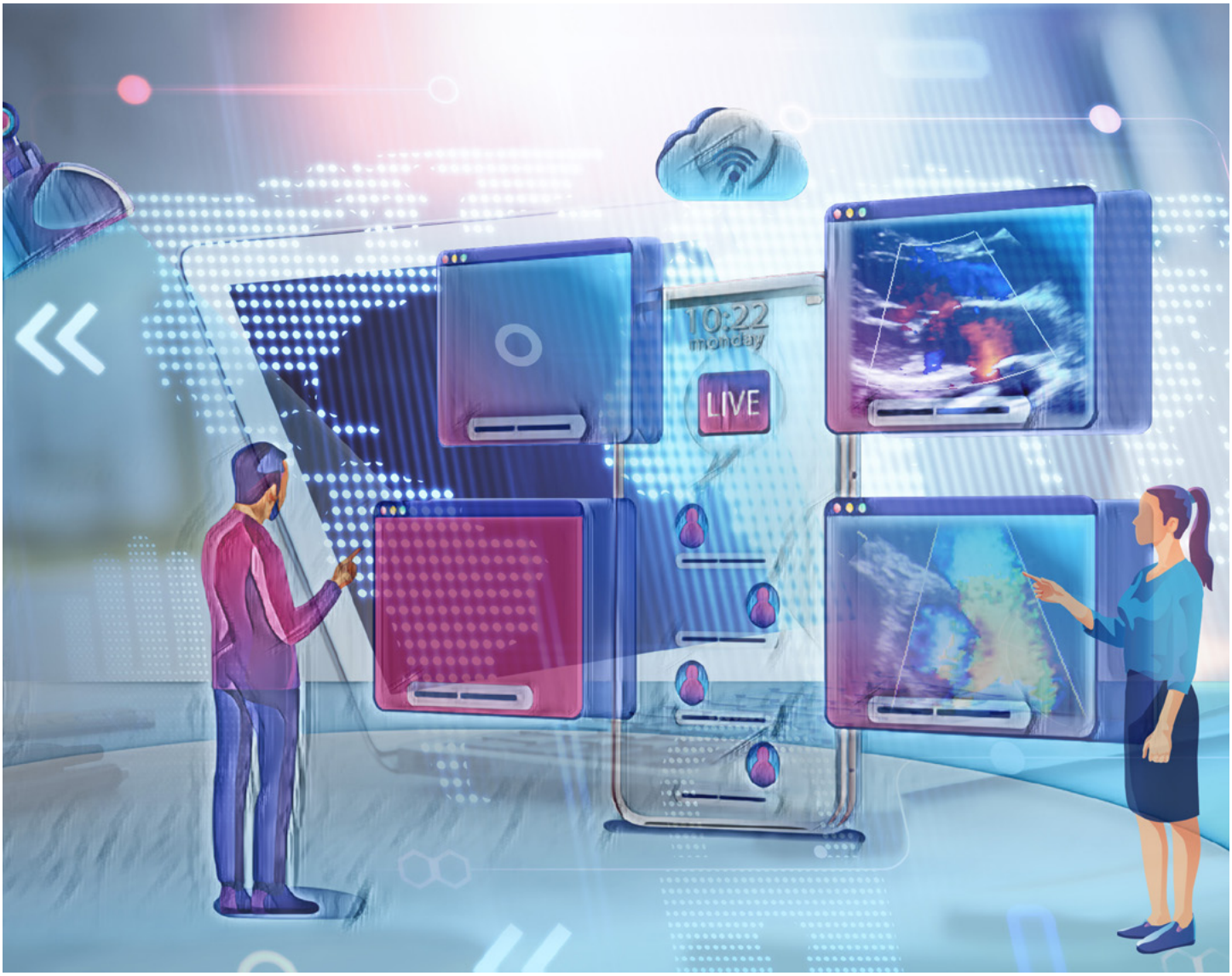
AMERICAN ASSOCIATION of PHYSICISTS IN MEDICINE

IMPROVING HEALTH
THROUGH MEDICAL PHYSICS

# AAPM NEWSLETTER

**March/April 2021** | Volume 46, No. 2




**IN THIS ISSUE:**

**COVID-19 UPDATE**

*Notice as of Sunday, February 28, 2021, 9AM Eastern Time.*

- COVID-19 Information for Medical Physicists
- All AAPM in-person meetings, plans for AAPM funded travel and meetings of other groups at HQ are to be canceled through July 31, 2021.

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### EVENTS/ANNOUNCEMENTS



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### SUBMISSION INFORMATION

Please e-mail submissions
(with pictures when possible) to:
newsletter@aapm.org
AAPM Headquarters
Attn: Nancy Vazquez

### PUBLISHING SCHEDULE

The AAPM Newsletter is produced bi-monthly.
Next issue: May/June 2021
Submission Deadline:
April 2, 2021
Posted Online: Week of May 3, 2021

### 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.

# AAPM 2021

JULY 25–29 | VIRTUAL

## 63RD ANNUAL MEETING & EXHIBITION

CREATIVE SCIENCE.
ADVANCING MEDICINE.

**Join the global medical physics community this summer for five days of exciting content and real-time connection.**

#AAPM2021 will be fully virtual, with an online platform offering outstanding scientific, professional, and educational content as well as opportunities to interact and network with friends and colleagues worldwide.

Featuring a theme recognizing the enormous contributions of medical physics to the development of modern medicine, #AAPM2021 will explore the various ways creativity and scientific expertise merge to continue its evolution.

***Your registration includes 12 months of online access to content on-demand.***

## IMPORTANT DATES:

- **April 7, 2021**
  Registration opens online.
- **April 13, 2021**
  Authors notified of virtual meeting presentation disposition.
- **Week of July 12, 2021**
  Virtual platform made available to registrants for pre-meeting exploration.

AMERICAN ASSOCIATION *of* PHYSICISTS IN MEDICINE

#AAPM2021 | aapm.me/annual

# LISTENING AND LEARNING, KEEP GOING

**PRESIDENT-ELECT'S REPORT** J. Daniel Bourland, MSPH, PhD
Wake Forest School of Medicine

Greetings AAPM Colleagues:

I am delighted to be writing this first report in my new role as AAPM President-Elect. Since the early summer, I have been in the listening-and-learning mode for AAPM's robust activities, issues, and opportunities. There have been an abundant number of emails, conference calls, and virtual meetings of AAPM's Board, five Councils (Administrative, Education, new International, Professional, and Science), and EXCOM — I haven't changed my email address, yet. It has been a pleasure to have met many of you during these meetings, and I thank you for your informative committee reports and our discussions, as these have all helped greatly with my orientation.

I have appreciated the discussions and wisdom of AAPM's executive committee comprised of **Saiful Huq** (Board Chair), **Jim Dobbins** (President), **Jennifer Johnson** (welcome to our new Secretary!), **Mahesh Mahadevappa** (Treasurer), and **Angela Keyser** (Executive Director). EXCOM is functioning well, addressing short-term issues and thinking strategically for the future along with the Board and Councils. The presidential chain terms are one year each as President-Elect, President, and Board Chair (followed by Chair of Nominating Committee). While this amounts to three years as an officer, the one-year term can be short for conducting initiatives. Thus, the presidential chain is discussing how to provide continuity for initiatives and issues across terms to best provide for oversight of our activities.

I would like to include a reminder for virtual meetings in 2021: AAPM's 2021 Virtual Spring Clinical Meeting, 2021 Virtual Summer School — "Modern Applications of MR in Radiation Therapy," and the 2021 Virtual Annual Meeting & Exhibition — "Creative Science. Advancing Medicine" featuring a wonderful welcome video by our President.

Substantial work has been done for continuity of our meetings during the pandemic, and I want to recognize the following groups for their responsiveness and ability to transition quickly to provide exceptional content, engagement, and continuing education:

Meeting Coordination Committee

Annual Meeting Subcommittee

Spring Clinical Meeting Subcommittee

Summer School Subcommittee

Ad Hoc Committee to Respond to the Impact of the Coronavirus (COVID-19) on AAPM Meetings (AHRICM)

**Email:** bourland@wakehealth.edu


**Our journals, *Medical Physics* and *The Journal of Applied Clinical Medical Physics*, strongly represent AAPM in the scientific and professional realms. Strategic planning continues on Open Access and print vs. electronic media, overseen by JsBMC and the respective editorial teams led by Editors-in-Chief** John Boone **and** Michael Mills.

## PRESIDENT-ELECT'S REPORT, Cont.

The Headquarters team works with a meetings industry partner, giving us the best leverage when negotiating and contracting with host cities, convention centers, and hotels. Based on AAPM's excellent history, industry relationships and by implementing a deliberate and thoughtful strategy, we were able to rebook contracts with terms favorable for AAPM. Whether our meetings are in person or virtual, it is the participants that bring value to each meeting — I encourage you to participate as fully as may be possible.

The AAPM Board and Councils have important strategic planning underway, with two of the top priorities being Advocacy — telling others who we are, what we do, and of our value — and Broadening the Field — broadening our expertise, our scope, our diversity, and more.

Advocacy initiatives are underway within our MP3.0 and AHECSM committees. AAPM will also shortly launch an Ask-the-Expert website. In addition, President Jim Dobbins has made this one of his presidential priorities.

A tradition for the President-Elect is to *actually* visit a number of AAPM Chapters to meet membership and discuss medical physics and the state of the AAPM. Since visits are not possible right now, I welcome the opportunity to participate from afar in your virtual meeting. My talk includes the topics of Advocacy, Diversity, Education, "Saying Yes" to Opportunities, and even something about "bringing back the AAPM Fun Run!" Please do not hesitate to contact me if your chapter or physics group would be interested in having me participate in your meeting or workshop.

The richness of AAPM resides in our remarkable members, volunteers, headquarters staff, and other colleagues. Together, we bring a diverse mix of expertise, experiences, interests, and cultures to AAPM's mission of Improving Health. In the midst of a pandemic, I commend all of you for your continuing contributions in medical physics and public health for the benefit of your workplaces, homes, and communities. I encourage all to "keep going" and take care of themselves to best take care of others.

Please let me know if you have comments or suggestions about AAPM's mission, priorities, and committees or would like me to participate in your meeting or seminar — my email is *still*: bourland@wakehealth.edu. ■

### OUR CONDOLENCES

Jackson H. Cundiff, BS | Charles Richard Griffith, MS | Vaughn C. Moore, PhD

Walter A. Matis Jr., MS | Dinko Plenkovich, PhD

*Our deepest sympathies go out to their families. We will all feel the loss in the Medical Physics community.*

If you have information on the passing of members, please inform HQ ASAP so that these members can be remembered appropriately. We respectfully request the notification via e-mail to: 2021.aapm@aapm.org
(Please include supporting information so that we can take appropriate steps.)

# THE VALUE OF HAVING CASH RESERVES

**TREASURER'S REPORT** Mahadevappa Mahesh, PhD | Johns Hopkins University

As we continue to navigate these unprecedented times, we will host the Spring Clinical Meeting and Annual Meeting completely virtually again this year. After last year's experience pivoting to a virtual format, I feel this year's meetings will be even better. I would like to applaud the Meeting Coordination Committee and AAPM Staff for their efforts to make this happen.

Every year in the fall, when we work on the AAPM annual budget, the questions often arise about "cash reserves," how much do we have? how much do we need to have? and is it too high? which can impact our tax-status (not-for-profit). Hence in this issue, we will focus on "Cash Reserves" and how it differs from "Cash Flow." Thanks to **Robert McKoy**, AAPM Finance Director, below is a brief discussion on the topic of cash reserves. The issue of "cash flow" will be a topic in a future article.

