AMERICAN ASSOCIATION of PHYSICISTS IN MEDICINE

IMPROVING HEALTH
THROUGH MEDICAL PHYSICS

AAPM NEWSLETTER

May/June 2023 | Volume 48, No. 3

Special Interest Feature:

Women's Professional Subcommittee

IN THIS ISSUE:

2023 AAPM EXPANDING HORIZONS TRAVEL GRANT

AMERICAN ASSOCIATION of PHYSICISTS IN MEDICINE

The **EXPANDING HORIZONS TRAVEL GRANT** program is designed to provide students and trainees with an opportunity to broaden the scope of scientific meetings attended in their career. The proposed meeting should introduce new and relevant topics which may ultimately be incorporated into current or future medical physics research and progress the field in new directions.

Program Year 2023 will be broken into two application cycles: **Spring** (Round 1) and **Fall** (Round 2).

The total amount of support funding for use towards travel and/or meeting registration will be based on attendance type: **$1,250 if attending IN-PERSON** or **$500 if attending VIRTUALLY/ONLINE ONLY**.

Please Note: $250 of the total award amount — *regardless of attendance type* — is contingent on a short in-person presentation given by awardee at the next available AAPM Annual Meeting & Exhibition.

IMPORTANT DEADLINES

- Open: May 1, 2023
- Deadline: July 1, 2023
- Award Decisions: August 15, 2023

REQUIRED DOCUMENTS

- Cover Letter/Personal Statement
  - Long-term career goals
  - Motivation to attend proposed meeting
  - Expected scientific value of attendance on dissertation project or future research
- Curriculum Vitae
  - Limit to education, publications, presentations, and any relevant awards
- Letter of Recommendation
  - Must also confirm that additional expenses outside of total award amount will be covered
- Budget/Overall Expected Expenses

ELIGIBILITY CRITERIA

- Proposed meeting cannot be specifically related to medical physics.
- Proposed meeting must take place between June 1 – December 31, 2023.
- Must be a current graduate student, post-doctoral candidate, or current resident within five years of graduation at time of submission.
- Must be an AAPM member in good standing at the time of submission.
- Must not be a past Expanding Horizons awardee.

EXAMPLES OF INELIGIBLE MEETINGS

- Any AAPM-sponsored meeting
- American Society of Radiation Oncology (ASTRO) Annual Meeting
- Radiological Society of North America (RSNA) Annual Meeting
- Any meeting regularly attended by institutional group/program (judged on case-by-case basis)
- Any meeting that has previously been supported by an Expanding Horizons Travel Grant under the same Faculty/Advisor/Principal Investigator

QUESTIONS?

exhg@aapm.org
www.aapm.org

APPLY TODAY:

gaf.aapm.org/#EXHG

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EVENTS/ANNOUNCEMENTS

EDITORIAL BOARD

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SUBMISSION INFORMATION

To keep all reports uniform, we kindly request that submissions be made through a QuestionPro portal.

Questions? Contact Nancy Vazquez

PUBLISHING SCHEDULE

The AAPM Newsletter is produced bi-monthly.
Next issue: July/August 2023
Submission Deadline: June 2, 2023
Posted Online: Week of July 3, 2023

CORPORATE AFFILIATE ADVERTISING

Advertising Rates & Deadlines

CONNECT WITH US!

EDITOR'S NOTE

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

AAPM 2023
JULY 23–27 | HOUSTON, TX
65TH ANNUAL MEETING & EXHIBITION

The ART OF SCIENCE
The SCIENCE OF CARE

REVIEW COURSES AT THE AAPM 65TH ANNUAL MEETING & EXHIBITION

Already planning to register for the AAPM Annual Meeting in Houston?

Consider adding a comprehensive review course just prior to the start of the meeting. These courses provide a good review for physicists entering the specialty and physicists who would benefit from a refresher taught by experts in the field. Courses will be held concurrently on Saturday and Sunday, July 22-23.

More Information on Course Content >>

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

Categories and Fees >>

aapm.me/annual | #aapm2023

For more information, visit aapm.me/school

2023 AAPM SUMMER SCHOOL

Radiopharmaceutical Therapy & Dosimetry
University of Minnesota–Twin Cities
JUNE 2–7

INTERESTED IN LEARNING MORE ABOUT RPT?

Radiopharmaceutical Therapy (RPT) is fast becoming a mainstream modality with the development and approval of new emitters and conjugates.

Led by Co-Program Directors:
Robert Hobbs, PhD, Johns Hopkins University
Joseph O'Donoghue, PhD, Memorial Sloan-Kettering Cancer Center
Jessica Clements, MS, University of Vermont Medical Center

This four and a half day Summer School will cover the gamut of RPT applications.

MAY 17
Deadline to Cancel Registration/Receive Refund

MAY 24
Check payment deadline

JUNE 2
On-Campus Housing Check-in

Spring Conference Season is On

NEWSLETTER EDITOR'S REPORT

Welcome to the May/June 2023 edition of the *AAPM Newsletter*. As I write this, the AAPM Spring Clinical Meeting has just concluded in Orlando, FL; there were many updates on social media about interesting sessions and social events as members still celebrate being able to meet in-person again. In this issue of the Newsletter, we also have summaries of recent meetings from two AAPM chapters; I encourage all chapters to share reports of the great local events they're organizing!

In this issue, the Special Interest Group feature is from the Women's Professional Subcommittee (WPSC). They have many great reports and interviews with an emphasis on mentoring and outreach. One feature is an interview between a mentor and mentee matched by the AAPM's new mentoring program; this program is open and accepting applications for both mentors and mentees. I hope after reading this article you'll be inspired to join the program! Other features in this issue include an update on the most recent IHE-RO Connectathon, a summary of a recent webinar on navigating non-clinical careers in medical physics, and a request from the International Council to update your AAPM member profile with your expertise and willingness to volunteer for training and education initiatives. Check out the full newsletter for these reports and more!

We hope every AAPM member finds something of interest in every issue of the *Newsletter*. All AAPM members are encouraged to submit content and ideas for the *Newsletter* either directly to the editor or through the submission link on the *Newsletter* page. If you have an announcement of an honor or award that you would like to share, please submit it to the Newsletter for consideration! Enjoy this issue of the *Newsletter* and send us your feedback and ideas for future editions. And as always, share the *Newsletter* articles you enjoy with your social media network; the *Newsletter* is available for all to read. ■

Jennifer Pursley, PhD
Massachusetts General Hospital

MENTORSHIP PROGRAM

AAPM MENTORSHIP PROGRAM: VOLUNTEERS NEEDED!

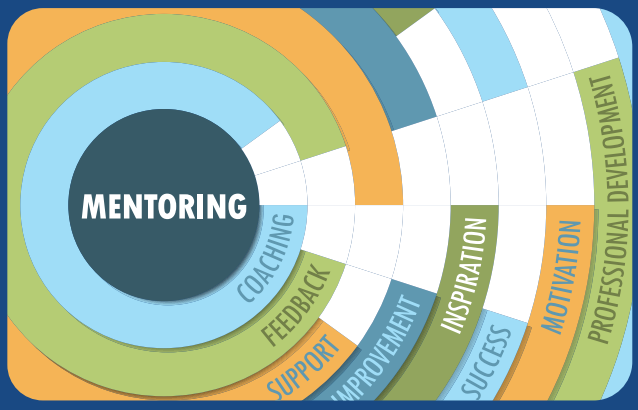
The AAPM Mentorship Program is actively recruiting volunteers from all disciplines, work environments and education levels to serve as mentors to other AAPM members. Participation is open to any AAPM member. More details including an FAQ and sign up can be found here.

What is Mentorship?

Mentorship is one-on-one, virtual, or in person. The AAPM Mentorship Program is not just for professional mentorship, it can be used to support any form of personal or career development, including navigating an early career post-residency, being more productive in research and grant writing, how to climb the academic ladder, becoming a better educator, strategizing career changes and moves, management and leadership skills, or even retirement! The individual aims of the mentoring relationship are up to the participants.

What Mentorship is Not:

This is not a clinical training program. Mentorship offers a personalized opportunity to work on your individual career development goals, develop new skills and expertise and access objective evaluation of your performance from an experienced member of AAPM. Mentorship can increase your networking opportunities, help to clarify your career direction, and provide support and motivation in meeting the challenges of work and home life.



The ABCs of Strategic Planning for AAPM

CHAIR OF THE BOARD'S REPORT

J. Daniel Bourland, PhD
Wake Forest School of Medicine

Greetings AAPM Colleagues:

One topic the AAPM Board of Directors is working on is ***Strategic Planning***, which is a vitally important process for associations like AAPM. The Board has the overall responsibility for AAPM activities and provides ***Care*** and ***Oversight***, to ensure that the AAPM mission has the needed resources and guidance to go forward with longevity and meaningful productivity. A robust Strategic Plan ensures that "*All the good work of AAPM*" can continue forward. The Board is beginning to work towards a robust plan, as described more below — such work is challenging, in general, for all nonprofit associations.

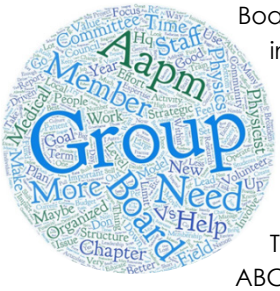
Background on ABCs: As an integral part of our strategic planning, here we are, the **A-A-P-M** and we have our **A-B-Cs**, which are our strategic priorities as affirmed by the Board in 2022. Everyone — the Board, Members and Staff — **should know AAPM's priorities**, as they provide overall guidance for our activities. Here are the **ABCs** for easy remembering:

A. Articulating Our Value

B. Broadening The Field

C. Coordinating Our Initiatives

The specific language is given at the bottom of this article (or a link if a webpage is available).



Strategic Planning Discussions: The March 16–17, 2023, virtual meeting of the Board was designed for discussion of topics of strategic importance for AAPM's future. Presentations to the Board included background information on strategic planning principles, summaries of selected Ad Hoc committees relevant to the ABCs, and perspectives on AAPM's stature, challenges, and opportunities.

Two poignant questions, framed with caveats of the ABCs and the preservation of AAPM's core of "good work" in mind, were then considered by the Board in smaller breakout sessions, with each breakout session led by a member of the Strategic Planning Committee. The two questions posed 1) how the activities and operations of AAPM might be designed for the future, and 2) how AAPM should further address the ABCs. The breakout groups were encouraged to "reimagine the possible" while "preserving the core of AAPM's good work."

The sessions were very productive and breakout group comments and suggestions have been collected and collated and will be assessed by the Strategic Planning Committee, assisted by EXCOM. The two word clouds shown here represent the common words of the discussions.

CHAIR OF THE BOARD'S REPORT, Cont.

While strategic planning can be challenging, we aspire for a plan for our future that builds upon our current stature and provides for sustainability and continuity of our mission.

IMAGINE: The AAPM BOD sets and carries forward a 5-year Strategic Plan that is meaningful for AAPM's mission and future, and can be implemented with metrics that help gauge success

And, thank you all! As I've written before, 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*. Please let me know if you have comments or suggestions about AAPM's mission, priorities, and strategic planning; my email remains bourland@wakehealth.edu.

AAPM Areas of Strategic Focus, as Affirmed by the Board of Directors, 2022

The ABCs – Short Version

A. Articulating Our Value

B. Broadening Our Field

C. Coordinating Our Initiatives

Formal Statements

AAPM Areas of Strategic Focus

Longer-term areas of focus (3-5 years)

1. **Articulating Our Value: Develop and implement a plan to advocate for our value as medical physicists within the healthcare enterprise and broader medical communities.**
2. **Broadening Our Field: Identify future directions in the science and practice of medical physics and consider possible areas in which AAPM could invest to enhance our success in the years ahead. Develop a plan to establish and maintain active relationships with the greater medical community beyond traditional, existing relationships for AAPM.**

Shorter-term area of focus (1-2 years)

3. **Coordinating Our Initiatives: Carefully evaluate areas for internal improvement and better coordination of operations across councils, groups, and staff. Coordinate, integrate, and communicate AAPM activities and initiatives from development to implementation, including science, education, practice, and administration ■**

OUR CONDOLENCES

Thomas D. Kampp, PhD • J. Joseph Allen, MS • Pai-Ho Huang, MS • John R. Glover, PhD
Joseph C. McDonald, MS • Ponnunni K. Kartha, PhD • Gin-Weigh Wu, PhD • Michael D. Williams, PhD
Peter M. Joseph, PhD • Fanqing Guo, PhD • Michael K. Garrity, PhD

Our deepest sympathies go out to the 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 email to: 2023.aapm@aapm.org
(Please include supporting information so that we can take appropriate steps.)

Information from HQ

EXECUTIVE DIRECTOR'S REPORT

Reminder: You Can Support AAPM *Without Spending a Penny*

When you are reading *Medical Physics* or the Journal of *Applied Clinical Medical Physics (JACMP)* online, **click on an advertisement**. AAPM advertisers are partners in the publication of AAPM journals, and the links they provide in their online advertisements provide useful information for the profession. Please consider clicking through if you see something that interests you. "Clicks" show that online advertising works and encourages advertisers to continue using online means to reach YOU, their audience.

When browsing through AAPM.org or reading the AAPM e-News, **click on an advertisement**. Again, "clicks" = VALUE to the advertiser. While a small percentage of AAPM revenue is currently generated from this source, we can make it grow so these opportunities provide a greater return to the organization in support of AAPM programs.

As you review the program for the Annual Meeting, plan to **participate in the Vendor Track** consisting of **Vendor Showcases** as well as **Partners in Solutions** and **Educational Topic Specific Guided Tours**. Plan to **visit the exhibit hall** and **engage with AAPM Corporate Partners**. It is important to remember that the fees that the exhibitor partners pay to participate support the overall program. Attendee engagement is vital to exhibitors who want to educate you about their latest products. Show the exhibitor partners that their continued participation in AAPM meetings makes smart business sense and thank them for their support through the challenges with virtual meetings.

Employers advertise in the AAPM Career Services/Placement Center because they know that it reaches qualified AAPM members. When you are thinking about changing jobs or have a position to fill, **use AAPM Career Services** as it too provides a substantial return to the organization in support of AAPM's mission.

Election Process Online Only!

Elections for the 2023 Officers, Board Members-at- Large and Nominating Committee Members will open on June 14 and will run through July 5. The AAPM Bulletin Board System (BBS) will be used during the election process to allow members to discuss issues of concern with the candidates and the election in general. This is an online only process, so be alert for email announcements.

Did You Know?

- New! Report 275.S - AAPM Task Group Report 275.S: Survey strategy and results on plan review and chart check practices in US and Canada.
- The Global Data and Information Exchange Committee has added a section to the AAPM Member Profile to create and maintain the database of volunteers within the AAPM membership who would be willing and

Angela R. Keyser
AAPM

Is your home address on file?
Having your home address on file plays a crucial role in enabling AAPM to effectively monitor and respond to regulatory and governmental activities in your state.

