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Reality

Cogito, ergo sum (I think, therefore I am).
Rene Descartes

A realist lets circumstances decide which end of the telescope to look through.
Anon

Vision is the art of seeing things invisible.
Jonathan Swift

Perception and reality are not two peas in a pod.

Reality is.

The reality we perceive not only is, but is dependent on circumstances which vary from moment to moment. Given our limited sensorium, what simply is, is quickly transmogrified by a multi-tasking mind. To translate the what 'is' into something we can understand, the sensory input is projected on the canvas of the emotional background of the moment. Or at least, that's how I perceive it.

The system is convoluted. Yet the system has an evolutionary advantage. If we faced reality head on and simply experienced things as they are, without processing the material, our ability to interpret and analyze would be lost. We would simply be machines, tallying data, devoid of a sense of wonder, and disinterested in comparative concepts such as beauty and joy.

Of course, looking at this from another angle, our inability to refrain from colorizing reality makes it possible to ask about the actual basis of our own reality. As Alan Watts suggests, do we only see white because there is black, or good because there is bad? To discern the truth, we need to collect many samples and interview many witnesses. After careful analysis, we may approach truth asymptotically.

An awareness of our subjective state is not enough, just as one carefully constructed experiment is never enough to reveal the complete picture. As in the fable of the blind man and the elephant, many results must be knit together to first begin to understand what we are actually seeing, or feeling.

So it is in science, and so it is in publishing.

To help us understand that the reality of Nuclear Medicine, as you see it, is similar to the way we perceive it, we seek your help. In this month's issue of the Journal, there is a reader survey form. If you could take a few moments to fill it out, and send or FAX your perceptions to us, we will continue to try and make the Journal's realities more closely resemble your expectations.

Of course expectations are the enemy of perception. But that's another story...
NRC REQUIREMENT:

"A licensee shall survey for removable contamination, once each week, all areas where radiopharmaceuticals are routinely prepared for use, administered or stored."

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Publication 10CFR35, "Medical Use of By-Product Material," Paragraph 35.70, "Surveys for Contamination and Ambient Radiation Exposure Rate."

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Forty post-menopausal women with
osteoporosis were treated with a
sequential, cyclic regimen of oral
phosphate for 3 days, edetinate for
2 wk, and calcium salt for 13 wk. The
cycle was repeated for 3 yr and the
patients were rescanned after every other
cycle. Page 1

Myocardial Emission Computed
Tomography with Iodine-123-Labeled
Beta-Methyl Branched Fatty Acid
in Patients with Hypertrophic
Cardiomyopathy

Iodine-123-labeled BMIPP SPECT
studies were compared to 201TI in
17 patients with hypertrophic
cardiomyopathy. Page 6

Safety and Role of Repeated
Administration of Indium-111-
Labeled Anti-carinoembryonic
Antigen Monoclonal Antibody ZCE
025 in the Postoperative Follow-up
of Colorectal Carcinoma Patients

Twenty-five patients who had undergone
resection for colorectal carcinoma were
prospectively studied to evaluate the
safety of repeated intravenous
administration of labeled murine
monoclonal antibody, ZCE 025, and to
determine whether tumor recurrence
and distant metastases could be detected
by radioimmunoscinography when anti-
mouse antibodies were present in
patients' sera. Page 14

Phase I Trial of Iodine-131-Chimeric
B72.3 (Human IgG4) in Metastatic
Colorectal Cancer

In a Phase I trial of 131I-labeled chimeric
B72.3, 12 patients with metastatic
colorectal cancer received 18 mCi/m², 27
mCi/m² and 36 mCi/m² of labeled
antibody. Page 23

Editorial: Radiolabeled Monoclonal
Antibodies for Cancer Therapy and
Diagnosis: Is It Really A Chimera?
Page 29

Radiation Dosimetry for Technetium-
99m-MAG3, Technetium-99m-DTPA,
and Iodine-131-OIH Based on Human
Biodistribution Studies

Biokinetics and radiation dose
estimates for the renal agents 99mTc-
MAG3, and 131I-OIH were obtained from
studies of healthy human
volunteers. Page 33

A Dual-Radioisotope Technique for
the Evaluation of Penile Blood Flow
During Tumescence

The authors describe a technique for
arterial and venous penile blood flow
during tumescence using 133Xe and
99mTc. Page 41

Editorial: Vascular Testing for
Impotence

Page 46

Radionuclide Assessment of Penile
Corporal Venous Leak Using
Technetium-99m-Labeled Red
Blood Cells

To evaluate penile corporal venous
outflow, a method that utilizes
intracorporal injection of Tc-RBC
was developed and used in 20
patients with erectile dysfunction.
Page 49

Technetium-99m-HMPAO SPECT in
the Evaluation of Patients with a
Remote History of Traumatic Brain
Injury: A Comparison with X-ray
Computed Tomography

Fifty-three patients with a remote history
of traumatic brain injury were studied by
SPECT using 99mTc-HMPAO and x-ray
computed tomography. Page 52

Diagnosis of Sternal Wound
Infection by Technetium-99m-
Leukocyte Imaging

The 99mTc-leukocyte scans of 29
patients, originally referred to rule out
stenal infections, were retrospectively
reviewed to evaluate the efficacy of
leukocyte imaging. Page 59

Editorial: Imaging Inflammation:
Current Role of Labeled Autologous
Leukocytes

Page 65

Left Ventricular Diastolic Function
in Systemic Sclerosis: Assessment
by Radionuclide Angiography

Twenty-four women with systemic
sclerosis and 14 age- and sex-matched
controls were studied with radionuclide
angiography to assess left ventricular
function. Page 68