For years the commonly held belief was that having reserves wasn't considered a best practice. This perception was born primarily out of two beliefs. The first being that not-for-profits were not allowed to operate at a surplus. However, as **Angela Keyser**, AAPM Executive Director, often states, "not-for-profit is a tax status; it is not a business plan." Not-for-profit organizations should operate at a surplus in order to build cash reserves, which help ensure the organization's viability and ability to deliver its mission. The second reason was that many leaders feared that by having reserves, potential donors would view the organization less favorably when evaluating where to donate their money. However, the sophisticated donor understands the need for organizations to set aside money to launch new future initiatives, sustain them through periods of operating deficits, or simply to have additional resources available for a rainy day.

These perceptions were often supported by actions taken by some not-for-profit watch-dog groups. Frequently during the late 1990s through the mid-2000s, charity watch-dog groups would give lower ratings to organizations with cash reserves. The feeling was that this money should be used for mission-related activities instead of being saved and/or invested. However, the financial crisis of 2007-2008 changed this perception. According to *Nonprofit Quarterly*, 13.5% of public charities closed during the period 2007-2010. In many cases, a decline in revenue was a major driver; however, the lack of cash reserves to help sustain the organization through the decline was the overarching reason behind their demise. Many for-profit and not-for-profit organizations could not survive this crisis because they lacked the cash to pay their liabilities. Technically speaking, insolvency is the inability to pay one's obligations when they come due. A person or a company could be

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**I would like to thank** Robert McKoy **and the entire AAPM finance staff for all their help during this past year and for making the budgeting process and the job of Treasurer manageable. Please feel free to reach out to me (**email **me, call me at 410-955-5115, or** tweet **me) if you have any questions concerning this report.**

generating plenty of revenue but lack the access to cash to pay its obligations when they come due.

One of the watch-dog groups, Charity Navigator, calculates a Working Capital Ratio (see below) to assess the adequacy of an organization's cash reserves:

$$\frac{\text{(Short Term Assets – Short Term Liabilities)}}{\text{12 Months Expenses}}$$

For an organization to earn the most points toward a top rating by Charity Navigator, an organization would need a ratio greater than one. A ratio of one is equal to 12 months of working capital. Based upon the 2019 audited financial statements, AAPM's working capital ratio is 1.51. Charity Navigator evaluates a nonprofit organizations' financial health by including measures of stability, efficiency, and sustainability. They also track accountability and transparency policies to ensure the good governance and integrity of the organization. **As a result of strong financial performance and solid governance policies, AAPM received a finance and accountability rating of 100 out of 100 from Charity Navigator.**

The economic fallout from the COVID-19 pandemic has once again highlighted the value of having cash reserves. Many for-profit businesses and not-for-profit organizations have experienced declines in revenue because of the pandemic, and as a result, have been forced to reduce expenses to preserve cash to allow them to remain viable. Those with inadequate cash reserves or who have been unable to secure external cash resources to bolster cash flow have been forced to close their doors.

How much does a business and more specifically a not-for-profit, need to maintain in cash reserves? Most financial experts state that one should maintain cash reserves equal to 3-6 months of their monthly expenses at a minimum. This level of cash reserves protects them for that period of time in the event of a reduction or elimination of revenue without taking any actions to reduce costs. If one can also reduce their costs, then they would be able to survive a downturn for a longer period. However, it should be noted that this is not a ceiling but a floor in terms of the establishment of cash reserves.

AAPM has been able to maintain high financial standards during its existence by having a team of volunteer leaders and staff with a long-term vision and understanding of the actions necessary to achieve these long-term goals. Back in 1996, the Board of Directors approved AP-28. The policy has been renewed since then but states:

*AP-28E – The AAPM will aim to maintain assets equal to one year's operating budget, outstanding bonds payable on the headquarters building, plus additional funds as are necessary to cover long-term obligations.*

Therefore, as of December 31, 2020 the calculation is as follows:

| | |
|---|---|
| 2021 Operating Budget | $ 9,699,244 |
| Bonds Payable | 3,558,575 |
| | $ 13,257,819 |

Therefore, the targeted reserves for AAPM as of December 31 should be $13.3M. It should be noted that the 2021 budgeted operating expenses are lower than normal as the result of the Annual, Summer School, and Spring Clinical meetings being held virtually, thus reducing travel and catering related costs.

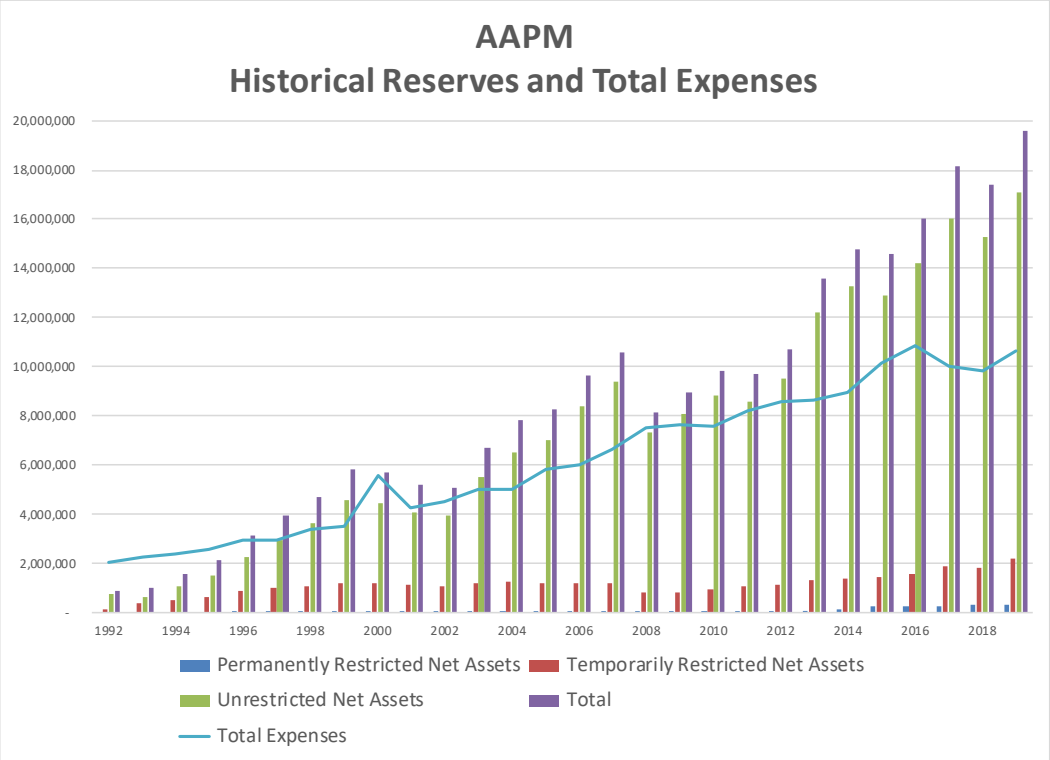
View here.

As of December 31, 2020, AAPM investment reserves were $16.1M. This means that our Association is well-positioned to navigate the turbulent waters created by this pandemic. Even in the event of a complete economic shutdown whereby the Association stopped receiving any revenue, the Association could continue to operate for over one year without reducing expenses. On the next page is a graphical presentation of this principle over the years.

In it, net assets reflect the accumulated earnings or surpluses of AAPM. The horizontal dark blue, green, and red lines represent the net assets by category, and the purple lines reflect the total net assets of AAPM. The light blue line represents the annual operating expenses by year.

As you can see, in 1992, total expenses exceeded the net assets of the Association. After 2000 you will note that net assets have consistently exceeded the expenses of the Association. This is the result of sound fiscal management

## TREASURER'S REPORT, Cont.




as well as consistent strong market performance. What this means for you as a member is that AAPM is well-positioned to succeed even in turbulent times and continue to work towards achieving its strategic objectives.

Strong cash reserves helped AAPM finance the purchase of the headquarters building in Alexandria, Virginia, at interest rates below market value. This further strengthens the bottom line of the Association, reducing interest expenses paid to the bank.

Not all reasons for maintaining substantial cash reserves can be measured by the bottom line. Organizations driven by mission often must launch new programs to achieve their strategic goals. Frequently not-for-profits evaluate the benefit of launching a new program or initiative. However, the operating budget will not support the initiative, and therefore the program is delayed until adequate funding is secured. However, an organization with healthy cash reserves can make the strategic decision to operate at a deficit for a period of time and cover these deficits from reserves to initiate a new program that will drive forward the mission and help the organization achieve its strategic objectives. Organizations with solid cash reserves can begin these new initiatives even when the operating budget will not support them. The ability to move rapidly to meet an organization's constituents' needs is vital in the rapidly changing landscape of today.

As a result of the pandemic's lingering effects, it is anticipated that revenue in 2021 for AAPM will be down slightly. The budget approved by AAPM's Board of Directors has a larger than normal deficit. By having substantial cash reserves, the Association didn't need to cut into programs that might hamper our ability to continue to meet our strategic goals during this short-term downturn in revenue.

Through sound fiscal management and managing investment risk, AAPM has positioned itself to not only survive but thrive in good times and bad without feeling overly restricted from taking the necessary steps to achieve organizational strategic goals. ■

AMERICAN ASSOCIATION of PHYSICISTS IN MEDICINE

# MEDPHYS 3.0 WEBINARS

The Medical Physics 3.0 (MP3.0) Webinar Series on Transformational Medical Physics provides monthly one-hour webinars free to members and the public. Moderated by MP3.0 Chair Ehsan Samei (Duke University), event topics are in the spirit of this initiative to ***redefine, reinvigorate, and promote the practice of sustainable excellence in medical physics.***


**What's Up with Imaging Protocols?**

Thursday, March 11, 2021 | 12:00 pm ET

*Speakers: Tim Szczykutowicz, University of Wisconsin; Justin Solomon, Duke University*


**Does Research Have a Place in the Clinical Practice of Medical Physics?**

Thursday, April 8, 2021 | 12:00 pm ET

*Speaker: Ken Fetterly, Mayo Clinic*


**Redefining Workflow in Radiation Oncology and the Role of the Clinical Physicist**

Thursday, May 13, 2021 | 12:00 pm ET

*Speaker: Todd Pawlicki, UC San Diego*

***For additional details and a complete list of upcoming events, visit www.aapm.org/announcements/MedPhys30WebinarSeries.asp***

# WHAT'S HAPPENING AT HEADQUARTERS?

## EXECUTIVE DIRECTOR'S REPORT Angela R. Keyser | AAPM

### Two New AAPM Reports

Available online:

- AAPM TG 264's report, The Safe Clinical Implementation of MLC Tracking in Radiotherapy
- AAPM TG 284's report, Magnetic Resonance Imaging Simulation in Radiotherapy: Considerations for Clinical Implementation, Optimization, and Quality Assurance

### AAPM Groups Continuing to Do Good Work...Virtually

AAPM groups are meeting remotely, many of them on a regular basis. Historically, finding out when the virtual meetings were scheduled was not easy to do. HQ has created an Upcoming Virtual Meeting Schedule that is posted on the main webpage.

Get Involved

Upcoming Virtual Meeting Schedule for those looking to join a group

Interested in joining an AAPM Group? Review the schedule, find something that you are interested in, and then plan to attend the group's meeting. It's also helpful to send an email to the chair of the group noting your interest and background. After the meeting, if you would like to know more, ask the Chair if you can be added as a guest. This will allow you to participate in online discussions and remote meetings.

### Shop Amazon Smile = Donation Made to AAPM's Education & Research Fund

Contribute to the AAPM's Education & Research Fund while you shop on Amazon. With a simple action and at no cost to you, AmazonSmile will donate to AAPM's Education & Research Fund.

What is AmazonSmile? When first visiting AmazonSmile, customers are prompted to select a charitable organization from almost one million eligible organizations. For eligible purchases at AmazonSmile, The AmazonSmile Foundation will donate 0.5% of the purchase price to the customer's selected charitable organization.