The AAPM HQ Team…at your service!
Who does what on the AAPM HQ team? See a list with contact information and brief descriptions of responsibilities online. An organization chart is also provided. We also provide information about the diversity of our team as well.

able to volunteer their time and effort towards various International Council activities to address the global needs worldwide. You can find this at https://www.aapm.org/memb/profile/gdiec_volunteer.asp

- Having your home address on file plays a crucial role in enabling AAPM to effectively monitor and respond to regulatory and governmental activities in your state. By providing us with accurate and up-to-date information, you empower us to advocate on your behalf, ensure that your voice is heard, and foster a stronger, more united community. Rest assured, AAPM is committed to safeguarding your privacy; your home address will not appear in the member directory unless you designate it as your primary address in our system. Please take a moment to review your Membership Profile and make sure that AAPM has your current home address.
- If you are receiving *Medical Physics* in print and would prefer to receive it online only, you can make that change at https://www.aapm.org/memb/profile/journalpref.asp by clicking the Change to Online Only button. Please note that changes to this preference take 4–6 weeks to take effect.
- An essential service provided by the American Institute of Physics (AIP) is the FYI science policy bulletins focusing on the physical sciences. The sign-up is free, and it is an easy way to stay on top of what is happening within the administration and Congress. Subscribe online.
- **AAPM's got merch!** AAPM offers a line of customized, handmade ties and scarves that incorporate our signature logo in a distinctive pattern that AAPM members will be proud to wear. Order yours today and wear it to the meeting! Please allow 3–5 weeks for fulfillment.

AAPM Meeting News

Mark your calendars for upcoming AAPM meetings and webinars:

- ***AAPM Webinar Series on Advances in Medical Physics (2023)***
  Webinar #33: PULSAR - Optimizing Immuno-Radiotherapy based on Intra-fraction Immune Response
  May 11, 12:00 pm – 2:00 pm ET
- ***AAPM Webinar Series on MP3.0 Transformational Medical Physics (2023)***
  Episode #18: Improving Medical Physics Education
  May 18, 12:00 pm – 1:00 pm ET
- ***AAPM Webinar Series on Global Research and Scientific Innovation (2023)***
  June 13, 12:00 pm – 2:00 pm ET
- ***AAPM Webinar Series on A Medical Physicist Guide to Sexual and Gender Minority Health & Well-Being (2023)***
  June 22, 12:00 pm – 2:00 pm ET

Have you missed any of the previous webinars? The archived webinars can be found here.

#AAPMSS — **AAPM Summer School *Radiopharmaceutical Therapy & Dosimetry***
June 2-7
University of Minnesota-Twin Cities
Minneapolis, MN

#AAPM2023 — ***AAPM 65th Annual Meeting & Exhibition***
July 23-27
Houston, TX

Make plans to attend the AAPM 65th Annual Meeting & Exhibition and reconnect with friends and colleagues, featuring the theme *The ART OF SCIENCE, The SCIENCE OF CARE*. Register by June 7 to receive Early Bird Registration.

Interested in Volunteering?

AAPM relies heavily on the volunteer efforts of its members to accomplish its scientific, educational, and professional missions. Without AAPM members who are willing to devote time and energy to the advancement of medical physics, AAPM would not achieve its goals. If you are interested in volunteering, please review the Committee Classifieds online to see what positions are available. ■

AAPM's Longest Serving Executive Director Angela Keyser to Retire

SPECIAL MESSAGE FROM THE AAPM EXECUTIVE COMMITTEE

On behalf of the AAPM Board, EXCOM would like to take this opportunity to both congratulate and celebrate Angela R. Keyser, AAPM Executive Director: we congratulate her on the well-deserved retirement that we know will bring great joy to her and her family beginning at the end of 2023, and we celebrate her outstanding career in leading and serving AAPM for 30 years (five years as Director of Meetings, five years as Deputy Executive Director, and 20 years as Executive Director). It is with tremendous gratitude that we reflect on the service she has been providing to our Association with grace, loyalty, and care. She has created a family atmosphere among headquarters staff, a family that has grown by a factor of three to 35 total staff during her tenure; she has established a culture of ownership and determination among members; and she has been a thoughtful and highly regarded ambassador to AAPM's peer associations. Her unwavering commitment has guided AAPM to become the leading professional and scientific society that we are today.

Please join us in expressing our gratitude for Angela's leadership of our Association — always conducted with a smile and with the highest level of care for AAPM members and our Headquarters team!!

AAPM 2023
JULY 23–27 | HOUSTON, TX
65TH ANNUAL MEETING & EXHIBITION

The ART OF SCIENCE
The SCIENCE OF CARE

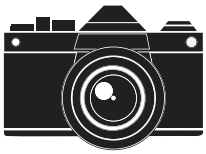
NEW MEMBER SYMPOSIUM

Tuesday, July 25, 2023 | 2:45–3:45 pm ET
Room 371 (Level 3), George R. Brown Convention Center

As a new member of AAPM, it is easy to feel overwhelmed by the size and complexity of the association and to be unaware of the benefits and opportunities available to members. At this year's AAPM Annual Meeting in Houston, we will host a New Member Symposium where you can learn more about the organization, member resources, opportunities to get involved, and about topics of particular interest to new professionals. We encourage you to take advantage of this great opportunity to learn valuable information and to grow your professional network.

Registered attendees will receive a raffle ticket. Enter to win a complimentary registration for the 2024 Annual Meeting in Los Angeles, CA!

In addition, all new members who register for the Symposium will receive a drink ticket, good for one complimentary soda or beer served after the New Member Symposium during the social with committee chairs from five AAPM Councils: Science, Education, Professional, Administrative, and International.



Get Your Picture Taken.
A photographer will be available to snap a photo for your profile in the AAPM member directory.

aapm.me/annual

AP-28 — Preparing for the Future

TREASURER'S REPORT

Samuel G. Armato III, PhD
The University of Chicago

For many years, not-for-profit organizations operated with the strategic mindset that 100% of revenue raised needed to be spent fulfilling the mission of the organization. The thought of building a reserve or setting aside funds for a "rainy day" wasn't a necessity. The Great Recession (2007–2010) provided a valuable lesson in the vulnerability of this strategy. According to the National Center for Charitable Statistics, nearly 5% of all not-for-profits closed their doors during this period.

Fortunately for AAPM, leadership had the foresight to recognize that a reserve fund would be vital to the long-term health and sustainability of the association. In 1998, the Board approved Administrative Policy (AP)-28, which reads as follows:

AP-28
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 contract obligations.

Maintaining strong investment reserves allows an organization to navigate through:

- unanticipated revenue declines,
- unanticipated expenses,
- unfavorable economic conditions, and
- implementation of new programs

Unanticipated Revenue Declines

Many not-for-profit organizations rely heavily on meeting or event revenue for a substantial portion of their overall budgeted revenue. During the recent pandemic, many organizations experienced substantial declines in overall revenue and, as a result, were forced to cut programs, reduce services, and/or reduce staff, while others were forced to shutter their doors for good. Based on our audited financial statements, AAPM experienced a 20% decline in revenue from 2019 to 2020; however, AAPM was able to navigate this period without cutting programs or staff, in part due to our strong reserves.

Unanticipated Expenses

In the early 1990s, many for-profit and not-for-profit organizations in aging structures were suddenly confronted with the reality of the asbestos crisis. Many were forced to eliminate staff in order to fund asbestos abatement costs. Regardless of the cause of unanticipated expenses, many not-for-profits without sufficient cash reserves are forced to cut programs or staff or seek outside capital (lines of credit) at a higher cost, which further hinders their ability to fund future programmatic activities.

Implementation of New Programs

The pace of change is rapidly accelerating. To meet the ever-changing needs of its constituents in a rapidly changing marketplace, organizations must be prepared to quickly implement new programs and/or new initiatives to meet those demands — or be left behind. Having sufficient reserves enables organizations to be nimble in launching new initiatives until funding sources can be identified.

The Board astutely identified these long-term needs and established AP-28, which created a **target** for sufficient reserves. The current target is $15.6M, and, as of March 2023, the current value of the investment reserves is $15.0M, which mean that the reserves are currently underfunded by $600k.

Market Volatility

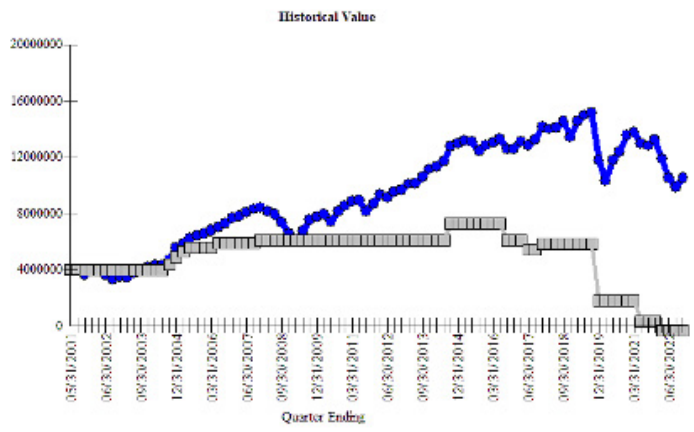
AAPM reserves are invested in two separate accounts: an Operating Reserves Investment Fund and an Excess Budget Increased Equity Portfolio Fund (EBIEP). The Operating Reserves Investment Fund maintains an equity/bond ratio of 60/40. In 2018, AAPM's Treasurer, Mahadevappah Mahesh, asked the Investment Advisory Committee to consider transferring some funds from the Operating Reserves Investment Fund to a slightly more aggressive investment vehicle with an equity/bond ratio of 80/20; given the strong investment reserves held by AAPM, the Investment Advisory Committee and the Board in 2019 approved an initial transfer of $2M to establish the EBIEP. Based on early returns, the Board approved an additional $1.5M transfer in 2021. Recognizing that short-term fluctuations in the market can skew performance results, the intention was to allow the funds to remain in the EBIEP account for a period of at least five years to properly evaluate its performance. EBIEP also was intended to be a stable account, so that transfers out of this fund would not be made unless necessary; any transfers needed for operations would be made from the Operating Reserves Investment Fund.

The graph (Figure 1) illustrates the historical market value of the **Operating Reserves Investment Fund** (blue line) along with cumulative net investment into the fund (gray line) since inception. The value of the portfolio currently exceeds the initial principal investment (made 5/31/2001) by $10,858,451. Since 2019 you will note several declines in the historical value of the fund (gray line). These reductions are related to planned, Board-approved transfers from the fund. Over the past five years the Board has approved four distributions from reserves for:

- Replenish Operating Cash — The acquisition of the headquarters building in 2014 was funded through operating cash. This greatly depleted operating cash and after a period operating cash levels were low, and therefore FINCOM recommended, and the Board-approved replenishing operating cash levels in 2019.
- Systems — The Board approved transfers for acquisition of the Association Management System (AMS) and the Financial Management System (FMS) in 2017 and for the Content Management System (CMS) and the Learning Management System (LMS) in 2022.
- Excess Budget Increased Equity Fund (EBIEP) — The Board approved transfers for the EBIEP fund previously mentioned.

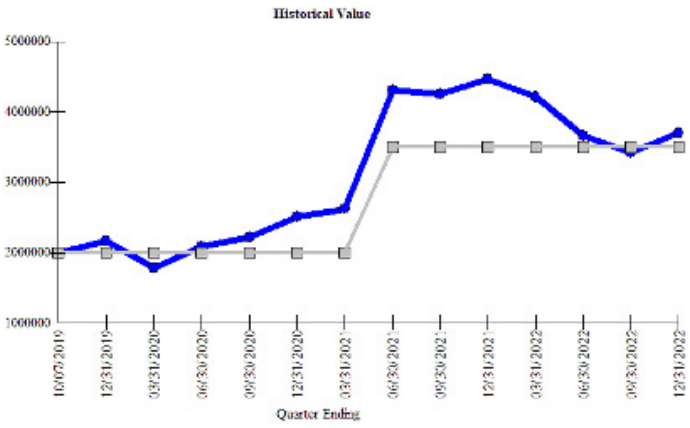
Figure 1.

The graph Figure 2 illustrates the historical market value of



the **Excess Budget Increased Equity Portfolio Fund** (blue line) along with cumulative net investment into the fund (gray line) since inception. Despite the shorter period over which to evaluate performance and the challenges of the market decline experienced at the beginning of the pandemic and the bear market of 2022, the portfolio value currently exceeds the principal investments made to the fund by $207,106.

Figure 2.



As the above graphs show, AAPM has greatly benefited from its investment strategy. Despite significant market declines in 2008, 2019, and 2022, the value of the Operating Reserve Investment and EBIEP funds exceed the contributions into these funds. AAPM's balance sheet has been strengthened and AAPM is well positioned to navigate unanticipated revenue declines, unanticipated expenses, unfavorable economic conditions, and implementation of new programs. The foresight of AP-28 not only ensures that AAPM is viable today but also that we are financially prepared and equipped to handle the challenges of tomorrow to remain an industry leader.

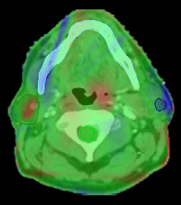
Investment Breakdown

Below are the target asset allocations as detailed in the administrative policies (investment policy statements) for the portfolios. Actual allocations over time will vary depending on movements in the market and the timing of repositioning as a result of the optimization process.

I would like to thank **Robert A. McKoy**, CPA (AAPM Director, Finance) for his expert contribution to this column. ■

Asset Class	Allocation	Minimum	Maximum
US Core Fixed Income	31%	30%	36%
Int'l Fixed Income	7.5%	3%	9%
Cash	0.5%	0%	3%
US Large Cap Value	18.5%	16%	22%
US Large Cap Growth	17%	16%	22%
US Small Cap Value	3.5%	0%	5%
US Small Cap Growth	2.0%	0%	5%
Int'l Equity (Developed)*	16%	14%	16%
Int'l Equity (Emerging)*	4%	1%	5%

myvarian WEBINARS



How Do You Adapt?

http://bit.ly/3KkUANq

Were you one of the over 800 people that attended our recent webinar "Adaptive Radiotherapy - The Why, When, and How of Offline and Online ART" presented by Ian Gallagher, MS DABR, from Henry Ford Health?

This in-demand event launched our latest webinar series, "How Do You Adapt?" that has peers sharing how their clinics do adaptive radiotherapy - whether online, offline, or both. Join us and discover how your clinic may enter the adaptive world with tools available today. Scan the QR code to watch the playbacks and to register for upcoming webinars.

