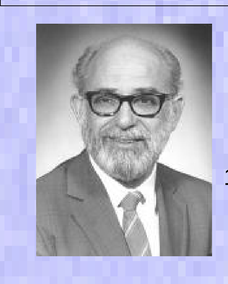
Radiological and Medical Physics Society of New York
RAMPS 1948 – 2008
The earliest organization of medical physicists in the US

25th Anniversary, 1973 NY Academy of Sciences

Mary Lou Meurk, John Laughlin

From left: Edith Quimby, Shirley Quimby, Emma Goodwin, Paul Goodwin, Shirley Epp

"The Mutants"
From left: Saul Harris, Joyce Davis, Shirley Vickers, Barbara Heller, Mort Heller



Robert Loevinger (1916-2005)
1995 AAPM Coolidge Award Recipient

During the mid 1940's, physicists associated with medical institutions in the metropolitan New York City region commenced meetings to compare instrumentation and their measurements of the quantity of radioactivity in solutions in medical use. This was necessary for uniformity, and also for accuracy since the national standard available appeared to be inconsistent. This was just prior to the availability of megavoltage x rays and electrons, and the primary concern of the physicists was associated with the uses of radioactive nuclides. The clinical uses of iodine-131 and other radionuclides (phosphorus-32, yttrium-90, etc.) were being actively explored and agreement on the amount of activity being administered was essential. Such measurements led to the "New York Millicurie," which served a vital purpose.

By **1948** the meetings of these medical physicists were on a scheduled basis with elected officers and records. Those initially active in RAMPS included **Mones Berman, Hanson Blatz, Carl Braestrup, Giacchino Failla, Sergei Feitelberg, Elizabeth Focht, Hiram Hart, Lillian Jacobson, Robert Loevinger, Leo Marinelli, Eleanor Oshry, Edith Quimby, Edward Siegel, Aaron Yalow, Rosalyn Yalow**, and others. This group established the measurement procedure for the "New York Millicurie," and their meetings served both scientific and professional functions. A constitution was written in 1954 by **R. Yalow** and **J. Laughlin**, and revised in 1957 by them. RAMPS has continued to grow from its modest beginning to a current membership of about 150 and conducts monthly meetings which are well attended. Their meetings usually include scientific presentations by a member or guest on physical aspects of treatment, diagnosis, nuclear medicine, or protection. Also, an all-day symposium on a pertinent scientific topic is held annually. RAMPS welcomed the initiation of the AAPM and became a chapter in it.

From J. S. Laughlin and P. N. Goodwin: History of the AAPM 1958–1998, Medical Physics 25(7, part 2): 1240-1241; 1998. Reproduced here with the permission of the AAPM

25th AAPM meeting, "Night In" at the Waldorf Astoria Grand Ballroom, 1983

Gathering of RAMPS Presidents
From Left: Rob Barish, Maynard High, Alan Schoenfeld, Arthur Olsen, Larry Rothenberg, Jean StGermain, Morris Hodara, Paul Goodwin, Bob Schulz (hidden), Chris Marshall, John Laughlin, Gerry Shapiro, Mort Heller, Mary Ellen Masterson, Ed Nickoloff, Jim Summers

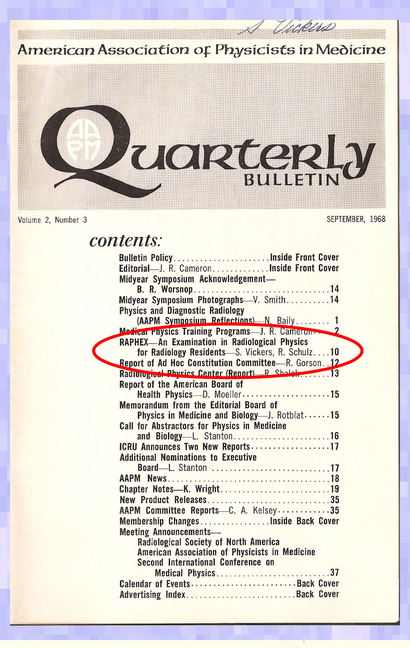
Failla Memorial Lecture 2008

Gioacchino Failla (1891-1961)

John Cunningham receiving the 2008 Failla Award from Gig Mageras

George Barclay retirement, ca 1970
John Laughlin, Edith Quimby, George Barclay, John Cavallari

Rosalyn Yalow receiving the 1977 Nobel Prize for Physiology or Medicine


American Association of Physicists in Medicine

Quarterly BULLETIN

Volume 2, Number 3 SEPTEMBER, 1968

contents:

Radiological Physics Exam
RAPHEX 1968 - 2008

In 1968, in order to assist the training of residents in the various radiological physics specialties, RAMPS appointed a committee to prepare an examination on radiological physics. This examination was administered on a voluntary basis to radiological residents in the city at a session held at the New York Academy of Medicine with the cooperation of the New York Roentgen Ray Society. The response was so enthusiastic that this examination has become an annual event. It is now being used throughout the United States through the courtesy of RAMPS and of the AAPM.

