

AAPM NEWSLETTER

July/August 2024 | Volume 49, No. 4



IN THIS ISSUE:

- ▶ President's Report
- ▶ Treasurer's Report
- ▶ Update From the Annual Meeting & Exhibition Organizers
- ▶ International Council Report
- ▶ Equity, Diversity, and Inclusion Committee Report
- ▶ AAPM Travel Award Report
- ▶ AAPM at the AIMBE Annual Meeting
- ▶ Person in the News
- ...and more!

CONGRATULATIONS

to the Recipients of the Following Awards, Achievements, and Honors in 2024!

All award, achievement, and honor recipients will be recognized during the 2024 AAPM Annual Meeting in Los Angeles, CA at the Awards and Honors Ceremony and Reception, Monday, July 22 | 6:30 PM (reception immediately following)

WILLIAM D. COOLIDGE GOLD MEDAL

Cynthia H. McCollough, PhD

EDITH H. QUIMBY LIFETIME ACHIEVEMENT AWARD

Mary K. Martel, PhD
Dianna D. Cody, PhD

MARVIN M.D. WILLIAMS PROFESSIONAL ACHIEVEMENT AWARD

Robin L. Stern, PhD
Per H. Halvorsen, MS

HONORARY MEMBERSHIP

William Small, Jr. MD

JOHN S. LAUGHLIN YOUNG SCIENTIST AWARD

Xuanfeng Ding, PhD

FELLOWS

Todd F. Atwood, PhD
Rex G. Ayers, MEng
Christopher T. Baird, MS
Parminder S. Basran, PhD
Tyler A. Blackwell, MS
Olivier Blasi, MS
Kirsten Lee Boedeker, PhD
Richard Castillo, PhD
Cynthia Fu-Yu Chuang, PhD
J. Adam M. Cunha, PhD

Fellows, cont.

Sebastien A. Gros, PhD
Linda X. Hong, PhD
Yanle Hu, PhD
Sunyoung Jang, PhD
Hyejoo Kang, PhD
Anuj J. Kapadia, PhD
Yusung Kim, PhD
Teh Lin, PhD
Weiguo Lu, PhD
Kyle J. Myers, PhD
Mi-Ae Park, PhD
William Parker, MS
Katia Parodi, PhD
Jennifer M. Pursley, PhD
Berkman Sahiner, PhD
Vikren Sarkar, PhD
Daniel J. Scanderbeg, PhD
Jiajian Shen, PhD
John Alan Shepherd, PhD
Joseph W. Stayman, PhD
Matthew T. Studenski, PhD
Paige A. Taylor, PhD
Christopher J. Tien, PhD
Ziheng Wang, PhD
Jing Wang, PhD
Dee H. Wu, PhD
Nathan E. Yanasak, PhD
Hengyong Yu, PhD
Hualin Zhang, PhD
Wei Zhao, PhD
Yuxiang Zhou, PhD

JACMP PAPER AWARDS:

Edwin C. McCullough Award of Excellence for an Outstanding Medical Imaging Physics Article:

Samaneh Abbasi, Alireza Mehdizadeh, Hamid Reza Boveiri, Mohammad Amin Mosleh Shirazi, Reza Javidan, Raouf Khayami and Meysam Tavakoli

"Unsupervised deep learning registration model for multimodal brain images." *J Appl Clin Med Phys.* 2023; 24:e14177.

<https://doi.org/10.1002/acm2.14177>

George Starkschall Award of Excellence for an Outstanding Radiation Oncology Physics Article:

John T. Stasko, William S. Ferris, David P. Adam, Wesley S. Culberson and Sean P. Frigo

"IMRT QA result prediction via MLC transmission decomposition." *J Appl Clin Med Phys.* 2023; 24:e13990. <https://doi.org/10.1002/acm2.13990>

Michael D. Mills Editor in Chief Award of Excellence for an Outstanding General Medical Physics Article:

Jacqueline E. Zoberi, Jose Garcia-Ramirez, David Luechtefeld, Nichole M. Maughan, Maxwell Amurao, Reiko Oyama, Brian C. Baumann, Hiram A. Gay and Jeff M. Michalski

"Logistical, technical, and radiation safety aspects of establishing a radiopharmaceutical therapy program: A case in Lutetium-177 prostate-specific membrane antigen (PSMA) therapy." *J Appl Clin Med Phys.* 2023; 24:e13899. <https://doi.org/10.1002/acm2.13899>

Peter R. Almond Award of Excellence for an Outstanding Radiation Measurements Article:

Kevin Liu, Allison Palmiero, Nifish Chopra, Brett Velasquez, Ziyi Li, Sam Beddar and Emil Schöler

"Dual beam-current transformer design for monitoring and reporting of electron ultra-high dose rate (FLASH) beam parameters." *J Appl Clin Med Phys.* 2023; 24:e13891. <https://doi.org/10.1002/acm2.13891>

MEDICAL PHYSICS PAPER AWARDS:

Farrington Daniels Award (awarded for an outstanding paper on Therapy Medical Physics, including dosimetry, planning, or delivery): Xiaoxuan Zhang, Alejandro Sisniega, Wojciech B. Zbijewski, Junghoon Lee, Craig K. Jones, Pengwei Wu, Runze Han, Ali Uneri, Prasad Vagdarji, Patrick A. Helm, Mark Luciano, William S. Anderson and Jeffrey H. Siewerdsen

"Combining physics-based models with deep learning image synthesis and uncertainty in intraoperative cone-beam CT of the brain." *Med Phys.* 2023; 50: 2607–2624. <https://doi.org/10.1002/mp.16351>

Moses & Sylvia Greenfield Award (awarded for an outstanding paper on imaging):

Yinsheng Li, Xin Tie, Ke Li, Ran Zhang, Zhihua Qi, Adam Budde, Thomas M. Grist and Guang-Hong Chen

"A quality-checked and physics-constrained deep learning method to estimate material basis images from single-kV contrast-enhanced chest CT scans." *Med Phys.* 2023; 50: 3368–3388.

<https://doi.org/10.1002/mp.16352>



AAPM NEWSLETTER is published by the American Association of Physicists in Medicine on a bi-monthly schedule.
AAPM is located at 1631 Prince Street, Alexandria, VA 22314

TABLE OF CONTENTS

July/August 2024 | Volume 49, No. 4

REPORTS IN THIS ISSUE

- 5 Newsletter Editor's Report
- 7 President's Report
- 9 Executive Director's Report
- 11 Treasurer's Report
- 13 Update From the Annual Meeting & Exhibition Organizers
- 15 Updates From ACR HQ
- 17 Special Interest Feature: Topical Group on Medical Physics
Medical Physics Within the American Physical Society
- 21 Research Spotlight
- 25 IROC Houston Quality Assurance Center
- 27 Legislative and Regulatory Affairs Report
- 29 International Council Report
- 33 ABR Update
- 35 Equity, Diversity, and Inclusion Committee Report
- 37 ASTRO Quality Improvement
- 41 AAPM-MIDRC Subcommittee Report
- 45 AAPM Travel Award Report
- 47 AAPM at the AIMBE Annual Meeting
- 51 Person in the News

EVENTS/ANNOUNCEMENTS

- 4 AAPM Specialty Meeting: Innovations in QA
- 6 Industry Scientists or Regulatory Physicists
- 12 2024 Proposed AAPM Dues Changes
- 24 AAPM International Council Associates Mentorship Program
- 36 2024 AAPM Review Courses
- 36 2024 Call for Grand Challenge Proposals
- 39 2025 AAPM Spring Clinical Meeting
- 40 Upcoming AAPM Webinars
- 40 2024 AAPM Annual Meeting Student and Trainee Events
- 46 AAPM Speciality Meeting: AI for Clinical Medical Physicists
- 49 AAPM Career Services
- 52 AAPM Science Council Associates Mentorship Program
- 53 2024 AAPM 66th Annual Meeting & Exhibition:
E&R Fund Donors Lounge and Meeting App

EDITORIAL BOARD

Jennifer Pursley, PhD, Editor

Assistant Professor
Massachusetts General Hospital
Department of Radiation Oncology
55 Fruit Street
Boston, MA 02114
617-643-8273
newsletter@aapm.org

Eileen Cirino, MS

Irena Dragojevic, PhD

Yanle Hu, PhD

Barbara Lilieholm, MS

Kristen McConnell, PhD

Wei Liu, PhD

Joann Prisciandaro, PhD

Anna Rodrigues, PhD

SUBMISSION INFORMATION

To keep all reports uniform, we kindly request that submissions be made through a [QuestionPro](#) portal.

Questions? Contact [Nancy Vazquez](#)

PUBLISHING SCHEDULE

The AAPM Newsletter is produced bi-monthly.

Next issue: September/October 2024

Submission Deadline: August 2

Posted Online: Week of September 2

CORPORATE AFFILIATE ADVERTISING

[Advertising Rates & Deadlines](#)

CONNECT WITH US!



EDITOR'S NOTE

I welcome all readers to send me any suggestions or comments on any of the articles or features to assist me in making the AAPM Newsletter a more effective and engaging publication and to enhance the overall readership experience. Thank you.

PhantomLab CT phantoms – designed to measure the maximum performance of modern scanners.



Quantitative tests for multi-slice, CBCT, and photon counting scanners coupled with Smári's critical image quality metrics – engineered for ease of use in the clinical workflow.

[Click to see our latest phantoms and request a demo of our Smári image analysis service.](#)

SEE YOU AT
AAPM IN L.A.!

STOP BY OUR
BOOTH:
#1007

phantomlab

phantomlab.com



SAVE the
DATE



Innovations in QA: Moving Toward Efficient QA Programs

October 28–29, 2024 | Virtual

Preparing for the AAPM Annual Meeting

NEWSLETTER EDITOR'S REPORT

Welcome to the July/August 2024 edition of the AAPM Newsletter, released just in time for the AAPM 66th Annual Meeting & Exhibition in Los Angeles. Check out the update from the organizing committee for more details on the meeting! Also in this issue, AAPM President **Todd Pawlicki** reports on the progress made on AAPM's strategic plan and other updates, and Executive Director **David Gammel** shares his review of AAPM's Strengths, Weaknesses, Opportunities, and Threats (SWOT). Please also see the report from Treasurer **Samuel Armato** on AAPM's financial landscape and the necessity for change, including a proposed member dues increase. Dues increases require approval by the membership, and a discussion of the increase will take place during the 2024 Annual Business Meeting.

In this issue, the Special Interest Group feature is the American Physical Society (APS) Topical Group on Medical Physics (GMED). APS was the first professional society I joined as a physics undergraduate student, and my first experience giving a conference talk was at an APS meeting. Check out the article to learn how medical physicists can connect with APS through GMED to further our science, education, and outreach initiatives. This issue also contains updates from the International Council, with features on three Global Rising Stars, and the Equity, Diversity, and Inclusion Committee, along with many other interesting reports.

All AAPM members are encouraged to submit content and ideas for the Newsletter either directly to the Editor or through the submission link on the [Newsletter page](#). If you have an announcement of an honor or award that you would like to share, please submit it to the Newsletter for consideration! We want every AAPM member to find something of interest in each edition of the Newsletter, and that's only possible with the help of members. Enjoy this issue of the Newsletter and send us your feedback and ideas for future editions. And please share the Newsletter articles you enjoy with your social media network; the Newsletter is available for all to read. ■



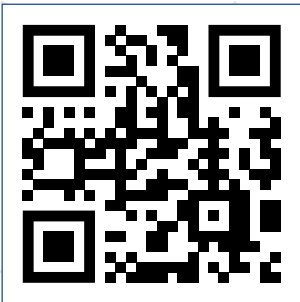
Jennifer Pursley, PhD
Massachusetts General Hospital



INDUSTRY SCIENTISTS or REGULATORY PHYSICISTS:

VISIT

aapm.org/memb
for more details.



- As an Industry Scientist or Regulatory Physicist, **YOU CAN JOIN AAPM.**

Individuals eligible to be an AAPM Full Member possess an earned graduate degree in the Physical or Biological Sciences, Computer Sciences, Mathematical Sciences, or Engineering from a college, university or program accredited by one of the organizations recognized by the Council on Higher Education Accreditation (or its successors), or an equivalent foreign degree. Applicants should also be engaged in clinical care, professional, research, or academic activity related to applications of physics in medicine and biology.

- As an Industry Scientist or Regulatory Physicist, **YOU CAN VOLUNTEER.**

AAPM Full Members in good standing are eligible for voting appointments on Committees, Subcommittees, Working Groups, and Task Groups. Many AAPM groups could benefit greatly from the unique perspective an industry scientist or regulatory physicist offers. Explore current volunteer opportunities at w3.aapm.org/ads/committee_classifieds/classifieds.php (member login required).

- As an Industry Scientist or Regulatory Physicist, **YOU HAVE OPTIONS.**

If the Full member class doesn't apply, consider the General, Associate, or Affiliate member classes, tailored to suit your career stage and qualifications.

A Message from the AAPM President: Advancing Our Mission and Shaping the Future of Medical Physics

PRESIDENT'S REPORT

Dear AAPM Members,

Our Association is committed to providing value to its members while at the same time advancing the contributions of medical physics towards improving human health. As we continue to navigate the ever-changing healthcare landscape, I am excited to share some updates on a few ongoing projects.

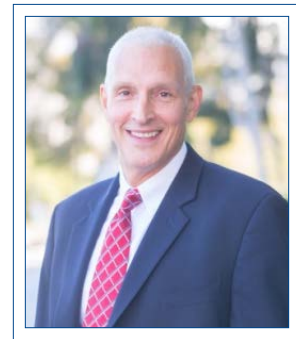
Strategic Planning, Volunteer Engagement, and Governance

AAPM's strategic plan, which will guide our activities for the next three years, is nearing completion. The process has been a thorough and inclusive effort, involving input from members, leadership, and stakeholders. The draft plan will be finalized for Board approval at our Annual Meeting in July. There have been several meetings of the strategic planning committee and the Board of Directors thus far, recognizing both the challenges and opportunities facing our association. As part of the strategic planning process, we must adapt our future budgets to allow for more effective business planning, simplify our governance structure to improve efficiency, and build stronger partnerships with industry leaders to drive growth and innovation. We are confident the final strategic plan will provide a clear roadmap for our association's growth and development. These efforts will enable us to better support our members, advance the field of medical physics, and ultimately improve patient care.

Furthermore, we will strive to make volunteering in AAPM more accessible and enjoyable. This will require that we explore ways to recalibrate the balance between staff and volunteer responsibilities. By streamlining our processes and delegating tasks more efficiently, we can free up our members to focus on advancing the science and clinical practice of medical physics, rather than getting bogged down in administrative tasks. We recognize that our members are busy professionals, and we want to ensure that their time and expertise are utilized effectively. Your feedback will be invaluable as we navigate this transition, and I encourage you to share your thoughts with us.

Medical Physics Institute Update

I am thrilled to announce that we are making progress on the Medical Physics Institute, a critical initiative that has the potential to expand our association's prominence and impact on patient care. After a thorough search process, I am delighted to announce that **Jatinder Palta** has been selected as the inaugural Director of the Medical Physics Institute. Dr. Palta is a well-known medical physicist and leader in our field, with a wealth of experience in research, education, clinical practice, and connections with industry. Under his leadership, the Institute will drive collaboration and will support excellence in both clinical medical physics and innovative research. I am confident that it will become a hub for cutting-edge research, education, and clinical practice.



Todd Pawlicki, PhD
UC San Diego

PRESIDENT'S REPORT, Cont.

AAPM's Collaboration with APS and GMED

The Topical Group on Medical Physics (GMED) is a subgroup within the American Physical Society (APS) that fosters interest in biomedical research and technology within the traditional academic physics community, and nurtures collaborations among scientists and trainees working on these applications. As AAPM President, I strongly support AAPM's collaboration with APS and GMED, fostering biomedical research, education, and career development. Our shared goals and complementary expertise can advance medical physics, attract new talent, and strengthen our community. I encourage AAPM members to engage with GMED and APS to leverage their resources and opportunities, including scientific meetings, career development programs, and outreach initiatives, to promote medical physics and enhance our profession. For a more detailed look at the opportunities and benefits of AAPM's collaboration with APS and GMED, I invite readers to explore the article "Medical Physics within the American Physical Society" authored by **Robert Jeraj**, **Jennifer Pursley**, and **Wojtek Zbijewski** in this edition of the AAPM Newsletter and attend the special dedicated session highlighting APS GMED during the AAPM Annual Meeting in Los Angeles.

AAPM Annual Meeting

Speaking of our Annual Meeting, I invite you to join us in Los Angeles for the "Embracing Change: Impacting Patient Care" Presidential Symposium. [This year's theme](#) is particularly relevant as we navigate the rapid evolution of science, technology, and the practice of medical physics. The symposium promises to be an unforgettable experience, with inspiring minds coming together to shape the future of the profession.

The symposium will also feature opening remarks from the leaders of AAPM, ASTRO, and RSNA, highlighting the importance of collaboration and innovation in medical physics. **David Gammel**, AAPM Executive Director, will set the stage for the symposium by discussing how AAPM is preparing to sustain and grow the impact of physicists in medicine as science, technology, and practice continue to evolve rapidly.