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The US Veterans Administration Salary Cap for Therapy Medical Physicists

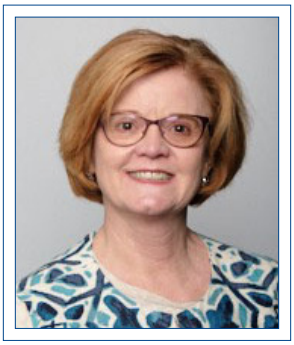
LEGISLATIVE AND REGULATORY AFFAIRS REPORT

Over the past 17 years, therapy medical physicist (TMP) salaries have increased nationwide as radiation therapy has become more sophisticated and more common. The average salary in the private sector for a PhD board-certified TMP with 10–14 years of work experience is approximately $190,000. For VA Medical Hybrid Title 38 employees like TMPs, salaries are governed by the General Service Title 5 basic salary limitation. Most of the TMPs employed by the VA earn a salary at or near the current pay cap of $166,500. Private sector salaries for TMPs have reached a level that inhibits the VA's ability to directly recruit qualified individuals to fill these positions. The VA estimates that retention within the Veterans Health Administration (VHA) of qualified TMPs will require salaries in the $175,000-$275,000 range for careerists.

When faced with TMP shortages, the VHA outsources this work to contractors with a total cost ranging from $225,000 to $454,000 per contractor. Currently, most of the VA's radiation oncology services are performed by contractors. The VHA has substantially overspent on these services, which could be done more reliably in-house and at a much lower cost. Contracts for TMP services are awarded for a short period (typically 1–3 years), which results in frequent turnover in this occupation that can be operationally disruptive and potentially dangerous from the perspective of quality care and patient safety.

AAPM supports the removal of the General Services Hybrid Title 5 basic salary cap, allowing a competitive bids process for TMPs that would improve the benefits associated with VA employment. It is believed that this will provide a higher quality of radiotherapy. There would be better employee satisfaction and encourage retention of well-qualified TMPs at a reduced cost that would benefit radiotherapy care for veterans.

AAPM is currently working with staff from Sen. Tim Kaine's (D-VA) office to draft legislation to move TMP from the current Hybrid Title 38 status to full Title 38 status under the VHA's Physician, Dentist, and Podiatrist pay system. The AAPM Government and Regulatory Affairs Committee (GRAC) is developing a strategy to mobilize TMPs to contact their representatives with talking points for discussing the best options to support the change in requirements in the VHA pay system. ■



Debbie B. Gilley, MPA
Government Relations Specialist, AAPM

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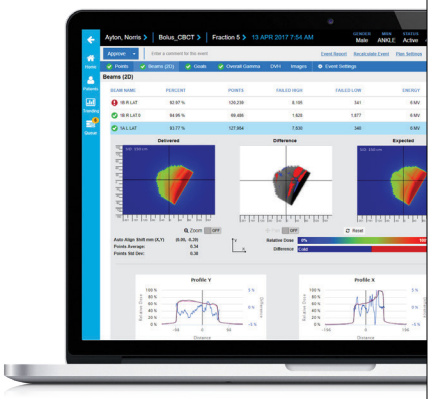


Patient

- Plan Quality Checks
- Secondary Dose Calculations
- Pre-Treatment QA
- In-Vivo Monitoring

Machine

- Standardized Routine QA
- Direct Device Control
- Automated Imaging, MLC & VMAT QA
- Protocol-Based QA

Medical Physics Initial Certification Advisory Committee Visits ABR Headquarters

ABR UPDATE

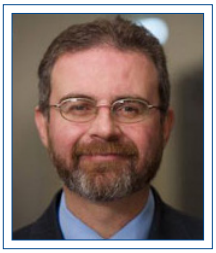
Members of the ABR Medical Physics Initial Certification Advisory Committee (IC-AC) recently traveled to Tucson, AZ for a 1 ½-day meeting where they engaged with ABR staff on many topics related to initial certification, including how exams are created, delivered, and scored. A primary purpose of the IC-AC is to improve communication between candidates, stakeholder groups, and the ABR. This theme of improved communications helped guide discussions throughout the meeting.

Members of the ABR's Initial Certification Advisory Committee came together to recommend ways to improve communication between candidates, stakeholder groups, and the ABR. Pictured, from left to right: Sameer Taneja, David Pearson, Kelsey Bittinger, Jacob Rembish, Kristen McConnell, Samantha Simiele, Kai Huang, Wayne Newhauser, David Jordan, Robert Pooley. Not pictured: Jay Burmeister, Reagan Dugan, Wendy Harris, Joann Prisciandaro.

Committee members are sponsored by AAPM and the Society of Directors of Academic Medical Physics Programs (SDAMPP). They represent a range of trainee statuses and professional roles. Members are appointed for a three-year term which may be renewed once for non-trainee members.

Robert Pooley, PhD
ABR Trustee
Mayo Clinic

Kalpana Kanal, PhD
ABR Trustee
University of Washington



Matthew Podgorsak, PhD
ABR Trustee
Roswell Park Cancer Institute

Geoffrey Ibbott, PhD
ABR Associate Executive Director
American Board of Radiology

Committee Member	Sponsoring Organization	Status / Role
David Jordan, PhD	AAPM	Professional Council
Jay Burmeister, PhD	AAPM	Education and Training Committee
Joann Prisciandaro, PhD	AAPM	Education Council
Kelsey Bittinger, MS	AAPM-STSC*	Resident
Kai Huang, BA	AAPM-STSC	Graduate Student
Reagan Dugan, BS	AAPM-STSC	Graduate Student
Jacob Rembish, PhD	AAPM-STSC	Resident
Sameer Taneja, PhD	AAPM-STSC	Diplomate
Wendy Harris, PhD	AAPM-STSC	Diplomate
Samantha Simiele, PhD	AAPM-STSC	Diplomate
Kristin McConnell, PhD	AAPM-STSC	Diplomate
David Pearson, PhD	SDAMPP	Residency Program Director
Wayne Newhauser, PhD	SDAMPP	Graduate Program Director
Bob Pooley, PhD	ABR	Trustee, Chair
Kalpana Kanal, PhD	ABR	Trustee, ex officio
Matthew Podgorsak, PhD	ABR	Trustee, ex officio
Geoff Ibbott, PhD	ABR	Associate Executive Director

*STSC – Students and Trainees Subcommittee

The IC-AC typically meets in person at the AAPM Annual Meeting & Exhibition with additional virtual IC-AC meetings occurring quarterly. This was the first time the committee visited ABR headquarters. In addition to receiving a tour of the facilities, committee members learned about ABR history, certification services, communications, volunteers and volunteerism, and specifics related to item-writing training. Information on exam development, delivery, standard setting, scoring, and results posting was also presented. Each presentation generated lively discussion and provided an opportunity for committee members to ask questions directly to ABR staff. The material presented and answers provided were not confidential.

At the conclusion of the meeting, members were asked to consider the most impactful items learned, ideas for topics to communicate to a broader audience, suggestions for best platforms to use for further communication, and overall suggestions for improvement.

Committee member **Kai Huang** shared the following comments after the meeting:

"The insights shared were immensely valuable and helped me gain a better understanding of the inner workings of the ABR. This knowledge allowed me to think about how I can contribute meaningfully to the committee…During the meeting, I realized that a lot of the information that was presented is publicly available, but candidates may not know where to find it. Therefore, I believe it is crucial for the ABR to communicate more effectively. While the current communication channels such as *The Beam*, *AAPM Newsletter*, website, and social media are great, I suggest we explore additional ways to engage with candidates."

ABR trustees, communications staff, and the IC-AC will continue to work closely together to enhance communications regarding initial certification for medical physicist trainees and stakeholders. ■

Medical Physics IC-AC takes a break at Reilly Craft Pizza after a full day of meetings.

ACR Accreditation & More: Info for Medical Physicists

UPDATES FROM ACR HQ

RadiologyInfo.org and its New Page on Scanxiety

Please bookmark and share RadiologyInfo.org, which is the patient-facing resource on medical imaging from both RSNA and ACR. At this link patients who associate imaging with anxiety, panic, or depression will find multiple resources on "scanxiety," such as a patient-friendly animation video.

New ACR White Paper on QM, QA, and QC in Medical Physics

If you've ever struggled to keep clear in your mind the differences between quality management, quality assurance, and quality control, you're not alone. Under the auspices of ACR's Commission on Medical Physics, member-volunteers from ACR's 2021–2022 Committee on Practice Parameters – Medical Physics recently published a white paper in *JACMP* on QM, QA, and QC in Medical Physics. We believe this white paper will be a useful and enduring reference for the practice of medical physics as we continue to evolve toward value-based services rather than volume-based, and continue honing our ability to articulate the nuances of the important work we do.

Speaking of quality… got ideas for measuring it?

In ACR's effort to support radiology practices in quality improvement efforts, it is always on the lookout for new measure concepts to prioritize for development and possible submission to the Centers for Medicare & Medicaid Services (CMS).

We're seeking measure concepts regardless of their stage of development—from high-level ideas to detailed quality measures already in use. Measure concepts submitted for prioritization can address various topics or include concepts for updating current Merit-based Incentive Payment System (MIPS) measures. Concepts meeting the criteria for high priority will be assigned for development or refinement by the ACR Metrics Committee.

The measure concepts developed or refined by the committee into fully formed measures are intended for use in CMS MIPS, either through the ACR Qualified Clinical Data Registry (QCDR) or as a MIPS clinical quality measure. Both measure reporting pathways are directly linked to physician payment under CMS MIPS regulation.

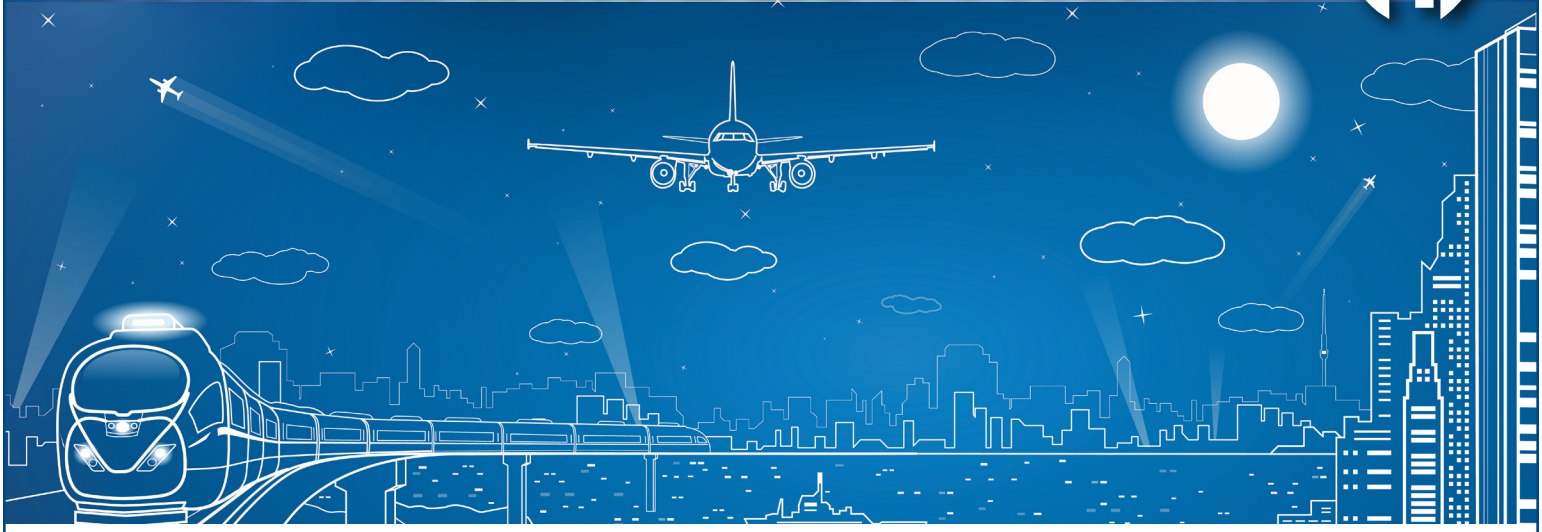
Submit Your Measure Concept: To support the delivery of high-quality care in radiology, complete the Measure Concept Vetting Form. All submissions require a completed Evidence Source Form. For questions about concept submission, measure development or MIPS, please contact measure.development@acr.org. ■

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

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

The ACR's Commission on Medical Physics, chaired by M. Mahesh, PhD, **recently selected the** 2023 Richard L. Morin, PhD Fellows in Medical Physics**:** Congratulations to Mercy Akerele, PhD of University of Florida and Emily Thompson, PhD of University of Texas MD Anderson Cancer Center!!! We had a record number of applications this year, and having read all of them, it's obvious that the future of medical physics is bright.

2023 AAPM BEST AWARD



Best Medical International, with their Team Best Companies and the American Association of Physicists in Medicine (AAPM), are pleased to announce the availability of a Travel Fellowship for Student, Resident or Junior Members of AAPM to attend the 2023 AAPM Annual Meeting in Houston, TX. Recipients will have access to the scientific and technical information and presentations on current and emerging topics in medical physics and related areas.

Sponsored by Best Medical International and the AAPM Education Council through the AAPM Education & Research Fund.

Eligibility

Each applicant must be:

- a Student, Resident or Junior Member of the American Association of Physicists in Medicine (AAPM); and
- first author on an accepted abstract for the 2023 AAPM Annual Meeting.

Required Supporting Documentation

- Attach all abstracts submitted to the 2023 AAPM Annual Meeting.
- Download and complete the AAPM Best Award application. Merge all files into one PDF and upload the completed application.

Award Duration:
July 23–27, 2023

Application Deadline:
May 17, 2023

(All supporting documents are due by the application deadline.)

Recipients notified on:
June 7, 2023

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A Continuous Quality Improvement Strategy for ASTRO's APEx Accreditation

AMERICAN SOCIETY FOR RADIATION ONCOLOGY UPDATE

Quality improvement is a critical aspect of providing safe, high-quality patient care. The American Society for Radiation Oncology (ASTRO) offers a valuable tool for achieving this goal: ASTRO's APEx - Accreditation Program for Excellence®. ASTRO designed the APEx accreditation program, based on ASTRO's Safety is No Accident: A Framework for Quality Radiation Oncology Care, to provide a baseline for quality and safety while also being a quality improvement program. [2020 Hong et al. Accreditation Program for Excellence (APEx): A Catalyst for Quality Improvement]. Since ASTRO launched the APEx program in 2014, more than 300 institutions have received accreditation. APEx grants three- or four-year accreditation periods. As early adopters prepare for their second or third accreditation cycle, many practices may ask if there is a more efficient way to prepare for the next APEx accreditation cycle. While most practices begin preparation for their next accreditation cycle six to nine months before the completion of the current accreditation, this article presents an alternative framework for continual quality improvement between accreditation cycles.

