

Radiologic and Medical Physics Society RAMPS Newsletter 2018 Highlights

Table of Contents:

- RAMPS Board Members
- From the President
- History of RAMPS
- A Tribute to Jean St. Germain
- 2017 Failla Lecture
- Sal Vacirca Young Investigator Symposium
- 2018 Spring Symposium
- RAMPS Membership



A New York Metropolitan area Chapter of AAPM

2019 RAMPS Board Members

 <p>President - 2019 Neelam Tyagi, PhD</p>	 <p>President - 2018 Usman Mahmood, MS</p>	 <p>President - 2017 Ziad Saleh, PhD</p>
 <p>President - 2016 Thomas Petrone, PhD</p>	 <p>President Elect Gary Lim, PhD</p>	 <p>Treasurer Klaus A. Hamacher, PhD</p>
 <p>Secretary Jussi Sillanpaa, PhD</p>	 <p>AAPM Board Representative Cesar Della Bianca, PhD</p>	 <p>Gregory Niyazov, MS Member-at-large</p>

Volunteer Positions -

Chief Editor of RAPHEX: Cheng-Sie Wu, PhD, FAAPM

Therapy Editor of RAPHEX: Sean Berry, PhD

Diagnostic Co-Editor of RAPHEX: Lawrence Rothenberg, PhD, FAAPM, FACMP

Diagnostic Co-Editor of RAPHEX: Pat Zanzonico, PhD

Secretary Assistant (CAMPEP): Ren-Dih Sheu, PhD

Paypal Account Manager: Ziad Saleh, PhD

Webmaster: Jeho Jeong, PhD

Administrative Assistant: Ellen Pinto

From the 2018 President

Dear RAMPS members,

Welcome to our first edition of the annual RAMPS newsletter. We hope the information provided in this newsletter is informative. For the year of 2018, we had a series of great events and talks lined up. Starting with the Failla lecture in February, the young investigator symposium in March, and the RAMPS spring symposium in April. We aim to give you a highlight of events/activities held by RAMPS in 2018. We would also like to remind you that monthly board meetings are open to all members. Please feel free to reach out to the board with questions or comments.

Usman Mahmood, MS



History of RAMPS

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 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.



Left: Rosalyn Yalow – Founding member of RAMPS and the winner of 1977 Nobel Prize for Physiology or Medicine.
Right – A Gathering of RAMPS Presidents (1988) 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

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, a symposium on a pertinent scientific topic is held annually. RAMPS welcomed the initiation of the AAPM and became a chapter in it.

Obituary: Jean St. Germain, M.S.

1945 - 2017



It is with great sadness that we share that Jean St. Germain, our colleague, friend, and integral member of the Medical Physics Department at Memorial Sloan Kettering Cancer Center for over 50 years, passed away on December 7th. She died peacefully and was with her brother, Amos, at the time.

Following completion of graduate study at Rutgers University and a fellowship at Brookhaven National Laboratory, Jean was appointed in November, 1967, as a Fellow in the Department of Medical Physics at Memorial Sloan Kettering under John Laughlin and Garrett Holt. At the conclusion of her fellowship, she was appointed to the faculty and rose to the rank of Associate Attending Physicist and subsequently, Attending Physicist. She served as the Corporate Radiation Safety Officer, guiding and presiding over the incredible growth of the institution. She served as interim chair of the Department of Medical Physics from 2007

to 2010 and subsequently as Vice-Chair for Clinical and Educational Affairs and Clinical Member. Jean was a licensed medical physicist in New York State and was certified in Comprehensive Health Physics in 1974 by the ABHP and in 1991 in Medical Health Physics by the ABMP. Jean was also appointed a Lecturer, Instructor, and ultimately Assistant Professor of Physics in Clinical Radiology, Weill College of Medicine, Cornell University and served as the Radiation Safety Officer at the NY Presbyterian Weill Cornell Medical Center for more than 35 years.