Our esteemed medical physicist speakers, **Ke Sheng**, **Jeff Siewerdsen**, **Erin Angel**, and **Jim Dobbins** will share their vision for the future of medical physics, from physics-driven innovation to clinical excellence. Dr. Sheng will discuss

the fluid dynamic problem based on high-resolution maps of tumor and normal tissue vasculature, highlighting the critical role of physics in elucidating fundamental biological processes. Dr. Siewerdsen will share his vision for the indispensable contribution of medical physicists in reshaping future surgical procedures through system integration, workflow improvements, and data science. Dr. Angel will provide the industry perspective on why some technologies succeed while others do not, and will delve into the critical role of collaboration among medical physicists and industry in fostering a dynamic ecosystem of innovation. Finally, Dr. Dobbins will lay the groundwork for transformative initiatives over the next decade to maximize the profession's impact on patient care.

You won't want to miss this opportunity to engage with the speakers, ask questions, and network with fellow professionals who share your passion for medical physics. The symposium promises to be a thought-provoking and inspiring experience, and I look forward to seeing you there.

Conclusion

As we embark on this journey of change and growth, I am reminded of the power of our community to drive innovation and excellence in patient care. I look forward to working together to shape the future of medical physics. I encourage you to stay engaged, provide feedback, and get involved in our efforts to advance AAPM in support of the science and clinical practice of medical physics.

As we navigate this transformative journey, I am inspired by the collective potential of our community to pioneer groundbreaking advancements in patient care. I am excited to collaborate with each of you to chart the course of medical physics' future. To ensure our collective success, I urge you to remain actively engaged, share your valuable insights, and participate in our initiatives aimed at elevating the AAPM and propelling the scientific and clinical excellence of medical physics forward.

Thank you for your continued support and dedication to our Association.

Sincerely,

Todd Pawlicki

President, American Association of Physicists in Medicine

Preparing AAPM for the Future Impact: An Initial Review

EXECUTIVE DIRECTOR'S REPORT

When I joined AAPM, the Executive Committee tasked me with conducting a comprehensive review to prepare our association for continued growth, mission impact, and enhanced member value. I'm excited to share my initial findings here and will address these themes at the President's Symposium during the Annual Meeting.

Analysis

I used a traditional SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) which is a tool developed in the 1960s that remains useful for high-level assessment of the business environment and operating condition. The figure below provides a summary of the themes identified through this exercise.

Strengths

Medical physics, and by extension AAPM, has fundamental strengths that promise a bright future. We are rooted in rapidly growing, innovative fields like cancer therapy and diagnostic imaging. By aligning our programs and services with these trends, AAPM can help members stay relevant and valuable in healthcare and take the lead in applying new discoveries.

Our committed volunteers are another major strength. They advance our mission by developing the next generation of physicists, publishing research



C. David Gammel
Executive Director, AAPM HQ

AAPM SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> Committed, resourceful, creative volunteers. Strong financial reserves. Vast content for continuing education. Centered on rapidly growing medical sectors of cancer and imaging. 	<ul style="list-style-type: none"> Disempowered and reactive management. Decentralized budgeting, unguided by strategy. Complex governance and intense volunteer time requirements.
Opportunities	Threats
<ul style="list-style-type: none"> Revenue growth from enhanced marketing and pricing. New computational technologies for medical physics and AAPM operations. New modalities and clinical settings for medical physicists. 	<ul style="list-style-type: none"> Structural operating deficit (~10%). Rising core expenses. Legacy custom software in tech stack. Workforce challenges and technology-driven disruption.

EXECUTIVE DIRECTOR'S REPORT, Cont.

and guidance, and advocating for the role of physics in medicine. This level of engagement is rare and a significant asset that will allow us to achieve our goals.

Additionally, AAPM's financial reserves protect us from external shocks and allow us to invest strategically in the future of the discipline and organization. Our extensive and growing collection of educational, training, and research content is another asset in our favor.

Weaknesses

One issue is our decentralized budgeting process, which isn't aligned with our overall strategy, contributing to our operating budget deficit. The Finance Committee is already working with our staff to restructure the budgeting process for better planning.

Our complex governance structure has also led to unsustainable volunteer workloads. We have the opportunity to address this issue, making it easier for volunteers to make meaningful contributions and maintain oversight of the association with reasonable time commitments.

Our capable staff have more they can contribute in leading our operations if they are empowered to do so. A rebalancing of duties will make members' service to the organization more sustainable and focused on the science and practice of medical physics while allowing our staff to really shine in their professional roles.

While our weaknesses are entirely addressable, they do require focused attention.

Opportunities

AAPM and medical physics have numerous opportunities. Advances in computational technology, novel modalities, and new clinical settings offer growth areas. Our challenge is to prioritize and invest in the most promising paths.

We can also strengthen revenue through strategic budgeting and by offering more value to industry partners. Diversifying our products and services and improving our marketing can enhance our mission and financial health.

Threats

Threats include a structural operating budget deficit of approximately 10%. I'm confident that this deficit is addressable through increased revenue and cost reduction without compromising member value or mission impact.

Medical physics workforce challenges are significant, especially in remote and underserved geographic areas. This issue mirrors the broader US healthcare workforce shortage and provides an opportunity for AAPM to address these critical needs.

Our operating costs have increased due to inflation, necessitating a strategic approach to finance and business planning. Additionally, some of our custom web applications are over 20 years old and becoming costly to maintain. We're transitioning to off-the-shelf systems to manage this challenge.

Moving Forward

These themes presented above have shaped the strategic planning process. The Strategic Planning Committee will present a formal plan to the AAPM Board of Directors in July. We will communicate about the plan and how it addresses these issues in the future. We can all be confident that our strengths and opportunities will outweigh our weaknesses and threats.

I look forward to seeing many of you at the AAPM Annual Meeting! If we don't connect there, feel free to email me at dgammel@aapm.org with your comments and suggestions. ■

Facing the Numbers: 2024 Budget Process Highlights Need for New Approach

TREASURER'S REPORT

Facing the Numbers: 2024 Budget Process Highlights Need for New Approach

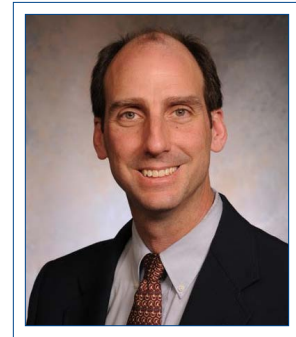
As we reflect on the financial landscape of AAPM, it's evident that we've been encountering some challenges. Traditionally, AAPM has intentionally budgeted for a deficit from operations, knowing that due to the volunteer-driven nature of the Association, not all programs and initiatives would come to fruition. This underspending allowed the Association to achieve less extreme actual deficits from operations (and some years ending with a surplus), but the net cumulative deficit from operations for the 5 years prior to 2023 still reached nearly \$1 million. In 2023, AAPM's year-end actual deficit from operations was \$1.0 million — the largest single-year deficit in AAPM history and greater than the cumulative deficit of the five prior years. The reality of an actual deficit of this magnitude has necessitated a new approach to budgeting.

As we move toward a new budget process model with the goal of AAPM preparing balanced budgets by 2027, new priorities will inevitably be identified, and the effectiveness of some established programs will be questioned. This can be a challenging exercise, but it also represents an opportunity to be more intentional when creating budgets to ensure that the distribution of AAPM resources aligns with its strategic priorities. AAPM's greatest assets—its staff and volunteers—will be essential in formulating and implementing these changes. This shift will require a multifaceted approach to increase targeted revenues and reduce certain expenditures.

Revamping the Process

The process for the 2024 budget underwent a substantial overhaul compared to previous years. We implemented several fundamental changes:

- **Restructuring Expenses:** For better financial clarity, expenses for grants and fellowships were moved out of operations and into the Education and Research (E&R) Fund.
- **Setting Target Expenses:** Councils were given a target dollar amount for their total expenses, based on past actual spending, rather than the usual wish-list approach.
- **Scrutinizing Fixed Expenses:** Fixed expenses, such as \$250k in credit card fees, were carefully reviewed, and efforts were made to reduce them substantially.
- **Focusing on Achievable Activities:** Councils were encouraged to budget only for activities they were confident they could reasonably achieve in 2024.



Samuel G. Armato, III, PhD
The University of Chicago

TREASURER'S REPORT, Cont.

However, even after implementing these measures, the 2024 budget process yielded a budgeted deficit of \$1.3 million; because this deficit came from a budget that was created conscientiously to remove excess expenses, we anticipate that in 2024, the year-end deficit from operations will again approximate \$1 million.

Board-Approved Motion

As one aspect of a multifaceted deficit-reduction plan to increase revenue while reducing expenses, the AAPM Board has recommended increasing member dues, subject to a vote of the membership.

The Board (subject to a subsequent vote of the membership) approves a three-year dues increase for Full Members:

2025 \$510

2026 \$525

2027 \$535

The increased percentage will be applied across all appropriate dues categories in accordance with [AP-41](#).

Balancing the Burden

If passed by the membership, the estimated increase in dues revenue in 2025 would be approximately \$120k, or less than 10% of the 2023 budget deficit. Member dues—which have remained constant since 2021 despite a 14.8% increase in the core consumer price index over this same period — are just one aspect of a plan that includes examining a range of revenue-generating and expense-reducing options as we work together towards AAPM's long-term financial health. AAPM's leadership has no intention of placing responsibility for shoring up AAPM's finances solely on the shoulders of the membership.

Navigating these financial challenges requires collaboration, transparency, and a commitment to fiscal responsibility. As we continue to adapt and evolve, I want to reassure all members that AAPM remains steadfast in its mission of advancing medicine through excellence in the science, education, and professional practice of medical physics. I look forward to working with staff and membership on this challenging but incredibly worthwhile project. Members are strongly encouraged to attend one — or both — of the upcoming virtual Q&A sessions

which have been scheduled for July 10 and August 14, both at 3:00 pm ET. I will be there along with our Associate Executive Director, Finance **Robert McKoy** to answer questions about this important vote. [Register now!](#) ■


REVIEW THE PROPOSED CHANGES HERE:
www.aapm.org/announcements/2024ProposedDuesChanges.asp

PROPOSED DUES CHANGES VOTE

OPEN:
THURSDAY, AUGUST 15TH

CLOSE:
THURSDAY, SEPTEMBER 5TH

Q&A:
Join AAPM Treasurer Sam Armato and Associate Executive Director of Finance, Robert McKoy as key moderators for two one-hour virtual Q&A sessions on Wednesday, July 10 @ 3 pm ET and Wednesday, August 14 @ 3 pm ET.
<https://www.aapm.org/announcements/2024ProposedDuesChangesQA.asp>



Embracing Change: A Closer Look at the 2024 Annual Meeting Program

UPDATE FROM THE ANNUAL MEETING & EXHIBITION ORGANIZERS

This year's 66th AAPM Annual Meeting & Exhibition will be held in Los Angeles, CA. Did you know this meeting site was recommended to the Meeting Coordination committee after a site visit in 2019? Seems like a long time ago!

The organizers have designed another phenomenal program with over 100 invited symposia and more than 2000 scientific, professional, and education abstracts, providing [267.04 Medical Physics Continuing Education Credits](#). And this is the first year that we will have a **Radiopharmaceutical Program**, which will become a permanent part of the AAPM Annual Meeting program structure.

New this year, we have restructured this meeting by bringing together the scientific and education program organizers to help foster synergies between education and scientific sessions to create four dynamic programs. Each track focuses on a sub-topic, improving the flow of session topics. The change is reflected in the structure of the meeting program outlined below.

The annual meeting features *four programs* in seven tracks.

- **Therapy program**
 - o Image Guidance in Therapy
 - o Therapeutic Planning, Delivery, Adaptation
 - o Radiation Physics, Dosimetry, Biology
- **Imaging program**
 - o Diagnostic medical physics
 - o Interventional medical physics
- **Radiopharmaceutical program**
 - o Radiopharmaceuticals, Theranostics, Nuclear Medicine
- **Professional program**
 - o Professional topics relevant to the Medical Physicist

Each program features a variety of scientific, educational, and invited sessions, as well as oral abstract sessions, and poster sessions.

Session Definitions:

Symposium: Symposia are given by invited speakers and cover scientific, education, and professional aspects of topics relevant to the practice of medical physics. Symposia can be found in all program tracks, including therapy, imaging, radiopharmaceutical, and professional symposia.

Scientific Session and SNAP Oral: These sessions feature oral abstract presentations, showcasing the latest research in medical physics and professional topics. Presenters include students and researchers at all levels. These sessions are a great opportunity to learn about new developments in the field, discuss with and provide researchers feedback, and meet new students.



Ingrid S. Reiser, PhD
The University of Chicago



UPDATE FROM THE ANNUAL MEETING & EXHIBITION ORGANIZERS, Cont.

Live Poster Presentations: The 2025 Annual Meeting brings back **live poster discussions** and **hardcopy posters** featuring high-scoring abstracts. Posters will be up for a limited number of days, so plan accordingly to attend all poster sessions. Additionally, all posters, including those displayed as hardcopy, can be viewed in electronic format through the meeting website or meeting app at any time.

Best in Physics Poster: Highest scoring abstracts are presented in scientific sessions and showcased during the **Best in Physics Reception** in the Exhibit Hall, Monday 3:30–4:30 pm. Best In Physics hardcopy posters can be viewed throughout the meeting during exhibit hall hours.

Best of Professional: These include hard-copy poster presentations on professional topics. Authors will be at their poster for live discussion during the **Best in Professional Break** in the Exhibit Hall, Monday 9:30–10:15 AM.

Blue Ribbon Poster: Higher-scoring abstracts are featured as Blue Ribbon posters. Authors will be at their poster for live

discussion on Sunday, Monday, and Tuesday during the afternoon live poster sessions from 3:30–4:30 PM.

General Poster Discussions: High-scoring abstracts presented as hardcopy posters with authors available for live discussions on Sunday afternoon, 3:00–4:30 PM (Session A), and Tuesday afternoon, 3:00–4:30 PM (Session B), including **education posters**.

Hardcopy posters can be viewed during exhibit hall hours (session A: Sunday and Monday; session B: Tuesday and Wednesday).

Electronic Version, General Poster Viewing: These posters are only showcased in electronic format, and can be accessed from within the Annual Meeting website or meeting app.

We hope that you will be **embracing changes** to the meeting program, enjoy this meeting, and learn new insights that will help you positively **impact patient care!** ■

See y'all at the Dodgers game Tuesday night!

Ingrid Reiser	Chair, Annual Meeting Subcommittee
Lei Ren	Vice-Chair, Annual Meeting Subcommittee
Michelle Wells	Chair, Professional WG
Ioannis Sechopoulos	Chair, Science WG
Robin Miller	Chair, Education WG
Stephen Bowen	Chair Designee, Science WG
Deborah Schofield	Chair, Technical Exhibits Subcommittee
Yixiang Liao	Professional Program Director
Yi Rong	Professional Program Co-Director
Sam Brady	Program Director, Imaging ED
Emily Marshall	Program Co-Director, Imaging ED
Jon Kruse	Program Director, Therapy ED
Susan Richardson	Program Co-Director, Therapy ED
Heather Whitney	Program Director, Imaging Science
Alex Sisniega	Program Co-Director, Imaging Science
Magdalena Bazalova-Carter	Program Director, Multi-Disciplinary Science
Jing Wang	Program Co-Director, Multi-Disciplinary Science
Rongxiao Zhang	Program Director, Therapy Science
Brian Winey	Program Co-Director, Therapy Science
Rob Hobbs	Co-Director, Radiopharmaceuticals Program
Jessica Clements	Co-Director, Radiopharmaceuticals Program

ACR Accreditation & More: Info for Medical Physicists

UPDATES FROM ACR HQ

ACR-AAPM Technical Standards Will be Available for Review and Comment!

ACR's Practice Parameters and Technical Standards are revised every five years. ACR-AAPM collaborative Technical Standards that have been revised for 2025 are:

- Medical Physics Performance Monitoring of Surface Guided Radiation Therapy (SGRT)
Diagnostic Medical Physics Performance Monitoring of Stereotactic/Tomosynthesis-Guided Breast Biopsy Systems
- Medical Physics Performance Monitoring of SPECT-CT Equipment
- Performance of High-Dose-Rate Brachytherapy Physics
- Performance of Low-Dose-Rate Brachytherapy Physics

The public comment period, called Field Review, will take place August 5 through September 27. This is the only time for comments to be submitted. ACR members may comment on any and all documents individually. Non-ACR members can submit comments on collaborative documents through AAPM's process, so keep an eye out for correspondence from AAPM HQ on how to submit. If you propose substantive language changes for a Technical Standard, please be on the lookout for future emails regarding participation on the Comment Reconciliation Committee (CRC) to review and reconcile Field Review comments. An overview of the Field Review process is available on [the Field Review webpage](#).

AAPM Annual Meeting Session: ACR Updates From HQ

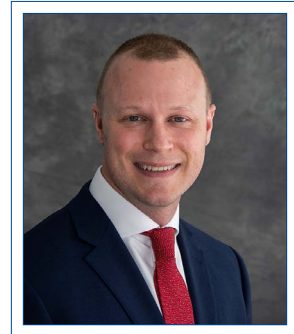
On [Thursday morning in LA](#), some of our colleagues will present on the ACR projects they have been working on:

- Stereo/Tomo-Guided Breast Biopsy QC Manual (Katie W. Hulme, MS, FAAPM)
- Status and Roadmap for DIR-DR (Xiang Li, PhD)
- Status and Roadmap for DIR-CT (Sarah E. McKenney, PhD)
- DIR-CT User Interface and Report Capabilities (Maryam Bostani, PhD)
- Final Report on Helical Estimation of CT DIvol (Izabella Barreto, PhD)

Please plan to join us on Thursday at 7:30am!