The Department of Radiation Oncology at Froedtert and the Medical College of Wisconsin began preparations approximately one year before receiving an initial APEx accreditation in January 2019. Once the department decided to pursue APEx accreditation, an internal ad hoc APEx committee was formed. The APEx committee was composed of the medical director, a physicist, a therapist, a dosimetrist, the site managers, the enterprise director, and administrative staff. During the initial preparation for APEx accreditation, the committee met weekly. The committee carefully and methodically reviewed all standards and corresponding evidence indicators. Like many other practices, the committee decided, in coordination with practice leadership, to make the necessary changes to the practice prior to the self-assessment phase of the accreditation process. Areas of focus included but were not limited to improving and standardizing patient electronic medical record (EMR) documentation, updating and standardizing policies and procedures, documenting previously undocumented practice standards, and formalizing several standing committees with written committee charters, including the Patient Safety and Quality Committee (including the Quality Management Program) and the Service and Technology Implementation and Review Committee. The overall consensus from the practice was that the APEx program improved the overall safety and quality of the practice.

After the jubilation following initial APEx accreditation, the committee met to review comments from the APEx determination letter and discuss the entire process. Aside from the feedback from APEx, the committee identified many additional areas of potential improvement. The committee felt that several APEx Evidence Indicators revealed practice areas that would benefit from

Douglas Prah, PhD
Director of Advanced Care & Technology

Department of Radiation Oncology, Medical College of Wisconsin

Froedtert and MCW achieved initial APEx Accreditation in 2019 and just successfully completed reaccreditation in March 2023. While every member contributes to high-quality outcomes, physicists play a pivotal role in radiation oncology practices. Visit APEx and Physicists to learn more about how APEx can help physicists enhance their current systems and processes. Schedule a one-on-one session with ASTRO staff to discover the ways APEx can benefit your practice.

further improvements and ultimately increase overall patient safety and quality. Moreover, the committee acknowledged the significant amount of time and effort devoted to the preparation process and decided it would be more manageable if work were distributed over several years instead of months. Furthermore, a standing committee seemed more appropriate since the cornerstone of the APEx accreditation process is continuous quality improvement. Ultimately, the ad hoc APEx committee became a permanent standing committee that now meets quarterly.

Our practice already had a Patient Safety and Quality Committee and so the internal APEx committee can solely focus on APEx. The members are highly familiar with all the APEx Standards and well-versed in related publications. The internal committee aims to ensure continued compliance and, consequently, continued APEx accreditation. In accordance with APEx Standards, this committee recommends and drafts new or modified policies and procedures for the practice that are present to the existing practice committees, including the Clinical Operations Committee, the Patient Safety and Quality Committee (including the Quality Management Program) and the Service and Technology Implementation and Review Committee, all of which require approval prior to implementation. The committee also provides advice and recommendations and monitors the activity of the existing committees to ensure APEx compliance. We have a cyclical approach to analyzing and improving processes and outcomes, ensuring that our practice is constantly striving for excellence. Below are some successful strategies we used to implement continuous quality improvement in our practice with the help of the APEx Evidence Indicators.

1. **Establish an APEx Committee.** The internal APEx committee should be composed of a multidisciplinary team of radiation oncologists, medical physicists, dosimetrists, therapists, and administrative staff. The committee should have the support of radiation oncology practice leadership and meet regularly to identify areas for improvement, implement solutions, perform routine audits, and review data.

2. **Form a Systematic Review Process.** Create a schedule of all the items that APEx evaluates and regularly review these documents. The committee does not necessarily need to perform the review; our Patient Safety and Quality Committee reviews the following records, but two members of the APEx committee are also members of that committee.
   - Review equipment QA reports quarterly.
   - Review downtime and service reports quarterly.
   - Review shielding compliance annually.
   - Review minimum staffing requirements annually.
   - Review external verification of machine output annually.

3. **Conduct Routine Compliance Audits.** Perform routine audits of patient charts to ensure that all the appropriate patient documents meet the standards set by the practice and APEx. Within our practice, the APEx committee standardized the physician consultation notes using an EMR template. After implementation, the group performed an initial audit of each physician and then annual audits thereafter. Additionally, the physics group performs an annual internal audit for all the practice locations to track APEX and AAPM compliance. The practice uses these metrics to identify areas of strength and weakness and prioritize improvement initiatives accordingly.

4. **Set Goals and Develop Action Plans.** The initial APEx determination letter may provide the practice's initial areas of improvement. The committee may have many suggestions for other areas of improvement. It is also essential to solicit solutions for these problems from practice staff. Once areas for improvement have been identified, the practices should set specific, measurable goals and develop action plans to achieve them. The committee should develop action plans and include specific steps for implementation, timelines, and measures of success. Practices should also assign responsibility for each action item to ensure accountability.

5. **Maintain Committee Records.** In order to preserve momentum, maintaining meeting minutes that include old and new business, as well as keeping action items for the committee members, ensure that the committee continues to make progress between meetings. As workload fluctuates, increasing and decreasing the frequency of meetings is helpful. For instance, as a pending accreditation cycle approaches, the

frequency of the meetings will likely need to be increased. Finally, meeting minutes should be distributed to other practice committees and practice leadership.

6. **Update Policies and Procedures.** Review policies and procedures on a three- or four-year cycle. As new procedures are added to the practice by other committees, ensure proper standard operating procedures are drafted and staff training is completed. Establishing an implementation committee is an effective tool to ensure that new services and technologies are implemented in a manner compliant with APEx. The APEx committee can then assign various tasks to the implementation committee. The implementation committee can ensure that technologies and services are comprehensively documented, including appropriate policies and procedures, treatment guidelines, billing pathways, QA techniques, staff competencies, and peer review.
7. **Communicate with Radiation Oncology Practice.** Results from the APEx determination letter, including recommendations, should be shared with the entire practice, including other practice committees. Doing so will help the practice understand where quality improvement is needed. As the internal APEx committee determines that it is necessary to make additional changes to the practice, it is essential to communicate the rationale for the change. Acceptance by the staff and participation through feedback ensure a more successful implementation. Practice staff will be more accepting of change when they understand the underlying rationale.

This framework for continual quality improvement may not be suitable for all practices. Fortunately, there are many ways to prepare for APEx accreditation. Regardless of the strategy used, the APEx Standards and Evidence Indicators are valuable tools to guide a practice toward quality improvement. Receiving APEx accreditation is only the first step in the process. An internal accreditation committee has the potential to provide the practice with a forum for continuous quality improvement and preparation for the next APEx accreditation cycle. The ultimate goal of ASTRO's APEx program is to improve patient safety and quality of care. ■

AAPM / RSNA IMAGING PHYSICS RESIDENCY GRANT

Applicant Eligibility:

The purpose of 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, 2022, 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, 2022.
- 3rd priority — Existing program but with new slots, has had previous funding from an AAPM program. A new slot is defined as one that has been created or filled after January 1, 2022.

In October 2022 AAPM and RSNA agreed to continue their partnership on this grant. Their matched funding will support 2023 and 2024 awarded grants. Two programs are selected for the award to be funded over the following two years. Each institution receives $35,000 for two years as matching support for one resident.

Sponsored by the AAPM Education and Research Fund.

A list of Award Recipients can be found here.

Award Duration: July 1, 2024 – July 1, 2026

Application Deadline: May 10, 2023

Recipients Notified by: June 2, 2023

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

Special Interest Feature: Women's Professional Subcommittee (WPSC)

WPSC AND SOCIAL MEDIA

Ashley Tao, PhD | Gundersen Health System

The Women's Professional Sub-committee (WPSC) started its social media presence approximately two years ago to reach out to the public about the work of the WPSC, but also to promote women in STEM with an emphasis on medical physics. Since the start of our Instagram account, we have featured the newly inducted women AAPM fellows along with mini interviews discussing their career as well as some insight into their life outside of work. In this article, we have included a few 2023 AAPM fellows that have been published on our page so far. Support the WPSC by following us on Instagram and Twitter (@aapm_wpsc).

Emily Soisson

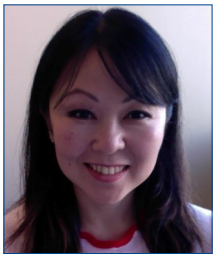
WPSC: How did you discover medical physics or get into the field?

ES: I entered the field as a dosimetrist at the Massachusetts General Hospital. I graduated from Bates College in Maine with a bachelor's degree in physics and wanted to go to medical school. To that end, I was trying to find a summer job in a hospital and my job search came up with a medical physicist position at MGH. When I called about it, they told me I was not qualified but they might have something for me and ended up offering me the dosimetry position. I had a great mentor there, Karen Doppke, and she really encouraged me to go back to school (specifically the University of Wisconsin) and get my PhD in Medical Physics. Despite my telling her that I didn't really want to be a physicist OR live in Wisconsin, I think she planted the seed and I eventually ended up going there and getting a PhD.

WPSC: What is the coolest or most groundbreaking work you have done in the field?

ES: At Wisconsin, I was involved with the early development and clinical implementation of helical tomotherapy. I worked with a really inspiring team there that really showed me the value of interdisciplinary collaboration and translational research in moving cancer care forward. While not really "groundbreaking," I started a clinical training program for other students while I was working clinically and finishing my PhD called "Team Tomo." The faculty at the time gave me the authority to come up with a way to bring students into the clinic and it really taught me quite a bit about how to be a leader and manager really early in my career. I will be forever grateful to the faculty in Wisconsin at that time for this opportunity.

WPSC: What inspires you in your work as a medical physicist?



Emily Hirata

Wensha Yang

Emily Soisson

ES: Patients. Primarily, I want our patients in Vermont and upstate New York to have the highest quality care possible and that is what inspires me every day.

WPSC: What hobby do you enjoy outside of work?

ES: Now, with it being winter in Vermont, I spend most of my free time skiing with my family. I have three kids (ages 6 and twins age 9) and we are into all kinds of skiing: downhill, nordic, and backcountry. This year my kids started racing and I started coaching so that has been a lot of fun.

Emily Hirata

WPSC: How did you discover medical physics or get into the field?

EH: I was getting my undergraduate physics degree and one of the classes in sophomore year introduced us to different professions with physics backgrounds. One of them was a medical physicist and that intrigued me. That summer, when I was home in Hawaii for the break, I emailed the webmaster for the Queen's Medical Center in Honolulu, and asked if they had a medical physicist, and if I could be put in touch with them. Shortly afterwards, I got an email from Scott Dube, and he invited me to come meet with him, which I did. That meeting was pivotal. I remember Scott showed me the AAPM website, gave me some reading material about the profession, and invited me to come and observe procedures – like a prostate seed implant procedure — and to sign up as a volunteer for the medical center so that I could help with some small projects and observe meetings like chart rounds, etc. The following summer, Scott invited me to spend the summer volunteering in their department. I developed a database to collect data on the prostate seed implant procedures, spent a lot of time with dosimetry to learn treatment planning, helped physicists with calibrations, and got a lot of mentorship from the entire department. It was a wonderful entry to the field and I'm so grateful for all the time and attention that the team gave to me. Scott also mentored me for the following years, helped me look into different graduate programs, and when I graduated from the University of Wisconsin-Madison, I was lucky enough to get a position as Physicist at Queen's, where I stayed for 15 years.

WPSC: What is the coolest or most groundbreaking work you have done in the field?

EH: Mentorship played such a big role in my career, as well as sponsorship, and I have this deep desire to give back, even as I continue to grow myself in clinical physics, operations, and leadership. One of things I'm really proud of is my involvement in the Specialty Meeting in 2021 on Accelerating Women and Minority Physicists. Through that work, I met a lot of stellar physicists who I hadn't connected with before, and the work was incredibly collaborative and inspiring, even during COVID and the challenges with remote work. I am excited about all the opportunities that are being developed to improve connectivity within the AAPM community.

WPSC: What inspires you in your work as a medical physicist?

EH: The patients inspire me. A few years into my career, I became the Chief Physicist at Queen's, and I was struggling with all the things being thrown at me and trying to navigate a political environment. One of my colleagues knew I was struggling, and he popped in and said, "Hey – in all that you do, try to focus on what's best for the patient. Evaluate the pros and cons of the different approaches to a problem, get specific, and then let the facts speak to what is best for the patients. If you keep that front and center, you can't go wrong." Some people may not like the answer or the direction for various reasons, but we are all aligned on the same goal of doing what's best for the patient, so that's a starting point of agreement from which we can debate collegially and professionally.

WPSC: What hobbies do you enjoy outside of work?

EH: Outside of work, I enjoy reading, going exploring with my family — whether it's hiking, traveling to a new place, trying a new restaurant, or just spending a couple of hours at the local library browsing books. We try to lean into whatever my kids are into — my older son is into swimming and baseball, my younger son enjoys drawing and soccer, so we participate in those activities however we can. They also love video games, so I'm trying to engage in that though my skill level is quite low compared to the kids and my husband. When I was in Hawaii, I enjoyed being in the ocean — canoe paddling, standup paddle boarding, kayaking, and surfing… the Bay Area waters are a bit too cold for me, though, maybe at some point, I'll get over the cold and dive in.

Wensha Yang

WPSC: How did you discover medical physics or get into the field?

WY: I majored in chemistry. My husband is a medical physics major. We both studied at UW-Madison. I learned about the field of medical physics through him and found it very interesting.

WPSC: What is the coolest or most groundbreaking work you have done in the field?

WY: My long-term research interest has been MR-guided radiotherapy and using novel MR sequences or

SPECIAL INTEREST FEATURE: WPSC, Cont.

post-imaging processing to inform treatment. Our team developed one of the first 4D MR sequences for radiation treatment planning. Our recent multitask MR development has advanced multi-contrast features and motion information. We are going to include it in our routine clinical flow at UCSF.

WPSC: What inspires you in your work as a medical physicist?

WY: I am inspired by the translation of state-of-art technologies to advance cancer patient treatments. Medical physicists are uniquely positioned to do innovative and translational work that can benefit patients.

WPSC: What hobby do you enjoy outside of work?

WY: I am a mother of two teenage girls. I enjoy hiking, skiing, and biking with my family. ■

Special Interest Feature: Women's Professional Subcommittee (WPSC)

EXPERIENCES AT THE CONFERENCE FOR UNDERGRADUATE WOMEN IN PHYSICS

Jennifer Dorand, PhD | ProCure Proton Therapy Center
Jessica Fagerstrom, PhD | Northwest Medical Physics Center
Jennifer Pursley, PhD | Massachusetts General Hospital

After several years of virtual conferences, we are all excited to safely return to in-person events and conferences. Every January the American Physical Society (APS) organizes a Conference for Undergraduate Women in Physics (CUWiP). Members of the Women's Professional Subcommittee (WPSC) always make an effort to attend CUWiP, and this year three members were able to participate from across the US. Here are their experiences and reflections.