Jean's contributions to the field of medical physics and health physics were vast and significant. She has served several professional societies in key leadership roles. She served AAPM as National Secretary, Chair of the Rules Committee, Parliamentarian, founding Chair of the Development Committee, Member of the Governing Board of the AIP, Treasurer of the American Academy of Health Physics, Chair of the Examining Panel in Medical Health Physics and Vice-Chair of the American Board of Medical Physics. She has served four terms on the AAPM Board of Directors. In the Greater New York area, she served as President of the Radiological and Medical Physics Society (RAMPS, the NYC Chapter of the AAPM) and served three terms as President of the Greater NY Chapter of the HPS.

Jean was a member of the Scientific Committee (SC) for the National Council on Radiation Protection and Measurements (NCRP) that produced NCRP Report No. 105 on radiation protection of medical and allied health personnel. Jean later served as Chairman of the SC that produced NCRP Report No. 155 on the management of radionuclide therapy patients. In addition, Jean served as a member of several New York State advisory committees on medical, and radiological health. She also served as a special examiner for the New York State Civil Service Commission.

Jean received many honors and awards during her career. She was a Fellow of the Health Physics Society and of AAPM. She was presented the Failla Award by the Greater NY Chapter HPS and RAMPS. She received the AAPM Distinguished Service Award in 2001 as well as the Varian Award for best professional paper in the Journal of Applied Clinical Medical Physics in 2004. And in 2015,

Jean was presented with the Marvin M. D. Williams Professional Achievement Award by the AAPM. The award recognizes AAPM members for an eminent career in medical physics with an emphasis on clinical medical physics.

Jean was an excellent lecturer and teacher. She taught Health Physics and Radiation Safety to generations of medical physicists, radiologists, radiation oncologists, nuclear medicine physicians, radiotherapists, radiologic technologists, lab scientists, and others at MSKCC, Weill Cornell Medical Center and throughout the medical physics and radiological community.

Beyond physics, Jean's great passion was music. She took vocal lessons at Julliard and was an operatic soprano soloist who gave many recitals and concerts throughout her life. She was also a regular attendee of performances at the Metropolitan Opera. Her commitment to service extended to her church, St. Joseph's in Yorkville, where she was a Trustee. She was also an active member of the National Society of Arts and Letters, serving on the Winston Scholarship Committee, and the Shirley Rabb Winston Scholarships in Voice.

Jean considered Marie Curie a heroine as she was the first woman to win a Nobel prize and then became the first person to attain a second Nobel prize. Jean had the pleasure of spending time with Marie Curie's daughter, Eve Curie Labouisse, who had written an extensive biography of her mother.

She is survived by her brother, Amos St. Germain, his wife, Susan, and their three children. Jean was particularly delighted with her two grand-nieces, Natalie and Maren, and shared photos of them with her colleagues at every opportunity.

In lieu of flowers, donations may be made to the Memorial Sloan Kettering Cancer Center – John Laughlin Research & Education Fund, in memory of Jean St. Germain. The website is www.mskcc.org, click on the 'Giving' tab. For additional information please contact Wei Lui, MSKCC, Department of Medical Physics, 1275 York Ave., New York, NY 10065 (lui1@mskcc.org).

Jean was an accomplished person of wide-ranging interests and service, with a distinct sense of professionalism and honor, who was engaged with the world and loved by friends and family members. She will be greatly missed.

Lawrence Rothenberg, PhD
Lawrence Dauer, PhD
New York, NY

2018 winner Failla Memorial Lecture and Award

The Failla memorial lecture and award is given the honor of Dr. Gioacchino Failla, a medical physicist and pioneer. An immigrant from Italy, he started at the then Memorial Hospital (now MSKCC) in 1915 where he was an attending physicist and the director of the physics and biophysics lab for radiation research. Following his pioneering work including use of 140 kVp and 200 kVp therapy devices and brachytherapy using radon capillary tubes, he joined Columbia university in 1942 where he was the Professor of Radiology and Director of the Radiological Research Laboratory at the College of Physicians and Surgeons.