Influence of Ureteral Status on
Kidney Washout During Technetium-
99m-DTPA Diuresis Renography
in Children

Ureteral images from 42 children
referred for suspicion of hydronephrosis
were reviewed to assess the influence of
the ureter on renal washout during
99mTc-DTPA diuresis renography. Page 73

Editorial: Effects of Ureteral
Function on Assessment of
Hydronephrosis

Page 78

Technetium-99m-DTPA Aerosol and
Gallium-67 Scanning in Pulmonary
Complications of Human
Immunodeficiency Virus Infection

Gallium-67 chest scans and 99mTc-
DTPA aerosol clearance measurements
were retrospectively compared with
results from fiberoptic bronchoscopy
exams of 88 patients infected with HIV.
Page 81

Absorbed Radiation Dose to Humans
from Technetium-99m-Teboroxime

Radiation dose to humans after
intravenous administration of 99mTc-
teboroxime was derived from tissue
distribution data obtained from nine
normal volunteers. Organ uptake as a
percent of injected dose was measured
using quantitative SPECT. Page 88
Myocardial Extraction of Teboroxime: Effects of Teboroxime Interaction with Blood

An isolated perfused rat heart preparation was used to determine whether the interaction of blood with either $^{99m}$Tc-teboroxime, $^{99m}$Tc-sestamibi, or $^{201}$Tl affects the extraction of these myocardial perfusion agents. Page 94

Uptake Kinetics of Technetium-99m-Methoxyisobutylisonitrile and Thallium-201 in Adult Rat Heart Endothelial and Fibroblast-like Cells in Comparison to Myocytes

The net uptake of $^{201}$Tl and $^{99m}$Tc-sestamibi by cultured rat heart endothelial and fibroblast-like cells and quiescent myocytes was examined to determine their role in the uptake of tracers used for myocardial perfusion imaging. Page 102

Uptake Mechanism of Technetium-99m-d,I-HMPAO in Cell Cultures of the Dissociated Postnatal Rat Cerebellum

The accumulation and retention mechanisms of $^{99m}$Tc-d,I-HMPAO were investigated in cultures of the dissociated rat cerebellum. Page 108

Unique Scintigraphic Findings of Bile Extravasation in the Presence of Ascites: A Complication of Hepatic Transplantation

A 4-mo-old female liver transplant patient was imaged with $^{99m}$Tc-HIDA 6 days after transplantation. Page 115

Reversible Increased Technetium-99m-HMPAO Cerebral Cortical Activity: A Scintigraphic Reflection of Luxuriant Hyperperfusion

This study of a hemiparetic and aphasic patient suggests that evanescent peripheral cerebral hyperemia may represent beneficial cortical collateralization of the peri-infarct area of a deeper lacunar CVA. Page 117

Clinicopathologic Conferences: A Thallium Scan Goes to Court

Page 120

Comparison of Left Anterior Oblique, Anterior and Geometric Mean Methods for Determining Gastric Emptying Times

To determine if there were significant differences in gastric emptying time measurements, the authors imaged patients in the anterior, posterior and left anterior oblique views. Linear regressions were then obtained using the anterior, left anterior oblique, and geometric mean data. Page 127

Simultaneous Dual-Isotope SPECT Imaging for the Detection and Characterization of Parathyroid Pathology

A patient study illustrating a simultaneous dual-isotope SPECT imaging method is described. Page 131

Kinetic Behavior of Technetium-99m-HMPAO in the Human Brain and Quantification of Cerebral Blood Flow Using Dynamic SPECT

Using dynamic SPECT and a four-compartment model with five parameters, the kinetic behavior of $^{99m}$Tc-HMPAO in the brain was investigated in 11 patients with a variety of brain diseases. Page 135

An Instant Kit Method for Labeling Antimyosin Fab with Technetium-99m: Evaluation in an Experimental Myocardial Infarct Model

Antimyosin Fab was labeled with $^{99m}$Tc using this kit method. The result was compared in murine biodistribution studies and in canine experimental infarct model to $^{111}$In-antimyosin Fab-DTPA. Page 144

Imaging of the Human Torso Using Cone-Beam Transmission Computed Tomography Implemented on a Rotating Gamma Camera

The feasibility of high quality, cone-beam transmission CT generated on a rotating gamma camera was investigated in three human subjects and compared to conventional CT. Possible imaging protocols are discussed. Page 150


The authors have developed a method based on a simple model of regional cerebral glucose metabolism, allowing for three potential sources of metabolic variability: individual differences in cerebral metabolic rate, consistent regional differences, and error. Page 157

Attenuation Correction for Bremsstrahlung Imaging Using the Gamma Camera

Quantitative imaging of bremsstrahlung from pure beta emitters is proposed as a means for in-vivo management of antibody therapy. Page 161

Commentary: Radiation Safety for Beginners Page 167

Commentary: The Utility of Single-Photon Absorptiometry and Dual-Energy X-ray Absorptiometry Page 170
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Please see reverse for brief summary of prescribing information.
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Technetium Tc99m Pertechrmtate is excreted in human milk during lactation. It is not known whether Technetium Tc99m Sestamibi is excreted in human milk. Therefore, formula feedings should be substituted for breast feedings.

INDICATIONS AND USAGE: CARDIOLITE®, Kit for the preparation of Technetium Tc99m Sestamibi, is a myocardial perfusion agent that is useful in distinguishing normal from abnormal myocardium, and in the localization of the abnormality, in patients with suspected myocardial infarction. It is also useful in the evaluation of myocardial function using the first-pass technique.