Recent Accreditation Article Updates

- [Clinical Image Testing: PET \(Revised 4-30-2024\)](#) — Updated the language in the Brain module for clarity and spelled out AC and NAC in the Oncology module.
- [Phantom Testing: Nuclear Medicine \(Revised 5-1-2024\)](#) — Clarified language in Module 1 (planar only) with regard to spatial resolution and using the rod phantom.



Dustin A. Gress, MS
Senior Advisor for Medical Physics
ACR Quality and Safety, Reston, VA

In each issue of this newsletter, I present information of particular importance or relevance for medical physicists. You may also check out the [ACR's accreditation support page](#) for more accreditation information and QC forms. **Thank You** to all the other staff that keep ACR programs running and assist with creating the content in this column.

Since I last submitted a column for the AAPM Newsletter, the ACR's Commission on Medical Physics, selected the 2024 Richard L. Morin, PhD Fellows in Medical Physics: Congratulations to Zahra Razi, PhD of University of New Mexico and Colin Schaeffer, PhD of Henry Ford Health System!!! The future of medical physics is bright.

UPDATES FROM ACR HQ, Cont.

- [Quality Control: Nuclear Medicine \(Revised 5-1-2024\)](#) — Updated the dose calibrator linearity test requirement to be annual (was quarterly).
- [Quality Control: PET \(Revised 5-1-2024\)](#) — Updated the dose calibrator linearity test requirement to be annual (was quarterly).
- [Testing Overview: Nuclear Medicine and PET \(5-1-2024\)](#) — The guidelines for written procedures document and clinical and phantom atlases have been updated.
- [Medium MRI phantom grace period ended May 8, 2024.](#) Sites must submit phantom images acquired using the coil that is routinely used for clinical brain imaging and must use the largest phantom that fits inside the head coil. Failure to utilize the appropriate phantom may result in failure of the submission. ■

RITG148+
FROM
RIT

Radixact
ACCURAY

Image courtesy of Accuray, Inc.
©2024 Accuray Incorporated.
All Rights Reserved.

**CLICK TO VISIT
RADIMAGE.COM
DEMO RITG148+
OR FIND YOUR
PERFECT QA
SOFTWARE SOLUTION**

**RIT IS YOUR BEST SOURCE
FOR COMPREHENSIVE
HELICAL TOMOTHERAPY®
QA FOR TG-148**

RITG148+ is a precise and state-of-the-art software built to perform all machine and imaging QA measurements for TomoTherapy® and Radixact® treatment delivery systems.

RITG148+ analyzes the standardized machine QA tests, including Static & Rotational Gantry Angle Consistency, Jaw Centering and Alignment, Overhead Laser Positioning, Interrupted Treatment, and all others recommended for daily, monthly, and annual QA. RITG148+ also analyzes image quality using the Tomotherapy Cheese phantom.

RADIOLOGICAL IMAGING TECHNOLOGY, INC.
sales@radimage.com | 1(719) 590-1077
© 2024, Radiological Imaging Technology, Inc.

TomoTherapy® and Radixact® are registered trademarks of Accuray, Inc.

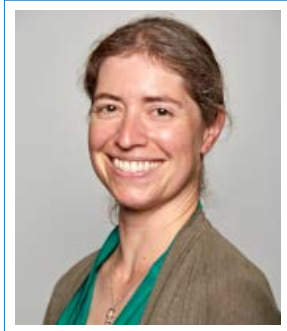
Special Interest Feature: Topical Group on Medical Physics

MEDICAL PHYSICS WITHIN THE AMERICAN PHYSICAL SOCIETY

Robert Jeraj, PhD | University of Wisconsin

Jennifer Pursley, PhD | Massachusetts General Hospital

Wojtek Zbijewski, PhD | Johns Hopkins University



Those interested in the history and origins of GMED are encouraged to watch this [APS TV video](#). Please join us for a panel discussion on GMED's activities and how to get involved during the AAPM Annual Meeting on Sunday, July 21, 10:30 AM–12:30 PM in room 408A at the LA Convention Center.

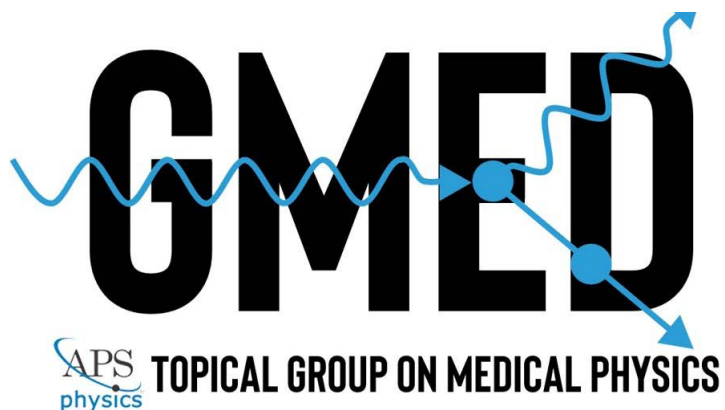
The American Physical Society (APS), our peer society within the American Institute of Physics (AIP) is a nonprofit organization whose mission is to advance and diffuse the knowledge of physics for the benefit of humanity. APS is much larger than AAPM — it has over 50,000 members working in all areas of physics through 30 different Divisions and Topical Groups, each of which has a specific scientific focus, in addition to 10 geographically defined Sections in the US, and nine special interest Forums.

The Topical Group on Medical Physics (GMED) was formed ten years ago. Those interested in the history and origins of GMED are encouraged to watch the [APS TV video](#), partially shot at the AAPM headquarters, for that

occasion. The mission of GMED is to foster interest in biomedical research and technology within the traditional academic physics community and to nurture collaborations among scientists and trainees working on these applications. AAPM helped form GMED through the activities of the Science Council's Working Group on Future Research and Academic Medical Physics (FUTURE). Many AAPM members, including the authors of this report, who have held leadership positions in GMED, have been extensively involved with GMED and through GMED with various APS activities. As the primary focus of APS is on education, training, and research,

APS engagement complements many AAPM activities. The goal of this report is to showcase some of GMED's past and current activities and outline the opportunities for AAPM members to have broader engagement with APS.

APS publishes some of the most impactful research journals in many fields of physics, such as *Physical Review Letters* (PRL). APS organizes two major international physics conferences annually, the APS March and April meetings. In addition, some APS Divisions hold focused specialty meetings, and APS Sections hold local meetings, similar to AAPM Chapter meetings. In addition to scientific opportunities, APS offers a broad range of career development programs to its members, as it is heavily involved in outreach to the public and students of all ages and advocacy to strengthen science education. APS is also very effective at building relationships with lawmakers and government leaders, lobbying extensively for challenges faced by physical sciences (including medical



MEDICAL PHYSICS WITHIN THE AMERICAN PHYSICAL SOCIETY, Cont.

physics). Within APS, GMED provides a forum for physicists working in the biomedical space – ranging from disease modeling to biophotonics and biomagnetism to radiation sciences.

Some of GMED's accomplishments to date include:

- Regularly fielding a medical physics scientific track in the APS March and April meetings. The March meeting is a major international conference for condensed matter physics, optics, magnetism, and biophysics, whereas the April meeting focuses on particle and nuclear physics and astrophysics. AAPM members who are also APS members have presented their research or been invited speakers at both of these meetings. GMED's

presence in these events is an opportunity to exchange ideas and build collaborations with scientists working in related fields and to advertise medical physics careers within the APS community.

- Among the highlights of GMED's conference programs have been tours of local imaging and radiation oncology facilities for interested meeting participants, organized by AAPM members. Recent examples before and post COVID include a visit to Massachusetts General Hospital's Department of Radiation Oncology and Martinos Imaging Center (March 2019), the University of Minnesota's Departments of Radiology and Radiation Oncology (April 2023), and the University of

Minnesota Center for Magnetic Resonance Research (March 2024). The tours are always well attended, particularly by students, enabling GMED to promote the medical physics field in the broader physics community.

- GMED has regularly participated in many outreach and career development programs of APS. Our primary motivation has been to raise awareness of medical physics both as an area of science and as a professional field with diverse job opportunities. For example, we have contributed to the APS Career guide, a resource to inform undergraduate students on the diversity of career opportunities available with a physics degree, which has featured several AAPM members highlighting medical physics careers. GMED also has supported and staffed tables at the March and April meeting undergraduate career fairs, providing an opportunity for students to talk with medical physicists about career options.
- Our members have frequently participated in the APS Conferences for Undergraduate Women in Physics (CUWiP) as medical physics ambassadors and served on career panels at the March and April meetings. GMED has also joined APS science advocacy efforts, with several GMED leaders participating in congressional visits organized by APS.
- GMED has been active in enhancing the visibility of medical physics within APS and the global physics community through APS



Former GMED chair Richard Spencer, MD, PhD (on the right) gave an interview for APS TV at the recent 2024 March meeting about his research on macromolecular mapping in the brain with MRI.

MEDICAL PHYSICS WITHIN THE AMERICAN PHYSICAL SOCIETY, Cont.

awards and honors. GMED has established its own PhD dissertation award and conference travel awards and has been active in nominating distinguished physicists working in biomedical research for APS Fellowship. For example, this year, this honor was awarded to Dr. Donald Chang from Hong Kong University of Science and Technology for his pioneering contributions to cancer detection using MRI.

The successful GMED initiatives described above illustrate the many synergies between AAPM and APS. On the science front, APS is a home for researchers working in areas that are often highly relevant to medicine and complement AAPM's focus on radiation therapy and medical imaging, including photonics, disease modeling, biomagnetism, and material science. Moreover, many of the physics disciplines represented in APS (for example, particle physics and astrophysics) have been early adopters and heavy users of machine learning and data mining — topics

of increasing priority for AAPM. By engaging with these groups in APS conferences and through partnerships with APS publications — including its membership magazine, *Physics Today* — AAPM can benefit from their expertise as AAPM pursues its strategic goals of advancing physical sciences into new areas of medicine.

Perhaps an even more valuable aspect of a partnership with APS is the opportunity to leverage its outreach and career programs toward the development of the medical physics workforce. Compared to AAPM, APS has a much closer connection to academic institutions of all types, from community colleges to R1 universities, and a wider variety of organized education and training efforts directed towards undergraduates and even high school students. In our experience based on GMED's participation in these programs, there is a great deal of interest in medical physics among physics students and junior researchers. A deeper involvement of AAPM members in such outreach would likely help attract many of

these talented young people to our field. Furthermore, AAPM's Executive Director **David Gammel** notes that the AAPM and APS, through GMED and the [AIP Federation](#), share closely aligned missions to advance biomedical research, education, and career development, and encourages AAPM members to explore the opportunities and benefits of our collaboration.

In summary, we encourage AAPM members to become involved with GMED and APS. Some activities, particularly the outreach efforts, do not require being an APS member to participate, while others, such as attending the scientific meetings or serving as an officer of GMED, do require APS membership. If you would like to learn more about GMED's activities, plans, and how to get involved, please join us for a panel discussion during the AAPM Annual Meeting on Sunday, July 21, 10:30 AM–12:30 PM in room 408A at the LA Convention Center. ■

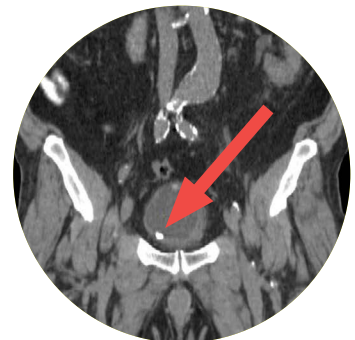
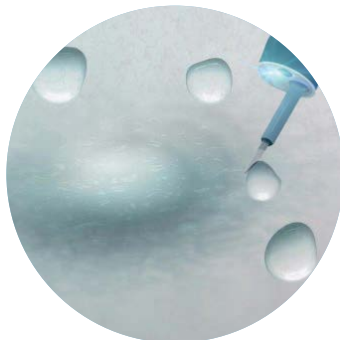


OUR NEWEST WAY TO CARE SMARTER: LIQUID FIDUCIAL MARKER

While our gold markers stand the test of time in pinpointing tumor location with great accuracy, **BioXmark® Liquid Fiducial Marker**, our newest way to Care Smarter, is unique for use in specific disease sites. The liquid nature of BioXmark enables the implantation of multiple markers of varying sizes in the same uninterrupted procedure. Sticky and soft markers form that adapt to surrounding soft tissue, providing exceptional positional stability and visibility.



LEARN ABOUT THE LIQUID NATURE OF BIOXMARK



Visit us at AAPM, Booth #619

Copyright ©2024 CQ Medical. All rights reserved. This advertisement contains information about products that may or may not be available in particular countries. CQ Medical and CIVCO RT are trademarks of Medtec LLC. CIVCO is a registered trademark of CIVCO Medical Solutions. Qfix is a registered trademark of Qfix Systems LLC. BioXmark is a registered trademark of Nanovi A/S. All products may not be licensed in accordance with Canadian law. CQ2024A142 Rev. 0

 **CQ MEDICAL™**
Care Smarter
Formerly CIVCO RT™ and Qfix®

FLASH-RT Poised to Revolutionize Cancer Treatment

RESEARCH SPOTLIGHT

In 1899, Tor Stenbeck, a general practitioner in Stockholm, used external beam radiation to treat a woman with basal-cell cancer on her nose. The patient was cured after receiving 99 treatments over several months. It was one of the first verifiable uses of radiation therapy to treat cancer.

Though radiation therapy has advanced significantly since then, the practice of delivering the prescription dose over many fractions, remains much the same. But a change in that paradigm is on the horizon, according to leading investigators in the field, in the form of FLASH radiotherapy (FLASH-RT). By delivering ultra-high-dose radiation in fractions of a second, FLASH-RT can administer an entire treatment dose in a single session while generating similar or superior clinical outcomes.

“FLASH radiotherapy is a potentially revolutionary development that will make treatment better, easier, faster and more accessible for most patients,” said **Liangzhong Xiang, PhD**, Associate Professor of Radiology and Biomedical Engineering at the University of California at Irvine.

The effects of dose rate on biological systems have been studied for decades, but the pace of FLASH research accelerated in the last 10 years after scientists led by Marie-Catherine Vozenin, PhD, at Lausanne University Hospital in Lausanne, Switzerland, showed that exposing mice to high levels of radiation in a short period of time produced similar anti-tumor effects to those receiving conventional radiation therapy with less damage to normal tissue¹. Since then, numerous studies have supported those findings and the technology has advanced to clinical trials on humans.

“Other than immunotherapy, it’s the fastest growing area in radiotherapy research,” said **Brian Pogue, PhD**, Chair of Medical Physics at the University of Wisconsin School of Medicine and Public Health in Madison.

With more than half of cancer patients requiring radiation therapy, the real and potential benefits of FLASH are enormous. Its speed—more than 1,000 times faster than the dose delivery in conventional RT—helps reduce the effects of tumor movement caused by breathing and other factors. FLASH-RT has shown potential to boost immunotherapy, an increasingly important component of cancer treatment².

Its path to clinical implementation, however, faces a significant obstacle: incomplete knowledge of why it spares normal tissue.

“There’s a lot of hype around FLASH right now, but nobody really understands why it happens,” Dr. Pogue said. “If we can’t solve the question of why normal tissue gets spared by high-dose-rate radiation, then we won’t have a chance of optimizing it.”



Richard S. Dargan
Contributing Writer, AAPM

Rongxiao Zhang, PhD
Dartmouth College

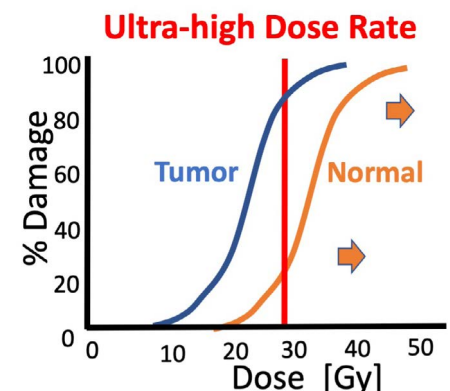


Figure 1: When compared with conventional radiotherapy, FLASH-RT offers an improved therapeutic ratio, which is the relationship between the probability of tumor control and the likelihood of damage to normal tissue.

RESEARCH SPOTLIGHT, Cont.

As Chair of the largest Medical Physics program in the country, Dr. Pogue devotes much of his research to answering this question. He is the lead principal investigator on several major National Institutes of Health-funded U01 and R01 projects using radiation physics and chemistry to understand the biology of FLASH-RT³.

Since laboratory studies have shown that oxygen depletion occurs quickly in cells exposed to FLASH irradiation, one theory is that FLASH destroys already hypoxic cancer cells while sparing normal cells. FLASH-RT also generates unstable molecules called reactive oxygen species (ROS) that kill tumor cells.

Neither oxygen nor ROS can be measured in vivo, so much of the current research is centered on developing tools to do that.

"We've got to find ways to directly measure those things in vivo in order to figure out how to optimize FLASH," said Dr. Pogue. "We're right on the edge of showing the link between the radiation chemistry that can be measured and the radiation biology that occurs in the cell and using that as a tool to understand why FLASH happens."

Radiation dose is a key modulator of FLASH-RT's tissue-sparing effects. Like oxygen and ROS, it has not been measured in vivo. Dr. Pogue is studying Cherenkov imaging, a technique that measures light emitted when the radiation beam travels through tissue, as a potential surrogate for measuring dose⁴.

Another promising option under investigation is radiation-induced acoustic imaging (RAI), a technique that takes advantage of the fact that acoustic waves are generated in objects exposed to a pulsed beam of ionizing radiation⁵. The signal is proportional to the radiation dose and can be detected and reconstructed spatially using ultrasound transducers.

