

# AAPM NEWSLETTER

May/June 2021 | Volume 46, No. 3



**IN THIS ISSUE:**

- ▶ Chair of Board's Report
- ▶ Secretary's Report
- ▶ Professional Council Report
- ▶ Special Interest Feature: WPSC
- ▶ Education Council Report
- ▶ Annual Meeting Subcommittee Report
- ▶ Professional Services Committee (PROFS) Report
- ▶ History Committee Update
- ▶ ...and more!

## **COVID-19 UPDATE**

*Notice as of Sunday, May 2, 2021, 9AM Eastern Time.*

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



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

## TABLE OF CONTENTS

May/June 2021 | Volume 46, No. 3

### REPORTS IN THIS ISSUE

- 5 Chair of the Board's Report
- 11 Treasurer's Report
- 15 Secretary's Report
- 19 Executive Director's Report
- 21 Professional Council Report
- 23 Education Council Report
- 27 Legislative and Regulatory Affairs Report
- 29 ABR News
- 31 ACR Updates
- 33 Special Interest Feature: Women's Professional Subcommittee (WPSC)
  - 33 Interview with AAPM Past President Dr. Cynthia H. McCollough
  - 36 First Impressions of Twitter: The @AAPM\_WPSC Enters Social Media
  - 39 Call Me "Dr.": Claiming the Honorific is a Matter of Gender and Race Equity
  - 42 Featured Physicist: Dr. Kalpana Kanal
  - 45 WPSC Insights and Reports from *Picture a Scientist* Panel Discussion
  - 46 Now is the Time for Allyship
  - 49 Breaking Down Roadblocks to Diversity: Managing Bias in Hiring
  - 53 Book Review: *Edge: Turning Adversity into Advantage*, by Laura Huang (2020)
  - 55 Out of the Shadows: What it Means to be an Industry Physicist
  - 59 Virtual Outreach Experiences at the Conference for Undergraduate Women in Physics 2021
  - 62 New Leadership Specialty Meeting Alert for 2021
  - 63 WPSC News Bites
- 65 Person in the News
- 67 Tip Sheet for TG-100 Implementation
- 69 Annual Meeting Subcommittee Report
- 71 AHHIE Report
- 74 *Red Journal* Special Issue Now Available on the AAPM Website
- 75 Professional Services (PROFS) Report
- 79 History Committee Update

### EVENTS/ANNOUNCEMENTS

- 4 2021 Virtual AAPM Annual Meeting
- 10 Journal Paper Award Recipients
- 18 AAPM Planned Giving Website
- 27 IHE-RO
- 28 2021 RSNA/AAPM Graduate Fellowship
- 41 2021 Virtual AAPM Review Courses
- 47 2022 AAPM Spring Clinical Meeting
- 48 2021 Research Seed Funding Grant
- 50 2021 AAPM Elections
- 54 WGNC Event
- 58 2021 Virtual AAPM Summer School
- 68 2022 Call for AAPM Newsletter Editor
- 70 2021 AAPM Virtual Spring Clinical Meeting YIA Winners
- 73 MedPhys 3.0 Webinars
- 78 AAPM Merchandise

### EDITORIAL BOARD

#### Jessica Clements, Editor

Chief Physicist  
Kaiser Permanente  
4580 Electronics Pl  
Los Angeles, CA 90039  
818-502-5180  
[newsletter@aapm.org](mailto:newsletter@aapm.org)

#### Yanle Hu, PhD

#### George C. Kagadis, PhD

#### Barbara L. Lilieholm, MS

#### Jennifer M. Pursley, PhD

#### Anna E. Rodrigues, PhD

### SUBMISSION INFORMATION

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

### PUBLISHING SCHEDULE

The AAPM Newsletter is produced bi-monthly.  
Next issue: July/August 2021  
Submission Deadline: June 4, 2021  
Posted Online: Week of June 28, 2021

### CONNECT WITH US!



### Editor's Note

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

# AAPM 2021

JULY 25–29 | **V**IRTUAL

**63<sup>RD</sup> ANNUAL MEETING & EXHIBITION**



CREATIVE SCIENCE.  
ADVANCING MEDICINE.



## REGISTER NOW!

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

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

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

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

## IMPORTANT DATES:

- **May 4**  
Annual Meeting Scientific Program available.
- **July 7**  
Deadline to cancel a registration in writing with no penalty.
- **Week of July 12**  
Virtual platform made available to registrants for pre-meeting exploration.



#AAPM2021 | [aapm.me/annual](http://aapm.me/annual)

## WHAT ARE THE ROLES AND RESPONSIBILITIES OF NON-PROFIT BOARDS?

### CHAIR OF THE BOARD'S REPORT

M. Saiful Huq, PhD | UPMC Hillman Cancer Center and  
University of Pittsburgh School of Medicine



On January 1, 2021, I assumed the role of the Chair of the AAPM Board of Directors. Since taking this role, I have spoken with many AAPM members to gauge their understanding of the roles and responsibilities of the AAPM Board members. Many members have advised me that the membership would benefit from a short refresher on this. So, in my first report as Board Chair, I decided to do exactly that. This report will consist of three parts: i) an overview of some general principles that apply to governing boards of non-profit organizations, ii) a discussion on how the principles apply to AAPM, and finally, iii) a brief report of the activities of the Board so far this year.