CONTRAINDICATIONS: None known.

WARNINGS: In studying patients in whom cardiac disease is known or suspected, take care to assure continuous monitoring and treatment in accordance with safe, accepted clinical procedure.

PRECAUTIONS: GENERAL

The contents of the vial are intended only for use in the preparation of Technetium Tc99m Sestamibi and are not to be administered directly to the patient without first undergoing the preparative procedure (as outlined in the prescribing information).

Radioactive drugs must be handled with care and appropriate safety measures should be used to minimize radiation exposure to clinical personnel. Also, care should be taken to minimize radiation exposure to the patient consistent with proper patient management.

Contents of the kit before preparation are not radioactive. However, after the Sodium Pertechrmatate injection is added, adequate shielding of the final preparation must be maintained.

The components of the kit are sterile and non-pyrogenic. It is essential to follow directions carefully and to adhere to strict aseptic procedures during preparation.

Technetium Tc99m labeling reactions involve, on maintaining the stannous ion in the reduced state. Hence, Sodium Pertechrmatate Tc99m injection containing oxidants should not be used.

Technetium Tc99m Sestamibi should not be used more than six hours after preparation.

Radiopharmaceuticals should be used only by physicians who are qualified by training and experience in the safe use and handling of radionuclides and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides.

Carcinogenesis, Mutagenesis, Impairment of Fertility

In contrast with most other diagnostic technetium-labeled radiopharmaceuticals, the radiation dose to the ovaries (0.5 rad/30 mCi) is high. Minimal exposure (ALARA) is necessary in women of childbearing capability, (See also PRECAUTIONS).

At cytotoxic concentrations (> 20 #g/mL), an increase in cells with chromosome aberrations was observed in the in vitro human lymphocyte assay, Cu(M[IIBI)4BF4 did not show genotoxic activity in the Ames, CHO/HPRT and sister chromatid exchange tests. No genotoxic activity was observed in the Ames, CHO/HPRT and sister chromatid exchange tests. No genotoxic activity was observed in the Ames, CHO/HPRT and sister chromatid exchange tests. No genotoxic activity was observed in the Ames, CHO/HPRT and sister chromatid exchange tests.

HOW SUPPLIED: Du Pont's CARDIOLITE®, Kit for the preparation of Technetium Tc99m Sestamibi is supplied as a 5 mL vial in kits of two (2), five (5) and thirty (30) vials, sterile and non-pyrogenic.

Pediatric Use

Safety and effectiveness in children below the age of 18 have not been established.

ADVERSE REACTIONS: During clinical trials, approximately 8% of patients experienced a transient metallic or bitter taste immediately after the injection of Technetium Tc99m Sestamibi. A few cases of transient headache, flushing and non-infectious rash have also been attributed to administration of the agent. One patient demonstrated signs and symptoms consistent with urticaria, 8 to 10 minutes after administration of the drug. No other adverse reactions specifically attributable to the use of Technetium Tc99m Sestamibi have been reported.

DOSAGE AND ADMINISTRATION: The suggested dose range for IV administration to be employed in the average patient (70 kg) is:

<table>
<thead>
<tr>
<th>Organ</th>
<th>Estimated Radiation Absorbed Dose</th>
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<tbody>
<tr>
<td></td>
<td>2.0 hour void mGy/1100 MBq 4.8 hour void mGy/1100 MBq</td>
</tr>
<tr>
<td>Breast</td>
<td>0.2 0.2 800-2240.1572 25.1 3570.4</td>
</tr>
<tr>
<td>Gallbladder Wall</td>
<td>2.0 2.0 20.0 20.0 155.8 311.5</td>
</tr>
<tr>
<td>Sternal Intemere</td>
<td>3.0 3.0 30.0 30.0 15.6 31.3</td>
</tr>
<tr>
<td>Upper Large Intemere Wall</td>
<td>5.4 5.4 55.5 55.5 7.2 15.0</td>
</tr>
<tr>
<td>Lower Large Intemere Wall</td>
<td>3.9 3.9 40.0 40.0 4.2 8.4</td>
</tr>
<tr>
<td>Sternal Wall</td>
<td>0.6 0.6 6.8 6.8 0.4 0.8</td>
</tr>
<tr>
<td>Heart Wall</td>
<td>0.5 0.5 5.1 5.1 0.4 0.8</td>
</tr>
<tr>
<td>Kidneys</td>
<td>2.0 2.0 20.0 20.0 2.0 4.0</td>
</tr>
<tr>
<td>Liver</td>
<td>0.6 0.6 5.8 5.8 0.6 1.2</td>
</tr>
<tr>
<td>Lungs</td>
<td>0.3 0.3 2.8 2.8 0.3 0.6</td>
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<tr>
<td>Bone Surfaces</td>
<td>0.7 0.7 6.8 6.8 0.7 1.4</td>
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<tr>
<td>Thyroid</td>
<td>0.7 0.7 7.0 7.0 0.7 1.4</td>
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<td>Ovaries</td>
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<td>Testes</td>
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<td>Red Marrow</td>
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<tr>
<td>Urinary Bladder</td>
<td>2.0 2.0 20.0 20.0 4.2 8.4</td>
</tr>
<tr>
<td>Total Body</td>
<td>0.5 0.5 4.8 4.8 0.5 1.0</td>
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ABSTRACTS

Scientific Papers and Scientific Exhibits

1992 Scientific Program Committee, Scientific Exhibits Subcommittee, and the Scientific & Teaching Sessions Committee solicit the submission of abstracts from members and nonmembers of The Society of Nuclear Medicine for the 39th Annual Meeting in Los Angeles, CA. Scientific Paper abstracts accepted for the program will be published in a special supplement to The Journal of Nuclear Medicine and accepted Technologist Section abstracts will be published in the June issue of the Journal of Nuclear Medicine Technology. Abstracts accepted for Society Program Scientific Exhibits will not be published. Original contributions on a variety of topics related to nuclear medicine will be considered, including:

- Instrumentation and Data Analysis
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- Hematology/Infectious Disease

Authors seeking publication for the full text of their papers are strongly encouraged to submit their work for immediate review to the JNM, and for the technologist section, to the JNMT.