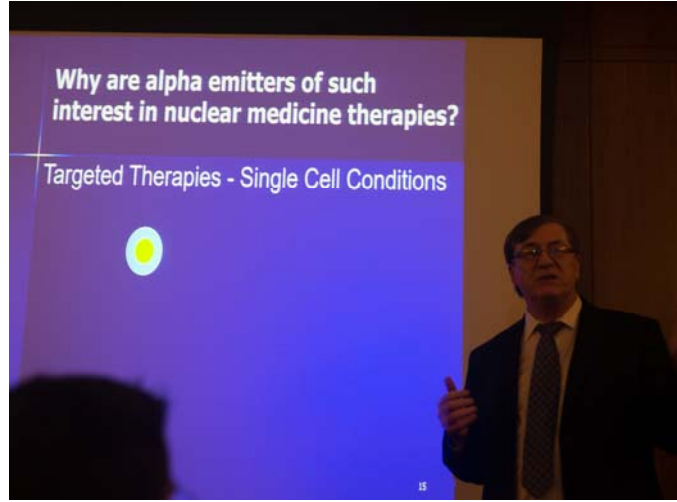
This year, RAMPS and the greater New York chapter of the Health Physics Society honored Dr. John Humm, a medical physicist at MSKCC for his work in the field of nuclear medicine and particularly imaging of tumor metabolic and microenvironmental properties.



John Humm Biography - Dr. John Humm received his PhD degree in 1983 from Southbank Polytechnic, London, for work performed at the Nuclear Research Center in Jülich, Germany with Professor Ludwig Feinendegen on the microdosimetry of Auger electron emitting radionuclides. He spent 5 years at the Radiobiology Division of the Medical Research Council in Harwell, England, developing models for radioimmunotherapy (RIT). From 1989-93, he trained as an external beam radiotherapy physicist whilst supporting the patient radioimmunotherapy program at the Joint Center for Radiation Therapy at Harvard Medical School. In 1993, Dr. Humm joined Memorial Sloan-Kettering Cancer Center (MSKCC) and worked initially in the dosimetry calibration lab. He then was appointed Chief of Nuclear Medicine Physics in 1995. He is currently a Member (Full Professor) and Attending Physicist at MSKCC and also serves as the Vice-Chair for Research of the Department of Medical Physics.

Dr. Humm is certified by the American Board of Radiology (ABR) in both Therapeutic and Nuclear Radiologic Physics. He has over 200 peer-reviewed articles and numerous book chapters, including seminal papers on radionuclide dosimetry, digital autoradiography, quantitative nuclear imaging and

PET-based treatment planning. His most recent research focus has been on imaging drug delivery and using this information to optimize therapies that combine drugs with radiation. Dr. Humm has had a number of NIH research and training grants. He served as president of the Radiological and Medical Physics Society of New York (RAMPS) and as the RAMPS representative to the Board of Directors of the American Association of Physicist in Medicine (AAPM). Dr. Humm became a fellow of the APPM in 2007 and received the Loevinger-Berman Award from the Society of Nuclear Medicine and Molecular Imaging for “excellence in the field of internal dosimetry” in 2012. He has contributed as an author and editor to publications of the International Council on Radiation Protection and Measurement (ICRP) and the International Atomic Energy Agency (IAEA).



Clockwise from left: Dr. John Humm (C) receiving the Failla award from Bae Chu (L) and Usman Mamood (R); Dr. Humm with RAMPS board members- from left Dustin Lynch, Gregory Niyazov, Ziad Saleh, John Humm, Usman Mahmood, Cesar Della-Bianca, Jussi Sillanpaa and Neelam Tyagi; attendees enjoying Failla lecture dinner; Dr. Humm giving his presentation titled “Radionuclide Dosimetry – Where Dose-Response Enters the Twilight Zone “.

