pathophysiology; studies of tumors in the CNS; functional brain mapping studies in patients and normal subjects.

**Psychiatry**: Clinical investigations of psychiatric disorders with established radiopharmaceuticals; clinical studies using newer radiotracers for neuroreceptor systems, enzymes, metabolic pathways, etc., to investigate the pathophysiology of psychiatric disorders. Psychiatric disorders are considered broadly and include drug and alcohol abuse.

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**Young Investigator Award (YIA) symposium housed within this track**

**Brain Imaging Council (Neurosciences) Young Investigator Award Symposium**: SNM-sponsored symposium and competition, in association with the SNM Brain Imaging Council, for the best scientific abstracts on neurosciences nuclear medicine. Only abstracts submitted to categories within the Neurosciences Track will be considered for the Brain Imaging Council Young Investigator Award Symposium. **Applicants must be medical students, residents, fellows or graduate students, or be within 5 years of completing a Ph.D. or certified nuclear medicine training program or other residency or fellowship training program to be eligible for consideration (there is no age limit).**

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1 For an oncology study, if the tumor is a primary brain tumor, then submit to **NEUROLOGY** category
2 For a sympathetic cardiac study done in patients with Parkinson’s disease or parkinsonism then submit to **NEUROLOGY** category
Instrumentation & Data Analysis

Some presentation topics may span two or three categories. Please try to select the most appropriate one in terms of the data stream: Instrumentation -> Image Generation -> Data Analysis. It may help to consider which peer group or audience you think should be the most interested in the material you will present.

Instrumentation: Development and evaluation of new instrumentation, new applications of existing instrumentation, and/or performance evaluation techniques.

Image Generation: Reconstruction algorithms (including comparison of methods); digital filtering; corrections for physical and systematic effects such as scatter, attenuation and motion correction.

Data Analysis & Management: Tracer kinetic modeling and parameter estimation methodology (submission to a basic science category in another track (e.g., Oncology-Basic or Neurosciences) should be considered if an established model is being used in a new clinical or research application); statistical analysis methods; image registration techniques; impact of image acquisition or processing on parameter estimation. Also included are topics on image displays, the use of Internet methods, image atlases and other data management systems.

Young Investigator Award (YIA) symposium housed within this track

Computer and Instrumentation Council Young Investigator Award Symposium: SNM-sponsored symposium and competition in association with the SNM Computer and Instrumentation Council, for the best scientific abstracts on computer and instrumentation nuclear medicine. Only abstracts submitted to categories within the Instrumentation & Data Analysis track will be considered for this awards symposium. Applicants must be medical students, residents, fellows or graduate students, or be within 5 years of completing a Ph.D. or certified nuclear medicine training program or other residency or fellowship training program to be eligible for consideration (there is no age limit).
Molecular Targeting Probes - Radioactive & Nonradioactive (revised 7/27/12)

CATEGORIES:

1. **Novel Radiochemistry & Chelation**: Novel radiochemistry methods, radiolabeling synthons and chelators.
2. **Novel Nonradioactive Probes**: Novel chemistry for development of nonradioactive probes and multi-modality probes.
3. **Preclinical Probes for Neuroimaging**: Synthesis and/or biological evaluation of radioactive OR non-radioactive molecular targeting probes for brain imaging applications.
4. **Preclinical Probes for Oncology**: Synthesis and/or biological evaluation of radioactive OR non-radioactive molecular targeting probes for oncology applications.
5. **Preclinical Probes for Cardiovascular, Endocrine & Other**: Synthesis and/or biological evaluation of radioactive OR non-radioactive molecular targeting probes for areas not covered under categories 1 and 2, including cardiovascular, cell trafficking, gene imaging, etc.
6. **Automation & Process Development**: Automated synthesis of known or novel probes, developing new equipment relating to molecular imaging such as synthesis modules, scanners, crystals, etc.
7. **Radiopharmacy**: Synthesis optimization of known probes, scientific work to adapt probe synthesis methodologies to regulatory compliance, cGMP production of imaging probes, and related topics.
8. **Dosimetry**: Radiation dosimetry, image analysis, and other scientific reports pertaining to radiation dose calculation, estimation and regulatory compliance.