DEADLINES

For receipt of abstracts for SCIENTIFIC PAPERS is Tuesday, January 7, 1992.

For receipt of abstracts for SCIENTIFIC EXHIBITS is Tuesday, January 14, 1992.

There are two abstract forms for this year's meeting. The Scientific Paper abstract form can be obtained in the October 1991 JNM. The Scientific Exhibits abstract form is only available by calling or writing:

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MID-WINTER MEETING

Title: Computer and Instrumentation: Toward the 21st Century
Location: Hyatt Regency DFW, Dallas, TX
Date: Monday-Tuesday, February 10-11, 1992
Sponsor: The Computer and Instrumentation Council of The Society of Nuclear Medicine
CME Credit: Approximately 12 Hours AMA Category I
VOICE Credit: Approximately .9 CEUs available for VOICE Credit for Technologists
Seminar Notes: Registration includes a luncheon on Monday, February 10th, with a guest speaker. There are a limited amount of lunches available so please register early.

All pre-registrations must be received by January 17, 1992

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AND

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DON'T FORGET
THE MID-WINTER MEETING
IN DALLAS, TEXAS

DATE: February 10–11, 1992

LOCATION: Hyatt Regency DFW, Dallas, TX

SPONSOR: The Computer and Instrumentation Council
The Journal of Nuclear Medicine
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You are invited to help shape the editorial policies of The Journal of Nuclear Medicine. Please fill out the questionnaire and drop it in the mail. Our primary objective has always been to serve the needs of the nuclear medicine community—but unfortunately, the day-to-day operation of a biomedical journal often leaves little time for looking ahead, and no time for looking around. You can give that important perspective. Give us a piece of your mind, and we'll give you a better Journal.

INSTRUCTIONS: The questions below may be answered by selecting letter codes from the selections beneath each question. Additional comments on separate sheets may be stapled to the form, but may require that additional postage be affixed. The Journal welcomes personal correspondence on any subject from readers and may be reached by phone at (617) 726-5785, or by fax at (617) 726-5708. Queries regarding subscription problems, government relations or matters not directly related to the basic editorial functions of the Journal, should be directed to the Society of Nuclear Medicine's offices in New York: (212) 889-0717.

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   B. Brain
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   F. Genitourinary
   G. Endocrine
   H. Gastroenterology
   I. Skeletal
   J. Antibodies
   K. Instrumentation
   L. Radiochemistry
   M. Other

4. You would classify yourself as a(n) _________.
   A. Clinician
   B. Technologist
   C. Researcher
   D. Industrial Representative
   E. Regulator
   F. Student

5. Which nuclear medicine procedures are performed most often in your department? (Again, please list your top three).
   1. ________ 2. ________ 3. ________

6. You would like to see a greater number of ________ in the Journal.
   A. Case Reports
   B. Basic Science Studies
   C. Human Studies
   D. Methodological Evaluations
   E. Other ________

7. You would like to see a continuing medical education article on _________________________________.

8. Your institution is located in _________.
   A. The United States or Canada
   B. Europe
   C. The Pacific Rim
   D. India/Asia
   E. Central/South America
   F. Africa/Middle East

9. Rate the following Journal elements, from 1 to 10, for their value to you. 1 representing little or no value, 10 representing an element that you specifically look for each time you read the Journal.
   Randoms
   First Impressions
   Annotations
   Newsline
   Human Studies
   Laboratory studies
   Methodology papers
   Case Reports
   Clinicopathologic Conferences
   Continuing Medical Education
   Editorial Commentary
   Letters to the Editor
   Calendar
   New Products
   Book Reviews

10. Considering your use of the Journal, your membership benefit of a subscription to The Journal of Nuclear Medicine is _________.
    A. a good value
    B. in line with other journals
    C. high, compared to other journals
    D. a poor value
IT'S TIME
TO TAKE
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STEP ...

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International Medical Course

Recent advances in nuclear medicine

6–12 September 1992, London

This new course will address many of the important issues currently receiving widespread attention and discussion, such as the role of SPECT, the introduction of new radiopharmaceuticals, the relationship of the newly emerging PET services and their relationship to other nuclear medicine procedures. Other important issues often overlooked but of great significance for nuclear medicine will be included, such as radiation risk assessment and the total evaluation of diagnostic imaging in relationship to other techniques and patient management. There will be ample opportunity for interactive discussion between the faculty and participants rather than a simple series of lecture presentations.

The course will be jointly directed by Professor M N Maisey, Division of Radiological Sciences, United Medical and Dental Schools of Guy’s and St Thomas’s Hospitals, London and Professor J H McKillop, Department of Medicine, University of Glasgow.

The course is designed for specialists and senior trainees in the field of nuclear medicine.

There are vacancies for 30 participants.

Course fee: £750; accommodation charge: £225; total fee: £975.

The working sessions will take place at Guy’s Hospital. Resident participants will be accommodated in single bedrooms with private bathrooms in a hotel in central London.