The basic responsibilities of non-profit boards are:

- Establish a mission and direction for the organization.
- Hire, support, and evaluate the chief executive officer.
- Ensure that there are necessary resources to achieve goals that are guided by strategic planning.
- Oversee and strengthen programs and resources.
- Enhance the association's brand and image.

The board's main responsibility is to steer, not to row, as illustrated by the pictures below:



**Twitter:** @HuqedOnPhysics

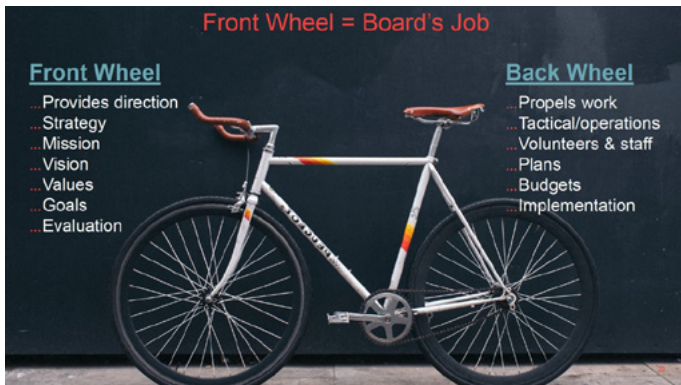
**Email:** huqs@upmc.edu

---

CHAIR OF THE BOARD'S REPORT, Cont.

---

And its functions can be described by the picture below:



The front wheel describes the job of our Board, and the back wheel describes the job of the 1,500+ volunteers of AAPM and the HQ staff.

Setting organizational direction includes participating in regular strategic planning, including reviewing the organization's mission, setting the vision for the future, and establishing the organization's values. As stewards for the organization, the board is responsible for setting major goals for the organization and developing strategies for achieving those goals. The board also approves operational or annual plans for the organization based on the direction set by the strategic plan. In many cases, staff takes the lead in developing operational or annual plans.

Resources are defined as both human and financial. In addition to hiring the organization's chief executive, the board is responsible for ensuring that the organization has the financial resources with which to operate. That includes adopting appropriate fundraising policies, supporting the organization's fundraising activities, and developing alternative funding sources such as fee-for-service programs, investments, or for-profit ventures. The board is also responsible for promoting and protecting the organization's public image by maintaining good relationships with other organizations and with stakeholders and by ensuring that the actions of the organization and its board are guided with integrity. The board itself needs to look at itself as a strategic resource to the organization. It should periodically look at its composition and structure and make the necessary changes to best serve the work of the organization.

The board's oversight role is perhaps one of its most important roles. Responsibilities under this role include:

- Overseeing the organization's financial health: reviewing and approving the budget, reviewing the annual audit, overseeing the organization's investments.
- Minimizing the organization's exposure to risk: ensuring that the organization has the proper insurance, adopting a risk management policy and proper human resource policies, and safeguarding the organization against any unnecessary risks.
- Measuring progress on the strategic plan: ensuring that the organization is applying the goals and strategies set forth in the plan into every activity; and
- Monitoring and evaluating the organization's programs and services to assure that the organization's efforts are effective and that the mission is being carried out.
- The board is also responsible for ensuring that the organization complies with federal, state, and local laws, that it develops appropriate organizational policies, and that it adopts a code of ethics for both the board and staff.
- The board should annually evaluate the performance of the chief executive and assess its own performance approximately every two to three years.

The characteristics of high performing boards are:

- Allocating the time of members of the board wisely.
- Focusing the activities of the members to the mission of the organization.
- Discussing, debating, deciding issues, and then supporting the decision publicly.
- Fostering a constructive board-staff partnership.
- Focusing on outcome and results, not on process.
- Developing and nurturing intentional practices.
- Committing to self-assessment and improvement.
- Eschew personal agendas and legacies in favor of shared vision and continuity.

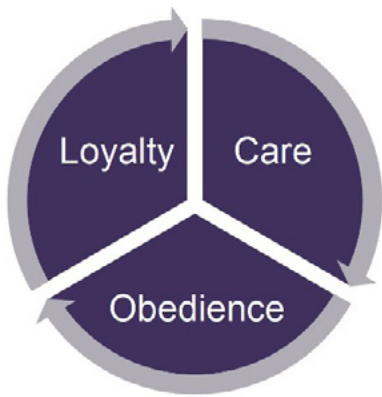
How does one build a high-performance board?

There are three modes of governance of a board: i) Fiduciary, ii) Strategic, and iii) Generative. In each of these modes, one asks the following questions:

CHAIR OF THE BOARD'S REPORT, Cont.