Young Investigator Award (YIA) symposia housed within this track

1. **Radiopharmaceutical Sciences Council (RPSC) Young Investigator Award Symposium**: This SNM-sponsored symposium and competition, in association with the SNM Radiopharmaceutical Sciences Council, is reserved for the best scientific abstracts on radiopharmaceutical chemistry nuclear medicine submitted by young investigators. NOTE: Only abstracts submitted to, and accepted for, categories within the Molecular Targeting Probes – Radioactive & Nonradioactive track will be considered for the RPSC Young Investigator Award Symposium. **Applicants must be medical students, residents, fellows or graduate students, or be within 5 years of completing a Ph.D. or certified nuclear medicine training program or other residency or fellowship training program to be eligible for consideration (there is no age limit).**

2. **Center for Molecular Imaging Innovation & Translation (CMIIT) Young Investigator Award (YIA) Symposium**: CMIIT-sponsored symposium and competition for the best scientific abstracts that incorporate non-nuclear molecular imaging agents and techniques. Abstracts on dual-labeled nuclear and non-nuclear probes and agents are included. Basic science, pre-clinical, translational and clinical abstracts will be considered. **Applicants must be medical students, residents, fellows or graduate students, or be within 5 years of completing a Ph.D. or certified nuclear medicine training program or other residency or fellowship training program to be eligible for consideration (there is no age limit).**

The objective of the CMIIT YIA session is to recognize promising young investigators working in the field of molecular imaging that incorporates non-nuclear techniques. To be considered, authors must “apply” for the “CMIIT Young Investigator Award Symposium” abstract submission. IMPORTANT NOTE: Abstracts submitted to any track within the Physician/Scientist/Pharmacist role can be considered for the CMIIT YIA Symposium. However, the author may ONLY select either the CMIIT YIA OR a track-specific symposium; submitters cannot be considered for both symposia competitions.

Non-Radioactive Topics include:

- Apoptosis
- MR spectroscopy
- Nanoparticles
- Reporter genes
- Optical probes & imaging
- Novel oncologic agents
- Receptor imaging
- MR, CT & ultrasound
- Antibody targeting & imaging
- Stem cell & tissue regeneration
- Imaging DNA repair
- Bioluminescence imaging
- Hypoxia
- Cellular imaging and trafficking
- In vivo quantification methods
- Cardio/Neuro/Oncology MI
General Clinical Specialties*

**Endocrinology/Neuroendocrine**: Clinical investigations of endocrine/neuroendocrine disorders (including malignancies) using diagnostic or therapeutic radiopharmaceuticals; pre-clinical in vitro or in vivo studies using animal models; thyroid cancer therapy.

**Gastroenterology**: Clinical investigations of hepatobiliary or gastrointestinal diseases; pre-clinical in vitro or in vivo studies using animal models.

**Infectious Disease/Hematology**: Clinical investigations of infectious diseases using radiopharmaceuticals; pre-clinical in vitro or in vivo studies using animal models.

**Musculoskeletal**: Clinical investigations of new methods for the clinical assessment of bone, joint and soft tissue pathology using established radiopharmaceuticals, new imaging agents or methods; pre-clinical in vitro or in vivo studies using animal models.

**Pediatrics**: All clinical and pre-clinical investigations involving the pediatric population should be submitted here rather than to other sections, e.g. renal, oncology, PET, cardiac, bone, etc.

**Pulmonary**: New methods for clinical assessment of lung function using radiopharmaceuticals; new imaging agents in clinical trials; effects of pathology, drug, environmental factors on function; pre-clinical in vitro or in vivo studies.

**Renal/Hypertension**: New methods for clinical assessment of renal function using established and new radiopharmaceuticals; studies of the effects of pathology, environmental effectors, drug interactions, etc. on function and renovascular hypertension; pre-clinical in vitro or in vivo studies using animal models.