Further information and application forms are available from your local British Council office or from Courses Department, The British Council, 10 Spring Gardens, London SW1A 2BN.
**The Society of Nuclear Medicine Education and Research Foundation**

**1991 Grants and Awards**

**TETALMAN AWARD**

Kimberlee J. Kearfoot, PhD, Georgia Institute of Technology and Emory University in Atlanta, GA

**PILOT RESEARCH AWARD**

Howard J. Eisen, MD, University of Pennsylvania, Philadelphia, PA

“Noninvasive Detection of Myocarditis Using Monoclonal Antibodies”

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<tbody>
<tr>
<td>Susana Bienkowski</td>
<td>Michener Institute, Toronto, Ontario</td>
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<td>Heidi Bougie</td>
<td>St. Mary's Hospital, Milwaukee, WI</td>
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<td>Cheryl Durling</td>
<td>Indiana University, Indianapolis, IN</td>
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<td>VA Medical Center, John Cochran Division, St. Louis, MO</td>
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<thead>
<tr>
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<tbody>
<tr>
<td>Brian P. Brooks</td>
<td>University of Pennsylvania, School of Medicine, Philadelphia, PA</td>
<td>Dr. Abass Alavi</td>
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<tr>
<td>Howard J. Eisen</td>
<td>University of Michigan Hospitals, Ann Arbor, MI</td>
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<td>Tomasz D. Gutowski</td>
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<tr>
<td>James B. Jones</td>
<td>Hospital of the University of Pennsylvania, Philadelphia, PA</td>
<td>Dr. Howard J. Eisen</td>
</tr>
<tr>
<td>Teresa M. Jones-Wilson</td>
<td>Mallinckrodt Institute of Radiology, St. Louis, MO</td>
<td>Dr. Michael J. Welch</td>
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<td>Mangesh H. Kanvinde</td>
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<td>Lori Jo Kiewel</td>
<td>University of New Mexico, Albuquerque, NM</td>
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<td>Stanford University, Palo Alto, CA</td>
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<td>Erik R. Rios</td>
<td>Memorial Sloan-Kettering Cancer Center, New York, NY</td>
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<td>Diana J. Tribbey</td>
<td>Perdue University/Washington University, W. Lafayette, IN</td>
<td>Dr. Mark A. Green</td>
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Positions Available

Fellowship
PEDICIAN NUCLEAR MEDICINE FELLOWSHIP position is available in a 230-bed premature pediatrics center. 2.800 imaging procedures per year encompassing all aspects of nuclear medicine with emphasis on teaching and research. Staff includes three full-time ABNM, ABR certified practitioners. Four state-of-the-art Gamma cameras and image processing and display, system with networking. Salary: 30-35K per annum. ABNM/ABR eligibility or certification required. Contact: James J. Conway, MD, The Children’s Memorial Hospital, 2300 Children’s Plaza, Chicago, IL 60614. (312) 840-4466.

Physician
Oregon Health Sciences University, Portland. Oregon invites applications for a FACULTY POSITION available immediately either part time in NUCLEAR MEDICINE or full time position divider between nuclear medicine and other division of diagnostic radiology. Position requires that radiologist be certified by either American Board of Radiology (Special Competence in Nuclear Radiology) and/or American Board of Nuclear Medicine. Send CV and references to William Weidner, MD. Chairman. Diagnostic Radiology, UHN 72, Oregon Health Sciences University, Portland. OR 97203-3098. OHSU is an affirmative action equal opportunity employer.

NUCLEAR MEDICINE DIVISIONAL CHIEF
Pittsburgh, PA. 14-member private practice group in 523-bed teaching hospital seeks ABNM/nuclear medicine, special competence board certified radiologists to head division of nuclear medicine. Department performs 20,000 studies annually, including 6,575 nuclear medicine studies with strong emphasis on cardiac imaging. Requirements include 5 years of nuclear medicine imaging, including cardiovascular and SPECT, strong teaching interest, and administrative experience. Duties would include clinical care, teaching, and some administrative. Competitive salaries and excellent benefits for this partnership track position. Send CV to: Diagnostic Imaging Associates, Pittsburgh, PA 15219. Attn: B.A. Cartin, MD

NUCLEAR RADIOLOGIST—Immediate opening for Director of Nuclear Medicine in large private hospital in Charlotte, NC. 12-person subspecialty-oriented radiology group seeks fellowship-trained ABR & ABNM certified colleague to practice nuclear medicine and some general radiology. Apply to Henry T. Adkins, PO Box 223249, Charlotte, NC 28222.

The University of Pittsburgh Heart Institute and the Division of Cardiology of the University of Pittsburgh School of Medicine seek to recruit a BC/BE cardiologist to direct a CARDIAC PET IMAGING program. Outstanding facility with exceptional support staff and resources available. Candidates must have substantial experience in positron imaging with demonstrated academic commitment. Attractive salary and benefits, including participation in departmental practice plan. Qualified applicants should submit curriculum vitae to William P. Follansbee, MD, 7th Scalea Hall, 3350 Terrace Street, Pittsburgh, PA 15261. The University of Pittsburgh is an equal opportunity employer.

The University of Pittsburgh Heart Institute and the Division of Cardiology of the University of Pittsburgh School of Medicine seek to recruit a BC/BE cardiologist in NUCLEAR CARDIOLOGY. Exceptional clinical facilities support existing high-volume laboratories. Excellent support resources available, including very productive collaborations with the department of nuclear medicine. Candidates must be experienced in nuclear cardiology and have demonstrated academic commitment. Qualified applicants should submit curriculum vitae to William P. Follansbee, MD, 376 Scalea Hall, 3550 Terrace Street, Pittsburgh, PA 15261. The University of Pittsburgh is an equal opportunity employer.