Fiduciary	Strategic	Generative
What is the issue?	What is the plan?	What is the question?
Focus: review and (usually) approve	Focus: align intent and actions	Focus: frame options
Duties of loyalty, care, obedience	Determine what is (and is not) in scope	Encourage multiple perspectives
Boards decide by reaching resolution	Boards decide by reaching consensus	Boards decide by grappling and grasping

The three core duties of fiduciaries are:



**The Duty of Care**

The directors of the board must act:

- Honestly, reasonably, and in good faith
- Consistently, with the best interests of the corporation in mind
- Diligently, on an informed basis
- With the care an ordinarily prudent person in like position would exercise under similar circumstances

**The Duty of Obedience**

The directors are obligated to:

- Faithfully pursue the corporation's purpose or mission.
- Act consistently with policies, procedures, and positions.

The documents that guide the organization:

- Articles of Incorporation
- Bylaws
- Policies adopted by the board of directors (e.g., record retention, executive compensation, conflict of interest, whistle blower, etc.)

**The Duty of Loyalty**

The directors must act:

- Only in best interests of corporation

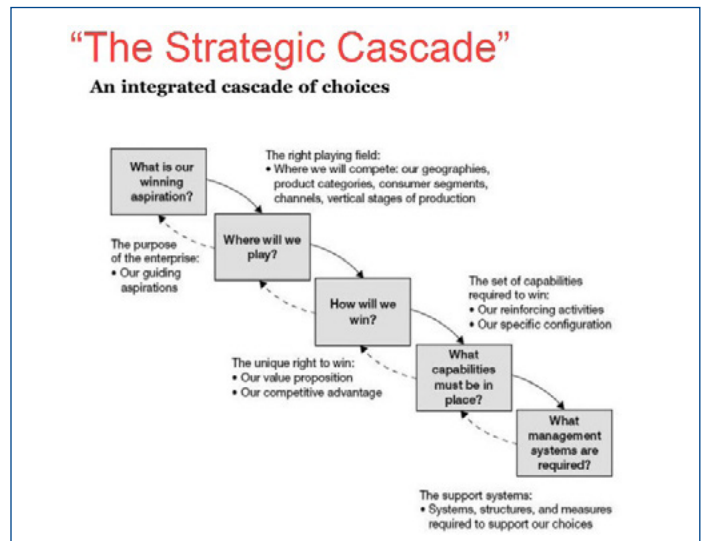
- To disclose and avoid conflicts of interest
- Consistently with the correct "hat"

Directors should not:

- Usurp corporate opportunity or directly compete with the corporation
- Act in their own personal interest versus that of the corporation
- Sign contracts or suggest "apparent authority"
- Confuse representation "of" with representation "for"

**The Strategic Mode**

In the strategic mode, strategic plan, operating plan and budget discussions should lead to a few action items that are the strategic goal for the organization. The following figure shows how "the strategic cascade" works:



**The Generative Mode**

The generative mode serves as a catalysts for "Blue sky discussions". These discussions may be considered for some time by the board before they are appropriately framed. Often the ideas discussed require study and reflection. Typically, ideas tend to surround "high stakes" opportunities

---

CHAIR OF THE BOARD'S REPORT, Cont.

---

or threats and do not benefit from immediate action. The very idea of generative governing is to delve into sensitive subjects: the organization's "politics and religion" as reflected in its values, beliefs, and aspirations.

How do the above general principles apply to AAPM?

At the Annual Meeting in 2017, the AAPM Board approved new Vision and Mission Statements:

The **Vision** of AAPM is: *"Improving Health Through Medical Physics"*

The **Mission** of AAPM is *"Advancing medicine through excellence in the science, education and professional practice of medical physics."*

In 2018, the Board adopted the following focus areas & strategic goals:

**Innovation**

**Strategic Goal:** Drive scientific and clinical innovation in medical physics to improve human health.

**Membership**

**Strategic Goal:** Enhance the value of AAPM membership experience and services.

**Leadership**

**Strategic Goal:** Promote leadership role of the organization and its members.

**Education**

**Strategic Goal:** Cultivate excellence in medical physics education.

**Organizational Management**

**Strategic Goal:** Practice stewardship in continuous assessment of programs and services.

**Communication**

**Strategic Goal:** Improve communication internally and externally.

**Patient Care**

**Strategic Goal:** Ensure High Quality Patient Care.

**Diversity and Inclusion**

**Strategic Goal:** Champion equity, diversity, and inclusion (EDI) in the field of medical physics.

Several documents provide the legal basis for how the affairs of the association are managed. The Articles of Incorporation, filed in the District of Columbia in 1965, establishes the initial structure of the corporation. The By-

Laws were adopted at the Annual Business meeting in 1965 under the authority of the Articles of Incorporation. The By-Laws cover topics such as how directors are elected, how the Board of Directors' meetings are conducted, the officers of AAPM and a description of their duties, what committees will exist, and what is required for membership and affiliation. The Rules were established under the authority of the By-Laws to augment the Articles of Incorporation and By-Laws. The purpose is to detail and expedite administrative matters of the association. AAPM governance documents can be amended. Because the process for amending the Articles of Incorporation and the By-Laws requires Board review and approval, followed by a discussion of the membership at the Annual Business Meeting, the process to amend these documents takes at least one year. Amendments to both the Articles of Incorporation and the By-Laws require the affirmative vote of two-thirds of the votes cast by the voting membership. The Rules may be amended by a majority vote of the Board of Directors.