Teaching has always been an important activity of the medical physicist in his/her institution and the establishment of this examination procedure was a method of assisting the education of residents in the physical aspects of radiology.

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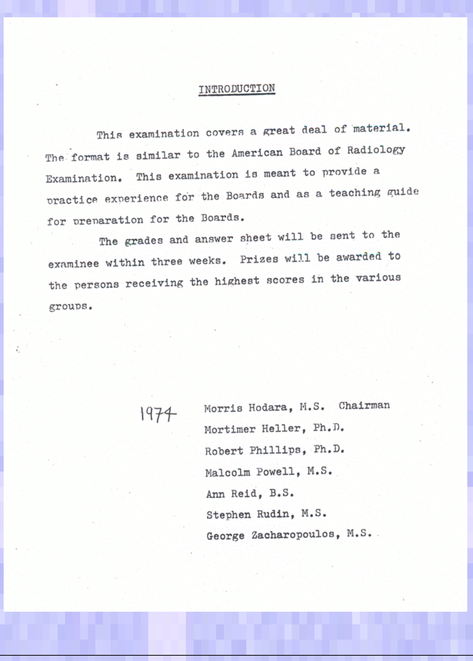
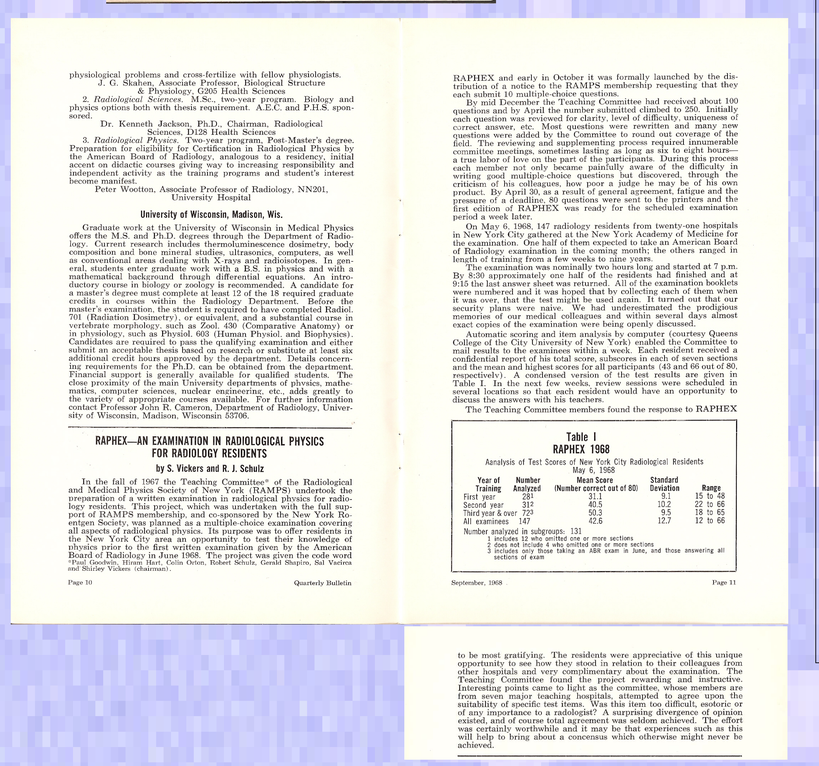


INTRODUCTION

This examination covers a great deal of material. The format is similar to the American Board of Radiology Examination. This examination is meant to provide a practice experience for the Boards and as a teaching guide for preparation for the Boards.

The grades and answer sheet will be sent to the examinee within three weeks. Prizes will be awarded to the persons receiving the highest scores in the various groups.