Physician
DIRECTOR OF NUCLEAR MEDICINE PHYSICS AND INSTRUMENTATION. A highly qualified PhD physicist to lead an active research group on PET and SPECT instrumentation with an interest in research applications in neurology, psychiatry, cardiology, and oncology. The successful candidate must qualify for a faculty appointment and be employed at a major academic institution (University of Pennsylvania School of Medicine). Please send Curriculum Vita to: Abos Aliav, MD. Chief, Division of Nuclear Medicine, Dept. of Radiology, Hospital of the University of Pennsylvania, 3400 Spruce St., Philadelphia, PA 19104. The University of Pennsylvania is an affirmative action equal opportunity employer.

Researcher
The University of Michigan Medical School seeks a RESEARCH INVESTIGATOR OR ASSISTANT RESEARCH SCIENTIST in the Division of Nuclear Medicine. This faculty member will join a large multidisciplinary research group involved in the development and clinical applications of new radiopharmaceuticals for PET. The successful applicant will be involved in scientists and graduate students. Qualifications include a PhD in chemistry or medicinal chemistry, experience in radiochemistry development and applications. Send curriculum vitae to: Dr. Michael R. Kilbourn, Division of Nuclear Medicine, BG42 Hospital University, University of Michigan, Ann Arbor, MI 48109-0028. Competitive salary/equal opportunity employer.

POSTDOCTORAL POSITIONS: Positions available in the expanding, exciting field of new radiotracer development for Positron Emission Tomography (PET). Candidates will join chemists, physicians, physicists and others in multidisciplinary research effort in the in vivo imaging of human biochemistry. PhD in organic or medicinal chemistry; experience in radiochemistry desirable but not necessary. Please send CV to: Dr. Michael R. Kilbourn, Division of Nuclear Medicine, BG42 Hospital University, University of Michigan, Ann Arbor, MI 48109-0028. Competitive salary/equal opportunity employer.

Residency
ABNM-approved NUCLEAR MEDICINE RESIDENCY position (2) at the University of Missouri Hospital and Harry S. Truman Memorial Veterans Hospital in Columbia, Missouri. The beginning July 1, 1992. Competitive compensation and excellent clinical and educational experience. Fellowship opportunities in diagnostic and nuclear imaging. Participation in clinical or basic research is encouraged. Candidate should preferably have completed two years of residency. For further information contact: Amolak Singh, MD, Acting Chief of Nuclear Medicine. One Hospital Drive, Columbia, MO 65201. Phone (573) 882-7955.

University of Tennessee Medical Center seeks a NUCLEAR MEDICINE RESIDENCY program, July 1, 1992. The University of Tennessee Medical Center, Knoxville, Tennessee is offering positions in a 2-year ACCEPE-approved program designed to provide competency in all aspects of nuclear medicine to meet the requirement of the American Board of Nuclear Medicine. UTMC is a 600-bed hospital and the regional referral center for east Tennessee. The Section of Nuclear Medicine is part of the Department of Radiology, a comprehensive diagnostic imaging center with X-ray, computed tomography, CT, MR, and clinical PET. The Nuclear Medicine Section performs 60,000 conventional imaging procedures, 21,000 RIAs and more than 1,000 clinical PET studies per year. The program includes extensive training in conventional procedures, nuclear cardiology, SPECT imaging, PET, and therapy with radionuclides. The Nuclear Medicine Section is equipped with an up-to-date image processing laboratory and the entire department is interconnected through an Ethernet communications system. Special research opportunities are being offered in cardiology, oncology, and neurology. Applicants should have 2 years of ACCEPE-approved training in internal medicine, pediatrics, pathology, or radiology. Send applications and CV to: Karl F. Huhner, MD, Chief, Nuclear Medicine, UTMC, 9294 Alcoa Highway, Knoxville, TN 37920. UTMC is an EEO/AA Title IX/Section 504 ADA Employer.

Technologist
TECHNOLOGIST—NUCLEAR MEDICINE wanted for a private outpatient imaging center in Tampa, Florida. Experienced in cardiac & bone imaging using SPECT. Top salary, bonus, benefits. Contact: Tarrl Serrul, North Tampa Imaging Center, 4099 W Waters Ave., Tampa, FL 33614. Phone (813) 888-7005. Fax (813) 889-8224.

Position Wanted

Equipment
For sale. Technicare 420/550, ADAC’s vertical CDS, system 1, system 111, DPS 2800. We offer the highest prices for all types of nuclear medicine cameras & computers. Call Franklin at Imaging Solutions (415) 924-9555.

JNM DIRECT RESPONSE
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SPECT BRAIN IMAGING CLINICAL FELLOWSHIP
Department of Radiology
Section of Nuclear Medicine

BENEFIT:
This program is designed for nuclear medicine physicians, radiologists, technologists and referring physicians. It is intended to educate participants about the clinical utility of SPECT brain imaging with agents such as SPECTamine® and Cerelec®. Objectives include:

- Development of interpretation skills for brain images.
- Appreciation of clinical applications of SPECT brain imaging.
- Knowledge of image acquisition and reconstruction.
- Appreciation of factors that influence image quality.
- Knowledge of quality control techniques for SPECT.

SPONSORSHIP:
This program is sponsored by the Medical College of Wisconsin.

TUITION:
The tuition fee of $650 includes the course syllabus, handouts, breaks, breakfasts, lunches, and other amenities involved in making this a pleasant learning experience. Maximum enrollments have been established. Cancellations prior to the course will be refunded, less a $30 administrative fee.