Dr. Xiang is looking at RAI to measure dose precisely in real time. In a prototype device, a robotic arm holds the transducer on the opposite side of the body from the radiation beam⁷. During treatment, these ultrasound detectors could be matched with treatment-planning CT scans and whole-body ultrasound to do image-guided adaptive radiation therapy.

"Radiation acoustics can give us a real-time 3D measurement of the radiation dose deep inside the human body," said Dr. Xiang. "This is very important because it lets us adjust the treatment on the fly."

Other obstacles to FLASH-RT's implementation include a lack of clinically approved FLASH linear accelerators (LINAC). In 2021, Dr. Pogue's colleague **Rongxiao Zhang, PhD**, and his team at Dartmouth in Hanover, N.H., developed a method to convert a standard clinical LINAC to a FLASH-capable machine in only two minutes using existing accessories⁶. The machine can easily be switched back to standard LINAC. More recently, Dr. Pogue has worked with industry partners on a system eligible for clinical approval but still considered experimental when used in FLASH mode.

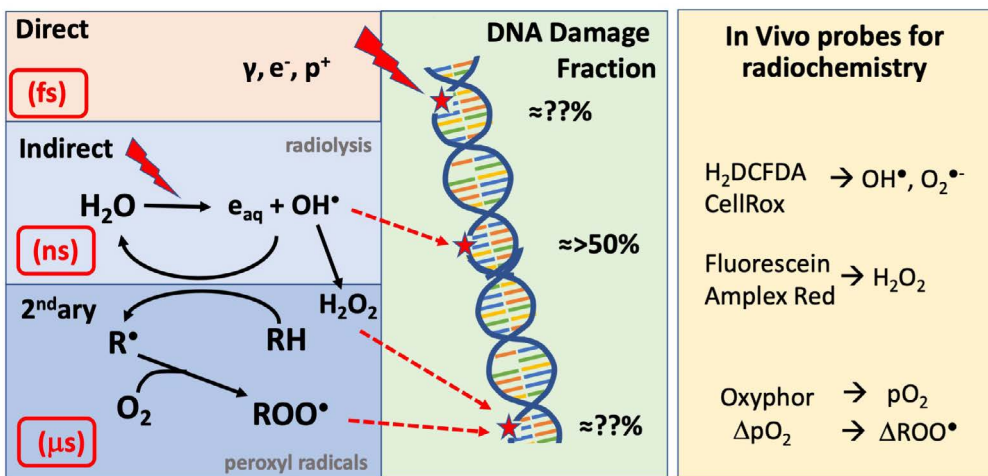


Figure 2: Several radiochemistry probes linked to DNA damage are being studied in vivo to shed light on why FLASH-RT spares normal tissue.

RESEARCH SPOTLIGHT, Cont.

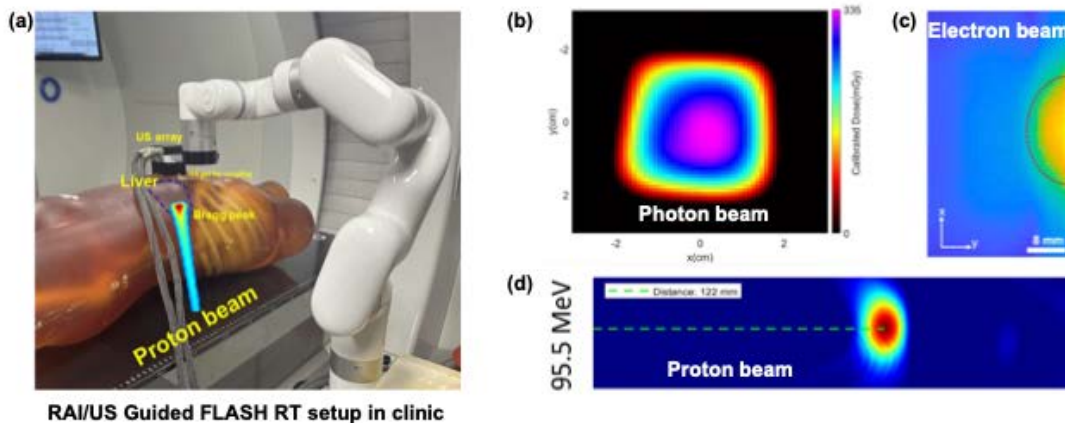


Figure 3: a) A prototype radiation-induced acoustic imaging (RAI) device with an ultrasound transducer set on the opposite side of the body from the radiation beam to measure dose in vivo. RAI has been evaluated for its effectiveness in visualizing radiation beams across various types including b) photon, c) electron, and d) proton beams in both conventional and FLASH therapy

Both Dr. Pogue and Dr. Xiang expect further acceleration in research in the near term as the number of people doing research and the number of tools to measure or deliver FLASH grow. Artificial intelligence is likely to play a role, speeding up data processing and improving reconstruction with limited views to help extract quantitative in vivo dosimetry.

More than 100 years after its first clinical use, radiation therapy is on the precipice of a new era driven by FLASH-RT; an era in which Dr. Xiang envisions image-guided FLASH-RT delivering therapeutic radiation with more precision than anything that has come before.

"I believe the future of this new technology is bright," he said. "Ultimately, FLASH will improve patient outcomes." ■

References

1. Favaudon V., Caplier L., Monceau V., Pouzoulet F., Sayarath M., Fouillade C., Poupon M.F., Brito I., Hupe P., Bourhis J., et al. Ultrahigh dose-rate FLASH irradiation increases the differential response between normal and tumor tissue in mice. *Sci. Transl. Med.* 2014;6:245ra293. doi: 10.1126/scitranslmed.3008973.
2. Zhang Y, Ding Z, Perentesis JP, Khuntia D, Pfister SX, Sharma RA. Can Rational Combination of Ultra-high Dose Rate FLASH Radiotherapy with Immunotherapy Provide a Novel Approach to Cancer Treatment? *Clin Oncol (R Coll Radiol)*. 2021 Nov;33(11):713-722. doi: 10.1016/j.clon.2021.09.003. Epub 2021 Sep 20. PMID: 34551871.
3. Cao X, Zhang R, Esipova TV, Allu SR, Ashraf R, Rahman M, Gunn JR, Bruza P, Gladstone DJ, Williams BB, Swartz HM, Hoopes PJ, Vinogradov SA, Pogue BW. Quantification of Oxygen Depletion During FLASH Irradiation In Vitro and In Vivo. *Int J Radiat Oncol Biol Phys.* 2021 Sep 1;111(1):240-248. doi: 10.1016/j.ijrobp.2021.03.056. Epub 2021 May 18. PMID: 33845146; PMCID: PMC8338745.
4. M. Rahman, R. Ashraf, R. Zhang, X. Cao, D.J. Gladstone, L.A. Jarvis, P.J. Hoopes, B.W. Pogue, P. Bruza. In Vivo Cherenkov Imaging-Guided FLASH Radiotherapy. *International Journal of Radiation Oncology*Biophysics*. Volume 114, Issue 3, Supplement, 2022, Pages S139-S140, ISSN 0360-3016.
5. Hickling S, Xiang L, Jones KC, Parodi K, Assmann W, Avery S, Hobson M, El Naqa I. Ionizing radiation-induced acoustics for radiotherapy and diagnostic radiology applications. *Med Phys.* 2018 Jul;45(7):e707-e721. doi: 10.1002/mp.12929. Epub 2018 May 18. PMID: 29679491.
6. Bjegovic K, Sun L, Kumar Pandey P, Grilj V, Ballesteros-Zebadua P, Paisley R, Gonzalez G, Wang S, Vozenin MC, Limoli CL, Xiang L. 4D in vivo dosimetry for a FLASH electron beam using radiation-induced acoustic imaging. *Phys Med Biol.* 2024 May 9. doi: 10.1088/1361-6560/ad4950. Epub ahead of print. PMID: 38722574.
7. Rahman M, Ashraf MR, Gladstone DJ, Bruza P, Jarvis LA, Schaner PE, Cao X, Pogue BW, Hoopes PJ, Zhang R. Treatment Planning System for Electron FLASH Radiation Therapy: Open-Source for Clinical Implementation. *Int J Radiat Oncol Biol Phys.* 2022 Mar 15;112(4):1023-1032. doi: 10.1016/j.ijrobp.2021.10.148. Epub 2021 Nov 8. PMID: 34762969; PMCID: PMC10386889.



AMERICAN ASSOCIATION
of PHYSICISTS IN MEDICINE

CONGRATULATIONS!

AAPM INTERNATIONAL COUNCIL ASSOCIATES MENTORSHIP PROGRAM

ICAMP was established in 2024 to promote long-term commitment to global health and international activities within AAPM. ICAMP uses a mentorship and shadowing model, allowing Associates to engage and participate with the International Council and its related internationally focused activities.

The 2024 Associates are:

Kricia Ruano Espinoza, MS
West Physics

Mary Gronberg, PhD
UT Southwestern Medical Center

Kai Huang, PhD
University of Maryland Medical Center

Williams Igoniye, MS
University of Port Harcourt Teaching Hospital

Ikechi Ozoemelam, PhD
University of Michigan

William Swanson, PhD
Weill Cornell Medicine



<https://aapm.me/ICAMP>



Updates and New Offerings from IROC Houston and the Radiation Quality Assurance Laboratory

IROC HOUSTON QUALITY ASSURANCE CENTER

Just as the field of radiation oncology is ever evolving, IROC Houston and the Radiation Quality Assurance Laboratory ("RQA Lab") have been working to create new offerings to support users of our numerous services. Whether your institution actively participates in clinical trials or wants an independent check of your clinical treatment delivery systems, we have been developing tools to enhance your user experience.

New Online User Portal

Our most recent development has been the creation of the [IROC Online User Portal](#), our one-stop shop that will allow users to perform the following actions (and more!):

- Access historic machine output performance results and data trends
- Update institutional information through the integrated Facility Questionnaire
- Submit new OSLD irradiation data
- Review previous phantom results
- Track phantom and output block processing
- Download phantom/output check reports
- Review credentialing status

In the coming months, IROC and RQA Lab will begin rolling out Portal services to users through our annual output checks. Please be on the lookout as activation emails will be sent to lead physicists. Once enrolled, the lead physicist may add additional personnel as Portal users.

Because new features are being continuously implemented, your feedback is welcome and encouraged.

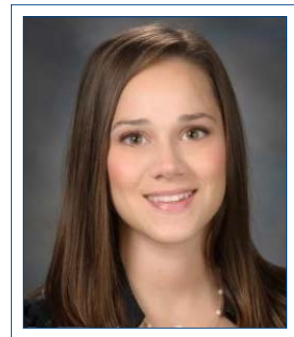
Digital Pelvis Phantom Series

A recent publication from Faddegon et al.¹ explored the impact of daily anatomical variations in the pelvis on prostate radiation therapy treatment accuracy. A DICOM repository from this work is now publicly available on the [IROC Houston website](#). This planning exercise can help assess an institution's RT plan robustness to realistic anatomical variations throughout the course of prostate treatment.

The repository contains DICOM images derived from MRI and CT scans of a single patient. The patient had three fiducials implanted in the prostate and was imaged and treated with a full bladder on a TomoTherapy unit. The images in the series were derived from the CT taken for treatment planning and six of the daily megavoltage CTs taken immediately prior to treatment. The images contain anatomical contours of the target (prostate) and other



Mallory Glenn, PhD
IROC Houston QA Center
UT MD Anderson Cancer Center,
Houston, TX



Paige Taylor, PhD
IROC Houston QA Center
UT MD Anderson Cancer Center,
Houston, TX

IROC HOUSTON QUALITY ASSURANCE CENTER, Cont.

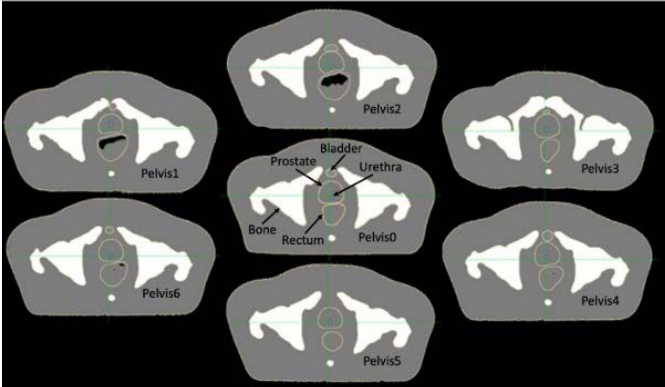


Figure 1. Digital phantom series showing the slice through the prostate nearest to the centroid of the fiducials for all seven phantoms. From Faddegon et al., 2023, used with permission.

nearby organs-at-risk. The images can be downloaded and used as a planning exercise for any radiotherapy treatment modality (photons, protons, carbon ions).

Ongoing Developments

IROC and RQA Lab stand committed to remaining up to date with innovative technologies and treatment techniques. Our offices are actively researching and developing tools for the following areas:

OSLD Dosimetry: IROC Houston is aware of the voluntary recalls issued by Landauer, Inc. for the nanoDot and microStar products. We at IROC affirm that this specific recall does not affect our dosimetry practices because we do not rely on any sensitivity specification from the manufacturer and follow the “high accuracy approach” described in AAPM TG-191². For more details, please read IROC Houston’s [recall response letter](#) on the IROC Houston website.

IROC will continue to use the nanoDot dosimeter for the time being. Recent work performed by Scott, et al.³ demonstrates that OSLD may be safely reused up to a cumulative dose of 20 Gy. While this is not a permanent solution, we are confident in our ability to reuse OSLD to higher cumulative doses while we explore other OSLD/TLD products and dosimetry solutions.

FLASH: As FLASH radiotherapy trials take off, IROC is developing and validating tools for ultra-high dose rate dosimetry audits. This work includes verification of thermoluminescent dosimeter (TLD) and film response in ultra-high dose rate beams, assessment of phantom materials and end-to-end phantom design appropriate to FLASH targets, and an independent assessment of dose rate and pulse structure.

Carbon Ion Therapy: In response to several NCI clinical trial proposals involving carbon ion radiation therapy (CIRT), IROC has developed and tested a credentialing process for CIRT. This process includes remote output checks with thermoluminescent dosimeters, an end-to-end anthropomorphic phantom audit to include a pancreas phantom, and a microdosimetry-based evaluation of RBE model implementation in the treatment planning system.

Visit us at AAPM 2024!

We look forward to seeing you at the AAPM Annual Meeting in Los Angeles, CA. You can find us at **Booth #1425** in the Exhibit Hall all week long.

Have any questions or comments regarding IROC Houston and RQA Lab services? Please contact us at irochouston@mdanderson.org. ■

References

1. Faddegon, B., Descovich, M., Chen, K., Ramos Mendez, J., Roach III, M., Wahl, N., Taylor, P., Griffin, K., Lee, C. “A Digital Male Pelvis Phantom Series Exhibiting Day-to-Day Anatomical Variation,” *Medical Physics* 51(4):3034-3044. 2024. <https://doi.org/10.1002/mp.16865>
2. Kry, S.F., Alvarez, P., Cygler, J.E., DeWerd, L.A., Howell, R.M., Meeks, S., O’Daniel, J., Reft, C., Sawakuchi, G., Yukihiro, E.G., Mihailidis, D. “AAPM TG 191: Clinical use of luminescent dosimeters: TLDs and OSLDs”. *Medical Physics*, 47(2). 2019. <https://doi.org/10.1002/mp.13839>
3. Scott, H., Alvarez, P., Howell, R., Riegel, A., Sun, R., Kry, S. “Lifetime extension of optically stimulated luminescent dosimeters above 10 Gy,” *Radiation Measurements* 171: 107063. 2024. <https://doi.org/10.1016/j.radmeas.2024.107063>

Changing, Adapting, and Growing at the 56th Annual CRCPD Meeting

LEGISLATIVE AND REGULATORY AFFAIRS REPORT

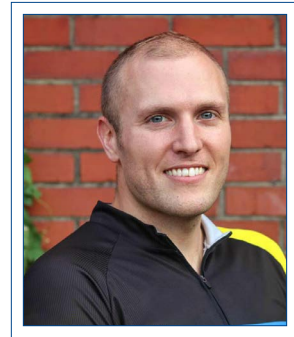
AAPM had a strong presence at the 56th Annual Conference of Radiation Control Program Director's (CRCPD) Meeting in Jacksonville, FL. President **Todd Pawlicki**, President-Elect **M. Mahesh**, members of the [CRCPD Subcommittee](#), and AAPM staff flew to the Sunshine State the week of May 20 to participate. CRCPD's theme for the meeting was "Changing, Adapting, and Growing." The agenda included talks on innovative concepts such as artificial intelligence, strengthening the workforce in radiation fields, and even the use of drones to conduct radiation surveys.

President-Elect Mahesh helped kick off the meeting by giving the honorary John C. Villforth lecture. In this talk, he focused on the communication challenges surrounding radiation. Mahesh shared the expertise he's gained by communicating with patients, students, and fellow medical providers throughout his career. Some key points were to meet patients where they are, treat them with respect, and not talk down to them. Another point was that there is an enormous amount of information out there on the web about radiation, too much for most people to make sense of. As medical and health physicists, we must provide effective communications to build trust with these individuals. You can learn more about Mahesh's honorary Villforth lecture in [an interview by ACR](#).