1974 Morris Hodara, M.S. Chairman
Mortimer Heller, Ph.D.
Robert Phillips, Ph.D.
Malcolm Powell, M.S.
Ann Reid, B.S.
Stephen Rudin, M.S.
George Zacharopoulos, M.S.



physiological problems and cross-fertilize with fellow physiologists.
J. G. Skahen, Associate Professor, Biological Structure & Physiology, G205 Health Sciences

2. *Radiological Sciences.* M.Sc., two-year program. Biology and physics options both with thesis requirement. A.E.C. and P.H.S. sponsored.
Dr. Kenneth Jackson, Ph.D., Chairman, Radiological Sciences, D128 Health Sciences

3. *Radiological Physics.* Two-year program, Post-Master's degree. Preparation for eligibility for Certification in Radiological Physics by the American Board of Radiology, analogous to a residency, initial accent on didactic courses giving way to increasing responsibility and independent activity as the training programs and student's interest become manifest.
Peter Wootton, Associate Professor of Radiology, NN201, University Hospital

University of Wisconsin, Madison, Wis.

Graduate work at the University of Wisconsin in Medical Physics offers the M.S. and Ph.D. degrees through the Department of Radiology. Current research includes thermoluminescence dosimetry, body composition and bone mineral studies, ultrasonics, computers, as well as conventional areas dealing with X-rays and radioisotopes. In general, students enter graduate work with a B.S. in physics and with a mathematical background through differential equations. An introductory course in biology or zoology is recommended. A candidate for a master's degree must complete at least 12 of the 18 required graduate credits in courses within the Radiology Department. Before the master's examination, the student is required to have completed Radiol. 701 (Radiation Dosimetry), or equivalent, and a substantial course in vertebrate morphology, such as Zool. 430 (Comparative Anatomy) or in physiology, such as Physiol. 603 (Human Physiol. and Biophysics). Candidates are required to pass the qualifying examination and either submit an acceptable thesis based on research or substitute at least six additional credit hours approved by the department. Details concerning requirements for the Ph.D. can be obtained from the department. Financial support is generally available for qualified students. The close proximity of the main University departments of physics, mathematics, computer sciences, nuclear engineering, etc., adds greatly to the variety of appropriate courses available. For further information contact Professor John R. Cameron, Department of Radiology, University of Wisconsin, Madison, Wisconsin 53706.

RAPHEX—AN EXAMINATION IN RADIOLOGICAL PHYSICS FOR RADIOLOGY RESIDENTS

by S. Vickers and R. J. Schulz

In the fall of 1967 the Teaching Committee* of the Radiological and Medical Physics Society of New York (RAMPS) undertook the preparation of a written examination in radiological physics for radiology residents. This project, which was undertaken with the full support of RAMPS membership, and co-sponsored by the New York Roentgen Society, was planned as a multiple-choice examination covering all aspects of radiological physics. Its purpose was to offer residents in the New York City area an opportunity to test their knowledge of physics prior to the first written examination given by the American Board of Radiology in June 1968. The project was given the code word "Paul Goodwin, Hiram Hart, Colin Orton, Robert Schulz, Gerald Shapiro, Sal Vaciera and Shirley Vickers (chairman).

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RAPHEX and early in October it was formally launched by the distribution of a notice to the RAMPS membership requesting that they each submit 10 multiple-choice questions.

By mid December the Teaching Committee had received about 100 questions and by April the number submitted climbed to 250. Initially each question was reviewed for clarity, level of difficulty, uniqueness of correct answer, etc. Most questions were rewritten and many new questions were added by the Committee to round out coverage of the field. The reviewing and supplementing process required innumerable committee meetings, sometimes lasting as long as six to eight hours—a true labor of love on the part of the participants. During this process each member not only became painfully aware of the difficulty in writing good multiple-choice questions but discovered, through the criticism of his colleagues, how poor a judge he may be of his own product. By April 30, as a result of general agreement, fatigue and the pressure of a deadline, 80 questions were sent to the printers and the first edition of RAPHEX was ready for the scheduled examination period a week later.

On May 6, 1968, 147 radiology residents from twenty-one hospitals in New York City gathered at the New York Academy of Medicine for the examination. One half of them expected to take an American Board of Radiology examination in the coming month; the others ranged in length of training from a few weeks to nine years.

The examination was nominally two hours long and started at 7 p.m. By 8:30 approximately one half of the residents had finished and at 9:15 the last answer sheet was returned. All of the examination booklets were numbered and it was hoped that by collecting each of them when it was over, that the test might be used again. It turned out that our security plans were naive. We had underestimated the prodigious memories of our medical colleagues and within several days almost exact copies of the examination were being openly discussed.