Failla Awardees

Year	Failla Memorial Lecturer	Year	Failla Memorial Lecturer
1962	Edith Quimby	1992	Fred A. Mettler, Jr.
1963	John S. Laughlin	1993	Rober O. Gorson
1964	Leo D. Marinelli	1994	Roger J. Cloutier
1965	Lauriston S. Taylor	1995	Lawrence H. Lanzl
1966	Herb M. Parker	1996	Andrew P. Hull
1967	Karl Z. Morgan	1997	Colin G. Orton
1968	Shields Warren	1998	Jean M. Saint Germain
1969	Carl Braestrup	1999	Edward R. Epp
1970	Merril Eisenbud	2000	Francis J. Bradley
1971	Frederick P. Cowan	2001	Kenneth R. Kase
1972	Hanson Blatz	2002	Naomi Harley
1973	Harald H. Rossi	2003	Wiliam R. Hendee
1974	John Villforth	2004	Robert L. Brent
1975	Niel Wald	2005	William F. Hanson
1976	Dade W. Moeller	2006	John D. Boice
1977	Eugene L. Saenger	2007	John Cunningham
1978	Rosalyn Yallow	2008	Lawrence N. Rothenberg
1979	Charles Meinhold	2009	Radhe Mohan
1980	Warren Sinclair	2010	Michael T. Ryan
1981	Harold O. Wyckoff	2011	Clifton Ling
1982	Victor P. Bond	2012	Antone Brookes
1983	Arthur C. Upton	2013	David Rogers
1984	Hohn H. Harley	2014	Isabelle Fisenne
1985	Robert Loevinger	2015	Stephen Balter
1986	Allen Brodsky	2016	Craig Yoder
1987	John Auxier	2017	John Humm
1988	Eric Hall		
1989	Edward Webster		
1990	Herman Cember		
1991	John R. Cameron		

2018 RAMPS/ Sal Vacirca Young Investigator Symposium

The 2018 Sal Vacirca Young Investigator Symposium took place on May 16 at Memorial Sloan Kettering Cancer Center. This symposium is open to participants who are RAMPS members and a “young investigator” defined as someone who is pursuing a degree in the field of medical physics, is a resident or a post doc enrolled in a medical physics residency program, or has finished such a degree or program within the last four years.

Previous participants, except winner of 1st place, are eligible to participate if they are presenting on a new topic. A panel will select abstracts for presentation and selected speaker gives a 10-minute presentation followed by Q & A session from the audience.

Each presentation will be evaluated by the YIS judges for the following criteria:

- a. Originality
- b. Usefulness to clinical medical physics
- c. Merit of the scientific approach
- d. Clarity of presentation
- e. Finish within allotted time
- f. Quality of audiovisual aids
- g. Ability to answer questions at the end of the presentation

The winner of **1st place** is awarded a RAMPS scholarship in the name of Dr. Sal Vacirca to cover the expenses up to **\$1500**, **2nd prize of \$600** and a **3rd prize of \$400**.

The purpose of the prize is to cover the expenses, e.g., costs of travel, lodging, living expenses and registration fees of attending any major meeting, e.g., AAPM Annual meeting, AAPM Summer School, AAPM clinical meetings, ASTRO, RSNA, SNM. Certain restrictions apply. Contact treasurer for details.

This year, from several high-quality submissions, following abstracts were selected-

- **Jose Teruel, NYU** : MRI based Treatment Planning of Spinal Stereotactic Radiation Therapy
- **Lei Hu, NYU**: Validation of Inhomogeneity Correction in Small Field
- **Lei Zhang, MSKCC**: Simultaneous MLC and Couch Tracking: A Clinical Feasibility Study
- **Paul Black, Columbia University**: Feasibility of Real Time Monitoring of Matched Radiation Field Spacing Using Cherenkov Imaging
- **Peter Klages, MSKCC**: Conditional Generative Adversarial Networks (cGANs) for Magnetic Resonance (MR) Based Synthetic Computed Tomography (sCT) Images in Head and Neck Dose Calculations
- **Rabia Haq, MSKCC**: Validation and application of a fast Monte Carlo algorithm for assessing the clinical impact of approximations in analytical dose calculations for proton therapy.
- **Xingyu Nie, MSKCC** : Introduction of a novel hybrid deformable image registration to enhance low-contrast tissue alignment in time-resolved 4DMRI reconstruction.
- **Yi-Fang Wang, Columbia University**: Investigation of 3D Gamma Analysis for Small Field Treatments
- **Jue Jiang, MSKCC**: Cross-Domain Adaptation from CT to MRI for Longitudinal Tracking of Lung Tumors for MRI-Guided Radiotherapy.