Other highlights of the 56th Annual CRCPD Meeting:

- President Pawlicki spoke about creating a culture of safety and quality, drawing insightful analogies from improvements in the airline industry.
- CRCPD SC coordinated a site trip to Mayo Clinic to educate regulators first-hand on how the needs of the patient come first.
- CRCPD SC members — **Robert Staton**, **Jessica Clements**, **Kevin Little**, **Kelly Kisling**, **Lindsey Berkowitz**, and **Melissa Martin** — provided a topical training on what is meant by dose and how it is calculated in various clinical applications.
- **Jennifer Elea**, CRCPD SC Liaison, and **Kathleen Hintenlang** presented on the CRCPD H-38 Committee Update regarding trends in voluntarily reported medical events.
- **David Crowley** spoke about the government relations program and activities within AAPM.
- A wide array of agencies and organizations participated, such as FDA, NRC, EPA, FEMA, DOE, IAEA, OAS, ASRT, ASTRO, and ACR.

AAPM has long partnered with CRCPD and greatly values the relationship between our two organizations. CRCPD is made up of staff from state radiation control programs, and their primary goal is to promote all forms of radiological health. They achieve this through collaboration with related



David Crowley
Senior Government Relations Manager,
AAPM HQ

LEGISLATIVE AND REGULATORY AFFAIRS REPORT, Cont.

federal and state agencies. CRCPD promotes uniformity of radiation control laws and regulations by generating the [Suggested State Regulations](#) (SSRs), which offer states templates on what should be adopted for radiation control

regulations. Notably for AAPM, CRCPD hosts the [Qualified Medical Physicist \(QMP\) Registry](#). AAPM members can also find points of contact within the state radiation control agencies through the CRCPD's [Director Map](#). ■



President-Elect M. Mahesh helps open the 56th Annual CRCPD Meeting by delivering the honorary John C. Villforth Lecture.



A convergence of AAPM presidents: President-Elect M. Mahesh, Past-President Melissa Martin, President Todd Pawlicki.

Global Research Education and Early-Career Research in Medical Physics: Showcasing Global Rising Stars

INTERNATIONAL COUNCIL REPORT

Written on behalf of: Global Early Career Research Subcommittee (GECRSC) and Global Research Education Subcommittee (GRESG).

Welcome to our special edition newsletter dedicated to celebrating the achievements and experiences and sharing insights of **Global Rising Stars (GRS)** in medical physics. Led by the **Global Early-Career Research Subcommittee (GECRSC)**, this initiative highlights the contributions and experiences of emerging talents in our field. As a subcommittee of the Global Research and Scientific Innovation Committee (**GRSIC**) under the AAPM International Council, the GECRSC is dedicated to nurturing next-generation medical physicists committed to advancing global research and scientific innovation.

One cornerstone activity of the GECRSC is the [AAPM Webinar Series on Global Research Excellence and Global Rising Stars](#). This webinar series, hosted in collaboration with the **Global Research Education Subcommittee (GRESG)** features a diverse array of topics designed to enhance knowledge of medical physicists and early-career researchers at an international scale. Previous webinars have covered essential research education themes including: creating and fostering global research collaborations¹, maximizing research impact through the scientific publication process², and leveraging open-source resources in medical physics³.

Central to these efforts is the **Global Rising Stars (GRS)** program. This initiative is designed to identify and elevate top-tier early-career researchers in medical physics within AAPM and around the world. *This includes but is not limited to, graduate students, residents, postdoctoral fellows, and/or researchers within the first 5-years of their independent academic positions following training.* The GRS program facilitates the dissemination of innovative research, promotes international scientific collaboration, and builds a robust network for the exchange of knowledge and tools. Through their participation in the AAPM Webinars and other GECRSC activities, GRS contribute significantly to the development of a unified, dynamic medical physics community driven by research and scientific innovation.

In this edition, we are thrilled to introduce and interview three outstanding Global Rising Stars featured in our previous and upcoming webinars: **Dr. Afua A. Yorke**, **Dr. Alejandro Bertolet**, and **Dr. Tess Reynolds**. Each of these GRS has made remarkable contributions in medical physics as early-career researchers. Through their experiences and advice, they offer invaluable perspectives on various aspects of research education and career development. Join us as we learn about their experiences, celebrate their achievements, and glean insights that can inspire and guide future generations of medical physicists.



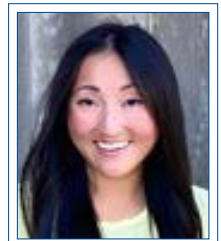
Lauren Smith, PhD
Memorial Sloan
Kettering



Mark D'Souza, PhD
Sunnybrook Health
Sciences Centre



Michael Jameson, PhD
GenesisCare and
UNSW Australia



Claire Park, PhD
Harvard Medical
School

INTERNATIONAL COUNCIL REPORT, Cont.

Creating & Fostering Global Research Collaborations¹



Afua Yorke, PhD, DABR, holds a joint appointment as an assistant professor at the University of Washington Medical School and Fred Hutch Cancer Center. She is deeply committed to advancing the field of Medical Physics and making impactful contributions to global oncology and health equity. Lately her research has been focused on developing mobile health technology: Global Oncology Cancer Surveillance and Symptom Assessment Mobile Application (GLOCASSA-App) to improve patients' experience and increase access to cancer care in underserved communities around the world. Her journey into academic medicine and as a researcher has been marked by a series of positions and honors that reflect her dedication to excellence and leadership in the field of radiation oncology. Her engagement extends beyond her academic roles, as evidenced by her participation in professional organizations such as AAPM and ASTRO. She is an active member of the AAPM and AAPM's International Council and has contributed significantly to the committees and subcommittees. She was recently elected a member-at-large within the APS-GMED Unit.

How can ECRs initiate and sustain global research collaborations effectively?

When I embarked on my journey in global medical physics, I made a conscious effort to participate in numerous conferences and workshops. This was at the height of COVID so most of the meetings were virtual, which mitigated costs significantly. While I acknowledge that attending conferences can pose financial challenges for many, there exist other avenues such as identifying potential collaborators. The significance of selecting the right partners cannot be overstated; it profoundly influences the trajectory of one's research endeavors. Based on my experience, finding the right collaborator often hinges on lived experiences. Once you've gained insight into what constitutes a successful collaboration, you're less inclined to accept anything less. Engaging in international collaborations inevitably entails navigating diverse time zones which can present logistical hurdles.

However, I've come to realize that when passion drives research pursuits, temporal differences become inconsequential; dedicated collaborators will always find a way to synchronize efforts.

What steps can ECRs take to identify potential collaborators across different regions or countries?

I encourage fellow early-career researchers to leverage professional social media platforms like LinkedIn to establish connections with international peers seeking mentorship opportunities. Oftentimes, fruitful collaborations emerge from these interactions. A valuable lesson imparted by one of my mentors, which I've found indispensable, pertains to communication. Effective communication lies at the heart of successful collaborations, particularly in the realm of global health, where cooperation spans across varied time zones and cultural backgrounds. Personally, I employ a range of communication channels including emails, zoom video conferencing, WhatsApp, and LinkedIn. Consistency in communication is paramount; I advocate for regular monthly meetings, with flexibility to reschedule when necessary, underscoring dedication to the partnership. Finally, securing funding is vital to sustain research efforts and strengthen partnerships. I recommend exploring funding opportunities tailored for international collaborations, such as grants offered by organizations like AAPM, ASTRO, and the NIH. These resources not only provide financial support but also foster growth and sustainability of collaborative endeavors.

Advancing Open-Source Resources in Medical Physics³



Alejandro Bertolet, PhD, is an Assistant Professor of Radiation Oncology at the Massachusetts General Hospital and Harvard Medical School. He leads the Bertolet Lab, focused on dosimetry and modeling of the radiobiology processes relevant for radiopharmaceutical therapies. He is funded by the NIH/NCI, having received an R00 grant to study microdosimetry, DNA damage, and repair in the exposure of neuroblastoma cells to alpha particle RPT (R00 CA267560), and an R21 grant focused on

INTERNATIONAL COUNCIL REPORT, Cont.

developing a new reconstruction algorithm for SPECT scans based on reverse physics and the Monte Carlo method.

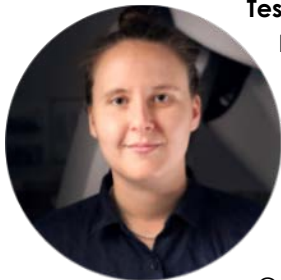
Describe your involvement in any open-source communities. How does the culture compare to traditional/commercial development environments?

I have been part of the TOPAS community, now renamed as OpenTOPAS, a Monte Carlo toolkit developed to answer the needs of medical physicists. In this case, the participation of the community has been and stays vibrant and essential to the continuous improvement of this tool, often reporting issues and desirable solutions to keep working on.

How does the community impact research output?

As I said above, the open-source characteristics of OpenTOPAS enables the extension of our capabilities to include applications with which the original developers are not necessarily familiar. This contrasts with more commercial applications, which usually provide more closed and compartmentalized solutions.

Securing Early Success in Grant Funding



Tess Reynolds, PhD, is the Deputy Director of the Image X Institute, Robinson Fellow and Cancer Institute NSW Early Career Fellow at the University of Sydney. She is a biomedical imaging physicist and winner of the 2022 Australian Eureka Prize for Outstanding Early Career Researcher (as the top

Australian scientist under 35) primarily focused on developing novel cone beam CT imaging techniques. In 2021, she received the Jack Fowler Early-Career Investigator Award from the AAPM for her new spine imaging protocol developed through an academic-industry-healthcare partnership between the University of Sydney, Johns Hopkins University, Siemens Healthineers, and Westmead Hospital. To date, Tess has received over \$7M in competitive grant funding, including three consecutive Fellowships.

How can ECRs set themselves up for success in grant funding before their first faculty position?

A few tips that I have employed myself, and try to instill in our students, are:

1. Plan ahead. For the major schemes (at least in Australia), the funding guidelines typically don't significantly change year to year, and the timelines for submission are approximately the same each year. This allows you to start preparing early (6–12 months in advance of the scheme opening), taking time to read and fully understand the funding guidelines and start identifying any weakness in your career track record/research proposal that might need addressing to be competitive.
2. Build a network that you can leverage for feedback. The network could be composed of colleagues, mentors, supervisors, or anyone willing to provide feedback on your research proposal, especially in the early stages of development.
3. Leverage the services available at your Institution. For example, reach out to the Research Office and ask for strategic reviews/advice on your proposal and request access to previously awarded grants for the scheme you are applying to.

We extend our sincere gratitude to Dr. Afua Yorke, Dr. Alejandro Bertolet, and Dr. Tess Reynolds for generously sharing their experiences and insights. Their journeys underscore the potential and opportunities to advance research and scientific innovation within the field of medical physics.

We encourage eligible early-career researchers to consider applying for the **Global Rising Stars (GRS)** program to showcase their innovative research, share experiences and insights with a global network, and drive forward scientific collaboration and excellence. To learn more, please connect with the GRSIC and GEGRSC. Through the GEGRSC initiatives, we aim to foster a vibrant community of aspiring researchers committed to advancing global research and scientific innovation in medical physics. ■

¹<https://www.aapm.org/meetings/webinars/GRSICWebinarSeriesNo1.asp>

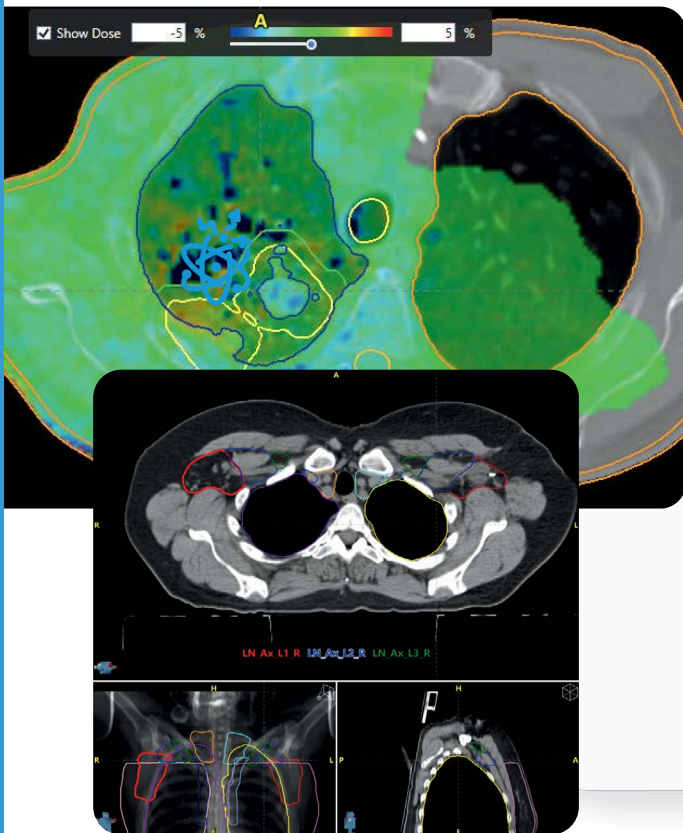
²<https://www.aapm.org/meetings/webinars/GRSICWebinarSeriesNo2.asp>

³<https://www.aapm.org/meetings/webinars/GRSICWebinarSeriesNo3.asp>



Visit Radformation at AAPM 2024 | Booth 807

Automation From Start to Finish



Be First in Line to See What's New



Powerful AI-Driven Contours

New editing tools and registration workspace



Full-Feature PSQA Functionality

With built-in log file analysis and EPID QA



Robust Machine QA/QC

More tests and customization than ever before



Radformation Acquires Limbus AI

Embarking on a future of innovation together

Schedule a Demo for AAPM

RAD formation

www.radformation.com | info@radformation.com

DEI Training Optimizes the ABR Oral Examination Experience for Examiners and Candidates

ABR UPDATE

The ABR is committed to incorporating the principles of diversity, equity, and inclusion (DEI) in its interactions with candidates, diplomates, volunteers, staff, and the public. The ABR DEI Committee is responsible for making recommendations and developing and supporting initiatives to create and sustain a diverse, equitable and inclusive environment. The DEI committee is composed of trustees from diagnostic radiology, interventional radiology, medical physics, and radiation oncology as well as representatives from the ABR Board of Governors. Over the past year, the committee has considered several options for introducing unconscious bias training for ABR volunteers. Since we typically receive DEI workplace training with employers, the ABR has been focused on developing DEI training geared towards ABR activities.

We recently conducted a pilot to compare prerecorded and live DEI training for oral examiners. The committee collaborated with a vendor to adapt their DEI training program for use with the medical physics examiners who participated in the April MP Oral Certifying Examinations. A prerecorded version of the DEI training was sent to all examiners to review in advance of the exam. On-site examiners had additional DEI training that was similar to the prerecorded version but presented in a live interactive format. The purpose was to determine which format would be most suitable for future DEI training.

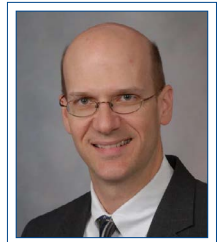
Overall, the feedback received from examiners regarding the oral exam experience optimization was positive. The training was recommended by both remote and on-site examiners, with most examiners preferring the prerecorded version as it could be viewed at the examiner's convenience and paused while viewing. On the other hand, several of the onsite examiners noted that the interactive format was better suited for live discussion. Additionally, participants pointed out that the live format was presented the day before the exam, which provided timely guidance to avoid unconscious bias when conducting exams.

The committee is now discussing which training is most suitable for our volunteers. We are currently proposing to incorporate the pre-recorded version of the training for the next interventional radiology and radiation oncology oral exams. We will make the training available in advance of the exam date and set a deadline a month before the exam for completion of the training. This will assist in identifying examiners who did not complete the training and encouraging them to do so. To ensure active participation, "Test your knowledge" questions will be inserted at the end of the training. The DEI Committee will evaluate the process annually to ensure that this training is effective.

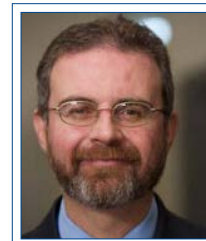
The ABR DEI committee will continue to develop training for other ABR scenarios that will consider language, gender, race, age, and other factors to enhance the oral exam experience and extend this experience to all ABR volunteers. ■



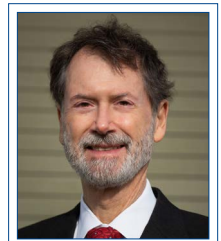
Kalpana Kanal, PhD
ABR Trustee
University of Washington



Robert Pooley, PhD
ABR Trustee
Mayo Clinic



Matthew Podgorsak, PhD
ABR Board of Trustees Chair
Roswell Park Cancer Institute



Geoffrey Ibbott, PhD
ABR Associate Executive Director

The ABR's examiners receive extensive training on conducting oral exams. The DEI training is one component of this education. Have questions about Continuous Certification (MOC)? See the video of our March 7 webinar and answers to all the questions that were asked at <https://aapm.me/WebinarArchive>.