Jennifer Dorand: I attended this year's CUWiP career/graduate fair at Princeton University representing the medical physics profession. Though many graduate schools were represented at the fair, there were no other medical physicists representing their specialty. Overall, I had lots of interest in my booth. I borrowed equipment from the clinic to bring with me, which attracted quite a few people with questions as to what everything was used for. I gave out plenty of business cards and created a handout that included what our field encompasses, how to become a medical physicist, and links to pages of interest from the AAPM website, which was quite popular. Many young physicists were already interested in our line of work after having a parent or relative go through radiation treatment related to a cancer diagnosis. One young woman had already settled on becoming a medical physicist and was presenting her summer research titled *Pacemaker/Implantable Cardiac Defibrillator SAVI Dose Predictions Using HDR Brachytherapy*. Over the course of the fair, I answered many questions, including how to get into our field and the difference between medical physics and biophysics. I was surprised by and very glad to see the number of undergraduates who were already interested in a career in medical physics. It was a wonderful and fulfilling evening connecting with young physicists.

Jennifer Pursley: I participated in the CUWiP at Boston University; the local organizing committee was led by Zeynep Demiragli and Masha Kamenetska, both assistant professors at BU. I contacted them by email several months before the conference to introduce myself as a local medical physicist who had participated in CUWiPs before and would be happy to help if they needed speakers. Most CUWiP organizers are academic, based at the hosting institution, and welcome any help finding speakers from outside academia! In the end, they invited me to be on two panels, one on the first night of the conference giving students advice on "How to make the most of CUWiP," and one the following day on "A discussion on diversity of physics careers." The first night, I got there early to meet some of the other speakers and enjoy a pizza dinner with the attendees. The students were very engaged in our panel discussion that evening and asked lots of questions on topics like how to decide which sessions to attend, how to follow up with speakers after the event, and how to overcome imposter syndrome when asking questions! I enjoyed chatting with them and the other speakers, and several students came up afterwards to tell me how interested they were in learning about medical physics; I promised to speak to them more the following day.

The next morning, I showed up bright and early for breakfast with the students and a fantastic plenary panel featuring several physicists with unique career journeys. My own panel on diverse careers was a lot of fun, my co-panelists were from very different backgrounds and the students asked great questions about how we made our career decisions and what we saw for the future of physics. After lunch and the CUWiP keynote presentation, the BU CUWiP featured a Physics Careers Expo, and I happily agreed to stand at a table and talk to anyone interested in medical physics as a career. The Expo lasted 2 hours and I had a crowd around me the entire time! This was finally my chance to explain more about medical physics to the students I'd met throughout the conference, and the ones I hadn't gotten to meet yet, and they took full advantage. It was exhausting but a ton of fun answering their questions and remembering what exactly makes medical physics such an exciting field. I really appreciate that I was able to participate in the BU CUWiP in so many ways; I made sure to sit at different tables at each meal to interact with more students, in addition to interacting through the panels and the Expo.

I gave my email address out to any students who asked for it, and after the conference several reached out by email with more questions about how to find summer internships or how to find medical physics graduate programs. Three students local to the Boston area asked if they could come shadow in the clinic, and I happily arranged visits for each of them, making sure they got to talk to other physicists, medical physics assistants, dosimetrists, and therapists for the full experience. I have high hopes that several of these students will pursue medical physics as a career, and even the ones who don't at least now know something about the field!

Jessica Fagerstrom: I'm very fortunate to have had the opportunity to participate in APS' 2023 Conferences for Undergraduate Women in Physics. The CUWiP program affords early career physicists an opportunity to attend a professional conference to present research, tour labs and research facilities, hear faculty presentations, review posters, learn about graduate school options, and discover possible career opportunities in physics. I attended a local conference hosted by the University of Washington Physics Department and acted as a panelist in a session called "Medical Physics as a Career." The session was moderated by Chitra Solomonson, physics professor and chair of the science division at Green River College in Auburn, Washington. Our session included a biophysicist from Central Washington University, Erin Craig, as well as three additional medical physicists: Sunan Cui, Kristi Hendrickson, and Sharareh Koufigar, from the University of Washington. After a brief introduction about job opportunities and research areas in biophysics and medical physics, most of the session was spent answering student questions. These were thoughtful and touched on a variety of topics, including graduate school, physicist day-to-day experiences, and professional challenges. After the session, I had another student reach out to say she was sorry that she could not attend the session based on a scheduling conflict, but we were able to connect over email after the event. This is only my second time participating in CUWiP, and I am already looking forward to the next time I can contribute! This is a wonderful opportunity for AAPM members to promote medical physics as a career option for undergraduate physicists. ■

Special Interest Feature: Women's Professional Subcommittee (WPSC)

MENTORSHIP IN MEDICAL PHYSICS: INTERVIEW WITH A MENTEE

Jennifer Dorand, PhD | ProCure Proton Therapy Center

Emma Small *is an undergraduate student at the College of William and Mary. She is majoring in physics with a concentration in engineering physics and applied design, as well as a minor in mathematics. She is part of the William and Mary International Genetically Engineered Machine competition (iGEM) team working on synthetic biology research. Emma is being mentored by* **Jennifer Dorand**, *PhD a senior medical physicist at ProCure Proton Therapy Center in Somerset, NJ. They were connected through the Mentoring for Careers in Physics (MCP) program at William and Mary, Jennifer's alma mater. The program seeks to provide one-on-one professional mentoring for undergraduate students in physics, particularly gender minorities. For more information about the program visit* https://mcp.physics.wm.edu/.

Interview with Emma Small

How did you become interested in medical physics?

I always wanted to go into medicine since I was a child until I had my first physics class in high school. I am now in college majoring in physics. I did not discover medical physics as a field until the summer after my freshman year during an REU (Research Experiences for Undergraduates) which had research positions in a wide variety of fields, including medical and biophysics.

What resources have you found helpful to learn about medical physics? Is there anything you'd like to know, but have had trouble finding information about?

When I first found out about medical physics, I tried to find out more about it online. It seemed to be a relatively new field by comparison and many graduate programs have only started within the last several years. This makes it difficult to find a lot of information about what medical physics is really like. At PhysCon 2022 there were plenary speakers and information booths about medical physics. There was also a tour of the Georgetown medical physics program. We got to talk to people in the program about the education track and the work that they do. Mentorship has been really helpful with this because I can ask more detailed questions as I learn more.

What excites you most about potentially pursuing a career in medical physics? Is there anything you're apprehensive about regarding this career path?

I am both excited and apprehensive about how small and relatively new the medical physics field is. Many programs only offer master's degrees or the PhD programs are only a few years old. This means that the programs are highly competitive since they are so small. However, this offers great opportunities as the field grows to both develop new science and help expand the field.

Emma Small

What appealed to you about having a mentor? What's one thing you most hope to accomplish during our mentoring relationship?

Having a mentor who is in medical physics has been a great resource. I only discovered this field less than a year ago, and mentorship is one of the best ways to find the information to help build long term goals and plan my immediate future to prepare me for medical physics. One of my goals in mentorship was to understand more about what the field was really like and the educational track to be a medical physicist. I could not find a single concise explanation from any of the programs I looked at that explained what the education track was, accreditation, or what coursework to focus on as an undergrad.

Do you have any suggestions about how we as a profession can attract

young people like yourself to our field?

I think the biggest thing that can attract people to medical physics is actually more awareness. I didn't know about medical physics until after my freshman year of college and this is earlier than most. I had been looking for a field relating medicine and physics, but there just wasn't that much information available to me early in college. More REUs especially would be a great way to get more undergraduates into medical physics, as we are highly encouraged to do those and branch out across many fields of interest.

What do you like to do when you are not studying?

Honestly, there is not that much time that I am not studying or doing something with physics. Most of my friends and I are part of the Society of Physics Students which hosts really fun social events. This year, the rest of my free time is dedicated to the William and Mary iGEM team working on synthetic biology research. ■

Special Interest Feature: Women's Professional Subcommittee (WPSC)

MENTORSHIP IN MEDICAL PHYSICS: INTERVIEW WITH A MENTOR

Kai Huang, PhD Candidate | MD Anderson Cancer Center

Dr. **Marina Sala** obtained her PhD in Medical Physics from Wayne State University School of Medicine. Additionally, she earned a Master of Business Administration degree in healthcare management from the University of Kansas. Dr. Sala has held a variety of clinical and administrative roles. Currently, Dr. Sala serves as the director of physics and integrations at the University of South Florida/Tampa General Hospital, while also actively participating in the AAPM and serving on several committees.

Dr. Sala is passionate about mentoring aspiring medical physicists and is involved in the AAPM Mentorship Program, where she serves as a mentor to **Kai Huang**, a graduate student at MD Anderson. During their conversations, Dr. Sala shared her experience and knowledge on how to become a successful medical physicist. She emphasized the importance of continuous learning, leadership, and being passionate about pursuing one's dreams. The following is an excerpt from a Q&A between Dr. Sala and Kai.

Can you briefly describe your trajectory to where you are now?

Like many in our field, I too stumbled upon the field of radiation physics. I began my career as an electrical engineer, but in my second year of college, I changed majors to physics. I enjoyed taking physics classes, so it became obvious that I liked physics more than electrical engineering. Subsequently, I knew I wanted to go to medical school at some point, so I ended up majoring in physics and took all the necessary classes for pre-med. Just weeks before starting my medical school career, I was venting in the Chair's office about not wanting to memorize information in medical school. That same day, she informed me about something called "medical physics" that I might like. It's a combination of "physics and medicine," she said. The following week, I shadowed a medical physicist in the department for a day, and I knew that it was what I wanted to do. I quickly changed gears and started medical physics graduate school that fall. It was the best decision of my life. I have no regrets about my decision, and I look forward to making a difference every day.

2. What made you decide to obtain an MBA degree while studying for a PhD?

I realized early on in my career that medical physics involved more than just taking care of the technical aspects of radiotherapy. I understood that I played a crucial role as the link between clinical, technical, and administrative staff. I knew I needed to be able to speak the same language as my VP or CEO to secure funding for new equipment, department renovations, and programs. Most importantly, I recognized that I lacked the foundation for writing a good business plan to present to my VP for approval. This realization motivated me to pursue my MBA to achieve the next level.

Marina Sala

One of my graduate school advisors, who recently passed away, would always tell me: "Always, be the student." I have never forgotten that. It is important to always keep learning and growing. Be humble, help, be wise, speak up, be a student, lead, learn, and innovate.

Years ago, AAPM launched the PHYS3.0 initiative, which fosters the unique skills that physicists must have to redefine care across clinical, administrative, scientific, global, and educational domains. While programs do a great job at educating future physicists, they often do not train us in how to be good "business leaders." The MBA was my way of getting the "business" skills that I felt I was lacking. I hope that we continue to build on the PHYS3.0 initiative and further expand physics curriculums to include

leadership skills because they are critical for success in our field.

Did the MBA degree help you in any way? How so?

Yes! The MBA provided me with the tools to view things from a much broader perspective. I can now step into the shoes of the executives and understand what they are looking for and why. It is easier for me to present a business case to them and translate technical language into business language. Additionally, I have been heavily involved in billing and reimbursement for the past 10 years, so being able to translate that information into tangible department revenue and long-term business plans is important for evolving the department to the next level. Understanding how billing is integrated into our system is important for the value-based medical physics approach advocated by PHYS3.0, and this knowledge is vital in utilizing revenue for expansion, technology, education, and other purposes.

What would you recommend to trainees who are interested in pursuing your trajectory?

During ASTRO this year, I had the pleasure of having dinner with one of my advisors, a brilliant physicist who started his career before the internet and well before I was born. As we sat around the table having a glass of wine and steak with perfectly grilled potatoes, I couldn't help but be in awe of all the stories he shared with me. These stories made me realize how lucky I am now, to have modern tools, such as record-and-verify systems, and automated treatment planning software, that didn't exist back then. Learning about the struggles and dedication of these wonderful physicists who always put their patients first, while nicely balancing their families, is gratifying. We chose a career because of our purpose and mission to help others, and just like my advisor, I would encourage the next generation to work hard and always do the right thing. Have a purpose and let it guide you through life. Always remember where you came from and always remember that one day, you may be on that treatment table as a patient.

Look past the long hours of your graduate school, residency, and long days at work as a junior or senior physicist. One of my graduate school advisors, who recently passed away, would tell me: "Always, be the student." I have never forgotten that. It is important to always keep learning and growing.

Be humble, help, be wise, speak up, be a student, lead, learn, and innovate.

What do you have to say to female physicists out there?

I'm glad you asked this important question. Let me share two stories. In my undergraduate years, I took an advanced physics course, and on the first day of class, I was the only woman in a room full of men. The professor said, "You must be in the wrong class!" I looked at my syllabus and verbalized the class code and name to him, only to hear him confirm that it was indeed the correct class. I walked all the way up to the front of the class and quietly sat there for weeks to come. At the end of the semester, I was the only student who received an A. My point here is that you need to be confident in your abilities and don't let the noise around you hold you back from where you need to be. There will always be people that doubt your abilities; your job is to focus on yourself.

Another experience occurred more recently during a job offer negotiation. The representative of this prominent institution quoted me a salary that was within range of the "female" line in the AAPM survey (he said) and didn't consider anything else. Goes without saying that I politely ended the meeting and went about my business. The point of these two stories is not to demean them, but rather to elevate our abilities. While AAPM does a great job at equalizing merit, it is up to all of us to do our part. I encourage the next generation to continue working hard and trusting their abilities to perform highly, regardless of their gender, color, nationality, etc.

You spent a lot of time volunteering for AAPM, can you highlight some initiatives you have been working on right now or in the past?

It's true that your past experiences shape your future experiences. So, I tend to lean towards education, equality, and geographical enrichment. For many years, every spring, I sit down with ten to twelve 5th graders in Michigan during their career day. It's a way for me to explain to 5th graders what I do and how they too can do something similar one day. I believe in fostering and empowering the little ones. I'm always inspired by their imagination and their will to change the world. Those two days with them are very special to me. Recently, I partnered

with the International Organization for Medical Physics (IOMP) and my goal is to provide equal opportunities to those physicists in low-income countries. Those physicists do so much more with far fewer resources, and I hope that I can make a difference.