Changes to the Rules:

- The Rules should document current practices found to work and provide guidance for the future.
- They are a reference that reminds us how we decided to handle various situations.
- Sometimes, when new situations arise, the practices evolve first, and then the Rules are changed accordingly.
- Judgment is required when deciding if current Rules should be followed or if adaptation is necessary.

Professional/Education/Science Policies have been adopted by the AAPM Board of Directors and consist of statements of policy, statements of philosophy, and statements of opinion that provide the position of AAPM in matters of importance before the public, other related organizations, and the profession of Medical Physics.

Administrative Policies and Procedures have been adopted by the AAPM Board of Directors (or the Executive Committee acting for the Board) to express philosophies of administration for the guidance of national officers, committee members, and Members of AAPM and to provide binding operational controls considered necessary as a supplement to or as an amplification of the AAPM By-Laws and Rules.

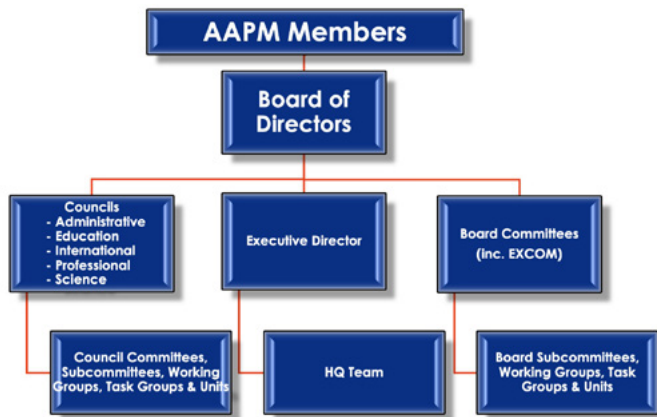
---

CHAIR OF THE BOARD'S REPORT, Cont.

---

The [governance documents](#) are available on-line at the AAPM website.

The organizational chart below shows the structure of the Association. As seen here, the AAPM Board is responsible to the membership. Members of the Executive Committee serve on the Board and are charged with exercising general supervision of AAPM business in the intervals between Board meetings as provided by the Rules.



Details about the committee structures can be found at the AAPM website. If you want more of the details of the actions of the Board, you can go to [this page](#) where you will find all the background materials and minutes.

In 2020, the Board voted to add a third and fourth meeting in 2021, instead of the two meetings a year called for in the governance documents. The Board has met twice thus far this year. The first meeting took place on February 26–27, and the second one on April 9 and 10. The third meeting will take place on August 6–7, and the fourth one on November 19–20. In addition to performing the business of the organization, the Board also spent a significant amount of time reviewing the activities of the five councils addressing the strategic focus areas of Membership and Organizational management in the February meeting and Leadership and Education in the April Board meeting. Additionally, the Board also spent a

significant amount of time actively participating in “blue sky” discussion on visionary topics presented by the five council chairs. The goal is to continue to have such “blue sky” discussions in the future so that our Board can provide guidance on major items that are of strategic interest to the organization.

AAPM also engaged Jay Younger, President and CEO of McKinley Advisors, which is a leading non-profit consulting firm that advises associations around the country on association governance. He is widely recognized as an expert in the association management industry and a transformative corporate leader. Since joining McKinley over 20 years ago, Jay has overseen the firm’s transformation from a niche marketing firm to the largest and leading association management advisory firm in the country.

During our April meeting, Jay spoke about the roles and responsibilities of the Board and its members and discussed principles and concepts of association governance and “good governance” practices. Jay and his team will conduct additional research with Board Members to better understand perspectives about the current state of our performance as a board and where opportunities exist for us to improve as we move forward together. The assessment will run through the summer, and Jay will deliver a final report at our November meeting. This was a very important session for Board members, and all actively participated in the discussion. I am convinced that this initiative will help guide Board members in understanding their roles and responsibilities, which in turn will strengthen the Board’s performance and thus lead to a more effectively functioning group.

I will give you an update on this process and any recommendations in my next Newsletter report.

Acknowledgment: Many of the materials in this report were taken from Jay Younger’s presentation at the April 9–10 AAPM Board meeting. ■

# Congratulations

to the Journal Paper Award  
Recipients for the year 2020!

## JOURNAL OF APPLIED CLINICAL MEDICAL PHYSICS PAPER AWARDS

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

**Jeffrey E. Snyder, Joël St-Aubin, Sridhar Yaddanapudi, Amanda Boczkowski, David A.P. Dunkerley, Stephen A. Graves, and Daniel E. Hyer**

"Commissioning of a 1.5T Elekta Unity MR-linac: A single institution experience." *J Appl Clin Med Phys* 2020; 21:7: 160–172.

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

**Yunfeng Cui, Hao Gao, Jiahua Zhang, John P. Kirkpatrick, and Fang-Fang Yin**

"Retrospective quality metrics review of stereotactic radiosurgery plans treating multiple targets using single-isocenter volumetric modulated arc therapy." *J Appl Clin Med Phys* 2020; 21:6:93–99.