Automatic scoring and item analysis by computer (courtesy Queens College of the City University of New York) enabled the Committee to mail results to the examinees within a week. Each resident received a confidential report of his total score, subscores in each of seven sections and the mean and highest scores for all participants (43 and 66 out of 80, respectively). A condensed version of the test results are given in Table I. In the next few weeks, review sessions were scheduled in several locations so that each resident would have an opportunity to discuss the answers with his teachers.

The Teaching Committee members found the response to RAPHEX

Table I
RAPHEX 1968
Analysis of Test Scores of New York City Radiological Residents
May 6, 1968

Year of Training	Number Analyzed	Mean Score (Number correct out of 80)	Standard Deviation	Range
First year	281	31.1	9.1	15 to 48
Second year	312	40.5	10.2	22 to 66
Third year & over	723	50.3	9.5	18 to 65
All examinees	147	42.6	12.7	12 to 66

Number analyzed in subgroups: 131
1 includes 12 who omitted one or more sections
2 does not include 4 who omitted one or more sections
3 includes only those taking an ABR exam in June, and those answering all sections of exam

September, 1968 Page 11

to be most gratifying. The residents were appreciative of this unique opportunity to see how they stood in relation to their colleagues from other hospitals and very complimentary about the examination. The Teaching Committee found the project rewarding and instructive. Interesting points came to light as the committee, whose members are from seven major teaching hospitals, attempted to agree upon the suitability of specific test items. Was this item too difficult, esoteric or of any importance to a radiologist? A surprising divergence of opinion existed, and of course total agreement was seldom achieved. The effort was certainly worthwhile and it may be that experiences such as this will help to bring about a concensus which otherwise might never be achieved.

Questions from RAPHEX 1969 - Physics of Radiation Therapy:

On which one of the following x-ray generators would you expect to measure a half-value-layer of 2.5 mm Cu?

a) Grenz Ray
b) superficial x-rays
c) orthovoltage
d) 2 MVp resonant transformer
e) 22 MVp betatron

A patient is treated with a Cobalt-60 beam rotated through an 180° arc. The highest dose will be:

a) in front of the center of rotation
b) at the center of rotation
c) behind the center of rotation
d) on the surface
e) 0.5 cm below the surface

Which correction factor would you use to correct for one uncrossed end in a planar implant using the Paterson-Parker Radium system?

a) reduce the area by 10%
b) reduce the mg-hrs/1000 R by 10%
c) increase the area by 10%
d) increase the mg-hrs/1000 R by 10%
e) increase the radium by 10%

Questions from RAPHEX 1974 - Diagnostic:

For the same kVp and filament current, three phase operation of an x-ray tube produces greater _____ than for single phase operation:

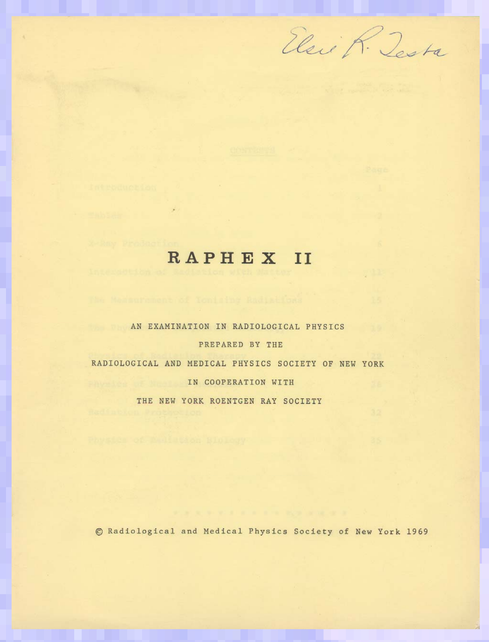
a) 1,2,3	1. x-ray quality
b) 2,3,4	2. tube current
c) 3,4,5	3. x-ray output
d) 4,5,1	4. focal spot sizes
e) 1,3,5	5. anode rotation speeds

Image amplifiers have replaced conventional fluorescent screens because:

a) 1,2,3	1. image amplifiers give brighter images
b) 1,3	2. the radiologist's eyes receive radiation exposure in excess of the Maximum Permissible Dose when viewing the conventional fluorescent screen for about 5 minutes
c) 3,4,5	3. dark adaptation is not necessary
d) 1,3,5	4. image amplifiers work at low kVp
e) 2,3,4	5. The relatively bright image of the amplifier is viewed by the cones of the retina which give better resolution