Introducing SunCHECK[®] 5.0

The Connected Workspace for Higher Quality

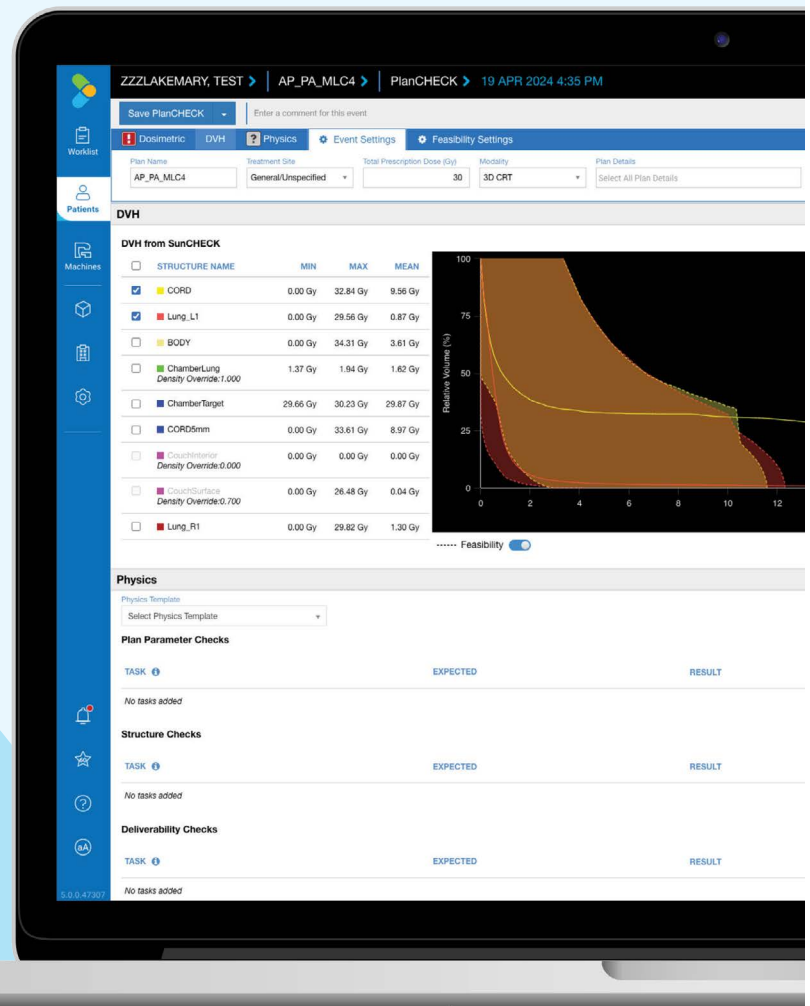


Aggregate insights, actions, and opportunities to drive continuous improvement in radiation therapy.

Featured enhancements:

- Plan complexity metrics
- Evaluation of plan feasibility per patient
- Enhanced TPS integration
- Refreshed UI with worklist focus

**Learn more &
request a demo.**



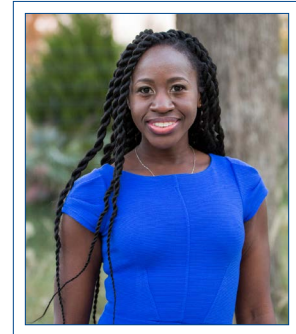
AAPM Supports AIP DEIBA Strategy

EQUITY, DIVERSITY, AND INCLUSION COMMITTEE REPORT

Earlier this year, AAPM endorsed the American Institute of Physics' (AIP) Diversity, Equity, Inclusion, Belonging and Accessibility (DEIBA) strategy. This initiative reinforces the collaborations amongst AIP and all of its sister organizations to address the underrepresentation of underserved communities in science, technology, engineering and mathematics. The groups being supported by these efforts include racial and ethnic minorities, LGBTQIA+ people, people with disabilities, and women.

This action reemphasizes AAPM's firm commitment to ensure that people of all backgrounds feel included, seen, heard and respected throughout our organization. Since the start of the pandemic, AAPM has included equity, diversity and inclusion (EDI) as one of its strategic goals. Before this took place, most of the diversity and inclusion work within AAPM was handled by the Women and Minority Recruitment Subcommittee ([WMRSC](#)), which was originally maintained under the Education Council. WMRSC, under the leadership of AAPM pioneers like **Dr. Stephen Avery** and supported by staff such as **Jacqueline Ogburn**, created the DREAM (Diversity Recruitment through Education and Mentorship) Summer Research Fellowship Program that has offered research experience to women and underrepresented minority students since 2006. The DREAM initiative is one of the most successful AAPM programs related to EDI and has funded over 100 trainees, many of whom have continued studying science and some of whom are current full members of AAPM.

The DEIBA endorsement allows AAPM to be more firmly connected to resources and strategies that will help AAPM remain the premiere medical physics society, one that is progressive and attractive to our current and future members. As we engage with this DEIBA strategy, it is incumbent upon our AAPM members that they take time each year to verify their confidential demographic information in their [AAPM personal profile](#) to ensure that AAPM staff has the correct, de-identified and pooled data to inform our team on how to update our EDI programming. ■



Julianne M. Pollard-Larkin, PhD
MD Anderson Cancer Center



REVIEW COURSES

Already planning to register for the AAPM Annual Meeting in Los Angeles?

Consider adding a comprehensive review course just prior to the start of the meeting. These courses provide a good review for physicists entering the specialty and physicists who would benefit from a refresher taught by experts in the field. Pre-Conference Event Courses will be held concurrently on Saturday and Sunday, July 20-21.

Registration Fees are the same for In-Person (which includes On-Demand access) and On-Demand only.

More Information on Course Content >>

Categories and Fees >>

aapm.me/annual | [#aapm2024](https://twitter.com/aapm2024)

Working Group on Grand Challenges

Do you know an important, unsolved medical physics scientific issue?

Let AAPM's Working Group on Grand Challenges (WGGC) help you organize a Grand Challenge, an engaging way to address scientific dilemmas while connecting with the AAPM membership and the broader medical physics research community!



**2024
Call for
GRAND
CHALLENGE
Proposals**

WGGC is dedicated to promoting Grand Challenges focused on enhancing medical imaging in diagnostic and therapeutic applications. We're currently welcoming proposals from groups interested in hosting a Challenge ahead of the 2025 Annual Meeting. Selected proposals will receive sponsorship, including some financial support, and guidance from WGGC to facilitate successful execution. Don't miss this opportunity to make an impact! Learn more and find the proposal application form [here](#).

Please e-mail proposals to Emily Townley (emily@aapm.org) by 5:00 PM EDT on Wednesday, July 31, 2024.

Quality, Safety, and Physics at the 2024 ASTRO Annual Meeting

ASTRO QUALITY IMPROVEMENT

The theme for the 2024 ASTRO Annual Meeting is "Targeting Provider Wellness for Exceptional Patient Care." The meeting will focus on an important aspect that deserves our consideration — being well, treating your physical and mental health as a priority, and living to achieve work-life balance — all go a long way toward helping us to serve as role models for patients. During the ASTRO meeting, content will highlight various aspects of provider wellness and its correlation to patient care.

The 2024 ASTRO Annual Meeting will be held at the Walter E. Washington Convention Center in Washington, DC, September 29 – October 2, 2024. A virtual option for attendees who are unable to join in person is also available. ASTRO will offer the full program to which attendees are accustomed including engaging education and scientific sessions with opportunities for networking events. We are excited to continue several of the new offerings from this past year, such as extended education sessions and deeper dives into important topics in the workshop series.

ASTRO 2024 has been uniquely designed to ensure that attendees from around the world continue to access timely scientific and educational content. The Presidential Symposium will highlight innovations in genitourinary cancers. The symposium sessions will review advances in multidisciplinary approaches for kidney, bladder and prostate cancers. The sessions will serve as a catalyst for implementing and applying innovative clinical practice into caring for patients with genitourinary cancers. The Cancer Breakthroughs and Science Highlights sessions have been expanded to provide attendees with the latest science. Storytelling sessions will highlight various topics from promoting sustainability to managing provider wellness after medical errors.

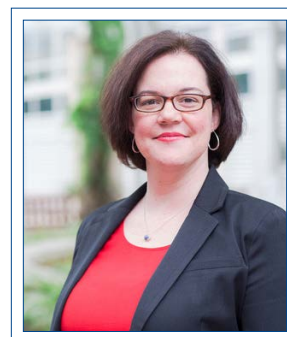
The ASTRO Annual Meeting is an important venue for medical physicists to connect with each other and with peers in the clinical and basic science realm. Each year quality and safety-focused sessions are presented at ASTRO, and we wanted to take this opportunity to share a few details about the meeting and the activities of some physics colleagues.

ASTRO 2024 Highlights

Saturday, September 28

1:00 PM – Workshop 02 – Radiopharmaceutical Therapy Workshop

Jacqueline Zoberi, PhD, Stephen Graves, PhD, and others will lead an extended workshop focused on clinical indications, difficult cases, medical physics considerations, development of standard operating procedures for clinical implementation, billing and safe theranostic delivery practices. Specifically, Radium-223, Lutetium-177 dotatate and Lutetium-177 PSMA-617 will be discussed.



Randi Kudner
ASTRO, Assistant Director of Quality Improvement

ASTRO registration is open!

www.astro.org/annualmeeting

Registration Deadlines:

Advance: June 28 – August 15, 2024

Standard: After August 15, 2024

The 2024 ASTRO Annual Meeting will be held at the Walter E. Washington Convention Center in Washington, DC, September 29 – October 2, 2024. For more information on the program and the schedule, please visit the [Learn page](#).

Celebrate with RO-ILS at AAPM and ASTRO

RO-ILS, co-sponsored by ASTRO and AAPM, is celebrating 10 years with receptions at their respective annual meetings. For AAPM Annual Meeting attendees, join patient safety leaders and RO-ILS users on Sunday, July 21 from 5:00–7:00 PM Pacific time in Room 404AB (Level 2) of the Los Angeles Convention Center to applaud RO-ILS accomplishments from the first decade of RO-ILS operation. Everyone is welcome.

ASTRO QUALITY IMPROVEMENT, Cont.

Sunday, September 29

8:00 AM – EDU 02 – Knowledge is Power: A Decade of RO-ILS Experience

Eric Ford, PhD, FASTRO, Bill Salter, PhD, and others will present 10 years of RO-ILS: Radiation Oncology Incident Learning System®. This session will briefly explain the history and current status of the program, followed by the latest RO-ILS trends and findings. After discussion about the program's impact, the panel will discuss the future of error reporting and how to advance radiation oncology safety in the next decade.

2:30 PM – EDU 04 – Fine ART: Ever Evolving Online Adaptive Radiotherapy Technologies and Clinical Innovations

Brian Winey, PhD, and Indrin Chetty, PhD, MS, FASTRO, will lead an extended session focused on adaptive radiation therapy. This session will be devoted to the basic scientific innovations, translational physics developments, and clinical deployments of adaptive radiotherapy workflows for the improvement of patient treatments and outcomes. The speakers include physicists, physicians and a dosimetrist from multiple institutions where adaptive radiotherapy techniques have been developed and deployed for clinical treatments, representing both photon and proton therapy and CBCT, MR and PET imaging systems.

Monday, September 30

8:00 AM – EDU 17 – Elevating Excellence without the Extra Steps: APEx Insights and Innovative Strategies

Doug Prah, PhD, Michael Howard, PhD, and others will offer an open discourse, inviting participants to share insights on the assessments encountered within ASTRO's APEx – Accreditation Program for Excellence®. Led by experienced APEx Surveyors, attendees will have the opportunity to exchange innovative strategies and collaboratively brainstorm solutions for overcoming common challenges of accreditation. The session will also provide interactive discussions, encouraging participants to ask questions and build a community of practice around quality and safety.

9:15 AM – Keynote

Bryan Sexton, PhD, is the Director of the Duke Center for Healthcare Safety and Quality. He leads the efforts around research and training that guide their quality improvement

and well-being activities. A psychologist member of the Department of Psychiatry, Brian is a psychometrician and spends time developing methods of assessing and improving safety culture, teamwork, leadership and especially workforce well-being. Currently, he is disseminating the results from a successful NIH R01 grant, using RCTs to demonstrate that we can cause well-being to improve in health care workers.

10:45 AM – ST 01 – Overlooked No More: Managing Provider Wellness after Medical Errors

Elizabeth Covington, PhD, will lead a panel discussing her own experiences navigating practice after being involved in or witnessing an error. An architect of the Resilience in Stressful Events program at Johns Hopkins University will share techniques in how best to support second victims. They will share what they have learned in their peer-support program providing psychological first aid to health care workers in the years since its implementation. There will also be exploration of future areas of improvement, drawing in part from other industries, to support those experiencing the second victim phenomenon.

10:45 AM – EDU 20 – Contemporary FLASH-RT to its Clinical Translation

Rongxiao Zhang, PhD, Anthony Mascia, PhD, MS, Stephen Kry, PhD, and other experts from NRG will elaborate on 1) current and the outlook for FLASH delivery technologies; 2) dosimetry, QA and credentialing requirements for FLASH trials; 3) considerations on FLASH treatment planning and bookkeeping; 4) recommendations on the design of FLASH clinical trials.

5:00 PM – EDU 31 – Simulation-Free Radiotherapy Treatment Planning and Workflow — From Diagnostic CT and MR to State-of-the-Art On-Board Imaging

Rojano Kashani, PhD, will lead a session providing an overview of different sim-free workflows using diagnostic CT, MR, as well as on-board CBCT for planning, discuss the current state of sim-free workflows available clinically, the types and quality of images available on standard and specialized linacs, as well as future direction for utilization of these techniques clinically.

5:00 PM – RO-ILS 10-Year Reception

Everyone is invited to the RO-ILS: Radiation Oncology Incident Learning System® 10-Year Reception to celebrate

ASTRO QUALITY IMPROVEMENT, Cont.

the first decade of the RO-ILS program! Light hors d'oeuvres and a drink ticket will be provided. Connect with people passionate about patient safety as we applaud the accomplishments from 10 years of RO-ILS operations. No registration required.

Tuesday, October 1

12:45 PM – EDU 39 – Linear Energy Transfer (LET) and Relative Biological Effectiveness (RBE) in Proton Therapy — Controversies and Gaps in Knowledge

Ying Xiao, PhD, Harald Paganetti, PhD, and others will review recent studies that correlate clinical outcomes as the endpoints with dosimetric parameters, discuss the limitations of the reported results and the consequences of such limitations and what needs to be done further to advance the state of the art.

5:15 PM – EDU 61 – Practical Elements of a Radiopharmaceutical Program: Findings from ASTRO's Safety White Paper

Jacqueline Zoberi, PhD, Jessica Clements, MS, and other authors will present the findings from ASTRO's Radiopharmaceutical Therapy Safety White Paper, describing practical information on establishing and maintaining a radiopharmaceutical program in radiation oncology.

5:15 PM – EDU 56 – Perspectives from a Physicist, Biologist and Clinician: Unrealized Opportunities in Spatially Fractionated Radiotherapy (SFRT)

Yuting Lin, PhD, Yolanda Prezado, PhD, and others will provide an overview of the field from their unique perspective as well as advancing research and future perspectives where SFRT is moving.

Continuing Medical Education for Physicists

An application will be submitted to the Commission on Accreditation of Medical Physics Education Programs (CAMPEP) for medical physics continuing education credits (MPCEC). Physicist attendees will not receive certificates of credit from ASTRO. The names of physicist attendees will be sent to CAMPEP 45 days after the meeting. Any credits claimed after the evaluation deadline will not be submitted by ASTRO to CAMPEP. CAMPEP credits will be available for in-person and virtual meeting attendance. Credits will not be available for the ASTRO Annual Meeting onDemand.

ASTRO looks forward to seeing you in Washington, DC! ■

Save
the
Date!

AAPM  2025
SPRING CLINICAL MEETING





AMERICAN ASSOCIATION
of PHYSICISTS IN MEDICINE

UPCOMING AAPM WEBINARS

Register for these events at
<https://aapm.me/webinars>

JULY 11
12:00–1:00
PMIET

AAPM Webinar Series on Radiochemistry and Oxygen Sensing in the Era of FLASH RT
Webinar #3 Effects of Oxygen and Oxygen Radicals in Biological or Biochemical Systems

JULY 16
12:00–1:00
PMIET

Securing Grants in Early Career

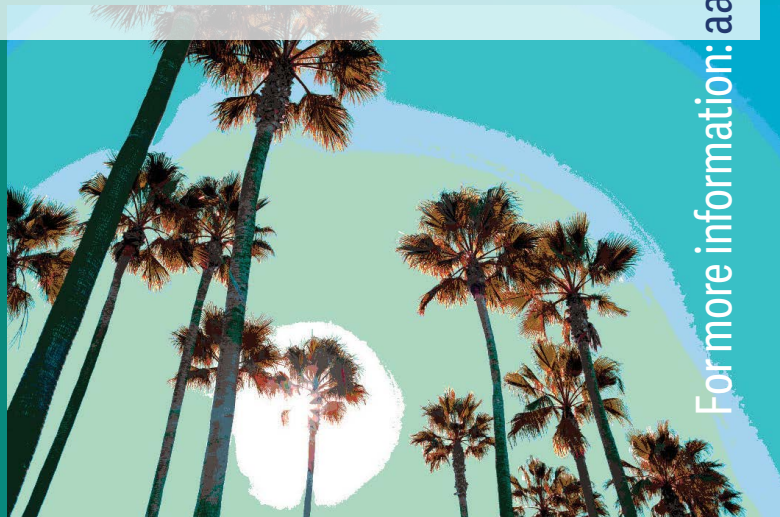
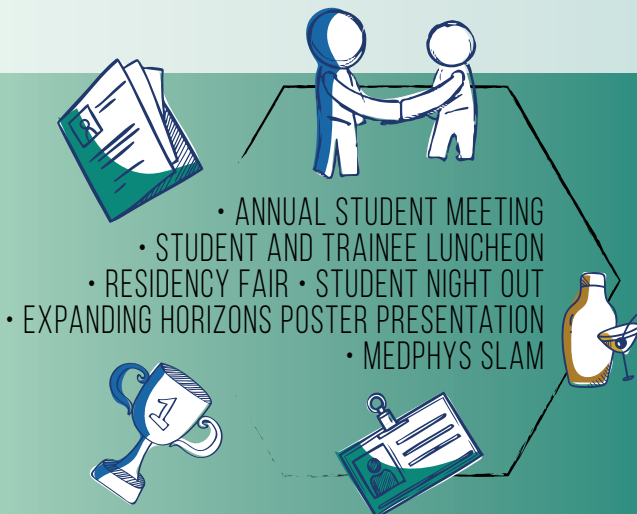
AUGUST 6
12:00–2:00
PMIET

AAPM Webinar Series on Advances in Medical Physics
Present and Future of Photon Counting CT: the "Hottest" Clinical Procedure in Radiology

AUGUST 13
12:00–1:00
PMIET

A Day in the Life of a Medical Physicist in Low-to-Middle-Income-Countries: Latin America and the Caribbean

GET EXCITED FOR THESE GREAT
STUDENT & TRAINEE EVENTS
IN LOS ANGELES THIS JULY AT
AAPM'S 66TH ANNUAL MEETING!