**Twitter:** @AngelaKeyser

**Email:** akeyser@aapm.org

**Who Does What on AAPM's HQ Team?**
See a list with contact information and brief descriptions of responsibilities online. An Organization Chart is also provided.

**Have a Suggestion?**


Use the "Suggestion Box" in the upper right corner of the AAPM website to reach the Executive Committee, Chairs of AAPM Councils, or the Executive Director.

**How to Get Started**

To select AAPM's Education & Research Fund as your charity:

1. Go to this link.
2. Log in using your Amazon account. Your shopping cart, Wish List, wedding or baby registry, and other account settings are also the same.
3. Now every eligible purchase you make at smile.amazon.com will result in a donation to AAPM's Education & Research Fund.

For more information about the AmazonSmile program, go here.

## AAPM / RSNA Imaging Physics Residency Grant

*(Application deadline: May 3, 2021)*

AAPM Board of Directors has approved $420,000 in support over six years ($70,000/year starting in 2019) to fund six spots in existing or new imaging residency programs. The RSNA Board of Directors approved $210,000 in funding for three additional slots in existing or new imaging residency programs. The purpose of the AAPM funding is to provide 50% support of a resident's salary for two imaging physics residents. The awardee institution(s) will provide the other 50% support. After the award period is over, the intent is that the awardee institution(s) will continue to fully support this new imaging physics residency position. CAMPEP accreditation is expected within the first year of the funding period if a program is not currently accredited. It is open to existing or new imaging residency programs.

View additional information and access the online application

## Research Seed Funding Grant

*(Application Deadline: May 31, 2021)*

Three $25,000 grants will be awarded to provide funds to develop exciting investigator-initiated concepts, which will hopefully lead to successful longer-term project funding from the NIH or equivalent funding sources.

Funding for grant recipients will begin on August 1 of the award year. Research results will be submitted for presentation at future AAPM meetings.

Applicants must be a member of AAPM at the time of application (any membership category).

View additional information and access the online application

## 2021 AAPM Meeting News

Mark your calendars for four upcoming AAPM meetings:

- AAPM Virtual Spring Clinical Meeting
  April 17-20, 2021
- AAPM Virtual Summer School
  *Modern Applications of MR in Radiation Therapy*
  June 26-29, 2021
- AAPM Virtual Annual Meeting & Exhibition
  *Creative Science. Advancing Medicine.*
  July 25-29, 2021

## Webinars

AAPM MP3.0 Webinar Series on Transformational Medical Physics (2021)

- March 11, 12:00 pm – 1:00 PM ET
  Episode #6: *What's up with imaging protocols?*
  Speakers: Tim Szczykutowicz, Justin Solomon
  Register
- April 8, 12:00 pm – 1:00 PM ET
  Episode #7: *Does research have a place in the clinical practice of medical physics?*
  Speaker: Ken Fetterly
  Register
- May 13, 12:00 pm – 1:00 PM ET
  *Episode #8: Redefining Workflow in Radiation Oncology and the Role of the Clinical Physicist*
  Speaker: Todd Pawlicki
  Register ■

# MULTI-INSTITUTIONAL JOURNAL CLUBS FOR RESIDENCY PROGRAMS

## EDUCATION COUNCIL REPORT (SUBMISSION 1 OF 2)

Hania Al-Hallaq, PhD | The University of Chicago
Ingrid Reiser, PhD | The University of Chicago

*H. Al-Hallaq*
*Chair, Medical Physics Residency Training and Promotion Subcommittee*

*I. Reiser*
*Chair, Annual Meeting Subcommittee*

Most of us will associate 2020 with the COVID-19 pandemic, which has greatly impacted our world and day-to-day lives. In order to reduce the spread of the virus, we transitioned many aspects of our professional and personal lives to virtual interactions. Without the chance to attend meetings in person, residents had fewer professional opportunities to interact with others, particularly as they began their job searches. To counteract this shortfall and provide new opportunities, we piloted a regional multi-institutional medical physics imaging residency journal club, conducted virtually, to provide residents with the opportunity to present to a larger group of attendees from multiple residency programs. This was expected to produce more stimulating discussions, which in turn was expected to improve the resident learning experience. The pilot program included nine imaging residency programs in Midwestern states (IL, IN, MI, MN, OH, WI) and occurred monthly beginning in October 2020. The smaller audience size enabled participants to turn on their video cameras and actively participate in the discussion. Anonymized feedback was given to the resident using a multiple-choice survey.

This successful pilot program will be expanded by a newly formed work group, **Work Group on Multi-Institutional Journal Clubs for Residency Program**s (WGJCRP), which will be led by **Chris Watchman**, PhD (Chair) and **Anna Rodrigues**, PhD (Vice-Chair). The WGJCRP expects to recruit four resident and two non-resident members using the AAPM committee classifieds. Once the WG develops a detailed framework, program directors will be invited to join. Participation in this grass-roots journal club will rely on the participation of the programs and residents to succeed. This new opportunity for residents to enhance and practice their professional skills is a silver lining of 2020!

We would like to thank all the participants of the pilot regional program, especially the residents who gave presentations. We would also like to thank the members of MPRTP for their helpful discussion regarding this effort. ■

**Email:**
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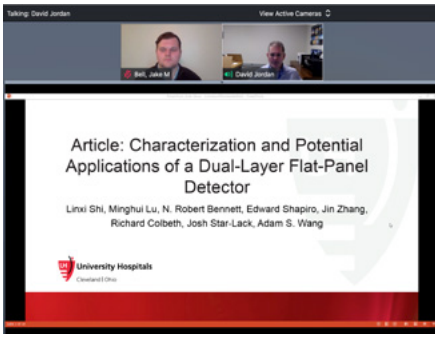
ireiser@uchicago.edu

**"The Midwestern journal club was a great networking opportunity, and the virtual format was a good challenge."**
***—Colin Paulbeck, PhD, Imaging Resident, Medical College of Wisconsin***

**"It was great discussing new literature and hearing new perspectives from residents and faculty from other institutions."**
***—Jake Bell, MS, Imaging Resident, University Hospitals of Cleveland***

**"Preparing for the presentation with a larger audience than I have been accustomed, provided an opportunity to improve my critical reading and presentation skills."**
***—Caroline Cheney, MS, Cleveland Clinic Foundation***




*Jake Bell from University Hospitals of Cleveland presents to the multi-institutional journal club on October 30, 2020 (featuring Program Director David Jordan, PhD).*

# focus on our future

THANK YOU!

## AAPM wishes to acknowledge and thank the following individuals and organizations for their 2020 contributions:*

**Unaudited data subject to change*

**General Fund**
**[Non-Endowed, 5-Year Pledge]**
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Russell B. Tarver, MS
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# REGISTRATION OPENS IN EARLY MARCH!

April 17–20
VIRTUAL

# AAPM SPRING CLINICAL MEETING 2021

**The 2021 AAPM Virtual Spring Clinical Meeting** will include practical information designed to help medical physicists integrate emerging technologies into the clinical environment. Developed to address regulatory and accreditation related issues, this meeting provides a forum for the exchange of ideas in support of practice quality improvement. You will be presented with additional opportunities to meet continuing education requirements and as a clinical physicist, you will gain easy access in a compact format for up-to-date education.

AAPM Member volunteers are working closely with the HQ team to introduce a fresh online meeting platform, ensuring that this virtual experience will provide great Spring Clinical Meeting content, including SAM credits and MPCEC hours, as well as engagement with vendors.

Mark your calendar now and be prepared to contribute to the success of the Virtual #AAPMSCM while helping to make this a continuing opportunity for the medical physics community's education.

## Full Meeting Program Now Available here

**Access the meeting-at-a-glance to gauge the overall scope or delve into the full program, including:**

- Numerous SAM offerings — AAPM has submitted 21 SAM sessions totaling 41 SAM Credits.
- An exciting new vendor-focused third track featuring Vendor Showcase Presentations and two Partners in Solutions sessions.
- NEW for 2021: Taxonomy | Keywords — to help attendees navigate the program and find Spring Clinical Meeting talks of particular interest.

AAPM.ME/CLINICAL | #AAPMSCM

# MPESC UPDATE: BEST-PRACTICES REPORT AND TEACHING WORKSHOPS

**EDUCATION COUNCIL REPORT (SUBMISSION 2 OF 2)**

Victor Montemayor, PhD | Germantown Academy
Chair, Committee on Medical Physicists as Educators

The charge of the Committee on Medical Physicists as Educators (MPESC – the "s" is a vestigial remnant of when we used to be a subcommittee) is, among other things, to "… compile best practices, and provide mechanisms for evaluation and dissemination of instructional techniques." During the past year, one working group and one subcommittee were formed to address the two primary aspects of our charge directly.

The **Working Group on Teaching Educators and Clinicians How** (WG-TEACH) is charged with producing a report on best practices for the teaching and mentoring of medical physics. Writing for the report is underway with the intent of having the report completed by the end of the year. The report will include a background section covering topics in adult learning theory, findings from neuroscience research on learning, and the role of accrediting and governing agencies in educating medical physicists. Other planned sections include classroom instruction and active learning, residency mentoring and clinical education, virtual and remote teaching, and finally, a section on educating other audiences about Medical Physics, including undergraduates, high school students (and younger), and adults.

The **Teaching and Mentoring Workshops Subcommittee** (TMWSC) is charged with planning and running future workshops on the teaching and mentoring of medical physics. There have been two workshops (2008 and 2018) and one Summer School (2010) on the teaching and mentoring of medical physics. Very positive reviews of these workshops and recommendations for a more regular offering of such workshops led to the formation of the subcommittee. The next major workshop is currently planned for 2023, with more teaching and mentoring workshops planned every four years after that. The subcommittee further plans on offering mini-workshops during the annual meetings intermittently between the major workshops.

With the production of the report and the more regular offerings of teaching and mentoring workshops, it is hoped that all AAPM members involved in the teaching and mentoring of medical physics at any level will find ideas that will help make their teaching and mentoring even better! ■

**Email:** vjmontemayor@gmail.com

*Participants at the 2018 Teaching and Mentoring Workshop in Nashville. [Photo credit: Montemayor]*

**The next major workshop is currently planned for 2023, with more teaching and mentoring workshops planned every four years after that.**

# Know your BLACK BOX?

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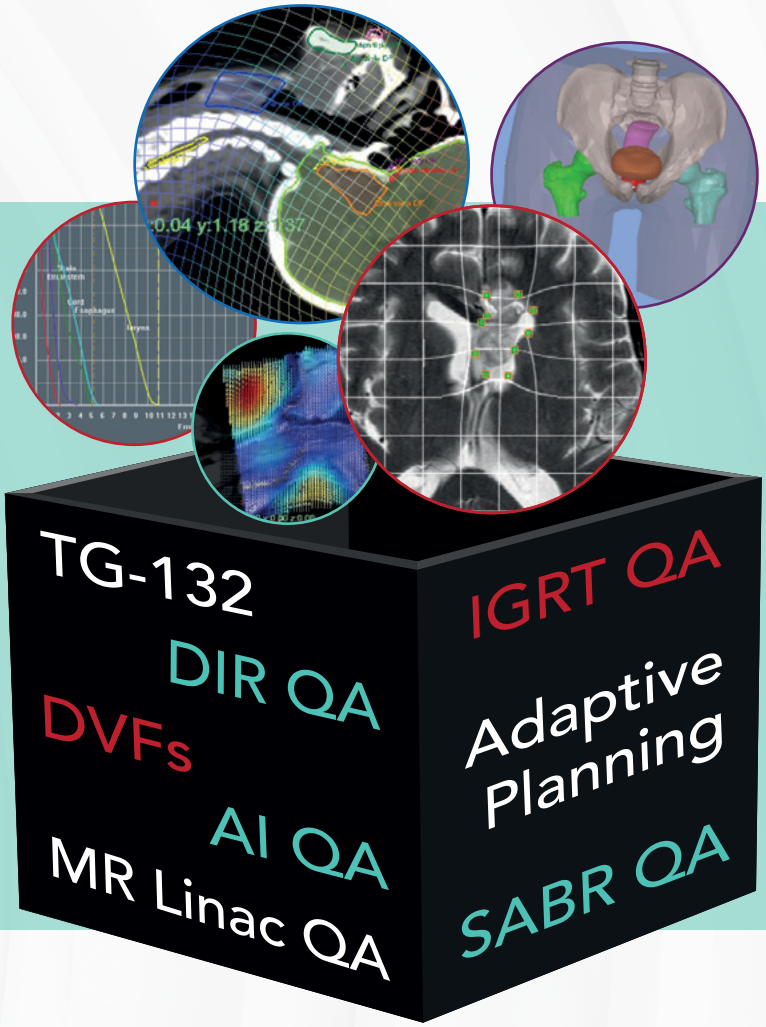


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# BIDEN ADMINISTRATION EMPLOYS PRO-REGULATORY POLICY

**LEGISLATIVE & REGULATORY AFFAIRS REPORT** Richard J. Martin, JD | AAPM

The Biden Administration is previewing a dramatically different regulatory approach from that of the former administration. Since the inauguration, the new administration overhauled the Office of Information and Regulatory Affairs (OIRA), within the Office of Management and Budget (OMB), and executed a number of relevant executive orders, including a regulatory modernization memo. These early actions characterize a pro-regulation administration eager to engage in regulatory activity to maximize policy change.