Computers in nuclear medicine can perform the following:

a) 2,3	1. subtraction of one image from another
b) 2,3,4	2. area integration and time histograms
c) 1,2,3	3. correction of non-uniformity of field
d) 1,2,3,4	4. data smoothing and enhancement
e) 1,2,3,4,5	5. reduce the decay time of the scintillation crystal



RAPHEX II

AN EXAMINATION IN RADIOLOGICAL PHYSICS
PREPARED BY THE
RADIOLOGICAL AND MEDICAL PHYSICS SOCIETY OF NEW YORK
IN COOPERATION WITH
THE NEW YORK ROENTGEN RAY SOCIETY

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1968-84 RAPHEX Committee Members (A partial list)

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Laszlo Berkovits	Jim Bond
Ellen Briefel	Susan Brownie
Klaus Buzzi	Ramesh Chandra
Saadia Cochavi	Richard Dobrin
Peter Esser	Paula Fischella
Marvin Friedman	Robert Goldberg
Mortimer Heller	Morris Hodara
Shlomo Hoory	Peter Joseph
Irving Lerch	William Malloy
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Donald Porteous	Malcolm Powell
Ann Reid	Leonard Rosenstein
Lawrence Rothenberg	Stephen Rudin
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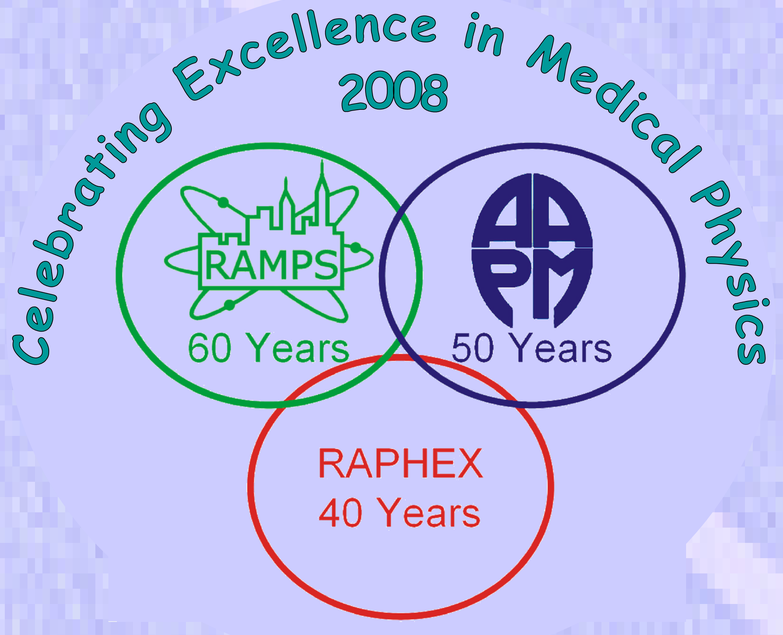
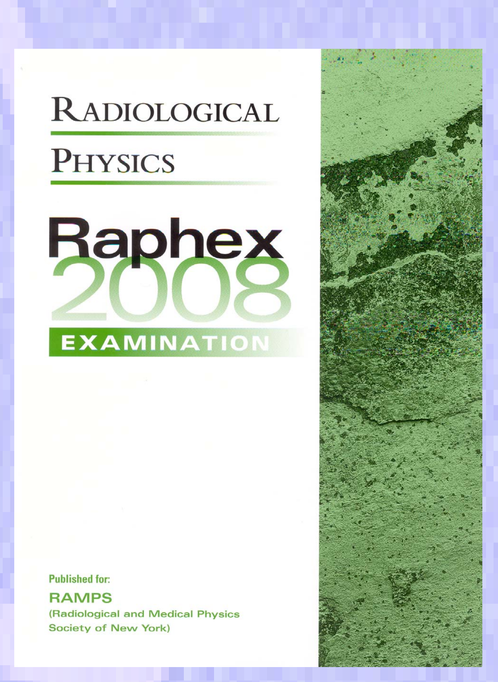
Richard Sell	Gerald Shapiro
Robert Shulz (Co-Founder)	Rene Smith
Jim Summers	Musarrat Syed
Andrzej Szechter	Elsie Testa
Arthur Trappier	S.J. Vacirca
Shirley Vickers (Co-Founder)	George Zacharopoulos





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