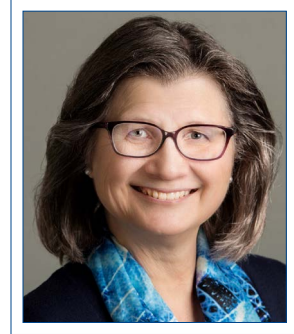
For more information: aapm.me/annual

Report from the Medical Imaging and Data Resource Center (MIDRC)

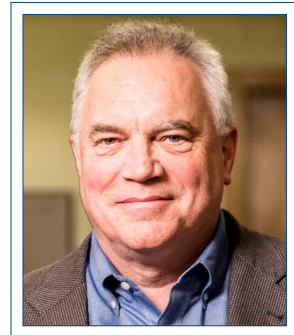
AAPM-MIDRC SUBCOMMITTEE REPORT

MIDRC (the Medical Imaging and Data Resource Center; midrc.org) supports open data and open science. During its first three years of operation, MIDRC has collected more than 300,000 X-ray and CT imaging studies, has released more than 176,000 imaging studies from roughly 75,000 patients across the U.S., and has helped to create 27 in-house algorithms, including (i) AI algorithms and (ii) algorithms as resources for AI investigators. MIDRC is now beginning to acquire imaging and associated metadata from multiple new modalities, such as MRI and ultrasound, related to its selection as a performer in the ambitious **ARPA-H Biomedical Data Fabric (BDF) Toolbox project**. These new collections will pivot MIDRC's focus to now include oncology data, making MIDRC an even greater and more comprehensive resource for data scientists and artificial intelligence/machine learning researchers (more information on the ARPA-H BDF Toolbox is [HERE](#)).

Along with ARPA-H and the **National Science Foundation's Artificial Intelligence Research Resource (NAIRR) pilot** (read the full NSF press release [HERE](#)), MIDRC is funded by the National Institute of Biomedical Imaging and Bioengineering (NIBIB), and brings together domain experts and researchers from AAPM, RSNA, ACR, the Gen3 data platform, the University of Chicago, NIH, and various government agencies. The collaborative nature of this initiative allows MIDRC to leverage the existing infrastructure, resources, and personnel of its participating organizations, making a large and lasting impact on the national artificial intelligence ecosystem.



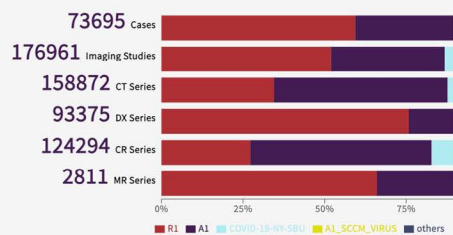
Maryellen Giger, PhD
University of Chicago



Paul Kinahan, PhD
University of Washington

MIDRC Data Commons

The Medical Imaging & Data Resource Center (MIDRC) Data Commons supports the management, analysis and sharing of medical imaging data for the improvement of patient outcomes. The data in MIDRC are open access in order to foster machine learning innovation through data sharing and include in addition to imaging files, patient demographic data, COVID-19 test results and other clinical data, harmonized study descriptions utilizing the LOINC playbook, and image DICOM tags for purposes of data filtering and selecting cohorts for analysis.



All data publication numbers as of May, 2024

In an effort to democratize access to computational tools and foster inclusivity and innovation, MIDRC widely disseminates information on its advances and makes its developed algorithms and tools open and accessible to all researchers. You can discuss current advances with members of AAPM's [MIDRC Subcommittee](#) and learn more about available and open-source MIDRC data and resources by visiting the **MIDRC Booth (Exhibit Hall, Booth #606)** during AAPM's upcoming [Annual Meeting](#) (Los Angeles, July 21–25)! There you will find information about:

Please direct inquiries to:

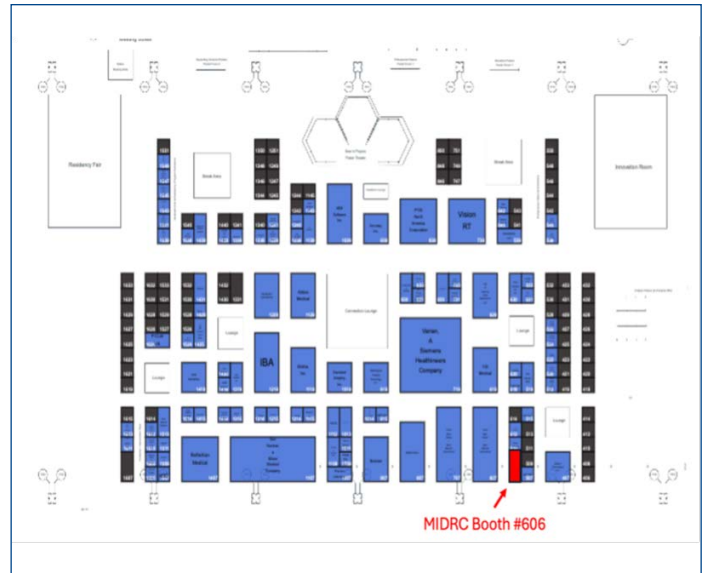
Maryellen Giger, PhD, FAAPM,
Paul Kinahan, PhD, FAAPM, or
Emily Townley, AAPM MIDRC Program
Manager



AAPM-MIDRC SUBCOMMITTEE REPORT, Cont.

- [The MIDRC MetricTree](#), an interactive decision-tree tool tailored to recommend performance metrics for computational research.
- [The MIDRC Bias Awareness Portal](#), a resource for researchers and practitioners to learn about the various forms of bias possible along the AI/ML development pipeline, including real-world examples, bias measurement metrics, best practices, and mitigation strategies.
- The MIDRC Diversity Calculator, an open-source dynamic tool for measuring, monitoring, and comparing the representativeness of biomedical datasets, was recently the subject of the monthly [MIDRC Seminar Series](#) (free and open registration for these educational Seminars is [HERE](#)).
- Cohort selection in the MIDRC data commons, MIDRC's public GitHub with various [algorithms](#), harmonizing varied incoming imaging study descriptions with the [LOINC](#) ontology, MIDRC's processes of sequestration and task-based sampling, and MIDRC's multi-modal investigations and interoperability.

MIDRC has been a standout presence at many national meetings and conferences. In April, NIBIB hosted an in-person workshop on the NIH campus in Bethesda, MD, entitled “**MIDRC – A Vision for the Future of Trustworthy AI in Medical Imaging**”. The workshop was moderated by Dr. Kris Kandarpa (Director of Research Sciences and Strategic Directions, NIBIB), was hosted by **Dr. Bruce Tromberg**



(Director, NIBIB), and featured presentations by the MIDRC Principal Investigators (learn more about MIDRC's team [HERE](#)), among others. The workshop was extremely well-attended by researchers and stakeholders from a variety of federal agencies, institutes, and societies (including AAPM's Executive Director, **David Gammel**), who gathered to discuss the current state and future strategic direction for MIDRC as it expands from COVID-19 to address any disease, organ system, and imaging modality.

In March, MIDRC was also a featured attendee at [the Academy for Radiology and Biomedical Imaging Research's](#) 12th Annual Spring Events and Meetings in Washington, DC. AAPM members and MIDRC investigators participated in an “Artificial Intelligence in Imaging” Research Roundtable discussion at the National Press Club, and then highlighted MIDRC progress during a Medical Imaging Technology Showcase on Capitol Hill.

These recent meetings and accomplishments underscore the importance of the work being conducted within the MIDRC community and highlight the growing recognition of AAPM's contributions at the federal level. We look forward to leveraging these resources and opportunities to further advance our goal of accelerating machine intelligence research.

Upcoming 2024
Challenge Announcement:
**MIDRC XAI Challenge:
Decoding AI Decisions for Pneumonia
on Chest Radiographs:**
Winners receive \$50,000 in cash prizes
and MIDRC support for their
code/models through the FDA
regulatory process!

AAPM-MIDRC SUBCOMMITTEE REPORT, Cont.

In light of MIDRC's upcoming expansion into oncology-specific data collection, you can make an important contribution to MIDRC's efforts by facilitating a data contribution from your academic institution or hospital system (we are especially interested in data from rural or traditionally under-represented communities) — please contact any member of the [AAPM-MIDRC Subcommittee](#) or find information about data contributions on [MIDRC's website](#).

Thank you for your continued support of MIDRC – we look forward to seeing you in Los Angeles in July! ■



Left: MIDRC PI, Dr. Maryellen Giger and AAPM's C. David Gammel, NIH April 26, 2024.
Right: MIDRC PIs, with Bruce Tromberg (Director), Kris Kandarpa and Rui Sá (all NIBIB/NIH), attend a MIDRC Workshop in April at NIH



Pictured left to right, top row: President-elect Mahesh Mahadevappa and Rep. Anna Eshoo; AAPM's David Crowley and Academy staff; AAPM leadership, members, and staff attend the Academy Research Roundtable in March; Maryellen Giger and AAPM's Emily Townley
Pictured left to right, bottom row: Maryellen Giger and Rep. Anna Eshoo; Dr. Kris Kandarpa (NIBIB), Dr. Bruce Tromberg (Dir., NIBIB), Dr. Maryellen Giger (MIDRC, University of Chicago), Dr. Rui Sá (NIBIB), Emily Townley (AAPM)

INTRODUCING **T3**

X-ray QA Meter

With New Smart
PROFILE
Technology

Compatible with
NEW **AG3** QA Software



Radcal

For further details:

Contact us at +1 (626) 357-7921 • sales@radcal.com or www.radcal.com

Visit us at AAPM, Booth 1112
7/21-7/25, Los Angeles, CA

AAPM2025

67TH ANNUAL MEETING & EXHIBITION | July 27–31 | Washington, DC

NEW!

In 2025 AAPM will be planning earlier for the Annual Meeting Program!
The RFP will now open **August 27, 2024**

RFP Opens	Tuesday, August 27, 2024
RFP Closes	Thursday, October 10, 2024
Abstract Submission Site Opens for Proffered Abstract Submissions	Tuesday, November 5, 2024
Deadline for Proffered Abstract Submissions	Tuesday, January 14, 2025
Authors Notified of Presentation Disposition	Thursday, April 24, 2025
Online Meeting Program Goes Live	Friday, May 9, 2025

Early Career Investigator in Imaging Travel Award Recipient's Experiences

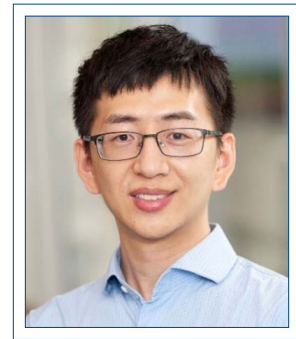
AAPM TRAVEL AWARD REPORT

The Academy for Radiology & Biomedical Imaging Research (Academy) created the Council of Early Career Investigators in Imaging (CECI²) in 2014 to recognize the achievements of junior researchers and engage them in advocacy for medical imaging research funding. In October 2023, AAPM's Research Committee chose my nomination from the group of applicants, and I was selected to join the Academy's CECI² Class of 2023-2024, along with 33 other junior investigators across the country. I am currently an assistant attending physicist in the Department of Medical Physics at Memorial Sloan Kettering Cancer Center, with research interests in cone-beam CT and image-guided radiation therapy. My team is developing nonstop gated CBCT imaging for respiratory gating radiotherapy, which can substantially decrease the scan time and imaging dose as compared to the current clinical gated CBCT.

The Academy has implemented year-long virtual programming aimed to prepare and support junior investigators as we begin the process of NIH grant applications. For instance, the Academy arranged online sessions of "NIH 101" and "Navigating the Labyrinth of NIH". A panel of Academy leaders mentored us and shared their experiences with the NIH grant applications, as well as how to ensure a meaningful connection with Program Officers. The upcoming Academy CECI² Summer Series will include the 'Dos and Don'ts of Grant Writing', an overview of the grant submission process, the grant re-submission and the reviewer's mandate, and lab management after funding. All these sessions are extremely helpful for researchers who are in the early stage of their careers.

The CECI² program also provides an opportunity to build connections with other early-career researchers from different academic institutions, imaging societies, and industries. These junior researchers have various research backgrounds and interests within the medical imaging field but share similar concerns and questions on career development and grant application. We had peer-to-peer discussions and commented on each other's grant proposal. About 70% of CECI² members are MDs, while the other 30% are PhDs. This experience has been invaluable for me because MDs and PhDs offer different perspectives on the same research project and grant proposal. These connections began a few months ago and will continue to strengthen throughout our careers as the Academy continues to facilitate ways to stay in touch. It is a huge asset to have a network of peers supporting each other along the way.

In March 2024, the CECI² members assembled in Washington, DC for the 12th Annual Academy Spring Events & Meetings. We had the opportunity to interact with industry leadership, governmental agency leadership and academic leadership from across the country at the Academy Research



Hao Zhang, PhD
Memorial Sloan Kettering Cancer Center

For more information on the Academy's mission and the program, visit their website [HERE](#).

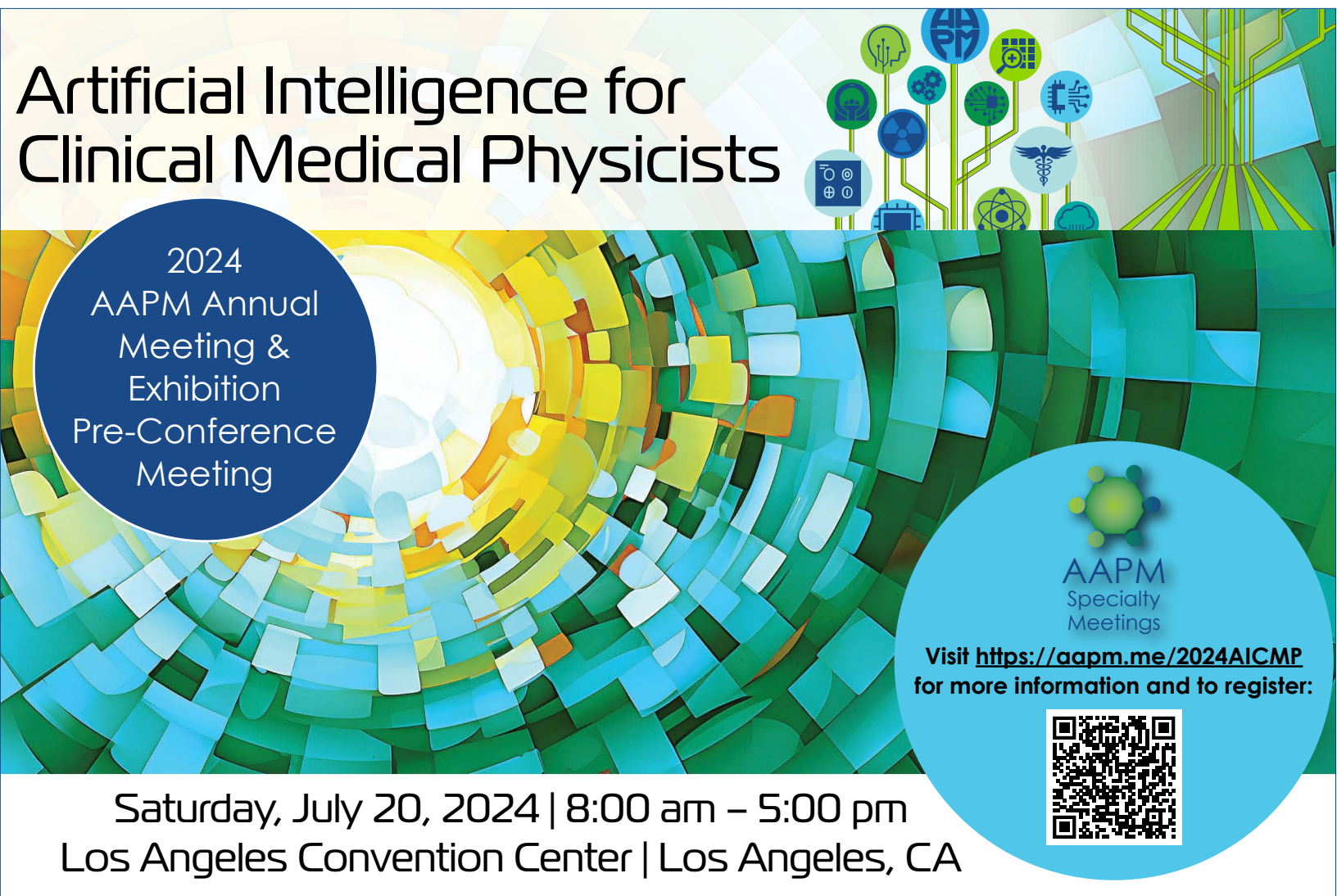
Nominations are NOW being accepted for the 2025 CECI class. Please find requirements and application [HERE](#).
Deadline for submissions is July 19, 2024 (11:59 PM EDT).