While OIRA is a relatively obscure federal entity, it is charged with vetting federal rules, and plays an essential role in how regulatory processes are implemented. This administration's actions, however, may portend a more pivotal role for OIRA in advancing pro-regulatory policies.

The modernization memo directs the OMB/OIRA to

- identify ways to improve and modernize regulatory review; and
- update and revise methodologies used for cost-benefit analysis in a way that considers who bears the costs/reaps the benefits.

As per the memo, the administration is seeking to update processes to reflect contemporary regulatory analysis methodologies and to advance regulatory review processes that promote "public health and safety, economic growth, social welfare, racial justice, environmental stewardship, human dignity, equity, and the interests of future generations."

These directives are only the beginning of work that would need to be done to implement lasting, consequential changes to regulatory processes, but the Biden Administration is off to a strong start in rebuilding the necessary infrastructure. We anticipate considerable activity in this area in the months ahead. Accordingly, we will continue to monitor regulatory developments in this dynamic environment and keep you updated. ■

**If you have any questions or need additional information, please contact Richard J. Martin, JD, AAPM's Government Relations Program Manager, at** richard@aapm.org.

AMERICAN ASSOCIATION *of* PHYSICISTS IN MEDICINE

## AAPM PROFESSIONAL SURVEY

**Did You Know?**

In 2019, members who did not change jobs saw an increase in their median salary of 2.5% (PhDs with certification) to 7.1% (Masters with no certification). These were slightly higher than the increases seen in 2018.

**Your Help is Needed!**

**It is really important that we hear from you this year so we can better understand the impacts of the COVID-19 pandemic in 2020.**

The next round of this annual survey will commence in mid-March. Please watch your inbox and complete the questionnaire to help our community compile this useful information.

The results will be available on AAPM's website by mid-May.

If you haven't seen the data from earlier years, you can find it at ***www.aapm.org/pubs/surveys.asp***

MIDRC

MEDICAL IMAGING AND DATA RESOURCE CENTER.

## SAVE THE DATE!

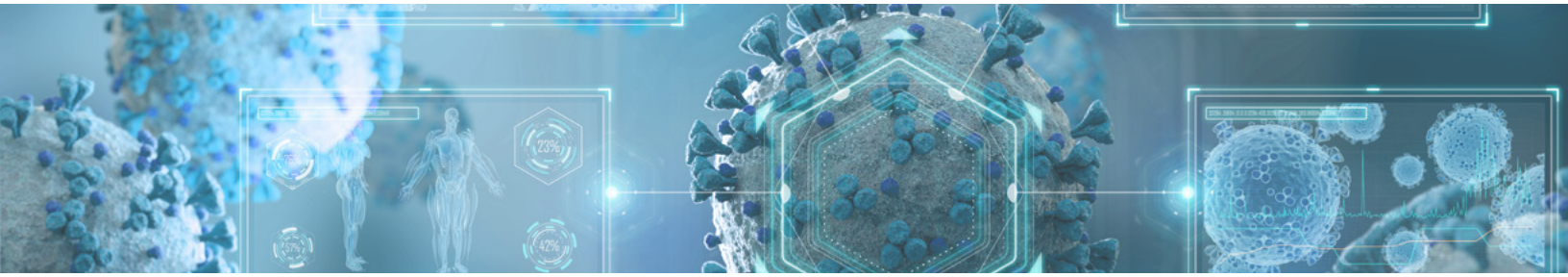
# Town Hall

**MARCH 12, 2021 | 11:00 AM TO 12:00 PM CT**

Hosted at The University of Chicago, the Medical Imaging and Data Resource Center (MIDRC) is a large-scale de-identified dataset of medical images of COVID-19 patients, and includes support for research projects that capitalize on the valuable dataset it creates. The MIDRC data portal is now live and accepting your data contributions! Please visit www.midrc.org/donate.

## *Free meeting registration here*

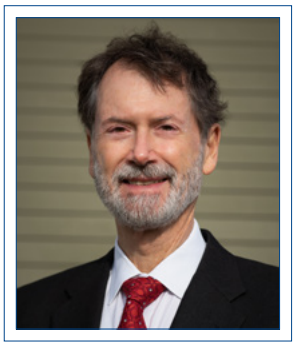
**We look forward to answering any questions about DATA CONTRIBUTIONS from the medical community at-large!**



MIDRC is funded by the National Institute of Biomedical Imaging and Bioengineering (NIBIB) and is jointly developed by representatives of the American College of Radiology® (ACR®), the Radiological Society of North America (RSNA), and the American Association of Physicists in Medicine (AAPM) for rapid and flexible collection, artificial intelligence analysis, and dissemination of imaging and associated data.

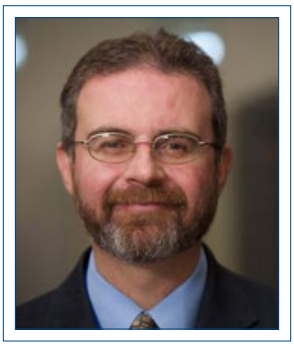
# ABR UPDATE: REMOTE EXAMS

**ABR NEWS**
Geoffrey S. Ibbott, PhD | ABR
Kalpana M. Kanal, PhD | University of Washington
Matthew B. Podgorsak, PhD | Roswell Park Cancer Institute • Robert A. Pooley, PhD | Mayo Clinic
J. Anthony Seibert, PhD | University of California at Davis



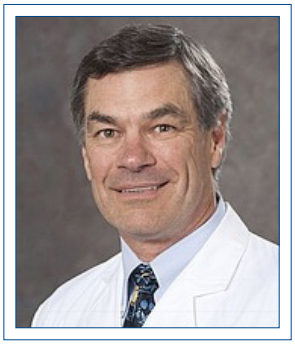
*G. Ibbott, ABR Associate Executive Editor*

*K. Kanal, ABR Trustee*



*M. Podgorsak, ABR Trustee*

*R. Pooley, ABR Trustee*



*J. A. Seibert, ABR Governor*

Approximately a year ago, disruptions caused by the COVID-19 pandemic were apparent, and the ABR began taking action to address concerns we anticipated would be expressed by candidates for certification. First among these was safety; for candidates, examiners and staff, travel was being curtailed by many employers. It was clear that the in-person medical physics certifying (oral) exams scheduled for the end of April could not be held, and candidates were notified in early March that the exams would be postponed until October 2020.

A decision about the August 2020 MP and RO qualifying exams (for MP, these are our Part 1 and Part 2 written exams) depended in part on the decisions made by Pearson VUE to close their centers through April 15. Initially, the exams were rescheduled for October but in mid-May, the ABR announced postponement to December 7-8, 2020. These dates were necessarily tentative, as it was not known if Pearson VUE would be open or would have sufficient seats available.

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**"Controlling the testing environment, image quality, and exam security were paramount to assuring the fairness, reproducibility, validity, and reliability of the testing instruments."**

**"Overall, I was very impressed with the testing software chosen to administer this exam."**

***—Comments by candidates for certification in diagnostic radiology after taking the first** remote Core Exam.*

The decisions to postpone or cancel exams were extremely difficult, and in the words of **Brent Wagner**, MD, ABR Executive Director, "… we realize that these postponements will be unavoidably disruptive. Our discussions were made more complicated because of inherently incomplete information, including (1) the inability to anticipate future travel restrictions or other external constraints and (2) the highly variable preferences of our candidates and volunteers. Further, the delivery of high-stakes exams that are part of a credible board certification process is itself an intricate process (and not easily modified over a short time window without negatively impacting the candidate experience, fundamental validity, and security)." (See https://www.theabr.org/announcements/coronavirus-updates)

In May, the ABR notified MP candidates whose Part 1 or Board Eligibility was expiring in December 2020 that their eligibility would be extended until December 2021. At the same time, the ABR acknowledged that graduate and residency program directors were having to make adjustments to address the pandemic and assured the directors that we would work with CAMPEP to help ensure the adjustments didn't affect the ability of trainees to take the ABR exams.

As these decisions were being made, the ABR was busy investigating a number of alternatives to in-person exams and monitoring the decisions and experiences of other ABMS boards. All boards were being contacted by candidates who wondered why the boards hadn't immediately converted to remote exam models. Some candidates felt that content prepared for delivery at Pearson VUE could quickly be adapted to an at-home exam model, similar to the remote exams many universities were employing. Others pointed to their institutions' decisions to adopt Zoom meetings as a substitute for in-person meetings and felt that oral exams could be conducted the same way. The ABR pledged to be as flexible and responsive as possible to candidates' needs, but asked candidates to understand that controlling the testing environment, image quality, and exam security were paramount to assuring the fairness, reproducibility, validity and reliability of the testing instruments. After assessing the effort required to meet these demands, the ABR announced in June the decision to move all exams (other than the qualifying exams scheduled for December) to a remote platform beginning in early 2021.

In July 2020 we received very convincing evidence that the ABR was taking the correct path. The American Board of Surgery announced, on the day it was to have been held, that they were canceling their remote qualifying exam. They had concluded that "the delivery of exam items continued to be both inconsistent and unreliable."

The ABR continued the work to develop remote qualifying and certifying exams. This involved numerous steps, as it required developing not only the mechanisms to deliver exam content and (for written exams) receive the candidate responses, but for the oral exams, incorporate a Zoom-like video interface that would enable the examiner and candidate to see and hear each other while simultaneously viewing and manipulating images and other exam content. The content delivery required establishing minimum requirements for computer hardware and internet connectivity, which would be communicated clearly to candidates. Assuring exam security would be handled by conducting a 360° scan of the candidate's environment and utilizing remote proctoring with AI technology to assure that all candidates have an equivalent experience.

Each exam model (written and oral) underwent exhaustive testing by the Tucson office staff and the Associate Executive Directors (all working remotely). Exam content was translated from the existing format used by Pearson VUE, the ABR's Chicago test center, or the in-person oral exams, to the format required by the remote exam model. Safeguards were developed and tested to enable candidates to take scheduled or unscheduled breaks without jeopardizing their results or exam security. Mechanisms were established to enable candidates to test their equipment and network connections in advance, and a practice exam was made available to ensure that candidates would be experienced with the testing interface. Procedures were developed to handle inquiries from candidates, and staff were trained in preparation for all eventualities.