**Outcomes/Comparative Effectiveness Research & Radiation Safety**: Outcomes-based clinical research; studies comparing different imaging modalities; projects performing analysis either on the accuracy of new or established techniques or evaluations of the cost effectiveness of a technique.

**Young Investigator Award (YIA) symposium housed within this track**

There are no YIA symposia housed within this track. Submitting authors, however, can apply for the CMIIT Young Investigator Award Symposium that is available to all abstract submissions within the Physician/Scientist/Pharmacist role.

*Please note that all topics that encompass oncology imaging and therapy should be submitted to respective categories under the Oncology: Clinical Diagnosis track (except for endocrine tumors including thyroid and neuroendocrine malignancies; these abstracts should be submitted to the Endocrinology/Neuroendocrine category).

Clinical investigations of tumors in the CNS should be submitted to the **Neurology** category in the Neurosciences track.
Oncology: Basic, Translational & Therapy*

**Basic Science**
Pre-clinical in vitro or in vivo (animal) studies of diagnostic or therapeutic radiopharmaceuticals or non-nuclear probes for molecular imaging should be submitted to this category. Also considered are non-clinical studies that use nuclear or non-nuclear probes to elucidate the pathophysiology of malignancy; non-clinical studies that investigate radiopharmaceutical mechanisms of action in oncology; and preliminary (Phase I) human studies of radiopharmaceuticals intended for applications in oncology diagnosis or therapy. Abstracts pertaining to Translational/Preclinical Molecular Imaging should be submitted to this category.

**Radiopharmaceutical Therapy**
Pre-clinical (animal) and clinical (human) investigations using established or investigational radiopharmaceuticals as Oncology therapeutic agents.

**Image-Guided Therapy**
Clinical investigations in human subjects, or pre-clinical studies in animal models, using radiopharmaceuticals or non-nuclear probes as adjuncts to the performance of image-guided invasive therapeutic procedures.

**Technical Advances & Quantification**
Clinical use of quantitative models in oncology; other translational, multidisciplinary, or multimodality investigations combining Molecular Imaging techniques with those of other disciplines as part of an integrated approach to oncology diagnosis or therapy.

*Note: Clinical investigations involving pediatric populations should be submitted to the Pediatric category in the General Clinical Specialties Track.

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**Young Investigator Award (YIA) symposium housed within this track**

**Nuclear Oncology Young Investigator Award Symposium:** SNM-sponsored symposium and competition, in association with the SNM Nuclear Oncology Council, for the best scientific abstracts on Nuclear Oncology related topics in nuclear medicine, is designated as the SNM Nuclear Oncology Young Investigator Award. The objectives of this award session are to identify promising young investigators working in Nuclear Oncology related fields in nuclear medicine. To be considered, authors must check the “Nuclear Oncology Council Young Investigator Award Symposium” checkbox during abstract submission.

**Requirements and guidelines for the Nuclear Oncology YIA Symposium:**
- Applicants must be medical students, residents, fellows or graduate students, or be within 5 years of completing a Ph.D. or certified nuclear medicine training program or other residency or fellowship training program to be eligible for consideration (there is no age limit).
- The abstract must be original research, not previously published or presented.
- All applicants are encouraged to submit supporting data (references, table, and/or image), to allow a better evaluation of their work. Supporting data will not to be published.
- Applicants submitting more than 1 abstract, in contention for other SNM YI awards, may win only one award.
- All applicants must choose “Oral or Poster” presentation type; abstracts submitted as “Poster Only” or accepted as poster presentations will not be considered for this symposium.
- Seven (7) finalists (abstract presenters) will be included as part of the Nuclear Oncology Council Young Investigator Award Symposium session. The award winners will be notified AFTER giving their presentations (presentation performances will be rated) during the SNM Annual Meeting at the SNM Nuclear Oncology Council business meeting
  - Monetary prizes + certificate are awarded to the Presenting Author of the abstract
Clinical investigations using radiopharmaceuticals in human subjects for the purpose(s) of diagnosis, initial staging, or restaging of solid tumors or hematologic malignancy, or for the noninvasive monitoring of response to therapy should be submitted to this track. Authors submitting to the Oncology: Clinical Diagnosis track must select 1 of the 10 categories available:

- Breast Cancer
- Prostate/GU
- Lung
- GI – Colorectal and Liver
- GI – Noncolorectal
- Sarcoma/Melanoma
- Leukemia/Lymphoma/Myeloma
- Head & Neck
- Gynecological
- Other Tumors

*NOTES:

1. Clinical investigations of endocrine and neuroendocrine tumors should be submitted to the Endocrinology/Neuroendocrine category within the General Clinical Specialties track.

2. Clinical investigations of tumors in the CNS should be submitted to the Neurology category in the Neurosciences track.
   a. For an oncology study, if the tumor is a primary brain tumor then submit to NEUROLOGY category
   b. For a sympathetic cardiac study done in patients with Parkinson’s disease or parkinsonism then submit to NEUROLOGY category

3. Clinical investigations involving pediatric populations should be submitted to the PEDIATRIC category in the general Clinical Specialties Track.

4. Although the Nuclear Oncology Council Young Investigator Award Symposium (NOC YIA) resides in the Oncology-Basic track, abstracts submitted to the either the Oncology: Basic, Translational & Therapy OR Oncology: Clinical Diagnosis tracks are eligible to apply for the NOC Young Investigator Award Symposium.

5. Authors submitting an abstract to either of the Oncology tracks will have the option to apply for the track-specific NOC YIA OR the CMIIT YIA symposia; however, authors cannot apply to, or be considered for, both NOC and CMIIT YIA symposia.
EDUCATIONAL EXHIBITS TRACK*

Educational Exhibits are abstract submissions representing a review of any clinical or research topic. Although mainly designed for educators and physicians, Educational Exhibits are open to all submitting authors. All submissions must be checked off with “Poster Only” presentation preference. Unlike other submissions, these posters will not include new, original research, but must be educational in nature.

Educational exhibits should be designed to teach or review common nuclear medicine/PET findings, pathologic correlations, procedures, techniques, treatments, and interventions or other aspects related to the practice of nuclear medicine/PET. They can include a single or multi-modality approaches, and there is no definite number of cases/procedures to be included. Exhibits should encourage Annual Meeting attendees to learn about current ideas and practices in nuclear medicine/PET, and should encourage attendees to return numerous times during the meeting to study the exhibits. Clinically-oriented exhibits should be amply illustrated with images.

This program is designed mainly for Nuclear Medicine residents and other young professionals, Nuclear Medicine Program Directors, and Program Directors and Educators in Diagnostic Radiology and Radiation Oncology, but is open to submissions from all authors.

There are 6 categories available when submitting an abstract to the Educational Exhibits track:

- **Cardiovascular Sciences**: exhibits containing nuclear medicine topics related to basic and clinical sciences in cardiac or vascular disorders
- **Neurosciences**: exhibits containing nuclear medicine topics related to radiotracers (particularly for studying CNS), neurologic and psychiatric disorders with radiopharmaceuticals, and functional brain mapping
- **Radiopharmaceutical Sciences**: exhibits containing nuclear medicine topics related to radiopharmaceutical sciences, radiation dosimetry, and radiobiology
- **General Clinical Specialties**: exhibits containing nuclear medicine topics related to endocrinology, gastroenterology, infectious diseases, musculoskeletal disorders, pediatrics, pulmonary function, and renal function/renovascular hypertension
- **Oncology**: exhibits containing nuclear medicine topics related to basic science, clinical diagnosis, therapeutic radiopharmaceuticals, and hematological disorders in oncology
- **Correlative Imaging (including instrumentation, image fusion and data analysis)**: exhibits containing nuclear medicine topics related to instrumentation, image generation, image fusion and data analysis