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

**Owen J. Brace, Sultan F. Alhujaili, Jason R. Paino, Duncan J. Butler, Dean Wilkinson, Brad M. Oborn, Anatoly B. Rosenfeld, Michael L. F. Lerch, Marco Petasecca, and Jeremy A. Davis**

"Evaluation of the PTW microDiamond in edge-on orientation for dosimetry in small fields." *J Appl Clin Med Phys* 2020; 21:8:278–288.

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

**Daniela Poppinga, Jana Kretschmer, Leonie Brodbek, Jutta Meyners, Bjoern Poppe, and Hui Khee Looe**

"Evaluation of the RUBY modular QA phantom for planar and non-coplanar VMAT and stereotactic radiations." *J Appl Clin Med Phys* 2020; 21:10: 69–79.

## MEDICAL PHYSICS JOURNAL PAPER AWARDS

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

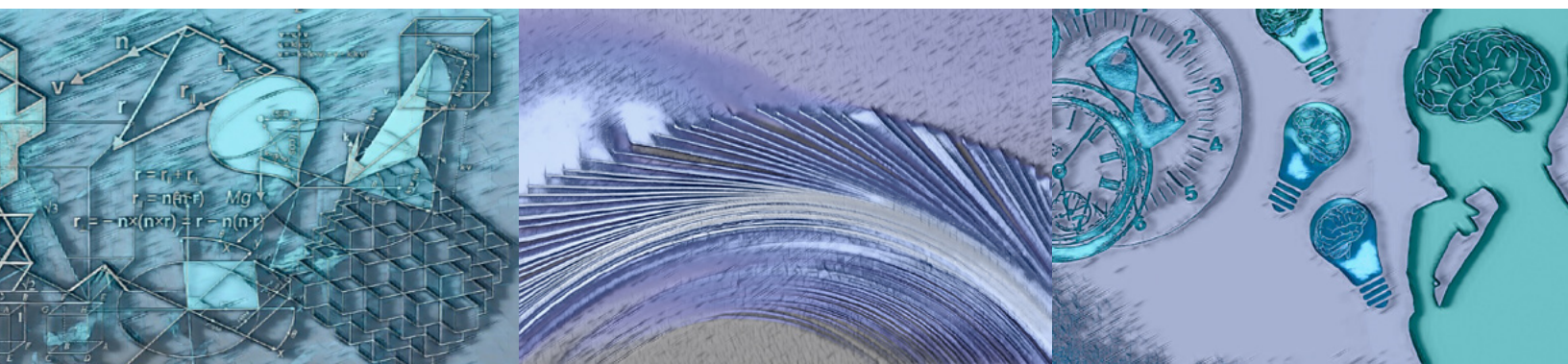
**Conor H. McFadden, Shirin Rahmanian, David B. Flint, Scott J. Bright, David S. Yoon, Daniel J. O'Brien, Aroumougame Asaithamby, Amir Abdollahi, Steffen Greilich, Gabriel O. Sawakuchi**

"Isolation of time-dependent DNA damage induced by energetic carbon ions and their fragments using fluorescent nuclear track detectors." *Medical Physics* 2020; 47:1:272-281.

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

**Ran Zhang, Amy M. Fowler, Lee G. Wilke, Frederick Kelcz, John W. Garrett, Guang-Hong Chen, Ke Li**

"Fast acquisition with seamless stage translation (FASST) for a trimodal x-ray breast imaging system." *Medical Physics* 2020; 47:9:4356-4362.



## ENTERPRISE RISK MANAGEMENT (ERM)

### TREASURER'S REPORT (Joint Edition with Audit Committee Chair)

Mahadevappa Mahesh, PhD | Johns Hopkins University

Sebastien Gros, PhD | Loyola University, Chicago



M. Mahesh



S. Gros

Written on behalf of  
Treasurer and Audit  
Committee.

At AAPM, as in most organizations, the role and responsibility for managing risk falls to the Audit Committee. Section 3.28 of the Rules states that “the Audit Committee shall

monitor the integrity of the Association's financial reporting process, the appropriateness of the Associations accounting policies and internal controls, the independence and performance of the Association's independent auditors, and report its findings to the Board.” In addition, section 3.28 of the Rules goes further to state under the activities section (3) that the activities of the Audit Committee include reviewing the adequacy of the Association's risk management systems.

Traditionally the role of the Audit Committee has been to provide oversight of the financial reporting process, the audit process and the company's system of internal controls and compliance with laws and regulations. One primary reason is that weaknesses in a company's system of internal control could expose it to fraud and greatly inhibit the company's ability to achieve strategic goals. However, this view is very limiting. In the real world, there are a multitude of risks beyond financial risks.

So, you may be asking yourself, why am I — as AAPM Treasurer — speaking to you about risk? In this article, I am collaborating with our current audit Committee chair **Sebastien Gros** to update you on the progress made towards an initiative that will forever change the process of managing risk at AAPM. This initiative is called Enterprise Risk Management (ERM).