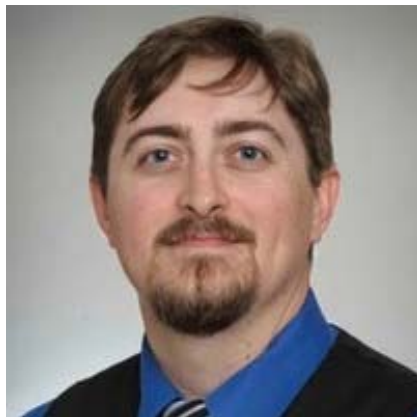
We congratulate all the participants who presented at the symposium for outstanding work!

Sal Vacirca Young Investigator Symposium winners



First Place – Dr. Peter Klages for his presentation “Conditional Generative Adversarial Networks (cGANs) for Magnetic Resonance(MR) Based Synthetic Computed Tomography (sCT) Images in Head and Neck Dose Calculations”.

Dr. Klages is currently a postdoc in the MSKCC Medical Physics residency program. His mentors are Drs. Neelam Tyagi and Harini Veeraraghavan.



Second Place – Dr. Paul Black for his presentation “Feasibility of Real Time Monitoring of Matched Radiation Field Spacing Using Cherenkov Imaging”.

Dr. Black was at the Columbia University Medical Physics residency program at the time of the symposium.



Third Place – Dr. Lei Zhang for her presentation “Simultaneous MLC and Couch Tracking: A Clinical Feasibility Study”.

Dr. Zhang is currently a postdoc in the MSKCC Medical Physics residency program. Her mentor is Dr. Grace Tang.

2018 Spring Symposium

The 2018 RAMPS Spring symposium held at the New York Academy of Sciences was a success with participation from close to 100 attendees and 14 vendors. The theme of the symposium was “Emerging Technologies in Imaging and Therapy” and an exciting program (listed below) was put together by the organizers.

MR/PET is more than MR and PET: Synergies and Opportunities

Fernando E Boada, PhD
Professor of Radiology, Psychiatry and Neurosurgery
Director, Center for Advanced Imaging Innovation and Research
New York University Langone Medical Center

On-line MRI Guided Radiation Therapy: Initial Experience with MR-LINAC and Future Impacts

Jihong Wang, PhD
Professor, Department of Medical Physics
MD Anderson Cancer Center

Clinical applications of Dual Energy CT

Alex Megibow, MD
Department of Radiology
New York University Langone Medical Center

Radiomics in clinical decision making: Potentials and pitfalls

Issam El Naqa, PhD
Department of Radiation Oncology
University of Michigan

Commissioning and early clinical experience with the Varian Halcyon delivery system

Chris Kennedy, PhD
Department of Medical Physics
University of Pennsylvania

2018 Spring Symposium

RAMPS 2018 Spring Symposium was proudly sponsored by:

1. Varian Medical Systems
2. Sunnuclear System
3. Standard Imaging
4. LAP Lasers
5. MIM
6. BionixRT
7. xstrahl
8. Best Cure Foundation (Theratronics)
9. RS&A
10. Accuray
11. Raysearch
12. iRT
13. ViewRay
14. Philips healthcare

RAMPS Membership

RAMPS membership can be obtained through one of the below membership options. Being a member puts you in the company of a network of physicists in the NYC metropolitan area and gives you access to events relevant to your professional development as a medical physicist. Please consider joining by filling out the membership application form:

<http://chapter.aapm.org/ramps/RAMPS/Membership.html>

The Society shall consist of Full Members, Juniors Members, Emeritus Members and Affiliates.

FULL MEMBERS: Open to persons who are Full Members of the AAPM.

JUNIOR MEMBERS: Open to persons who are not Full Members of AAPM. The applicant must be currently engaged in a graduate program directed towards a career in Medical Physics or fulfill one of the following academic and experience requirements:

- Ph.D. or D.Sc. in Physical Science: Minimum 0.5 Years of Experience in Medical Physics
- M.A. or M.S. in Physical Science: Minimum 1.0 Years of Experience in Medical Physics
- B.A. or B.S. in Physical Science: Minimum 2.0 Years of Experience in Medical Physics

EMERITUS MEMBER: Open to Full Members 55 years of age or older who have retired from the practice of Medical Physics.

AFFILIATES: Open to persons interested in Medical Physics.

Membership or affiliation may be obtained by submitting an application, endorsed by two Full Members in good standing, to the Executive Committee. Membership is conferred by a majority in the Executive Committee.