I'm very excited about this opportunity and look forward to bridging the gap and helping our colleagues overseas. Lastly, I am looking forward to joining and contributing to the Florida Chapter and using the depth of knowledge in the region to change our practices and further elevate patient care. I am a firm believer that change starts locally, so I encourage every trainee to participate in their local chapter meetings and present their ideas. ■

Special Interest Feature: Women's Professional Subcommittee (WPSC)

FEATURED PHYSICIST: MAGDALENA BAZALOVA-CARTER, PHD, DABR

Irena Dragojevic | UC San Diego

Brief Bio:

Magdalena Bazalova-Carter, PhD, is an associate professor and Canada research chair at University of Victoria, British Columbia, Canada. Dr. Bazalova-Carter received her Bachelor of Science in Physical Engineering at the Czech Technical University in Prague in 2003 and her PhD in Medical Physics at McGill University in 2008. In 2009, she became a postdoctoral fellow at Stanford University where she later was promoted to an instructor. Dr. Bazalova-Carter has a long volunteer service with AAPM, and she is currently a member of AAPM's Board of Directors, a Deputy Editor of *Medical Physics*, and a Co-Chair of TG 319 - Guidelines for Accurate Dosimetry in Radiation Biology Experiments. Currently she is on sabbatical at the University of Sydney. Outside of work, she loves to spend time outdoors: she enjoys rock climbing, ice-climbing, back-country skiing, mountaineering, and biking. She climbed Aconcagua, the highest peak of the Americas at 6,964 m and crossed western Canada (Vancouver to Winnipeg) on her bicycle.

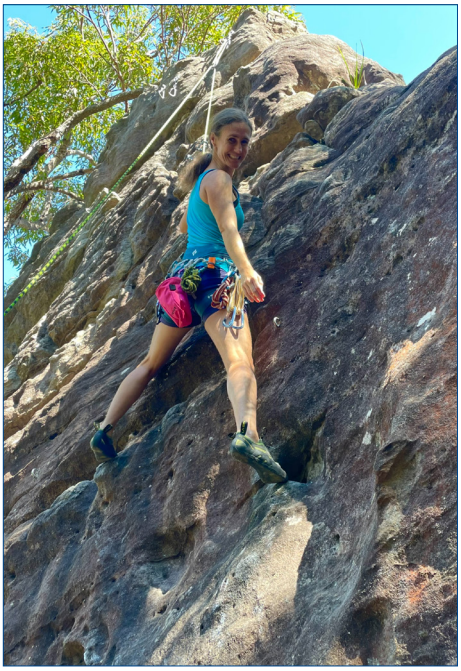
Why did you decide to study science?

First, I had a wonderful and inspiring math and physics teacher, Mrs. Ferlikova, in secondary school. She explained math very well and not in a prescriptive fashion; she always encouraged students to find their own solutions to problems. Second, I simply did not like memorizing things, and I thought math and physics were easy and logical, until the end of high school that is! Once I started studying at the Czech Technical University, however, I quickly realized that math and physics were not that easy after all. Despite a few exam failures I stuck with it and finished my MSc degree in high-energy physics on the CERN ATLAS experiment.

How did you decide to pursue a medical physics career? Was it what you expected it to be? Any surprises?

In my last year of ATLAS MSc I was an Erasmus exchange student at the University of Valencia in Spain. This is where I was introduced to medical physics, specifically to Monte Carlo dose calculations, and I was very intrigued. I still started a PhD in high-energy physics, but I was not too happy with it. As a result, I applied for a PhD position in medical physics at McGill University and after 1 ½ years of PhD in high-energy physics I switched to medical physics. I was very excited to be working in a new field and the potential to help cancer patients was what attracted me to the field. There were two big differences between high-energy physics and medical physics: first, working in a hospital was very different (cleaner!) than working in a big high-energy physics lab; second, conference attendees were a diverse group of mainly young and enthusiastic people who were capable of taking me seriously. Sometimes at least.

My involvement with the graduate program has not only shaped my career, but it IS my career and I love it. My career is to help my trainees succeed and make sure they get their dream jobs when they leave the XCITE lab. My trainees are wonderful and thanks to their feedback I get to be a better mentor.



Magdalena Bazalova-Carter rock climbing in Australia.

From your CV it looks like you studied high-energy physics in Czech Republic? Why did you make the switch and is there anything you miss about that part of your career?

To be frank, I was a bit lost in high-energy physics but mainly I wanted to make an impact on patients' lives. While big collaborations were a bit difficult to handle, I miss working with large high-energy physics accelerators and smelling ozone. Visiting high-energy physics labs feels like being in a candy store!

What do you find most rewarding and challenging?

By far the most rewarding aspect of my job is teaching the members of the X-ray Cancer Imaging and Therapy Experimental (XCITE) lab how to conduct medical physics research and most importantly seeing my trainees succeed. I watch them with pride when they give talks at large international conferences. I am thrilled when my trainees get job offers from top American institutions, especially since they come from a Canadian university with a very small medical physics program. The most challenging part of my job, on the other hand, is having to have difficult conversations with my students if their research is not progressing satisfactorily. Thankfully my trainees are outstanding, and I don't have to have these conversations too often!

You have been involved with the graduate program at the University of Victoria. Has that experience shaped how you approach your own career? Has it influenced how you approach mentorship?

My involvement with the graduate program has not only shaped my career, but it is my career and I love it. My career is to help my trainees succeed and make sure they get their dream jobs when they leave the XCITE lab. My trainees are wonderful and thanks to their feedback I get to be a better mentor. I am always learning from them and adjusting my mentoring style, hopefully for the better. It has been a wonderful experience.

If you weren't a medical physicist, what do you think you'd be doing today?

I'd be a mountain goat!

You have made a lot of contributions to AAPM. What do you enjoy the most about your involvement with AAPM?

I love working with AAPM members who are passionate about their jobs and about medical physics in general. Every year I am thrilled to attend the Annual Meeting and see everyone, even if it results in serious sleep deprivation. I am continuously impressed by how much time AAPM members put into their volunteer positions.

What do you like to do in your spare time? Any big adventures coming up?

I very much enjoy any sports and kayaking, backpacking and rock-climbing with my family in beautiful British Columbia. We are currently on a big adventure, spending 10 months traveling around the world on my sabbatical. So far, the highlights have been backpacking with my 5-year old daughter to Refugio Frey in Argentina while on sabbatical at Centro Atomico Bariloche (thank you, **Robert Jeraj** for making the connection!) and night canoeing on the Yarra River with **Brendan Whelan** on New Year's Day while on sabbatical at Image X at the University of Sydney. ■

Special Interest Feature: Women's Professional Subcommittee (WPSC)

INTERVIEWS WITH GENERATIONAL MEDICAL PHYSICISTS

Irena Dragojevic | UC San Diego

It is often said that medical physics (MP) is a hidden field and many of us have accident-ally stumbled upon it in our search for a rewarding career. MP provides both the thrill of scientific discovery and personal fulfillment through service to our patients. Therefore, it is no surprise that those of us who are lucky to be in this field want to pass it on to our children and make it a family legacy. We interviewed two father-daughter pairs of medical physicists to learn about their experiences and why they chose MP as their profession.

Lauren Long and Greg Courlas

What drew you to MP? How were you influenced by your father?

Lauren: I knew I wanted to pursue a career in the medical field from an early age, and while I was raised by parents who were both in healthcare (my mom was an internal medicine physician and my dad a medical physicist), I was never pushed to follow in their footsteps. Though there was definitely some encouragement from my parents to focus on classes in the sciences and consider pursuing an education related to medicine. I was mostly drawn to MP because … I could apply my physics and biochemistry background to clinical applications, and have a positive impact on a patient's cancer journey.

Greg: Like most first year college students, I didn't know what career and study path I wanted. I chose "political science" with some prodding from my family and quickly found it was the wrong "science" for me. As soon as I could, I changed to a Biochemistry major and found this and other related sciences, including physics, was what made me happy. By my senior year I was considering a Master's degree in Biochemistry or Biomedical Engineering when one of my advisors spoke to me about a new program offered through the University of Virginia Biomedical Engineering department emphasizing Radiological Physics. This led to an exciting 42 year career in MP.

Did your father actively recruit you into MP?

Lauren: Both of my parents encouraged academic excellence while I was growing up and were incredibly supportive and involved in fostering my education from a young age. My dad never pushed me towards one field or another but was certainly supportive and excited about my growing interest in MP in my late high school and college years.

Greg: My wife and I were both working in medicine as we raised our family. Clearly this was an influence on our kids as they grew up and considered fields of study and careers which might interest them. During Lauren's senior high school year, she selected a special project on breast cancer in the Radiation Oncology Department

Everyone has sharp memories of growing up, and many of my great ones were with my dad and they happened to be him showing me fun and interesting things from his work, no doubt each having a subtle influence on my interest in the field.

Lauren Long and Greg Courlas

Nicole C. Detorie and Nicholas A. Detorie

where I was working. Later as we discussed her observations, I certainly applied gentle pressure to consider the MP profession. For me, the field clearly had provided a good work/life balance and I loved the collegial clinical work that was the role of the medical physicist. On the other hand, Lauren's mother, an internal medicine physician, worked to steer her away from the long and costly years required to become a licensed physician.

As you were growing up, what do you remember being told about MP?

Lauren: My dad was really passionate about his work and shared how much he enjoyed implementing new technology and learning about advances in the field, which definitely added to the appeal of MP for me. I remember going into the clinic with my dad on a weekend and irradiating a film with all of the electron energies available on that linac so I could see the different depths [of penetration] and the bremsstrahlung contribution. I also remember helping with a radiation survey after a new machine installation. Everyone has sharp memories of growing up, and many of my great ones were with my dad showing me fun and interesting things from his work, no doubt each having a subtle influence on my interest in the field.

Did you ever collaborate or attend meetings together? Is there any "shop talk" at holiday dinners?

Lauren: We've attended a number of professional meetings together (including an ASTRO meeting before I headed off to grad school) and have even worked on a linac commissioning job together. There's definitely a lot of shop talk at family gatherings, at least until the rest of our family [tires] of hearing it, but usually they think it's pretty interesting and indulge us.

Greg: Lauren and I have worked together on special projects such as new linac and treatment planning system commissioning. We have attended national and local AAPM meetings together and discussed new developing technologies. As a father, it has been wonderful to see Lauren grow into the excellent medical physicist she is! I'm so proud of her!

Nicole C. Detorie and Nicholas A. Detorie

What drew you to MP? How were you influenced by your father?

Nicole: From an early age, I knew I wanted to work in a scientific field in large part because my father was a medical physicist. I looked up to him and wanted to be like him. For the longest time, I wanted to pursue astrophysics but during my senior year of college I was having doubts. So I asked my dad, "What do you do again?" Once he reminded me of the different roles a medical physicist has and how the profession crosses into many disciplines of medicine, engineering, and physics, I thought this may be the profession for [me]. It [has] many opportunities .. [including] pure research, working in industry developing the next new piece of hardware or software, working in academia, clinical support to ensure safe and effective diagnostic and therapeutic procedures for patients, or a mix of all of these things. It is not without its challenges, but the mix of disciplines is really what drew me to MP.

How did you influence your daughter into choosing MP?

Nicholas: I am sure my influence on Nicole was indirect and based mainly on visits to my work place: the hospital! While growing up she saw that my activities included work with physicians, staff, patients, and sophisticated radiological equipment, which appealed to her love of science and technology.

Did your father actively recruit you into MP?

Nicole: No, although we had many summer family vacations coupled with AAPM meetings so there may have been some subconscious indoctrination occurring.

As you were growing up, what do you remember being told or shown about MP?

Nicole: I remember visiting my father at work and being shown the linac and diagnostic x-ray machines. There were also a few science fair projects involving the effects of irradiation and I recall getting an x-ray of my pet fish. My father was the chief physicist at his institution and adjunct faculty with the local university and would organize seminars. He would often invite the speakers to our house and I would have the opportunity to meet [them]. I remember meeting Rosalyn Yalow, which was pretty amazing. At the time, I was around 10 years old and just thought, "Oh, this is a nice lady that is a colleague of my dad's," but of course later I realized she was a Nobel Prize winner.

What were resources or drawbacks of having a father in MP?

Nicole: My father definitely helped me with my physics and math homework growing up so that was great! When I was contemplating entering the field, he was a great resource [with] many connections. The year before

applying to graduate school, I was so fortunate to be able to work under **Cedric Yu** at University of Maryland for several months where I met so many talented physicists, post-docs, physicians, dosimetrists, and staff, and within weeks I knew this was the type of career I wanted and could not wait to apply to graduate schools. I really cannot think of a drawback.

Did you ever collaborate or attend meetings together? Is there any "shop talk" at holiday dinners?

Nicole: During graduate school and residency, we spent a few AAPM meetings together and we would talk about clinical and research topics regularly. Since my father has retired, we do not talk shop as often but I still love to call and get his opinion on new things we are implementing in our clinic or ask in general for his advice. He asked me recently if I wanted a pressurized ion chamber for radiation surveys that has been in the basement, which I declined, but it is nice to know that I have a resource for backup equipment if the need presents itself.

Nicholas: Occasionally we would be at the same meeting and lapse into "shop talk". At one AAPM poster presentation the moderator gave me credit for work my daughter did. I corrected the moderator and said politely the "N. Detorie" co-author was not "Nick" but rather my daughter, "Nicole Detorie." Light laughter followed. I am so proud of Nicole and her achievements in our field.

Acknowledgements: We thank **Hania Al-Hallaq** for leading this effort and **Jennifer Pursley** and **Jessica Clemens** for helpful discussions. ■

Industry Scientists or Regulatory Physicists:

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

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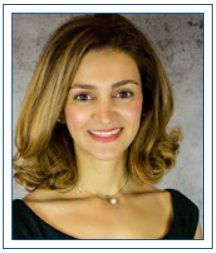
AAPM Southern California Chapter Mid-Winter Meeting 2023

SCCAAPM CHAPTER REPORT

The AAPM Southern California Chapter (SCCAAPM) held yet another successful mid-winter meeting on February 3, 2023, at Sheraton Universal Hotel in Universal City, Los Angeles. A record-breaking 29 vendors sponsored the meeting. The meeting offered CAMPEP, MPCEC, ASRT, and MDCB credits and attracted nearly 100 participants, including medical physicists, dosimetrists, radiation therapists, residents, and students. In addition to excellent talks, nearly 60 vendor representatives presented their latest products.

The meeting started with a tribute to **Steven Goetsch, PhD** for his outstanding leadership and life-long contribution to the field of medical physics and the greater community of AAPM, given by **Lijun Ma, PhD**. As usual, the meeting featured a variety of different hot topics given by exceptional experts in the field. Igor Barani, MD from Barrow Neurological Institute in Phoenix, AZ, introduced ExacTrac Dynamics and the importance of combining surface guidance with triggered internal imaging. After a short coffee break, John Adler, MD, renowned stereotactic radiosurgery pioneer, inventor of CyberKnife, and emeritus Dorothy & TK Chan professor of neurosurgery and radiation oncology at Stanford University, presented his newly developed ZAP-X platform, a new generation radiosurgery treatment system. **Thomas Rockwell Mackie, PhD**, emeritus professor, from Madison, WI, talked about technological challenges in proton therapy and overcoming them with upright radiotherapy systems. UCLA alumnus **Amy Yu, PhD** from Stanford

Members connecting during a coffee break



Maryam Bostani PhD
University of California Los Angeles

Sherry Xiaoyu Liu, PhD
Kaiser Permanente Los Angeles Medical Center

Zhilei Liu Shen, PhD
University of Southern California

Chengyu Shi, PhD
City of Hope

SCCAAPM CHAPTER REPORT, Cont.