#### What is ERM?

“...a **process**, effected by an entity's **board** of directors, **management** and other personnel, applied in **strategy setting** and **across the enterprise**, designed to **identify potential events** that may affect the entity, and **manage risk** to be within its **risk appetite**, to provide reasonable assurance regarding the **achievement of entity objectives**.” (Source COSO ERM – Integrated Framework).

#### Twitter:

@mmahesh1

#### Email:

mmahesh@jhmi.edu

sebgros@gmail.com

We would like to thank Robert McCoy for his help with the subject matter. Please feel free to reach out to us Mahesh (email me, call me at 410-955-5115, or tweet me) or Sebastien (email or 708-216-4121) if you have any questions concerning this report.

---

TREASURER'S REPORT, Cont.

---

The keyword in Enterprise Risk Management is Enterprise. The purpose of ERM is to take a global look at any risk (both internal and external) **which may inhibit the Association from achieving its strategic objectives.**

As you can see, the scope of ERM expands across the entire organization and impacts everything under the umbrella of AAPM. ERM will positively impact all levels and activities undertaken by our organization, and therefore, it makes perfect sense for me as your treasurer and for Sebastien as the Audit Committee chair to share these exciting developments with you.

Before we dig deeper into ERM it would be helpful to provide some additional definitions.

The **Risk Appetite** is the amount and type of risk an organization is prepared to pursue, retain or take.

The **Risk Tolerance** is the acceptable deviation around a particular set of risk-based objectives.

The **Residual Risk** is the threat a risk poses after considering the current mitigation activities in place to address it. The formula to calculate residual risk is Inherent Risk – Impact of Risk Controls = Residual Risk.

With those key definitions in mind, we should remember that the end goal of ERM is not to eliminate risks down to zero. Risk will always exist, therefore one of the key goals of ERM is to manage risk within our risk tolerance. It should be noted that an additional goal of ERM is risk optimization to maximize value for the association.

An excellent example of risk optimization can be found in AAPM's conservative investment policy. As Treasurer, I recommended that the Investment Advisory Committee consider a slightly more aggressive fund (80% equities vs 60% equities) for a portion of our reserve funds. After adoption of my proposal by the committee and the board of directors, \$2M was transferred to this more aggressive fund. The fund is currently being analyzed and will continue to be analyzed for a period of five years. To compare the returns to the more conservative funds. Optimizing the return to the association is an example of ERM at work.

In light of this, we have established 10 ERM objectives that I am describing below.

### What are our objectives?

1. Provide **increased visibility** to the most significant risks impacting our organization.
2. Forestall events that could **jeopardize AAPM's strategic objectives.**
3. Provide a platform for **broad discussion and evaluation** of appropriate levels of "risk-taking" consistent with the risk tolerances.
4. Enhance AAPM's capability to **proactively** identify, report and manage its critical risks.
5. Create **ownership** and **embed** throughout the organization.
6. Improve **alignment** between responses to risk and AAPM's strategy, operations and business processes.
7. Minimize the **impact** of risk by enabling quick responses to these risks.
8. Recognize **emerging risks** that could jeopardize the organization's mission and strategy.
9. Enable **on-going monitoring processes.**
10. Uphold and preserve the organization's **reputation and brand.**

Now that you have a better understanding about ERM, we can review some of the activities undertaken thus far by AAPM.

### Activities to Date

AAPM's journey towards implementing ERM was started under the leadership of then Audit Committee Chair **Jennifer L. Johnson**. AAPM hired the consulting practice of Grant Thornton (GT) to lead AAPM through this process. It is important to note that ERM is not a project to be undertaken to produce a deliverable that is subsequently placed upon a shelf. ERM is an ongoing process. Thus, GT is leading AAPM through this process with the goal of training AAPM members and staff and equipping them with the knowledge and experience required to keep up the momentum and conduct this activity in the future. Activities undertaken by GT include:

- Understood current environment — GT collected and reviewed relevant documentation, including the strategic plan, financial statements, budgets,

---

TREASURER'S REPORT, Cont.

---

organizational charts etc. to develop an understanding of the AAPM environment, structure and known enterprise risks.

- Conducted interviews with leadership — GT met with nearly 20 key stakeholders, including volunteer leaders and management.
- Developed ERM framework — GT worked with management to define strategic, operational, legal/compliance, fraud, opportunity and reputational risk impacts to AAPM on a low to high scale and aligned appropriate metrics to categorize risk likelihood, duration and velocity.
- Analyzed existing and emerging risks — GT used the information gathered to identify current and future risks of material potential impact to AAPM. Each risk was rated in terms of potential impact, likelihood, duration and velocity, independent of any current mitigations to provide a comprehensive view of the risk landscape. These findings were grouped into risk areas and documented in the **risk register**.

The risk register was reviewed by management and the Audit Committee and then management broke down the register into themes. This was crucial for the next step in the process. The themes identified were:

- Strategy
- Governance
- Membership
- Publications
- Financial
- Operations
- Technology
- Meetings

### Next Steps

The next step in the process is to hold thematic risk review workshops. In these workshops GT, volunteer leadership and management will review the risk identified within a specific theme:

(1) Perform risk event analyses in cross-functional workshops to:

- Confirm the thematic risk areas, as well as the relevant risk events within each risk area.
- Identify existing risk mitigation activities and map them to identified risk events.
- Identify gaps in AAPM's ability to undertake response initiatives.
- Identify action plans for additional steps that AAPM can take to further mitigate risk.