In December, most Pearson VUE sites were at least partially open, and most MP candidates for the qualifying exams were able to reserve seats and complete the

exam. There were some issues reported having to do with the COVID-19 restrictions, or, in some cases, restrictions that were perceived to be inadequate. On the whole, however, the exams were conducted successfully. Some candidates who were unable to find a seat at Pearson VUE or were uncomfortable taking the December exams will be admitted to either of two administrations to be offered in 2021 without penalty.

The first remote exams were delivered on January 9, 2021. About 160 diagnostic radiology candidates took a pilot certifying exam with only a handful of minor issues, all related to network connectivity. This pilot exam demonstrated the acceptability of the testing platform for all disciplines, including medical physics, as the written exam mechanisms are very similar. On February 1–3, the diagnostic radiology core (qualifying) exam was delivered to about 550 candidates, again with only a very few minor connectivity issues, some related to the snowstorm in the Northeast, which were resolved quickly in all but two cases. The experience reported in an interview with one candidate was quite positive (see sidebar). An equivalent number of diagnostic radiology candidates will take the Core exam on February 8–10 (after this article was written).

The first MP written qualifying exams with this new platform will be delivered on April 15 and 16. We are confident that our experience with the DR exams predicts a smooth and successful delivery of these exams. There will be a second administration of the qualifying exams in August 2021.

In the meantime, thorough testing of the oral exam model has been ongoing. As a final test, a "dry run" of the MP remote oral exam will be held on February 19, with examiners playing the roles of both examiners and candidates. This will be followed by a pilot administration to a randomly selected group of eligible candidates in late March. All remaining candidates who were eligible for the 2020 administration will be invited to the first full administration of the MP exams, to be held in early May. And candidates who qualified in 2021 for the certification exam will be invited to be examined in August, for the second administration of the oral exams.

We look forward to a successful experience for both candidates and examiners with this new paradigm. ■

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# ACR ACCREDITATION & MORE: UPDATES FOR MEDICAL PHYSICISTS

**ACR UPDATES** Dustin A. Gress, MS | Senior Advisor for Medical Physics

## Low Dose Renal CT

Imaging physicists, technologists, and clinicians can learn the basics of optimizing imaging for patients with suspected renal stones in the Image Wisely® Radiation Safety Case for Low-Dose Renal CT. Clinics can report their quality improvement with MIPS measure ACRad 39 (Use of Low Dose CT Studies for Adults with Suspicion of Urolithiasis or Nephrolithiasis), available through the ACR General Radiology Improvement Database, which is a CMS-approved Qualified Clinical Data Registry. In other words, imaging physicists have an opportunity to directly impact reimbursement by leading the effort to optimize their clinics' renal CT protocols. Image Wisely® Radiation Safety Cases are free to anyone, and they provide CAMPEP, Cat. 1, and Cat. A credit.

## Upcoming Changes to the MR Accreditation Program

Two ACR MRI phantoms are currently approved for accrediting MR systems in the MR Accreditation Program (MRAP); a small phantom for small bore orthopedic systems and a large phantom for large bore systems. At the time the MRAP was implemented, the head coils used on large bore MR systems were typically quadrature coils of sufficient size to accommodate the large phantom (internal diameter 190mm, length 148mm). Since then, multi-channel phased array coils have become standard in MR imaging, some too small to accommodate the large phantom.

A medium ACR MRI phantom has been developed specifically for use in smaller phased array head coils. The medium phantom size (internal diameter 165mm, length 134mm) solves an issue for MR systems that do not have a head coil large enough to fit the large phantom. It also solves a problem for sites that have had to use the system's larger quadrature coil for daily or weekly quality control, then switch to the phased array head coil for clinical imaging, wasting time and creating additional handling of the coils.

The medium ACR MRI phantom enables sites to acquire phantom images for accreditation and for quality control with the same coil that is used to acquire most clinical brain images. In addition to improving efficiency and convenience, this will provide more meaningful MR system performance data.

**How will the medium phantom be incorporated into the MRAP program?**

Sites will be required to submit phantom images acquired using the head coil that is routinely used for clinical brain imaging on the MR system. Sites will submit images using the largest phantom that fits inside the same coil that is used for the site's clinical brain study.

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**In each issue of this Newsletter, I will present information of particular importance or relevance for medical physicists. You may also check out the** ACR's accreditation web site portal **for more accreditation information and QC forms. A big THANK YOU to all of the other staff that keep ACR programs running and assist with creating the content in this column.**

**ACR recognizes the value of engaging our younger and incoming generations of medical physicists. Applications for the** Morin Fellowship **(for medical physics residents and fellows) and** Medical Physics Graduate Student Scholarship **are both due March 21. We look forward to again receiving applications from excellent candidates for both awards.**

**Who does this affect?**

This only affects MR systems where the large ACR phantom is too large to fit into the coil used for routine brain imaging. Pending approval, it is expected that the medium phantom will be incorporated into the MRAP this summer, at which time guidance documents including pass/fail limits will be announced.

Special thanks to **Donna Reeve**, MS, FAAPM, Chair of ACR's Subcommittee on MRI Accreditation Physics for contributing this section of the column.

## Recent Changes to Accreditation Programs

The ACR® Accreditation programs are constantly evolving to help you keep up with the latest quality and safety guidelines and deliver the best care possible. In case you missed my last column, here are some recent accreditation program updates of note:

- **Nuclear Medicine and PET Accreditation Updates:** To better assist sites in meeting accreditation imaging requirements, we have provided a Nuclear Medicine/PET Clinical Image Atlas and a Nuclear Medicine/PET Phantom Image Atlas. These contain example images and tips to help sites reduce errors in their submissions. For more information, visit the Nuclear Medicine/PET Accreditation page and the Nuclear Medicine/PET support page.
- **New accreditation process flowcharts and Checklists:** Convenient accreditation process flowcharts are now available for ROPA and the other programs for new and renewing facilities. Printable checklists for each step of the accreditation process are also available on each program landing page and in the table below:

| | | |
|---|---|---|
| CT | Breast MRI | Stereotactic |
| MRI | Breast ultrasound | Ultrasound |
| Nuclear medicine/PET | Mammography | Radiation oncology |

ACR's Publications and Lifelong Learning team recently worked with a radiology group in North Carolina to publish a brief Imaging 3.0 Case Study that provides a clear and convenient diagram for accreditation. I've included the figure in this column, and encourage everyone to read the short Case Study. The diagram is downloadable from the link above, and will be a helpful resource for all medical physicists who support accreditation needs for the clients or employers.

And just in case you haven't heard, all of ACR's QC manuals are available for free on acr.org's Medical Physics Resources page.

## DIR Updates

Beginning in 2021 there will be two changes to how the Dose Index Registry accepts data through TRIAD server.

1. **RDSR Requirement for New Participants(CT): NEW** participants registering for the DIR registry in 2021 will only be permitted to send records using the Radiation Dose Structured Report (RDSR). Secondary capture (OCR) image data can be sent in addition to the RDSR but will not be accepted as the sole means of transmission. For now, existing sites will still be able to send secondary capture as their sole transmission method—but the DIR does intend to disable this support later in 2021. We are very interested in the obstacles that facilities may be experiencing that are preventing them from sending RDSRs to the DIR. If you are able to provide any insight, please let me know or open a support ticket to share the information with us.
2. **Addition of Pregnancy Tag (CT):** The TRIAD anonymization profile will be updated to permit collection of the header tag related to the pregnancy status (0010,21C0). This will permit future analysis on radiation exposure of pregnant patients. If your site is already sending this header tag, the DIR registry will retain the data going forward. If your site is not sending this tag we would encourage you to begin doing so. Please reach out to the TRIAD support team (Triad-Support@acr.org) if you need assistance, and if you're sending the pregnancy status tag, please let me know because we could use some help with testing the development.

Thank you for your attention to these changes. As always, if you have further questions please open a support ticket and we will be happy to assist.

## ACR UPDATES, Cont.

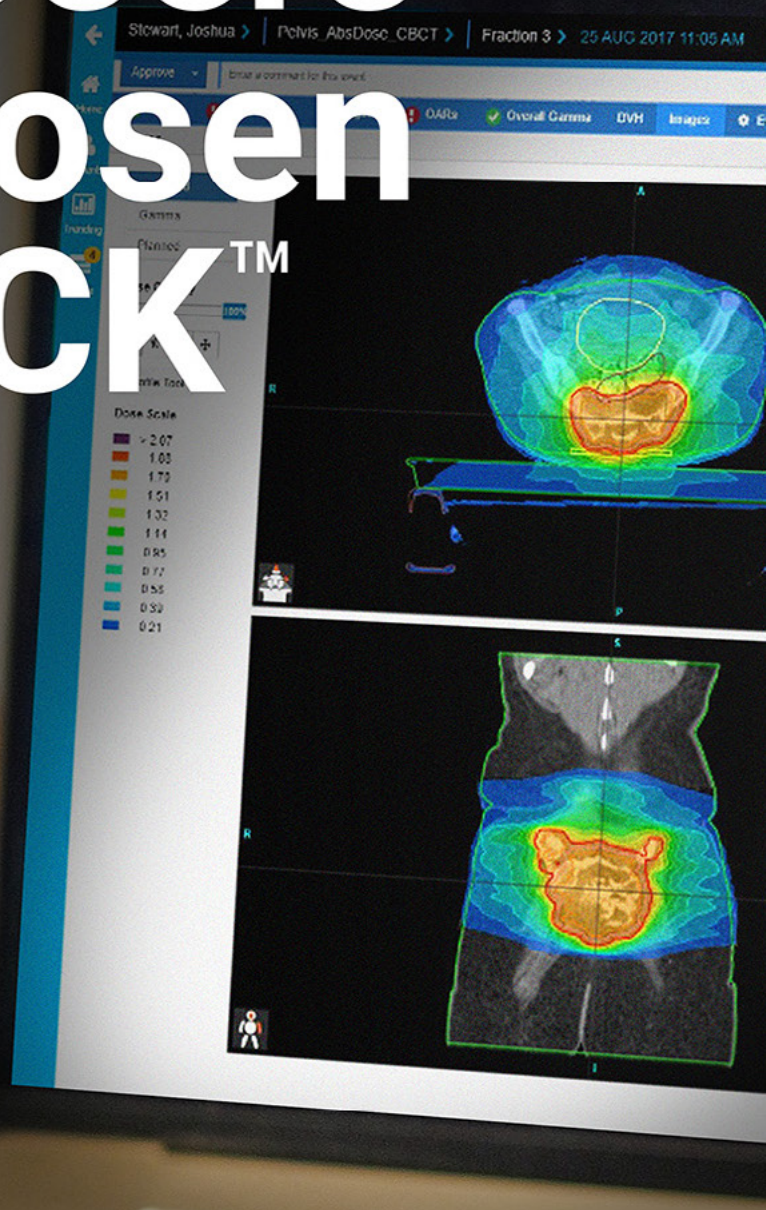
ACR continues to develop the DIR-Fluoro. A two-year pilot project was carried out at nine institutions beginning in early 2018 that included updating the ACR Common lexicon, collecting clinical radiation dose indices from a minimum of 10,000 interventional radiology procedures, and comparing the dose index distributions collected to those reported in the Radiation Dose in Interventional Radiology (RAD-IR) study, which took place from April 1999 through January 2002. You can get some good foundational and technical information about the pilot group in the paper they've published in *JVIR*.

The DIR Fluoroscopy Module is now available for enrollment and data submission. You can read about the features of the new interactive fluoroscopy standardized DIR reports in the Knowledge Base. Updated weekly, the reports provide an overview of your systems' performance and allow you to delve into the details.