CREDIT:
The Medical College of Wisconsin is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians.

Accordingly, the Medical College of Wisconsin designates this continuing medical education activity as meeting the criteria for 13.00 hours in Category I toward the Physician's Recognition Award of the American Medical Association.

Nuclear Medicine Technologists who attend the SPECT Brain Imaging Clinical Fellowship are eligible for 1.0 VOICE credit.

Register me for the following dates: (Please indicate a second choice)
- January 20–21, 1992
- April 6–7, 1992
- May 11–12, 1992
- September 14–15, 1992
- November 9–10, 1992

I will need hotel reservations for __________________ only Monday night.
I will need a __________________ single/____________ double room.

A check in the amount of $650 should accompany this registration form and be made payable to the Medical College of Wisconsin. Telephone registrations must be confirmed by check within 10 days.

Name
Address
City/State/Zip
Office Phone ( ) __________________ work address __________________ home address

Registrations and payment should be sent to:
Lisa Ann Trelfeth
SPECT Brain Imaging Fellowship Coordinator
Nuclear Medicine Division
Medical College of Wisconsin
6700 W. Wisconsin Avenue
Milwaukee, WI 53226 (414) 257-7867

Nuclear Medicine Technologist
Full-service, 380-bed, not-for-profit hospital in Arlington, Texas, seeks certified Nuclear Medicine Technologist (NMTCB, ARRT or ASCP registry). Arlington Memorial Hospital is just minutes away from both Fort Worth and Dallas. Join a growing team of healthcare professionals in our progressive, technically sophisticated Radiology Dept. We offer competitive salary and benefits. Send resume or contact Employment Manager Louise Harris at (817) 548-6161 or 1-800-852-6761, ext. 6161. Equal Opportunity Employer.

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New Products

Each description of the products below was condensed from information supplied by the manufacturer. The reviews are published as a service to the professionals working in the field of nuclear medicine and their inclusion herein does not in any way imply an endorsement by the Editorial Board of The Journal of Nuclear Medicine or by The Society of Nuclear Medicine.

Survey Instruments

Atomic Products Corporation introduces a complete line of survey instruments including radiation meters, monitors, and probes. A key feature of the new RAM Survey Meter is its ability to interchange detectors without the need for recalibration. This saves valuable time while simultaneously ensuring accurate readings. The Model 2 Beta/Gamma Survey Meter comes complete with a built-in Side Wall GM Detector and telescoping metal holder. Stray radiation is indicated by a built-in speaker and is ideal for measuring iodine-131, phosphorous-32, or higher energy beta radiation. The RAM Gamma Survey Meter is designed for one hand operation, utilizes only three pushbuttons, and provides fast time response and dead time correction. Atomic Products Corporation, P.O. Box 702, Shirley, NY 11967. (516) 924-9000. Please see page 44A

High Resolution Graphics Board

XL1 Corporation announces the availability of LaserPix 3.0 high-resolution graphics printer controller board. The unit, which utilizes SUPER LGA Technology, offers true halftone print capability. Benchmark tests suggest that a test image can be produced in less than 30 seconds using SUPER LGA technology. A full-page picture uses only half a megabyte of memory, compared with as much as 8 megabytes required by a dithered image. LaserPix upgrades standard 300 dpi laser printers to 2400 dpi (dots per inch equivalent) for photographic output. The product consists of two boards: the controller board is placed in the PC and the laser interface board resides in the printer. SUPER LGA technology allows the printer to vary the size of the individual dots that make up an image. Micrografx Picture Publisher is supplied free with LaserPix, providing image improvement tools such as grayscale adjustment, cropping, sizing, and scaling. Once the picture is edited, LaserPix is used to print the image. Images are produced with 256 gray levels at either 75- or 150-line screen, providing 2400 dpi. LaserPix is available immediately for all PC and compatible computers (Intel 80286 and higher) and industry standard laser printers with available video port. Print drivers are available for many popular Windows 3.0 applications including Aldus Pagemaker 4.0 and Ventura Publisher Windows edition and LaserPix supports PCL and Postscript printers. XL1 Corporation, 200 West Cummings Park, Suite 24, Woburn, MA 01801. (617) 932-9199 or (800) 338-0506. Please see page 44A

PLC Line Conditioner

Best Power Technology, Inc. introduces PLC Line Conditioners featuring surge suppression, true isolation, full voltage regulation, and harmonics suppression. PLC protects PCs, workstations, LAN nodes, and computer peripherals. For surge suppression capability, PLC can reduce a 250 volt surge to one volt. Bother large and small surges never reach the load. PLC completely isolates its load from incoming utility power. An output neutral-to-ground bond eliminates the possibility of high-frequency line noise damaging the system. This design gives sensitive office equipment the best operating environment. PLC protects against many high and low-line voltage conditions. Only clean, regulated power reaches the load, even if the line is full of surges or sags. PLC also smooths out harmonic distortions. The unit's ferroresonant technology removes power line harmonics and gives a pure sine-wave output to the load to help protect equipment. A software PLC is available in sizes from 110 VA through 1.8 kVA. The hardwire option fits needs between 2,000 and 15,000 watts. Kenneth Urban, Best Power Technology, Inc., P.O. Box 280, Necedah, WI 54646. (608) 565-7200 or (800) 356-5794. Please see page 44A
AMR's AccuSync provides R-wave detection with precision and reliability. The finest R-wave Triggering device available for computerized gated cardiac studies.

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- Playback Mode (optional)
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MODEL

AccuSync-6L

AccuSync-1L

AccuSync-3R

AccuSync-4R

FEATURES

All AccuSync-6L features with the exception of the Strip Chart Recorder.