University presented on virtual reality in radiation therapy, a novel approach to patient education, regarding what to expect at each stage of treatment, from t preparation to first treatment. Up next, Qihui Lyn, PhD from UCLA introduced a novel tomographic image formation method using pair production, along with its unique properties, such as improved image contrast for low atomic number materials. Another outstanding presenter, Touseef Ahmad Qureshi, PhD from Cedars-Sinai Medical Center in Los Angeles, CA, talked about risk prediction of Pancreatic Ductal Adenocarcinoma using AI analysis of abdominal CT scans. **Kevin Moore, PhD** from Varian Medical Systems talked about improving a physicist's role in the assessment of treatment plan quality by not only reviewing technical and clinical aspects that affect plan quality, but also increasing one's exposure to planning and exercise planning skills to aid plan-quality checks. To conclude, AAPM President-Elect **Todd Pawlicki, PhD** from UC San Diego shared his perspectives on quality and safety in medical physics and gave an overview of everything relating to AAPM, from introducing boards, committees, board members, and staff, to relevant statistics and AAPM's future. The presentations can be viewed at the SCCAAPM website. SCCAAPM's next upcoming event is the 2023 Norm Baily Awards and MedPhys Slam, which is scheduled to take place at City of Hope in Orange County on May 13, 2023. ■

SCCAAPM members paid tribute to Dr. Steven Goetsch for his contributions to the field of Medical Physics

Update from the New England Chapter of AAPM

NEAAPM CHAPTER REPORT

The New England Chapter of the AAPM (NEAAPM) kicked off their 2023 meeting series on March 10 at the Merkell Conference Rooms at the Mass General Brigham system headquarters in Assembly Square, Somerville, MA. Assembly Square is located on the banks of the Mystic River and was home to a Ford Motor Co. assembly plant for over three decades (ending in the 1960s). Now a mixed-use, smart-growth development in the most densely packed city in New England, the site is conveniently located near a subway stop allowing a significant number of participants to utilize public transportation to attend the meeting. The meeting was organized by NEAAPM President-Elect **Chris Melhus, PhD** and chaired by NEAAPM President **Yulia Lyatskaya, PhD**. On a sun-filled, late-winter day, 90 attendees met for the day-long meeting. Known as the "Winter Meeting", this meeting featured the Peter J. Neurath Early Career Symposium (ECS; formerly known as the Young Investigator's Symposium), designed to integrate students, residents, fellows, post-graduates, and early career faculty into chapter programming. A MedPhys Slam was also held as part of the ECS to ensure that the NEAAPM would be well-represented at the national competition in July.

Three speakers were invited to present at the Winter Meeting. Dr. Christopher "Risto" Filippi, Alice Ettinger – Jack R. Dreyfuss chair and professor of the Department of Radiology at Tufts University School of Medicine (Boston, MA), spoke on "Artificial Intelligence and Neuro-oncology: New Frontiers." This exciting topic reviewed decades of advances in artificial intelligence, while also discussing the opportunities and challenges inherent in AI-informed interpretation of medical images. Dr. **Davide Brivio**, a faculty medical physicist in the Department of Radiation Oncology at the Brigham and Women's Hospital (Boston, MA), presented, "A novel device for electron FLASH beam monitoring: the BWH/DFCI experience on a converted linac," which reviewed

ECS participants posing with NEAAPM chapter leaders. Thanks to **Martin Fraser**, *the unofficial NEAAPM photographer, for the photo.*

Chris Melhus, PhD
Tufts Medical Center

Yulia Lyatskaya, PhD
Brigham & Women's Hospital

the current state of clinical FLASH metrology and dosimetry. The meeting's final presenter was Dr. **Ashley Cetnar**, assistant professor and medical physicist in the Department of Radiation Oncology at The Ohio State University, who presented the "AAPM Committee on Medical Physicists as Educators Traveling Road Show." This presentation introduced modern teaching techniques and a learner-informed approach to teaching medical physics — a topic that meshed well with this audience.

The ECS was put together by Education Chair **Martina Hurwitz** and featured eight 10-minute presentations and eight poster presentations. Participants represented many New England training programs (and beyond!), including Brown University, Dartmouth College, Harvard Medical School, Massachusetts Institute of Technology, University of Massachusetts Lowell, and the University of Rochester School of Medicine and Dentistry. Two ECS presenters were selected as the winners by a panel of judges: **Megan Clark** for "High spatial-temporal resolution scintillation imaging for the characterization of ultra-high dose rate pencil beam scanning," and **Austin Sloop** for "Stabilizing the output of a UHDR converted C-series through waveguide tuning," both PhD candidates at Dartmouth College. Finally, the Slam competition featured four well-prepared contestants and two descriptions of FLASH radiotherapy! The competition was moderated by **Addie Barron**, who also carefully timed the presentations. **Rachael Hachadorian**, Harvard medical physics program resident, was selected as the winner of the competition by an independent panel of judges. NEAAPM wishes Rachael well at the national competition in Houston!

Finally, NEAAPM was pleased to be joined by 22 of our vendor sponsors during the Winter Meeting. The morning break (featuring mini donuts!) and the afternoon break (featuring chips and salsa!) were held with our vendor partners. NEAAPM is very grateful to its vendor partners, who strongly support chapter programming.

A virtual mock-oral to benefit members working towards board certification took place on March 22 with six participants and six volunteer examiners. Additional chapter activities during 2023 will include summer and fall meetings. We hope to see more of our New England colleagues during 2023! ■

Working Group on Grand Challenges

2023 Call for Grand Challenge Proposals

Let the AAPM Working Group on Grand Challenges (WGGC) assist you and your colleagues in conducting a Grand Challenge, an exciting and fun way to solve an important scientific problem while engaging with AAPM membership and the medical community at-large!

The WGGC is charged with promoting the conduct of Grand Challenges designed to assess or improve the use of medical imaging in diagnostic and/or therapeutic applications and is now accepting proposals from groups that wish to host a Challenge in advance of the 2024 Annual Meeting. The WGGC will identify up to two proposals that merit sponsorship (which includes some financial support) and will assist the organizing groups to move forward with the Challenges. The timeline for a proposed Challenge should allow for the conduct and conclusion of the Challenge in time for presentation at the Summer 2024 AAPM Annual Meeting. More information and the proposal application can be found here.

Please e-mail proposals to Emily Townley (emily@aapm.org) by 5:00 PM ET on **Wednesday, July 19, 2023!**

Navigating Non-Clinical Careers, Returning to the Clinic, and Continuing Certification

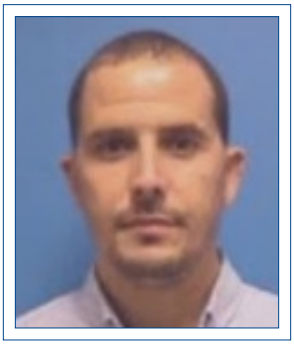
WORKING GROUP FOR NON-CLINICAL (WGNC) PROFESSIONALS REPORT

On February 16, the Working Group for Non-Clinical Professionals (WGNC) hosted a webinar entitled Navigating Non-Clinical Careers, Returning to the Clinic, and Continuing Certification (MOC). This article summarizes the webinar, including tips provided by the speakers. There were three invited speakers who provided advice on navigating non-clinical careers and transitioning into and out of clinical positions. The first speaker was **Jean Moran, PhD** who provided advice on navigating a non-clinical career in medical physics. The second speaker was **Alan Cohen, MS** who described his experiences transitioning from a non-clinical to clinical position, including strategies to be successful. The third and final speaker was **Varun Sehgal, PhD** who discussed ABR's Maintenance of Certification (MOC) process, known as Continuing Certification, and how to become ABR certified when transitioning into a clinical position. This webinar was moderated by WGNC Chair **Christine Gnaster, MS** and **Matthew Scarpelli, PhD**.

The first webinar speaker, Dr. Moran, is the vice chair of medical physics and director of the Radiation Therapy Physics Division at Memorial Sloan Kettering Cancer Center. Dr. Moran discussed working with many different medical physicists in a variety of roles during her career. Some of these roles were outside the traditional clinical practice areas of medical physics. Four categories for these non-clinical positions were identified: 1) Teaching as a professor and program director role in graduate programs; 2) Government service (e.g., Grant agencies, regulatory); 3) Administration (e.g., CEO, dean, etc.); and 4) Academic/infrastructure role in support of clinical care. Dr. Moran went on to describe the academic/infrastructure role in more depth. In this role, physicists will typically do research that supports clinical care. One of many examples given was the development of flat panel cone-beam CT for image-guided radiotherapy. Dr. Moran identified several tips to be successful in this academic/infrastructure role. This includes: 1) Identifying clinical collaborators and a problem to solve; 2) Forming a diverse mentoring team for yourself to provide different perspectives; and 3) Monitoring energy/effort to avoid burnout in yourself and collaborators.

The second webinar speaker, Alan Cohen, works at GenesisCare USA Inc. Mr. Cohen has transitioned between industry and clinical physicist positions multiple times through the course of his career. Of specific focus for this webinar was his experiences transitioning from an industry position to a clinical position. He started his presentation by citing different industry positions such as customer support, marketing, research and development, and sales. One of the challenges when transitioning from an industry to a clinical position is lacking knowledge of clinical protocols. For example, knowing how the average clinic treats brain metastases may not be something known by physicists working in industry positions, but it could be expected for a clinical

Matthew Scarpelli, PhD
Purdue University



Abdelhai BEN ALI, PhD
Ohio State University

physicist. In addition, clinical workflow, billing codes, and equipment knowledge may be lacking for someone in an industry position. Learning some of this information would be useful before transitioning into a clinical position. Mr. Cohen emphasized that frustrations exist in both clinical and industry positions, but they are different kinds of frustration. As examples of frustrations in clinical positions, he discussed: 1) Project timelines, which might take significantly longer than in industry positions;, 2) Established treatment methods vs. cutting edge methods; 3) Older equipment and/or software; and 4) Fewer opportunities to attend conferences and trade shows. Mr. Cohen closed his talk by describing the importance of ABR certification when transitioning to a clinical position. Mr. Cohen identified a few strategies for getting ABR certification if desiring to have an industry position: 1) Get an ABR certification before going into industry; 2) Try to get into a residency program before going into industry; or 3) Find a job in the state that doesn't require ABR certification (although not recommended as it may limit future opportunities).

The final webinar speaker, Dr. Sehgal, is chair of the AAPM Continuing Certification Subcommittee and a medical physicist at the University of California, Irvine. Dr. Seghal outlined the ABR's requirements (as of February 16, 2023) to be certified for a clinical physicist position. This included the Maintenance of Certification (MOC) implemented by the ABR in 2012. There are four required parts to fulfill MOC summarized below. Dr. Seghal and Mr. Cohen both mentioned that it is possible to fulfill MOC requirements while in an industry position.

Part 1: Professionalism and Professional Standing

If you have a state medical license from Florida, Hawaii, New York, or Texas, then you may use your state license to fulfill the Part 1 requirement. If not, then you need to identify one ABR-certified diplomate who can attest to your professional standing.

Part 2: Lifelong Learning and Self-Assessment

Complete at least 75 Category 1 Continuing Medical Education (CME/CE) credits in the previous three years.

Part 3: Assessment of Knowledge, Judgment, and, Skill

Pass the Online Longitudinal Assessment (OLA) exam or Continuing Certification exam in the previous five years.

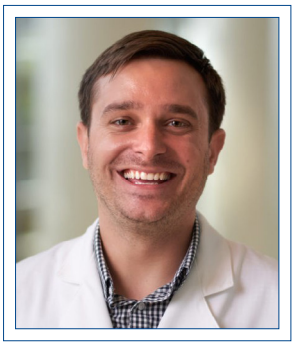
Part 4: Improvement in Medical Practice

Complete at least one Participatory Quality Improvement (PQI) activity in the previous three years. Quality improvement is defined as a systematic approach to the study of healthcare and/or a commitment to continuously improve performance and outcomes in healthcare.

The webinar concluded with a 15 minute Q&A session and can be found on the AAPM website as part of the webinar series on Non-Clinical Medical Physics Careers, Resources, Opportunities and Networking (2023). In addition, the third and final webinar in this series, titled *MPLA and MedPhys3.0 Applied to Non-Clinical Careers*, was held on April 27 from 12–1 pm ET. The video for that session will also be available on the AAPM website. ■

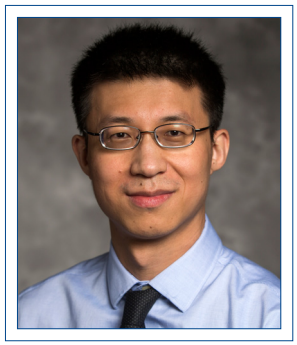
New Global Volunteer Information Section in Member Profile

AAPM MEMBER PROFILE UPDATE

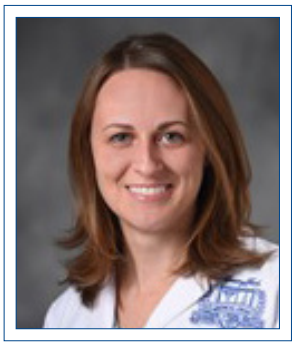


Kevin Little, PhD
University of Chicago

Minsun Kim, PhD
University of Washington



Jiahan Zhang, PhD
Emory University



Courtney K. Morrison, PhD
Henry Ford Health

Teh Lin, PhD
Fox Chase Cancer Center

Wei Luo, PhD
University of Kentucky

Eun Young Han, PhD
MD Anderson
Cancer Center

(Written on behalf of Global Data and Information Exchange Committee)

Various initiatives within the AAPM International Council (IC) are working to address needs and to enable knowledge exchange in the global medical physics community. To support these efforts, the Global Data and Information Exchange Committee (GDIEC) wants to facilitate excellent matches between requests from our global partners and AAPM member volunteers. GDIEC invites you to fill out a new section of the AAPM Member Profile indicating your experience, volunteer interests, and regional/cultural preferences. Your input will only be visible to yourself and AAPM IC committee members, and you can update it at any time. While filling out the new profile section does not necessarily mean that you will be asked to volunteer, it allows members of IC committees to search for a great volunteer match for a given initiative or request.