If a site already has a National Radiology Data Registry (NRDR®) account, but not DIR, they only need to complete an addendum to your existing agreement to participate in the DIR. No additional registration or fees are required for a facility currently participating in the CT DIR. New sites wishing to participate should complete the application process and create corporate and facility accounts in the NRDR.

More tips on getting started with the DIR Fluoroscopy Module here. ■

# 1,000+ Users Have Chosen SunCHECK™

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Christopher Melhus, Ph.D.,
Chief of Radiation Oncology Physics,
Tufts Medical Center (U.S.)

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# YEAR-END LEGISLATION IMPACTS 2021 MEDICARE PAYMENTS AND FURTHER DELAYS THE RO MODEL

**HEALTH POLICY AND ECONOMIC ISSUES REPORT**

Wendy Smith Fuss, MPH | AAPM Consultant | Health Policy Solutions

The Consolidated Appropriations Act, 2021 (H.R. 133), enacted on December 27, 2020, includes a provision that prohibits implementation of the Radiation Oncology Model prior to January 1, 2022, effectively delaying the start date by six months.

In addition, the legislation adds an additional $3 billion to the 2021 Medicare Physician Fee Schedule (MPFS), which provides additional payment increases across the board to help all Medicare providers during the ongoing COVID-19 pandemic.

The 5% cut anticipated for radiation oncology services is now an estimated 1% increase due to the passage of the bill. The legislation also decreased payment cuts to radiologists by more than half — from 10% to approximately 4% for 2021.

The legislation delays separate payment for the new add-on code G2211 Inherently Complex Evaluation and Management Visits until 2024. Bundling payment of this code effective January 1, 2021, results in a one-third reduction to the budget neutrality adjustment to the conversion factor. The final 2021 MPFS conversion factor is $34.89, which increased from $32.41 in the final rule yet is significantly lower than the 2020 conversion factor of $36.09.

## Medicare Begins Repayment of Incorrect 3-D CRT-related Denials

Through coordinated advocacy efforts, the American College of Radiology and American Society for Radiation Oncology (ASTRO) appealed National Correct Coding Initiative (NCCI) procedure-to-procedure (PTP) edits for 3-D radiotherapy plan. The outreach was in response to the Office of Inspector General's report on the Medicare payment policy for three-dimensional conformal radiation therapy planning service (3D-CRT).

The successful appeal led to CMS' deletion of NCCI PTP edits for 3-D radiotherapy plan and therapeutic simulation CPT code pairs 77295/77280, 77295/77285, and 77295/77290.

Medicare Administrative Contractors (MACs) across the country used this as their rationale to deny simulation and continuing medical physics services when billed with 3-D radiotherapy plans. ASTRO reached out to all MACs for details on their plans to reprocess incorrectly denied claims and remit payments to practices.

CMS will retain the 3-D radiotherapy plan, and medical physics consultation NCCI PTP edit for CPT code pair 77295/77336 with a correct coding modifier indicator of "1," which will allow the reporting of this code combination. The "1" modifier differentiates between the services provided, and if used appropriately, may yield separate payment for the services billed on the same day. ■

**Email:** wendy@healthpolicysolutions.net

**For revised and updated 2021 Medicare payments and final rule summary, go** here.

# REPORT FROM THE MEDICAL IMAGING AND DATA RESOURCE CENTER (MIDRC)

## MIDRC SUBCOMMITTEE UPDATE

Maryellen Giger, PhD | University of Chicago
Paul Kinahan, PhD | University of Washington

*M. Giger*

*P. Kinahan*

The Medical Imaging and Data Resource Center (MIDRC), a unique medical imaging data commons created in response to the COVID-19 pandemic, is officially underway as of late August 2020. MIDRC is an unprecedented NIBIB-funded collaboration between AAPM, ACR, RSNA, and the University of Chicago's Gen3 Data Commons, and is aimed to foster machine intelligence research in the development of scientifically innovative algorithms that aid in the detection, diagnosis, monitoring and prognosis of COVID-19 and, ultimately, future global health crises. This multi-institutional initiative includes researchers from 23 collaborator institutions and is being led overall by **Maryellen Giger** (University of Chicago), with the AAPM team helmed by Giger and **Paul Kinahan** (University of Washington). More information is available at MIDRC's website.

MIDRC's new data portal is now live, while under development. It will actively house data from thousands of COVID-19 patients and currently has over 1000 imaging studies.

You can support this important initiative by facilitating data contributions from your individual institutions. Your medical imaging facility, academic medical center or community hospital can greatly aid MIDRC and COVID-19 research in general with their uploaded data contribution of COVID-19 medical images (e.g. chest X-rays, CT scans). Please visit the data portal to browse data and find a contribution request form.

MIDRC has moved quickly over the last few months to create infrastructure and become operational. Important accomplishments to date include:

- Developing methods for image data harmonization and for AI algorithm evaluations
- Publishing its first annotated data set from RSNA's RICORD database through The Cancer Imaging Archive (TCIA)
- Developing collaborative opportunities between MIDRC and NIH's N3C initiative

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**This multi-institutional initiative represents a partnership spearheaded by the medical imaging community aimed at accelerating the transfer of knowledge and innovation, including clinical problem identification, discovery, development, evaluation, translation, implementation, and dissemination. The first common goal of this coalition is to build data repositories to fuel COVID-19 machine intelligence research, coupled with optimal standardization, curation, and compliance with ethical responsibilities to honor patients' privacy. In order to leverage existing infrastructure, MIDRC will be a linked collection that coordinates access to data and harmonizes data management activities across all participating organizations at three critical stages: (1) intake, including curation, de-identification, abstraction, and quality assessment (2) annotation and labelling of images and other data using semi-automated approaches and (3) distributed access and query methods.**

*continued*

MIDRC
MEDICAL IMAGING AND DATA RESOURCE CENTER

## MIDRC SUBCOMMITTEE UPDATE, Cont.

*MIDRC, cont.*

***These methods will yield a large data set that is in accordance with the FAIR principles (findable, accessible, interoperable and reusable). The public access 'front door' of MIDRC is hosted by the state-of-the art Gen3 Data Ecosystem housed at the University of Chicago and will be expanded to include and/or link to additional image and non-image data feeds from multiple registries and repositories. Through the MIDRC Data Commons Portal, images and data, as well as guidelines and recommendations, are disseminated to investigators to expedite research that provides solutions to the COVID-19 pandemic to ultimately maximize patient benefit. Please note that MIDRC is actively looking for clinical sites to contribute medical COVID-19-related images and associated data, emphasizing the importance of the inclusion of smaller sites such as community hospitals, in order to mitigate bias in the data collection. The second common goal of MIDRC is to foster machine intelligence research in the development of algorithms for the detection, diagnosis, monitoring, and prognosis of COVID-19. To this end, five Technology and Development Projects and 12 Collaborating Research Projects are part of MIDRC and are represented by a team of experts in their field. The hosting of scientific challenges will also be part of MIDRC, benefiting the research community at large.***

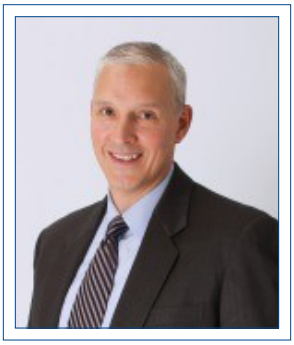
**Please direct inquiries to:**
Maryellen Giger, PhD, **FAAPM,**
Paul Kinahan, PhD, **FAAPM, or**
**AAPM MIDRC Program Manager,**
Emily Townley

- Successfully holding its first MIDRC-wide Annual Meeting in December 2020, opened by **Dr. Bruce Tromberg**, Director, the National Institute of Biomedical Imaging and Bioengineering (NIBIB) and moderated by NIBIB collaborators
- Joining AAPM Science Council, as a subcommittee under the Data Science Committee

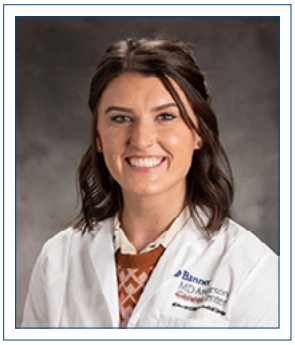
A MIDRC open Town Hall Meeting will be held from 11:00 am to 12:00 pm CT, March 12, 2021 to field inquiries from the medical community at-large. Please visit www.midrc.org for the latest MIDRC news! ■

# PROFESSIONAL LETTERS OF REFERENCE: *How to Write a Letter of Reference*

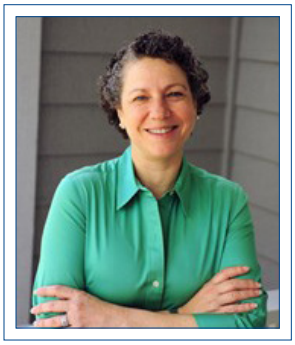
**PROFESSIONAL SERVICES COMMITTEE (PROFS) REPORT**
Todd Pawlicki, PhD | UC San Diego
Chelsea M. Page-Robertson, MS | Banner MD Anderson Cancer Center
Robin Miller, MS | Northwest Medical Physics Center



*T. Pawlicki*



*C. M. Page-Robertson*



*R. Miller*

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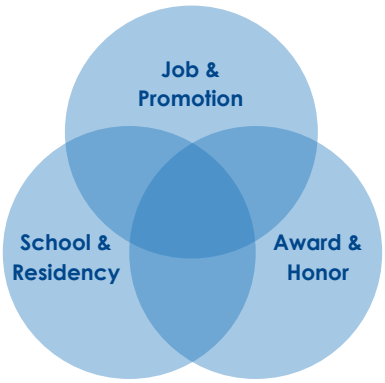
Throughout your career as a medical physicist, there will undoubtedly be times when you are asked to write a letter of reference. In this article, we will discuss some best practices for writing letters of reference both generally and specifically for different types of letters.

## General Thoughts

The first thing to understand about writing a good reference letter is to know your audience. This is especially true for reference letters because you're not able to see the audience's response to clarify your message. You should closely follow any instructions provided. If the instructions are not clear, then you should ask for clarification. The audience will be reading your letter with a filter for specific information related to their criteria for judgment. The easier you can make it for the reader to find that information, the more impactful the letter.

It is important that the writing is formal. A letter of reference is not the time to use colloquial phrases to emphasize a point, even if you're trying to communicate a positive characteristic. Also, a small well-placed adjective or attribute can have a large impact, e.g., supporting the candidate versus enthusiastically supporting them.

You do not want to simply recite the information on the candidate's curriculum vitae. The goal is to explain why that information is important (relative to the job they are applying for). Explaining the candidate's skills and abilities is best accomplished with examples. The fact that someone independently commissioned a new linear accelerator or CT scanner isn't helpful unless the audience is a medical physicist. For any other type of audience, you'll need to explain what that says about their clinical capabilities, initiative, or leadership skills.




*Types of reference letters.*

There are some situations when you may be asked to write a letter of reference for someone you've never met or have never worked with. These types of requests generally come from academic institutions. The thought behind the requestor in these situations is that you will have no bias about the candidate (positive or negative), and you can assess their competence for the job as a true independent assessor. In these situations, the candidate is prohibited from contacting you, and they may not even be aware of who is being asked to write letters for them. You should not take this as a slight of protocol.

A letter that is neutral in tone is a negative endorsement of a candidate. That being said, honesty is an unwritten code of ethics in providing letters of reference. There are always ways to communicate accurate information without being dishonest but still being appropriately positive. Your job as a letter writer is to find the line that gets your assessment across to the audience but in the most positive light as possible. If you can't do that, then you shouldn't write the letter of reference. And lastly, if you can't meet the deadline, then don't agree to write the letter. This is unfair to both the candidate and the audience and can significantly delay or compromise someone getting a job, getting into graduate school or a residency, or winning an award or honor.