AAPM TRAVEL AWARD REPORT, Cont.

Roundtable meeting held at the National Press Club. The Academy also hosted the 2024 Medical Imaging Technology Showcase on Capitol Hill, and we displayed and talked about our research with congressional staff throughout the event. In addition, we joined the effort to bring the message about the importance of funding NIH and medical imaging research directly to Capitol Hill on Academy Hill Day. We had in-person meetings with federal policy makers and their staff on Capitol Hill, introduced our current research and the impact of the research to our patients and our district. We asked for their continued support for NIH budgets and medical imaging research in FY2025.

It has been quite a unique program and invaluable experience for me. I enjoyed the various activities organized by the Academy and learned new things from them. I am extremely grateful to the AAPM Science Council and Research Committee for giving me this opportunity to be the AAPM representative to the Academy's CECI² program. I also look forward to communicating with AAPM's nominees for future CECI² members. ■




Artificial Intelligence for Clinical Medical Physicists

2024
AAPM Annual
Meeting &
Exhibition
Pre-Conference
Meeting

AAPM
Specialty
Meetings

Visit <https://aapm.me/2024AICMP>
for more information and to register:



Saturday, July 20, 2024 | 8:00 am – 5:00 pm
Los Angeles Convention Center | Los Angeles, CA

Maryellen Giger, AAPM Liaison to AIMBE Meeting March 23-25, 2024 in Washington, DC

AAPM AT THE AIMBE ANNUAL MEETING

AIMBE, the American Institute for Medical and Biological Engineering, held its annual meeting this past March 23–25, 2024. The theme this year was “AI and Biomedical Technologies: Policy and Ethics of Innovation”.

The American Institute for Medical and Biological Engineering (AIMBE) is a non-profit organization representing the most accomplished individuals in the fields of medical and biological engineering. Such fields often overlap those of AAPM members. The mission of AIMBE includes providing education to the public and advancing public policy on medical and biological engineering for the benefit of society, promoting intersociety and multi-disciplinary cooperation within the medical and biological engineering community, and recognizing achievements to the field of medical and biological engineering.

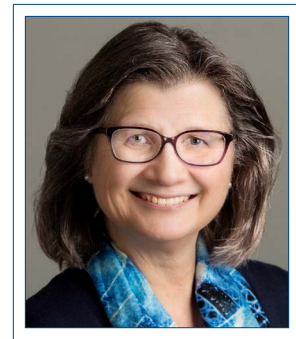
As a member of AIMBE, AAPM belongs to the AIMBE Council of Societies. AAPM benefits from AIMBE's mechanism to coordinate and enhance interaction among scientific organizations in medical and biological engineering. AIMBE fosters intersociety dialogue and provides a cohesive public representation, especially through Capitol Hill visits. Other AIMBE society members include the American Society of Biomechanics, the American Society for Laser Medicine and Surgery, the American Society of Mechanical Engineers, the Biomedical Engineering Society, the Engineering in Medicine and Biology Society of IEEE, the International Society for Advancement of Cytometry, the Orthopedic Research Society, the Society for Biomaterials, and the TERMIS World Congress.

One of the main points of this year's meeting was introducing the new AIMBE Strategic Plan, which will focus on three areas: (i) elevating the value of AIMBE membership, (ii) extending AIMBE's advocacy impact, and (iii) providing local support to AIMBE Fellows. More information is available at aimbe.org/strategic-plan.

The event started with an evening reception at the Library of Congress at which **Bruce Tromberg**, Director of NIBIB, was invited to address the attendees. He noted the role of AIMBE, as well as that of the Academy for Radiology and Biomedical Imaging Research, in obtaining the support of Congress and others in the establishment of the NIBIB. Dr. Tromberg suggested that perhaps the two could work together in the future on some shared goals.

The AIMBE program included the Earl Bakken Lecture, entitled “Dynamic Imaging and Interfacing with the Brain by Means of ML/AI” given by Bin He from Carnegie Mellon University. He studies AI to understand the brain, so that ultimately AI can be used to help us use our brain to control our environment, such as the systems being implemented for epilepsy patients.

Other talks included “Digital Medicine: From Idea to Clinic, and Implementation to Policy” presented by Dean Ho from National University of Singapore, “Developing Ethics and Equity Tools to Advance Health Equity



Maryellen L. Giger, PhD
University of Chicago



Pictured left to right: Maryellen Giger (AIMBE Fellow 2000), with new 2024 Fellows: Savannah Partridge, Robert Jeraj, Jan Seuntjens, and Kullervo Hynynen

AAPM AT THE AIMBE ANNUAL MEETING, Cont.

and Researcher Diversity in AI and Machine Learning" presented by Rachele Hendricks-Sturup from the Duke-Margolis Center for Health Policy; "AI in Cell Manufacturing: Ethical Challenges and Opportunities" presented by Aaron Levine from Georgia Tech; "AI, Equity, and Ethics in Health Care" presented by Gabriella Waters from the Cognitive & Neurodiversity AI Lab; and "Accessible, Affordable, and Equitable AI for Precision Medicine" presented by Anant Madabhushi from Georgia Tech/Emory University. Many interesting points were noted in these talks, and associated panel discussion, including recognizing that for AI-based models, all biases cannot be removed from a model, however, the key is to focus on harmful biases that should be removed if possible. And that often with some diseases, such as in prostate cancer where one in seven men will get prostate cancer, but only one in forty will actually die from it, image-based risk scores related to the pathology and subtypes can be beneficial in determining treatment, and potentially avoiding unnecessary treatment options. Repeatedly, it was noted that data were important, especially in assessing differences in AI across groups, i.e., creating population-based models. One noted that while there are data from great clinical trials, they are locked away.

Also, at the AIMBE meeting, a Keynote Policy Address was given by Jennifer Roberts, Director of the Resilient Systems Office at the Advanced Research Projects Agency for Health (ARPA-H). ARPA-H supports the development of high-impact research to drive biomedical and health breakthroughs to deliver transformative, sustainable, and equitable health solutions for everyone. ARPA-H's mission focuses on leveraging research advances for real world impact. Dr. Roberts noted various ARPA-H programs as well as the four initial mission focus areas of (i) Health Science Futures, (ii) Scalable Solutions, (iii) Proactive Health, and (iv) Resilient Systems. [Side note: MIDRC's ARPA-H funding is under the Resilient Systems Office]. Roberts also discussed the ARPANET-H Network on bridging disparate pieces of

the health ecosystem and powering communities via ARPA-H, noting the Stakeholder and Operations Hub, the Customer Experience Hub, and the Investor Catalyst Hub. Also discussed was the ARPA-H AI Vision to leverage AI to drive safe and effective innovation across the health ecosystem including patients and providers. ARPA-H aims to maximize the benefits and minimize the harms of AI to improve the health ecosystem. She talked about the first Customer Experience Hub & Spoke Initiative on Advancing Clinical Trial Readiness (ACTR) and about DIGIHEALS on Digital healthcare Security. Thus, AAPM (e.g., via Science Council and other member initiatives) should actively follow the ARPA-H website and announcements for potential funding opportunities.

A panel discussion on diversity, equity, and inclusion focused on fostering inclusive department practices in the era of challenging federal and state laws. Panel members noted their efforts and the benefits of diverse members.

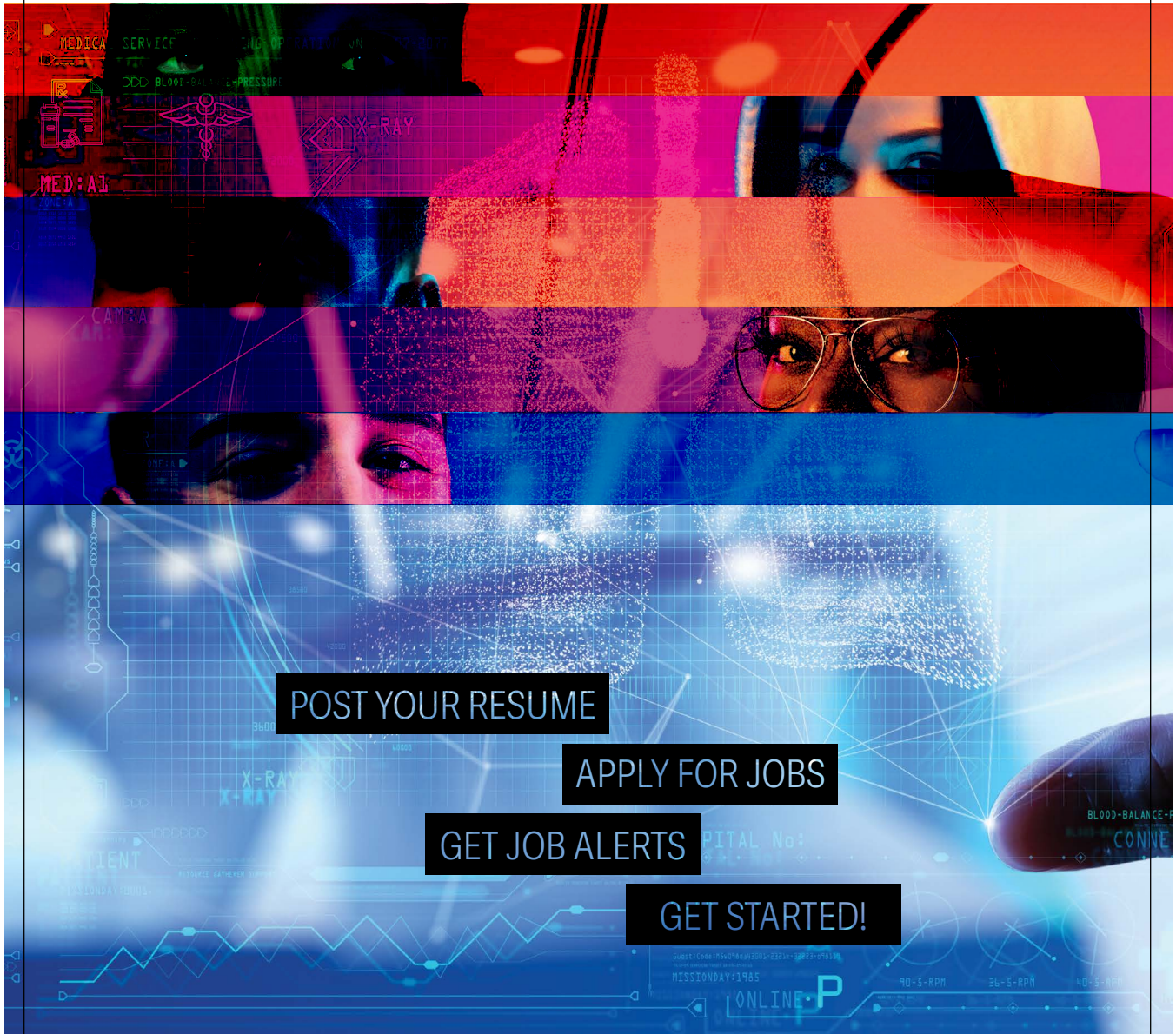
At this year's Council of Societies Meeting, a discussion was held — with active AAPM participation — on how AIMBE could better serve its members, and how the societies could increase opportunities to interact and learn from each other. Suggestions included having AIMBE meet with the government relations personnel from the different societies, creating a chart linking the societies with each other based on their main areas of expertise, and increasing communication from AIMBE to the members of the various societies. While AIMBE updates are currently shared with AAPM members, there are opportunities to strengthen government relations efforts between the two societies, particularly focusing on the areas of common interest to the members.

AAPM members as AIMBE Fellows continue to grow. The new 2024 Fellows included AAPM members **Jan Seuntjens** and **Robert Jeraj**. All new fellows learned about AIMBE through their new fellow orientation. See their induction via the photos below. ■



AAPM CAREER SERVICES

CONNECTING medical physicists with the finest JOBS



POST YOUR RESUME

APPLY FOR JOBS

GET JOB ALERTS

GET STARTED!

Find your future at aapm.org/careers



Eclipse v18.0 TREATMENT PLANNING SYSTEM

Gateway to Future Innovation

Visit us at booth #719 at AAPM



GOLDEN STATE HACKATHON

When the stars come out...
the Varian Developer Workshop begins.

Los Angeles Convention Center
Saturday, July 20, 2024 from 5:30-9:00pm



Scan to register

varian

A Siemens Healthineers Company

Grace Gwe-Ya Kim Elected to RSS Board of Directors

PERSON IN THE NEWS



Grace Gwe-Ya Kim, PhD

Founded in 2002, the Radiosurgery Society (RSS) is an international non-profit society consisting of physicians, physicists, and healthcare professionals dedicated to advancing the education, science, and clinical practice of stereotactic radiosurgery, stereotactic body radiation therapy, and advancing therapies. The RSS announced the newly elected members of its Board of Directors, whose two-year terms started on April 1, 2024. Congratulations to **Grace Gwe-Ya Kim, PhD**, who has been elected as the Medical Physics Officer on the RSS Board of Directors. Dr. Kim is a Professor and

Assistant Vice-Chair of Clinical Medical Physics at the University of California, San Diego, and was elected a Fellow of the AAPM in 2021. She is an active AAPM member, volunteering on and leading numerous committees, has served as an author on multiple AAPM reports, and presented many times at AAPM meetings. Her research focuses on patient safety, implementing novel treatment techniques, and improving intracranial radiosurgery procedures. ■



Jennifer Pursley, PhD
Massachusetts General Hospital

AAPM SCIENCE COUNCIL ASSOCIATES

**MENTORSHIP
PROGRAM**

This program has been established to recognize and cultivate outstanding researchers at an early stage in their careers, with the goal of promoting a long-term commitment to science within AAPM. The program uses the process of “shadowing” to integrate the Associates into the scientific activities of the organization.

THE 2024 ASSOCIATES ARE:

Claire Park, PhD
Harvard Medical School

Daniel Alexander, PhD
University of Pennsylvania

Emily Hewson, PhD
The University of Sydney

Emily Thompson, PhD
MD Anderson Cancer Center

Soleil Hernandez, PhD
University of Colorado Anschutz Medical Campus

Sudharsan Madhavan, PhD
Memorial Sloan Kettering Cancer Center

Sunan Cui, PhD
University of Washington

Zi Yang, PhD
Stanford University

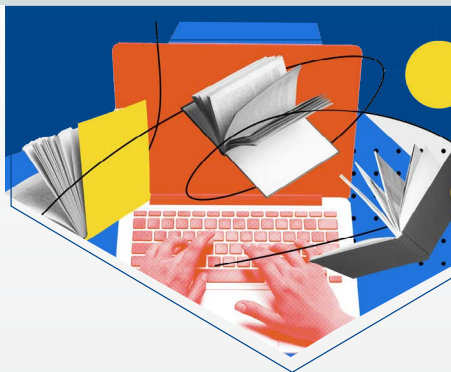
AAPM 2024

66TH ANNUAL MEETING & EXHIBITION



JULY 21-25 | LOS ANGELES, CA

EMBRACING CHANGE. IMPACTING PATIENT CARE.



VISIT THE EDUCATION & RESEARCH FUND DONORS LOUNGE LEVEL 1 FOYER

(WEST LOBBY, CONVENTION CENTER)

The AAPM Education & Research Fund supports the development of our great profession via the provision of seed money for research, fellowships for PhD students, fellowships for undergraduate students, and grants to support Imaging Physics residencies.

Without contributions from our generous members, we would never have been able to provide the now over 100 grants, fellowships, and residencies since the inception of the Fund 24 years ago.

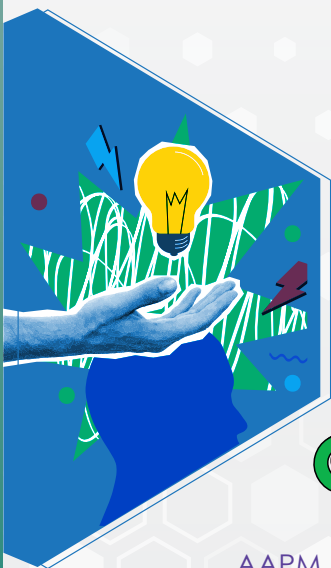
All contributions are tax deductible. Larger donations may be designated for specific fellowships, residencies, travel awards, research, or other suitable purposes.

focus on
OUR future

Give to the

AAPM Education & Research Fund

www.aapm.org/education/edfundintro.asp



DOWNLOAD the AAPM 2024 ANNUAL MEETING APP!



STAY CONNECTED DURING THIS YEAR'S MEETING WITH OUR NATIVE APP FOR IOS & ANDROID

- Gain off-line access to the Annual Meeting Program, Exhibitor Maps, and more.
- Explore the city of Los Angeles with its iconic entertainment, dining, shopping, star-studded Walk of Fame, and more during your down time.

GET MORE INFO & DOWNLOAD THE APP:
[HTTPS://AAPM.ME/MEETINGAPP](https://aapm.me/meetingapp)



1631 Prince Street, Alexandria, VA 22314 | p. 571-298-1300 • f. 571-298-1301 | aapm.org