If you are willing to volunteer, please fill the section that matches your specialty (you are welcome to complete multiple sections, if applicable).

https://www.aapm.org/memb/profile/gdiec_volunteer.asp

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Testing The Interoperable Exchange of Radiotherapy Data — The 2022 IHE-RO Connectathon

IHE-RO REPORT

IHE-RO Test Process

The IHE process consists of identifying clinical use cases and creating documents, called Integration Profiles, that specify how data standards are to be used to exchange information between clinical systems. Once these Integration Profiles have been written and used to guide the implementation of clinical products, the next step is to test how well those products actually meet the requirements of the Profile. When it has been demonstrated that a product adheres to an IHE Profile, the results are published by the vendor in the form of an Integration Statement to assist users in selecting systems that will work together. Adherence to IHE Profiles is tested at a structured, cross-vendor, live, supervised test event, referred to as a Connectathon. All vendors' products are assembled at a single location for approximately one week of testing with multiple test partners. Software developers are present to assist in identifying and resolving problems. These tests attempt to simulate real-world clinical scenarios and are monitored by judges.

Connectathon judges play an essential role in IHE-RO testing. These volunteers, mostly clinical physicists, assist in two important ways. First, they help vendor personnel, most of whom are not trained as treatment planners, to create clinically meaningful test data. Although the purpose of the Connectathon is not to see which product creates the best plans, it is important for the test data to be clinically relevant. During test sessions, judges compare side-by-side product displays of Producer and Consumer Actors for the same data to assure that the data are interpreted consistently in both products. For this side-by-side comparison of Producer and Consumer plans, judges use a checklist of plan parameters and features identified in the Profile, to record any clinically meaningful discrepancies between the systems.

In addition to side-by-side comparisons of product displays, the content of data exchanged between them is examined to determine whether it meets Profile requirements. For this purpose, DICOM data exchanged between Actors are stored to, and retrieved from, a DICOM test Archive. A separate instance of the test dataset is created for each vendor and stored in the Archive before testing begins. The first Producer retrieves its starting data and stores its output in the Archive. The Consumer then retrieves and displays the Producer's data. Having a copy of the data transferred between the Actors in the Archive allows the judges to determine whether the data meets Profile requirements and can be helpful in determining the source of interoperability problems.

IHE-RO Test Tools

To assist in evaluating the content of DICOM objects, Connectathon judges and participants make use of Test Tool software. Two Test Tool software

Walter Bosch, DSc
Washington University in St. Louis

Integrating the Healthcare Enterprise – Radiation Oncology (IHE-RO) is an effort, currently sponsored by AAPM, to improve the interoperability of systems involved in radiation oncology. Created in 2004, IHE-RO is composed of members of the radiation oncology clinical team, administrators, and industry representatives who work together to ensure a safe and efficient radiation oncology clinic. The overall aim of IHE-RO is to identify how existing industry standards, such as DICOM, HL7, and FHIR, should be effectively utilized to solve clinical issues involving connectivity and interoperability among multiple vendor systems. IHE-RO does not directly create these data communication standards, but rather assists vendors in finding a common way of using them based on specific clinical use cases.

applications, developed using the DICOM Validation Toolkit and maintained by Demcon in the Netherlands, were used during the Connectathon. The IHE-RO Content Validator tests the content of data for conformance to the DICOM Standard and IHE-RO Profile requirements. The IHE-RO UPS Validator tool evaluates messages exchanged between treatment management systems and treatment delivery devices using DICOM Unified Procedure Step workflow management. IHE-RO Test Tools are used in three ways: first, to assist manufacturers as they prepare their products for testing; second, to assess readiness of those products to participate in a Connectathon; and finally, to aid judges in the formal testing process.

2022 IHE-RO Connectathon

The IHE-RO 2022 Connectathon was held November 14-18, 2022 at AAPM headquarters in Alexandria, VA. This was the first in-person IHE-RO test event since the fall of 2019. Over the past two years, the IHE-RO Testing Committee developed an online infrastructure for Connectathon testing in a distributed environment. Three test events were conducted in 2020 and 2021 using video-conferencing and screen sharing. A virtual private network (VPN) was used to connect vendor systems with a DICOM test Archive and Test Tool software. This year, the Radiation Oncology Domain resumed in-person testing in a hybrid mode, using the VPN to connect both on-site and remote participants.

Four Integration Profiles were tested formally during the 2022 IHE-RO Connectathon.

- The **Basic RT Objects-II (BRTO-II)** Profile addresses the exchange of DICOM CT images and radiotherapy information objects for treatment planning, including image segmentation, simple treatment planning, and dose review.
- The **Multi-Modality image registration in Radiation Oncology-III (MMRO-III**) Profile covers the use of DICOM (rigid) spatial registration in radiotherapy. It includes spatial registration, registered segmentation, as well as review of registered segmentations and doses.
- The **Treatment Planning-Plan Content (TPPC)** Profile addresses the exchange of DICOM RT plan objects among treatment planning systems and between treatment planning systems and treatment management systems. Plan content requirements are specified for each of 14 different beam techniques.
- The **Treatment Delivery Workflow-II (TDW-II)** Profile addresses the communication between a treatment management system and treatment delivery device, such as a linac, to schedule treatment delivery and store treatment records.

As in prior years, the Connectathon began with a half day setup session to connect equipment and load initial test data. By the end of the first day, participants had begun to create output data that could be exchanged with test partners. The last half day of the week was reserved for cleanup and to assure that all tests had been completed and documented. In addition to formal testing, Connectathon participants also conducted informal exchanges of data to provide early feedback regarding their products' adherence to new Integration Profiles. These exchanges also gave the judges an opportunity to develop test procedures for future Connectathons.

Connectathon Results

Historically, Actors were judged to have passed peer-to-peer testing based on successful exchanges with three or more test partners. In 2018, this rule was modified to allow Actors with only *two* available test partners to pass based on successful exchange with *both* test partners. In 2022, the challenge of finding at least two test partners for Actors in the TPPC Profile prompted a further modification of these criteria: the IHE-RO Technical Committee approved a designation of "Provisional Pass" to report successful peer-to-peer testing with a single partner *when only one test partner is available*.

Results of the 2022 Connectathon are summarized as follows:

- A total of seven vendor teams with eight products participated in testing at this event.
- 16 of 19 vendor representatives were on-site at AAPM headquarters in Alexandria, VA; 3 participated remotely.
- Six medical physicists/informaticists and a Test Manager acted as monitors/judges.
- One AAPM secretariat provided administrative support.
- All participants succeeded in passing formal testing for one or more Actors.

- BRTO-II – A total of 15 Actors (5 vendors, 6 products) passed testing.
- MMRO-III – A total of 20 Actors (4 vendors, 5 products) passed testing.
- TPPC – A total of 45 Actors (3 vendors) passed testing; 36 of these passed with a single test partner.
- TDW-II – A total of 9 Actors (6 vendors, 6 products) passed testing.
- Of a total of 89 passing Actors:
  - 39 passed with 3+ test partners
  - 13 passed with 2 test partners
  - 37 passed with a single test partner

To maintain a welcome and safe test environment for all vendors, IHE policy stipulates that only successful test results are published. For their products that pass Connectathon testing, vendors publish Integration Statements indicating the successfully tested IHE Profiles for a specific release of their product. Links to these Integration Statements can be found on the AAPM website. Since clinically released systems must match those referenced in the Integration Statement, changes in a product that affect interoperability require re-testing.

Summary

Continued testing is essential to assure that cross-vendor interoperability is realized in clinical products. In November 2022, IHE Radiation Oncology domain resumed in-person testing at its annual Connectathon at AAPM headquarters in Alexandria, VA. Seven judges tested products from seven vendors as Actors in four Integration Profiles. The event provided an opportunity to detect and repair errors in several systems. Connectathon successes are reported to the participating vendors, who publish them as Integration Statements to indicate to customers the IHE Profiles that are supported by a specific release of their products. The next IHE-RO Connectathon is planned for the fall of 2023 in Munich, Germany. ■

CONGRATULATIONS!

TO THE JOURNAL PAPER AWARD RECIPIENTS FOR THE YEAR 2022!

JOURNAL OF APPLIED CLINICAL MEDICAL PHYSICS PAPER AWARDS

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

"A comprehensive quality assurance procedure for 4D CT commissioning and periodic QA"

J Appl Clin Med Phys. 2022; 23:e13764.
https://doi.org/10.1002/acm2.13764

Mitchell Polizzi, Siyong Kim, Mihaela Rosu-Bubulac

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

"Virtual patient-specific QA with DVH-based metrics"

J Appl Clin Med Phys. 2022; 23e13639.
https://doi.org/10.1002/acm2.13639

Lam M. Lay, Kai-Cheng Chuang, Yuyao Wu, William Giles, Justus Adamson

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

"Commissioning an Exradin W2 plastic scintillation detector for clinical use in small radiation fields"

J Appl Clin Med Phys. 2022 Aug;23(8):e13728.
https://doi.org/10.1002/acm2.13728

Epub 2022 Jul 21. PMID: 35861648; PMCID: PMC9359019

Dustin J. Jacqmin, Jessica R. Miller, Brendan A. Barraclough, Zacariah E. Labby

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

"Method of determining technique from weight and height to achieve targeted detector exposures in portable chest and abdominal digital radiography"

J Appl Clin Med Phys. 2022; 23:e13582.
https://doi.org/10.1002/acm2.13582

Matthew Hoerner, Kevin Grizzard, Jennifer Moroz

MEDICAL PHYSICS JOURNAL PAPER AWARDS

Farrington Daniels Award *(awarded for an outstanding paper on radiation therapy dosimetry, planning, or delivery)*

"Bayesian optimization to design a novel x-ray shaping device"

Med. Phys., (2022) 49: 7623-7637.
https://doi.org/10.1002/mp.15887

Brendan Whelan, Stefania Trovati, Jinghui Wang, Rebecca Fahrig, Peter G. Maxim, Adi Hanuka, Muhammad Shumail, Sami Tantawi, Julian Merrick, Joseph Perl, Paul Keall, Billy W. Loo Jr.

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

"Patient-specific radiation risk-based tube current modulation for diagnostic CT"

Med. Phys., (2022) 49: 4391-4403.
https://doi.org/10.1002/mp.15673

Laura Klein, Chang Liu, Jörg Steidel, Lucia Enzmann, Michael Knaup, Stefan Sawall, Andreas Maier, Michael Lell, Joscha Maier, Marc Kachelrieß

AMERICAN ASSOCIATION *of* PHYSICISTS IN MEDICINE

JOURNAL OF APPLIED CLINICAL MEDICAL PHYSICS

MEDICAL PHYSICS
The International Journal of Medical Physics Research and Practice

Changes at *JACMP*

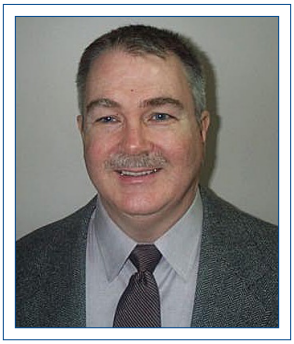
REPORT FROM THE *JOURNAL OF APPLIED CLINICAL MEDICAL PHYSICS*

It is a great pleasure for **Tim Solberg** and me to welcome **Susan Richardson** to the Editor in Chief (EIC) team as deputy editor. Susan is a former member of the AAPM Executive Committee, having served AAPM as secretary for three years. She is an expert in clinical brachytherapy, medical physics education, and AAPM operations. Additionally, she is a careful and skilled writer, scholar, and editor.

Previous Deputy Editor **Per Halvorsen** has accepted a position that will greatly limit his continuing as deputy editor-in-chief. Per completed his term of service at the end of 2022, but will remain on the *JACMP* as deputy editor-in-chief emeritus and will voluntarily edit a very limited number of manuscripts, primarily in the category of AAPM reports and documents. Per has served *JACMP* as deputy editor-in-chief since January 2013 and has performed extraordinary service over the years. We will miss him, but we are also thankful to have him in this continuing role as occasionally the EIC team is faced with difficult decisions. It is helpful to have his wise and seasoned perspective and advice when important decisions are made.

Additionally, *Medical Physics* Managing Editor **Elle Thomas** joined *JACMP* as managing editor in October 2022. She is performing a management supporting role for *JACMP* and brings significant knowledge and skills to the *JACMP* operation.

Finally, *JACMP* added a number of new associate editors in January 2023. These associate editors were identified from the most productive, competent, and efficient *JACMP* reviewers. The EIC team welcomes each of these new associate editors to the *JACMP* Board of Editors. ■



Michael D. Mills, PhD
University of Louisville

AAPM 2023
JULY 23–27 | HOUSTON, TX
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The SCIENCE OF CARE

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JULY 23–27 | HOUSTON, TX
65TH ANNUAL MEETING & EXHIBITION

The ART OF SCIENCE
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GET READY, GET SET, GET PERMISSION!

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IMPORTANT DATES:

- **May 11:** Annual Meeting Scientific Program available online
- **June 7:** Deadline for Early Bird Registration
- **June 30:** Housing reservation deadline
- **July 2:** Deadline to receive refund with written notice of registration cancellation

The Art of Scientists

2023 ANNUAL MEETING & EXHIBITION ART SHOW

Medical Physics is a profession full of beauty and humanity. Every day we face the wonders of the human body through its images and by interacting with our patients. Medical physicists also are known to be masters of many trades. We must be, in order to combine clinical and academic duties, while spending time with our loved ones and keeping our health!

Despite our training, our ethics, and our professional commitment, being a scientist, particularly in this field, is not an enterprise devoid of feelings. It is no surprise then to find medical physicists with an artistic side.

The Art of Scientists Art Show is a chance for all of us to admire the pictorial talents of our colleagues; a chance to see the humans behind our profession; a chance to come together as a community in the way that only art makes possible.

All accepted artworks will be part of the Art Show at the AAPM 65th Annual Meeting & Exhibition where attendees will be able to vote for their preferred works and the lucky (and talented) winner of the popular vote will go home with a special surprise!

We will be accepting submissions of 2D visual artworks in any physical media (drawing, painting, collage, etc.), with a maximum size of 12 x 15 inches, protruding no more than three inches from the backing. One entry per AAPM attendee is allowed. Due to space limitations, submissions will be accepted until the available exhibition space is full, based on the time in which the application was submitted.

All works must include their respective mounting hardware and other materials required for hanging the artwork. Further hanging instructions will be provided.

All artists will be responsible for transporting the artwork to and from the Art Show. The care and protection of the artworks are the responsibility of their respective authors. AAPM and the individuals organizing the Art Show are not responsible for any damage that may occur to the artworks during the Art Show or during the transport of the works. All artworks and submissions must abide by the AAPM Code of Ethics.

Submissions will be accepted via Google Forms starting on May 15 via this link: https://forms.gle/6uqDLhr7QLGpRG1x7. The submission form closes on June 10, or when all available exhibition spaces are filled. Accepted entries will be announced to the respective authors via email. Further enquiries may be directed to artofscientistsaapm@gmail.com. ■

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