### Clinical Job

The audience for a clinical job is usually looking to understand two things: competency of clinical medical physics work and the ability to get along with others. If you're writing for a chief, lead or principal role, then they might also be looking for indications of leadership. You should provide evidence of these different aspects if you've worked with someone directly. Remember to provide context with examples such as a situation when you observed their independent decision-making or sound clinical judgment. If you haven't worked with them directly, then you can infer their capabilities from what is in their resume, cover letter, or personal statement.

### Graduate School or Residency

These letters require that you provide information to indicate the degree to which the candidate has potential. At this stage of a candidate's career, the currencies of value are hard work, determination, and the ability to be open to learning. Demonstrating the intelligence or 'smarts' of the candidate may be helpful to get into graduate school but is less necessary for residency since the candidates have already completed an advanced degree. Other aspects of the candidate to describe are their ability to get along with others since they'll be working in a multidisciplinary environment (perhaps for the first time) and the desire to take the initiative for their own learning. Finding examples of these in their curriculum vitae is most helpful in that regard.

### Awards and Honors

This is a unique category of reference letter. As a side note, writing letters for permanent residency (at least within the United States) requires a similar approach. You should not exaggerate accomplishments but rather take the most positive view of those accomplishments. You're not trying to indicate potential or promise for a position but rather you are indicating suitability for a particular recognition. The audience is assessing varying degrees of greatness among candidates (defined by the award or honor) as opposed to filtering for characteristics that may not be a good fit for a particular job or environment.

### Academic Jobs

Academic or University reference letters always consist of four main components. You must speak to the candidate's capabilities and impact in research, teaching, service, and clinical care. The type of academic job will determine the relative importance of these different aspects. An academic research job will emphasize research, teaching, and service with little or no clinical expectations. Explaining the importance of a candidate's extramural funding and first or last author papers is key. Remember to describe why someone's research is impactful to the field and patient

## PROFESSIONAL SERVICES COMMITTEE (PROFS) REPORT, Cont.

care, not just that they're productive. An academic clinical job will emphasize clinical care, teaching, and service with little research expectations. Some jobs require an equal emphasis in all areas. Teaching is described from both the quantity and the quality of teaching. Providing context, especially if you've directly observed the candidate's communication skills is important. Service comes at three different levels: University, Department, and Profession. While you may not be able to comment on each individual area, any information about the candidate's ability in any one of these areas is helpful to the audience.

In summary, it is important to know the audience for which you are writing the letter. What are they looking for and how might they judge what you say? Your job is to provide context for the audience by using examples. Describe the significance of the candidate's accomplishments relative to the position for which they are applying. If you can achieve those goals, then you will have written an excellent letter of reference. For employer and potential employee alike, writing a competent letter of reference is an important professional responsibility. We know you will do a great job with it, good luck! ■

MPLA Medical Physics Leadership Academy


*Introducing:*

# THE MPLA JOURNAL CLUB

**Grow and develop as a leader when you participate in these monthly discussions with other AAPM members who want to do the same!**

- Look for new topics introduced each month along with a selected resource focusing on the theme.
- Suggested articles, books, podcasts, or other creative resources to generate discussion relevant to medical physicists to begin the discussion will be provided.
- Take a few weeks to read and reflect on the material prior to joining The Journal Club discussion, moderated by a leader through a live web conference.

## Upcoming AAPM MPLA Journal Clubs:

| | |
|---|---|
| **March 8:** | Emotional Self-Awareness |
| **April 12:** | Service Orientation |
| **May 10:** | Accurate Self-Assessment |

**Visit the MPLA Journal Club website page for more information. We look forward to you joining us in this new opportunity for learning more and growing together as leaders through the MPLA's Journal Club.**

**https://w3.aapm.org/leadership/community/journalClub.php**

AAPM AMERICAN ASSOCIATION *of* PHYSICISTS IN MEDICINE

# AAPM SCIENCE COUNCIL ASSOCIATES MENTORSHIP PROGRAM

**THE AAPM SCIENCE COUNCIL ASSOCIATES MENTORSHIP 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 program will include eight Associates, each assigned to shadow one member from the AAPM Science Council, Research Committee, Therapy Physics Committee, Imaging Physics Committee, Data Sciences Committee or Technology Assessment Committee. The Associate will participate in selected meetings of the Mentor's Committee and will join and contribute to one Task Group (chosen with input from the mentor). The Associate will shadow AAPM-related activities of the mentor, including committee phone calls, abstract review, Young Investigator judging, committee activities at the Annual Meeting, etc.

SC Associates will participate in the program for one year. Each Associate will receive funding to register for the AAPM virtual Annual Meeting in 2021 and will be funded for up to $2000 to cover the costs of the 2022 Annual Meeting (travel costs including flight, hotel, and meeting registration), including the pre-meeting activities associated with each Committee. The Science Council Associates will be announced, and a picture along with a short biosketch of each SC Associate posted on the AAPM website.

**TYPE:** Grant

**OPEN:** 1/29/21

**DEADLINE:** 4/12/21

**NOTIFICATION:** 5/10/21

**ELIGIBILITY CRITERIA**

- PhD candidates or early career Medical Physicists within 5 years of earning his/her doctoral degree
- Must be a member of AAPM at the time of application (any membership category) and maintain membership for the duration of the award period.

  *Pending membership status not acceptable*

  *Prior Mentorship Program recipients are ineligible*

**APPLY AT: gaf.aapm.org**

**DIRECT INQUIRIES: scamp@aapm.org**

AMERICAN ASSOCIATION *of* PHYSICISTS IN MEDICINE

**APPLICATION REQUIREMENTS**

- Cover letter outlining current contributions to Medical Physics research, describing future career plans, and reasons for interest in the Mentorship program
- The Cover Letter should specify the committee(s) and/or committee member(s) of interest — e.g., Science Council, Research Committee, Therapy Physics Committee, Imaging Physics Committee, or Technology Assessment Committee, and/or member(s) therein
- A diversity statement limited to one single-spaced page that describes how you will support and achieve SCAMP and AAPM's goals of equity, diversity and inclusion, especially as it relates to supporting the role of women and underrepresented groups in the field
- CV (no more than 4 pages)
- Brief letter of support from supervisor
- Please combine and submit all application documents as one PDF

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# MEDICAL X-RAY IMAGING DEVICES CONFORMANCE WITH IEC STANDARDS

## AAPM/CRCPD/MITA JOINT STATEMENT ON FDA GUIDANCE

Lifeng Yu, PhD | Mayo Clinic
Kevin Wunderle, PhD | Cleveland Clinic

*L. Yu*

*K. Wunderle*

On May 8, 2019, the FDA published a guidance titled *Medical X-ray Imaging Devices Conformance with IEC Standards.* This describes the FDA's decision to allow manufacturers of medical x-ray imaging equipment to voluntarily conform to relevant IEC standards instead of the applicable 21 CFR performance standards. The guidance provides flexibility for x-ray imaging device manufacturers during their FDA application process, with benefits widely recognized by device manufacturers, medical physicists, and regulators.

IEC standards are developed and maintained by an international consensus process and are more up to date than most of the corresponding 21 CFR performance standards. However, implications of the FDA guidance for clinical medical physicists, regulatory and accrediting bodies, and clinical users have been largely uncertain. For example, should state regulators and accreditation bodies require clinical users to adhere to those IEC standards? Should they incorporate those standards by reference? Should medical physicists perform acceptance and routine quality control tests according to the applicable IEC standards? What procedures are used to perform the IEC tests (IEC standards are not publicly available and might not be easily understandable by general users)? To answer these questions, the *Ad Hoc Committee to Develop User Instructions for IEC X-ray Performance Tests* (AHIEC) was formed at the end of 2019, chaired by **Dr. Lifeng Yu** and **Dr. Kevin Wunderle**, with members from AAPM, FDA, CRCPD, MITA, ACR, and the Joint Commission.

After many thoughtful discussions, the Ad Hoc prepared a joint statement in the name of the AAPM, CRCPD, and MITA to clarify the implications of the FDA guidance, with consultation from **Dr. Donald Miller** of the FDA. The statement was approved by the AAPM Board of Directors on November 19, 2020, and is printed below.

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**Written on behalf of Ad Hoc Committee to Develop User Instructions for IEC X-ray Performance Tests (AHIEC)**

**Co-Chairs:**
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*Lifeng Yu*

**Committee Members:**
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*Renee Dickson Butler*
*William DeForest*
*Allen Goode*
*Katie Hulme*
*Amirh Johnson*
*Steve Mann*
*Donald Miller (FDA)*
*Beth Schueler*
*Marlene Skopec*
*Adam Springer*
*Mark Supanich*
*Dustin Gress (ACR)*
*Andrea Browne (Joint Commission)*
*Kirsten Boedeker (MITA)*
*Andrew Kuhls-Gilcrist (MITA)*

**Committee Consultants**
(non-AAPM members):
Jennifer Elee (CRCPD)
Mary Ann Spohrer (CRCPD)
John Winston (CRCPD)

## AAPM/CRCPD/MITA Joint Statement on FDA Guidance of *Medical X-ray Imaging Devices Conformance with IEC Standards*

The purpose of this joint statement by the American Association of Physicists in Medicine (AAPM), the Conference of Radiation Control Program Directors (CRCPD), and Medical Imaging Technology Alliance (MITA) is to clarify the implications of the recent FDA guidance that, under certain circumstances, permits manufacturers of medical x-ray imaging equipment to conform to relevant International Electrotechnical Commission (IEC) standards in lieu of certain FDA performance standards for clinical medical physicists, regulatory and accrediting bodies, and clinical users. AAPM and CRCPD meet regularly with FDA and the latter has given numerous presentations on the planned guidance since 2016. AAPM and CRCPD have provided feedback on FDA and industry's approach to meeting the needs of all relevant participants.

FDA regulates medical x-ray imaging devices as both medical devices and electronic products. Electronic products are regulated by FDA through its Electronic Product Radiation Control (EPRC) regulations. The EPRC regulations are aimed at protecting the public from hazardous and unnecessary exposure to radiation from electronic products. A guidance document published by FDA in 2019, entitled "Medical X-Ray Imaging Devices Conformance with IEC Standards", permits manufacturers of medical x-ray imaging equipment to conform to relevant IEC Standards in lieu of certain EPRC regulations.[1] This flexibility is widely supported by device manufacturers and recognized by medical physicists and regulators to have benefits because the IEC Standards are developed by an international consensus process and are updated regularly. The relevant IEC Standards provide, at a minimum, the same level of protection of the public health and safety from electronic radiation as certain EPRC performance Standards and reporting requirements. This guidance document has no effect on the medical device regulations.

FDA regulations require manufacturers to supply adequate instructions for assembly, installation, adjustment, and testing (AIAT) to assemblers and, upon request, to anyone else (21 CFR 1020.30(g)). The guidance document recommends that a manufacturer who chooses to declare conformity to IEC Standards in lieu of certain EPRC regulations comply with FDA requirement by supplying AIAT instructions that include a Radiation Safety Specification and Testing Comparison Document. This document, at minimum, should include *inter alia*: radiation safety specifications that apply to the device, where those specifications would not otherwise meet the comparable EPRC performance Standards; IEC document number, version, and specific clause(s) under which each such specification is found; EPRC performance Standard requirement being replaced by the IEC Standard; and the test method and acceptance criterion. The intent is to format the AIAT documentation so that all radiation safety specifications and necessary test methods are available in a format that is practical for all and that does not require access to the relevant IEC Standards.