(2) Summarize the results of the ERM workshops including:

- An evaluation of AAPM's risk exposure, existing mitigation practices, and current tools in place.
- Recommended action plans to reduce organizational risk.
- Documenting a risk heat map depicting risk exposure for each risk theme for volunteer leadership and management's consideration and review.

Our work will not finish after the workshops are completed. On an annual basis, the Audit Committee will continue to work with leaders in the respective theme areas to perform annual reviews. The purposes of these annual reviews are to identify new potential risks, to see if the threat has increased or decreased in previously identified risk areas and to see if mitigating controls have modified the residual risk in existing threats.

As AAPM implements ERM, the goal is that this is not felt as a necessary effort, but that it is a cultural imperative. One which will be incorporated into AAPM's strategic and operational decision making. The goal will be to engage participation at all levels of the organization. This will not only allow AAPM to optimize risk, but to maximize value. One which will position AAPM for the challenges to come. ■

# Measure and Evaluate MRgRT 3D Distortion



## distortioncheck

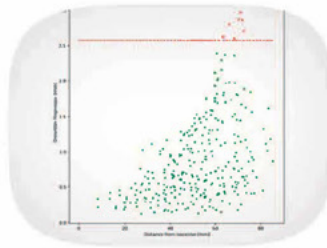
CLOUD SOFTWARE FOR EVALUATION OF IMAGE DISTORTION



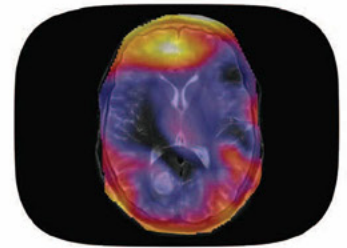
**SCAN**



**UPLOAD  
IMAGES**



**REVIEW REPORTS  
& TREND ANALYSIS**



**EXPORT DICOM  
OVERLAYS TO TPS**



**Large Field Grid Phantom  
2152 Physical Control Points**

- ✓ CIRS proprietary materials simulate distortion due to susceptibility & chemical shifts typical to clinical patient scans
- ✓ Density of physical control points optimized to bring interpolation close to linearity
- ✓ Cloud based solution frees user of operating system and hardware constraints
  - ✓ Quickly & automatically analyze complete MR data sets
- ✓ Online deployment facilitates collaboration, easy review and portability of results



**Inter-cranial Grid Phantom  
859 Physical Control Points**

# CIRS

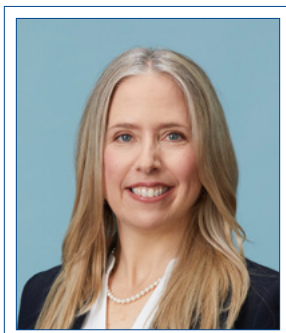
Tissue Simulation & Phantom Technology

[cirsinc.com](http://cirsinc.com)

900 Asbury Ave., Norfolk, VA 23513, USA • (800) 617-1177

## BOARD OF DIRECTORS ACTIONS FOR 2021

SECRETARY'S REPORT Jennifer Johnson, PhD | Kelsey-Seybold Clinic



Written on behalf of the AAPM Board of Directors.

The AAPM **Board of Directors** approved a number of actions in recent meetings, including motions that affect access of AAPM meeting content effective for AAPM's 2021 meetings and the Online Education Credits (OEC) Program effective for the 2022 renewal cycle.

The Board of Directors, during their November 19, 2020 virtual board meeting, approved a motion to increase the OEC program annual subscription fee for earning Medical Physics Continuing Education Credits (MPCECs) and Self-Assessment Modules (SAMs) in 2022 as follows, with small incremental increases in the future as needed.

Membership/ Affiliation Type	Current Fee	Proposed 2022 Subscription Fee MEMBERS	NEW Proposed 2022 Subscription Fee NON-MEMBERS
Full Associate	\$75	\$150	\$300
Emeritus & Emeritus Associate Corresponding Professional Affiliate International Affiliate	\$50	\$100	
Resident Junior	\$10	\$20	\$150
Student	\$0	\$0	\$50

Twitter: @ms\_jl\_johnson

Email: [jjohnson@aapm.org](mailto:jjohnson@aapm.org)

The Board discussed the expectation that future AAPM meetings will include a virtual component after AAPM transitioned to a virtual meeting environment in 2020 due to the coronavirus (COVID-19) pandemic. The Board concluded that AAPM needed to rethink its existing fee structures. As illustrated, the OEC Program subscription fees have not increased in 8 years.