All AccuSync-1L features with the exception of the Digital CRT Monitor.

All AccuSync-3R features with the exception of the Heart Rate/R-R interval display.

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The Journal is testing a new method to enable you to get information on a more timely basis from our advertisers.

Listed below are the companies that have advertised in this issue, as well as those that have been mentioned in the New Products section. Simply fill out the form and FAX it to the Society (FAX: 212/545-0221), and we will send it to the advertiser.

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INDICATIONS AND USAGE
Rubidium chloride Rb 82 injection is a myocardial perfusion agent that is useful in distinguishing normal from abnormal myocardium in patients with suspected myocardial infarction.

CardioGen-82® (Rubidium Rb 82 Generator) must be used with an infusion system specifically labeled for use with the generator and capable of accurate measurement and delivery of doses of rubidium chloride Rb 82 injection not to exceed a single dose of 2220 MBq (60 mCi) and a cumulative dose of 4440 MBq (120 mCi) at a rate of 50 mL/min with a maximum volume per infusion of 100 mL and a cumulative volume not to exceed 200 mL. These performance characteristics reflect the conditions of use under which the drug development clinical trials were conducted.

Adequate data from clinical trials to determine precise localization of myocardial ischemia or identification of stress-induced ischemia have not been collected.

Position emission tomographic (PET) instrumentation is recommended for use with rubidium chloride Rb 82 injection.

CONTRAINDICATIONS
None known.

WARNINGS
Caution should be used during infusion as patients with congestive heart failure may experience a transitory increase in circulatory volume load. These patients should be observed for several hours following the Rb-82 procedure to detect delayed hemodynamic disturbances.

PRECAUTIONS
General
Data are not available concerning the effect of marked alterations in blood glucose, insulin, or pH (such as is found in diabetes mellitus) on the quality of rubidium chloride Rb 82 scans. Attention is directed to the fact that rubidium is physiologically similar to potassium, and since the transport of potassium is affected by these factors, the possibility exists that rubidium may likewise be affected.

Rubidium chloride Rb 82 injection must be administered only with an appropriate infusion system capable of meeting the performance characteristics previously described. (See INDICATIONS AND USAGE). The drug should be used only by those practitioners with a thorough understanding of the use and performance of the infusion system.

Repeat doses of rubidium chloride Rb 82 injection may lead to an accumulation of the longer lived radioactive contaminants strontium Sr 82 and strontium Sr 85.

Since eluate obtained from the generator is intended for intravenous administration, aseptic techniques must be strictly observed in all handling. Only additive free Sodium Chloride Injection USP should be used to elute the generator. Do not administer eluate from the generator if there is any evidence of foreign matter.

As in the use of any radioactive material, care should be taken to minimize radiation exposure to the patient consistent with proper patient management and to ensure minimum radiation exposure to occupational workers.

Radionuclides should be used only by physicians who are qualified by training and experience in the safe use and handling of radionuclides and whose experience and training have been approved by the appropriate government agency authorized to license the use of radionuclides.

Carcinogenesis, Mutagenesis, Impairment of Fertility
No long term studies have been performed to evaluate carcinogenic potential, mutagenicity potential, or to determine whether rubidium Rb 82 may affect fertility in males or females.

Pregnancy Category C
Animal reproductive studies have not been conducted with rubidium Rb 82. It is also not known whether rubidium Rb 82 can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. Rubidium Rb 82 should be given to pregnant women only if the expected benefits to be gained clearly outweigh the potential hazards.

Ideally, examinations using radiopharmaceuticals, especially those examinations which are elective in nature, in women of childbearing capability should be performed during the first few (approximately 10) days following the onset of menses.

Nursing Mothers
It is not known whether rubidium Rb 82 is excreted in human milk. Due to the short half-life of rubidium Rb 82 (75 sec) it is unlikely that the drug would be excreted in human milk during lactation. However, because many drugs are excreted in human milk, caution should be exercised when rubidium Rb 82 is administered to nursing women.

Pediatric Use
Safety and effectiveness in children have not been established.

ADVERSE REACTIONS
No adverse reactions specifically attributable to rubidium Rb 82 have been reported during controlled clinical trials.

HOW SUPPLIED
CardioGen-82® (Rubidium Rb 82 Generator) is supplied in the form of strontium Sr 82 adsorbed on a hydrous stannic oxide column with an activity of 90-150 millicuries Sr 82 at calibration time. The generator is encased in a lead shield surrounding a labeled plastic container. Complete assay data for each generator are provided on the container label. CardioGen-82® (Rubidium Rb 82 Generator) is intended for use only with an appropriate, properly calibrated infusion system labeled for use with the generator.

600-501

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Squibb & Sons, Inc., Princeton, NJ
We’ve removed your PET collar

PET perfusion studies without a cyclotron

CardioGen-82® (Rubidium Rb 82 Generator) is the only generator-based myocardial perfusion agent indicated for PET imaging.

Now in 45 to 60 minutes you can have PET images to help you distinguish normal from abnormal myocardium. All without the expense of a cyclotron!

The short 75-second half-life lowers the radiation burden to the patient. When incorporated into the Rubidium Infusion System, serial imaging of myocardial blood flow changes can be performed as often as every ten minutes.

The CardioGen-82 System also improves patient throughput and scheduling efficiency by enabling you to perform multiple studies in a short time.

Remove the PET collar from your department. Get the PET images you need in 45 to 60 minutes, without a costly cyclotron.

CardioGen-82®
Rubidium Rb-82 Generator

SQUIBB Diagnostics