Industry, through MITA, supports this Radiation Safety Specification and Testing Comparison Document as a reasonable least-burdensome approach to communicate IEC specifications and test methods that are different from 21 CFR requirements. This allows medical physicists and state inspectors to understand the requirements and update their testing procedures accordingly. Through the process of creating and vetting modality-specific tables, MITA confirms referenced IEC Standards contain similar and, in many cases, more prescriptive descriptions of specifications/tests than current 21 CFR Standards. MITA also commits to making these documents publicly available via a central Web-based "landing page," hosted by MITA, which directs users to the dedicated manufacturer's site providing the information. The manufacturers retain autonomy on how the information is provided. Web links to table templates are available for download.[2,3]

Manufacturers that choose to conform to IEC Standards must provide to FDA a declaration of conformity. IEC Standards typically include specific requirements and tests that permit a determination of whether those requirements have been met. Some of these tests are intended to be performed by the manufacturer or a test house, but not normally on installed equipment at a user facility. Some are intended to be performed by the installer at the user facility after the equipment is installed and before clinical use. Some are also intended to provide guidance for the user facility during acceptance and constancy testing and can be used by regulatory authorities who perform equipment testing.

## AAPM/CRCPD/MITA JOINT STATEMENT ON FDA GUIDANCE, Cont.

In this statement, we clarify that the requirements of FDA EPRC regulations and the IEC Standards apply to x-ray equipment manufacturers, and not to clinical end users or others for whom they are only a source of information. IEC acceptance and constancy test Standards are intended to guide manufacturers by setting a minimum baseline for what those tests should be and by providing consensus methodology on how the tests should be done. This then guides the manufacturer on what information to provide. Any regulatory requirements from state or local government are either in addition to, or supersede, the manufacturer's recommendations. Individuals who perform acceptance and constancy tests must do so based on the requirements of state and local regulatory agencies and accreditation bodies such as ACR and The Joint Commission, taking into account the recommendations of equipment manufacturers and their own knowledge and experience. ■

***References***

1. *Medical X-Ray Imaging Devices Conformance with IEC Standards. U.S. Food & Drug Administration. May 2019.* https://www.fda.gov/regulatory-information/search-fda-guidance-documents/medical-x-ray-imaging-devices-conformance-iec-standards
2. *Radiation Safety Specification and Testing Comparison Document for Medical X-Ray Imaging Devices: General Radiography and Fluoroscopy, and Interventional Fluoroscopy. NEMA/MITA RSSTCD 1-2019.* https://www.nema.org/Standards/view/Radiation-Safety-Specification-and-Testing-Comparison-Document-for-Medical-X-Ray-Imaging-Devices-General-Radiography-and-Fl
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# SOCIAL INVESTMENT FOR TEAM PERFORMANCE

**MPLA SPOTLIGHT** Jennifer Johnson, PhD | Kelsey-Seybold Clinic

Teams are critical for getting work done in organizations, but they are also critical for providing the community domain in our work life.[1] Teams provide a means of communication and social support in a healthy work environment to participants.[2] Community, along with reward and fairness, that relates to our values can offset an unmanageable workload that leads to burnout.[3] AAPM's Medical Physics Leadership Academy (MPLA) has learned from surveys and program feedback that medical physicists are extremely interested in how they can get teams to work better.

AAPM's Medical Physics Leadership Academy (MPLA) has previously worked with Impact International, a consulting company that helps improve organizations, including leadership and team development.[4] MPLA engaged Impact to inform MPLA's definition of leadership and introduced team effectiveness at the 2016 AAPM Summer School. Richard Little of Impact / Institute for Leadership and Sustainability shared team models from four perspectives. The practice perspective sees the team as a community with shared know-how and supportive engagement.[5, 6] More people are familiar with the pathological perspective, with the groups forming and passing through phases of developing sociability and solidarity (i.e., form, storm, and norm) before performing effectively as a team (i.e., perform). [7, 8] The models using a performance perspective show how a group (e.g., single-leader unit) that initially invests in sociability may initially not perform well but does become a more effective team (e.g., real team, with distributed leadership following capability and know-how) with higher performance impact.[9] Finally, the behavioral perspective acknowledges the verbal behavior of a group can be adjusted to improve collaboration and performance.[10, 11] Skilled teams not only engage in more verbal behavior than average teams, through greater initiating, reacting, and clarifying behaviors, but also use the following more positive interactions to achieve more successful team outcomes: building, supporting, testing understanding, seeking information, and bringing in.

Impact International used team research, literature, and best practices and has developed a Team Performance Model (TPM) that considers the team as a whole entity and may be applied regardless of industry. Impact's research has found that teams have six necessary domains to be successful in being effective and achieving its purpose: (1) external alignment; (2) unified purpose; (3) quality conversations; (4) effective relationships; (5) agreed approach; and (6) high-performance mindset.

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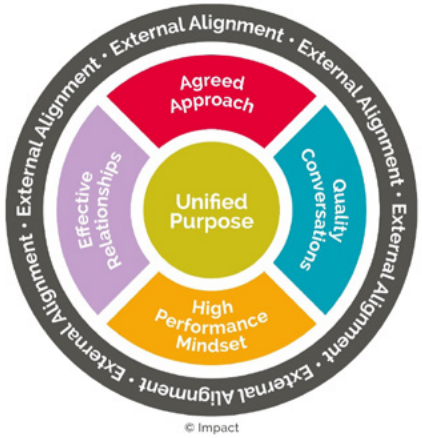

### External alignment

Even cohesive teams may struggle to be successful because of their alignment with the external environment. External alignment represents the context in which the team operates and grows. It reflects stakeholder backing and expectations of others for the team.

### Unified purpose

The unified purpose is why the team exists and is the one domain that teams frequently do well. Team members generally understand the goals, tasks, or reasons for the group to do its work. They consciously and collectively act towards the same agreed goals and outcomes.

### Quality Conversations

Quality conversations are the external actions members take to engage and communicate with each other. Team members should actively solicit input, through questioning and listening. Teams also need to have a way to work through conflict, where they incorporate a diversity of ideas and voices. This area relates to how members act in good faith on behalf of the team, with mutual respect for individual members.

### Effective Relationships

If quality conversations are the external actions, effective relationships are the internalized feelings members have for each other that is built upon trust, openness and honesty. Team members relate with understanding and appreciating each other, spending time with and nurturing their relationships.

### Agreed Approach

While teams most easily have a unified purpose, they most often lack an agreed upon approach. Teams need to agree on how they do their work, through processes of communication, problem-solving, decision-making, and generative thinking. These agreed upon procedures cover both tasks and personal interactions and become habits and traditions of the team.

### High-Performance Mindset

Teams that display a high-performance mindset want to learn and get better. They are willing to take on risk and a challenge. The team members readily give and receive feedback, providing support and rewarding growth and development. It is possible for a team to be effective in achieving their unified purpose but not have a high-performance mindset and achieve this self-actualization.

Medical physicists as leaders can review their team's six domains as defined by TPM. If they notice areas for improvement, they can decide what steps to take and act. The social investment in team members and processes will pay back through better performance. Leaders can reflect on whether they have a supportive community to mitigate against burnout. ■

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[1] *Leiter, M. P., & Maslach, C. (1999). Six areas of work life: a model of the organizational context of burnout.* Journal of health and Human Services administration*, 472-489.*

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# Congratulations

## to the Recipients of the Following Awards, Achievements & Honors in 2020 and 2021!

**The recipients will be recognized during the**
**2021 AAPM 63rd Virtual Annual Meeting and Exhibition | Tuesday, July 27, 6:00 PM**

The ceremony will recognize the 2021 AAPM Fellows and John S. Laughlin Early-Career Scientist Award winner, as well as offer the opportunity for the 2020 William D. Coolidge Gold Medal, Edith H. Quimby Lifetime Achievement Award, and the Marvin M. D. Williams Professional Achievement Award winners and Honorary Members to address us and receive their awards.

### Please join us in congratulating the recipients:

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Randall Ten Haken, PhD

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Frederic Fahey, DSc
X. George Xu, PhD

**2020 MARVIN M.D. WILLIAMS PROFESSIONAL ACHIEVEMENT AWARD**
Priscilla Butler, MS
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# 2021 RESEARCH SEED FUNDING GRANT

Three $25,000 grants will be awarded to provide funds to develop exciting investigator-initiated concepts, which will hopefully lead to successful longer term project funding from the NIH or equivalent funding sources. Funding for grant recipients will begin on August 1 of the award year. Research results will be submitted for presentation at future AAPM meetings. The award is not intended to provide salary support for the applicant, however any other research-related expenses, including travel to scientific meetings, will be supported. Travel expenses should be included in the submitted budget. At the end of the 12-month period a report must be forwarded to AAPM, along with itemized expenses. The award will not support indirect costs. Any unspent funds should be returned to AAPM.

Sponsored by the AAPM Science Council through the AAPM Education and Research Fund.

A list of Award Recipients can be found here.

**Eligibility:**

- 5 years or less since awarding of PhD
- Must be a member of AAPM at the time of application (any membership category); pending membership status not eligible
- No previous grants >$50,000 as principle investigator
- Previously funded projects are ineligible
- Prior Seed Grant recipients are ineligible

**Application Requirements:**

Five-page description of research project (including figures and tables), separated as follows:

a. Specific aims
b. Background and significance
c. Preliminary results
d. Research plan
e. Literature cited
f. Budget
g. Letter of support from division/ department chair demonstrating support for the project and authorization of time and resources to complete the proposed research
h. CV (no more than 4 pages)

*Note that sections (e), (f), (g), and (h) do not count towards the five-page limit.*

As the competition for the seed grant is high, eligible applicants are encouraged to also submit their applications for other awards, e.g. www.cancer.gov/researchandfunding/training/.

**Review Criteria**

- 50% Scientific merit of proposal (significance, innovation, environment, and soundness of approach)
- 25% Potential for project to develop into a major project fundable by NIH, DOE, DOD, etc.
- 25% Background of investigator

**Application Deadline:** May 31, 2021

(All supporting documents are due by the application deadline.) **You must log onto the AAPM website to view the apply button.**

**Award duration:**

August 31, 2021 – August 31, 2022

**Recipients notified by:**

June 22, 2021

## FOR MORE DETAILS, VISIT:

http://gaf.aapm.org/index.php#SEED

# AAPM / RSNA IMAGING PHYSICS RESIDENCY GRANT

The AAPM Board of Directors has approved $420,000 in support over 6-years ($70,000/year starting in 2019) to fund six spots in existing or new imaging residency programs. The RSNA Board of Directors approved $210,000 in funding for three additional slots in existing or new imaging residency programs.

Sponsored by the AAPM Education and Research Fund.

A list of Award Recipients can be found here.

**Applicant Eligibility:**

The purpose of the AAPM funding is to provide 50% support of a resident's salary for two imaging physics residents. The awardee institution(s) will provide the other 50% support. After the period of the award is over, the intent is that the awardee institution(s) will continue to fully support this new imaging physics residency position. Demonstration of this intent should be included in the application materials.

- CAMPEP accreditation is expected within the first year of the funding period, if a program is not currently accredited.
- Open to existing or new imaging residency programs.
- 1st priority — New programs (hence new slots), no previous funding from any AAPM program. A new program is defined as one that has applied for CAMPEP accreditation after January 1, 2020, or has not yet applied for CAMPEP accreditation.
- 2nd priority – Existing program but with new slots, no previous funding from any AAPM program. A new slot is defined as one that has been created or filled after January 1, 2020.
- 3rd priority - Existing program but with new slots, has had previous funding from any AAPM program. A new slot is defined as one that has been created or filled after January 1, 2020.

Award Duration: July 1, 2022 – July 1, 2024

**Application Deadline: May 3, 2021**

Recipients Notified by: May 27, 2021

**FOR MORE DETAILS, VISIT: http://gaf.aapm.org/index.php#IPRWG**


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