*Note: Nuclear Medicine Technologists and/or Technologist Students submitting an EDUCATIONAL EXHIBIT abstract, whether intended to be accepted as an oral or poster presentation, should indicate the following track and category during abstract submission:

**Track**: Technologist Abstracts  
**Category**: Professional Practices & Educational Exhibits

This will indicate to the Scientific Program Committee that the content of the abstract submission will need to be peer-reviewed by a group of technologists rather than physicians, scientists, and/or pharmacists.
TRACK & CATEGORY DESCRIPTIONS for Technologists

TECHNOLOGIST TRACK

**Cardiovascular Sciences**: Abstracts reporting investigations of camera, computer and radiopharmaceutical developments, new methods for analysis and technical aspects of established procedures specific to the clinical assessment of the cardiovascular system. This category includes both PET and conventional instrumentation and radionuclides.

**Clinical PET**: Abstracts reporting investigations of camera, computer and radiopharmaceutical developments, and new methods for analysis and technical aspects of established PET procedures.

**Diagnostic & Therapeutic Nuclear Medicine**: Abstracts reporting investigations of camera, computer and radiopharmaceutical developments, and new methods for analysis and technical aspects of established nuclear medicine procedures specific to the clinical assessment and therapy.

**Instrumentation & Data Analysis**: Abstracts reporting investigations of new developments, existing applications and performance and evaluation of nuclear medicine instrumentation and methods and programs available for data analysis not specific to SPECT or PET.

**Neurosciences**: Abstracts reporting investigations of the technical aspects and/or new methods of analysis for the clinical assessment of CNS function or specific neuropsychiatric disorders using established or new radiopharmaceuticals. Abstracts reporting investigations of camera, computer, and radiopharmaceutical developments, new methods for analysis and technical aspects of established PET procedures – that are specific to the clinical assessment of the central nervous system and neuropsychiatric disorders.

**Pre-clinical Studies (in vitro & animal efforts)**: Abstracts reporting investigations of camera, computer and radiopharmaceutical developments and new methods for analysis and technical aspects of procedures specific to in vitro or animal studies.

**Professional Practices & Educational Exhibits**: Abstracts reporting the evaluation of managerial, educational and teaching practices, skill sets and professional competencies. **This is also the category in which Technologists and/or Technologist Students are to submit abstract(s) intended for the Educational Exhibits track.**

**Radiopharmaceutical Science, Biology & Dosimetry**: Abstracts reporting investigations of radiation safety and/or radiation dosimetry and biology as it pertains to diagnostic and therapeutic nuclear medicine and PET procedures.
CATEGORY DESCRIPTIONS for Technologist Students

TECHNOLOGIST STUDENT TRACK

**Cardiology:** Abstracts reporting investigations of camera, computer, and radiopharmaceutical developments, new methods for analysis and technical aspects of established nuclear medicine procedures specific to the clinical assessment of the cardiovascular system.

**General:** Abstracts reporting investigations of camera, computer, and radiopharmaceutical developments, new methods for analysis and technical aspects of established nuclear medicine procedures specific to the clinical assessment and therapy. General specialties for the following can be placed in this category: bone/joint, endocrinology, gastroenterology, pediatrics, pulmonary and renal diseases.

**PET:** Abstracts reporting investigations of camera, computer, and radiopharmaceutical developments, new methods for analysis and technical aspects of established PET procedures specific to the clinical assessment and treatment of physical and mental disorders.

**Instrumentation:** Abstracts reporting investigations of new developments, existing applications and performance and evaluation of nuclear medicine instrumentation and methods and programs available for data analysis.

**Radiopharmacy:** Abstracts reporting investigations of labeled compounds that have not been extensively reported and how they pertain to diagnostic and therapeutic nuclear medicine and PET procedures.

**Radiation Safety & Patient Care:** Abstracts reporting investigations of radiation safety and/or radiation dosimetry/biology as it pertains to diagnostic and therapeutic nuclear medicine and PET procedures.