YEAR(s)	Fee
1998	FREE
1999-2002	\$20
2003	\$25
2004	\$30
2005-2009	\$50
2010-2012	\$65
2013-	Student \$0 Emeritus, Corresponding, Emeritus Associate, International Affiliate: \$50 Resident, Junior: \$10 Full, Associate: \$75

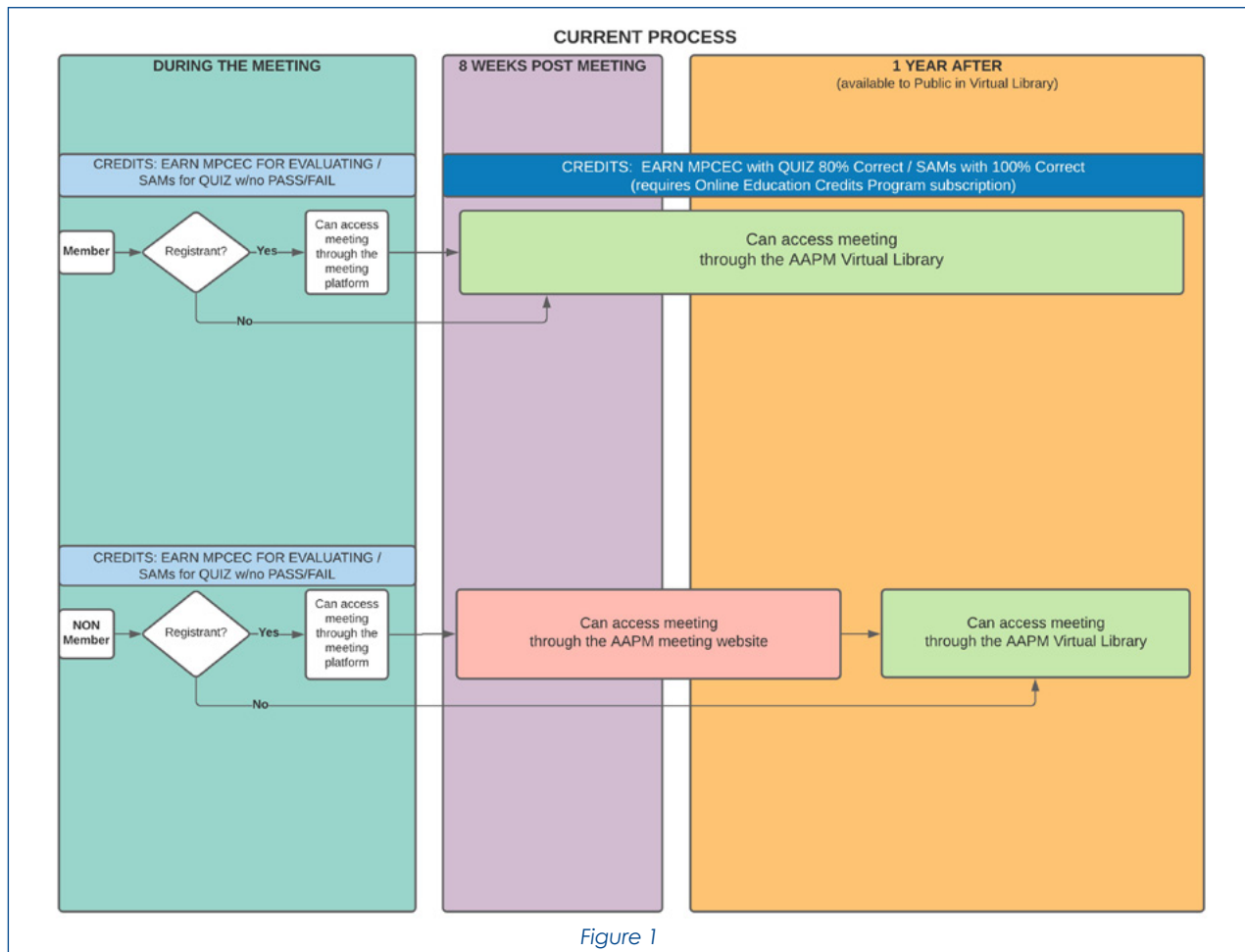
SECRETARY'S REPORT, Cont.

The Board expanded the OEC Program to non-members as well. They determined most non-members would pay their subscription fee at a rate twice the Member subscription fee. The Board opted to have non-member students, residents and trainees pay their subscription fee equal to their respective member 2022 dues rate to encourage AAPM membership. They decided to make the OEC program expansion and subscription fee changes effective for the 2022 dues renewal cycle, which begins October 2021. The Board of Directors approved this change with a near-unanimous vote (31 yes, 0 no, and 2 abstentions).

Also, during their November 19, 2020 virtual board meeting, the Board of Directors approved a motion to offer post-meeting access to AAPM meeting content for a fee to incentivize meeting attendance in 2021.

The Board reviewed access to the AAPM Virtual Library for AAPM meeting content by meeting registrants and non-registrants, for AAPM members and non-members alike, as shown in Figure 1. They deemed that AAPM meeting registrants having continued post-meeting access to the meeting content is a benefit of their meeting registration. The Board decided non-registrants, regardless of AAPM membership status, would be able to access the meeting content after an interval of time through the AAPM Virtual Library, as shown in Figure 2.

The Board of Directors also recognized access to the Virtual Library as an AAPM member benefit. They determined AAPM member non-registrants will gain access one year after the meeting, and non-members (i.e., members of the public) will gain access two years after the meeting, also



SECRETARY'S REPORT, Cont.

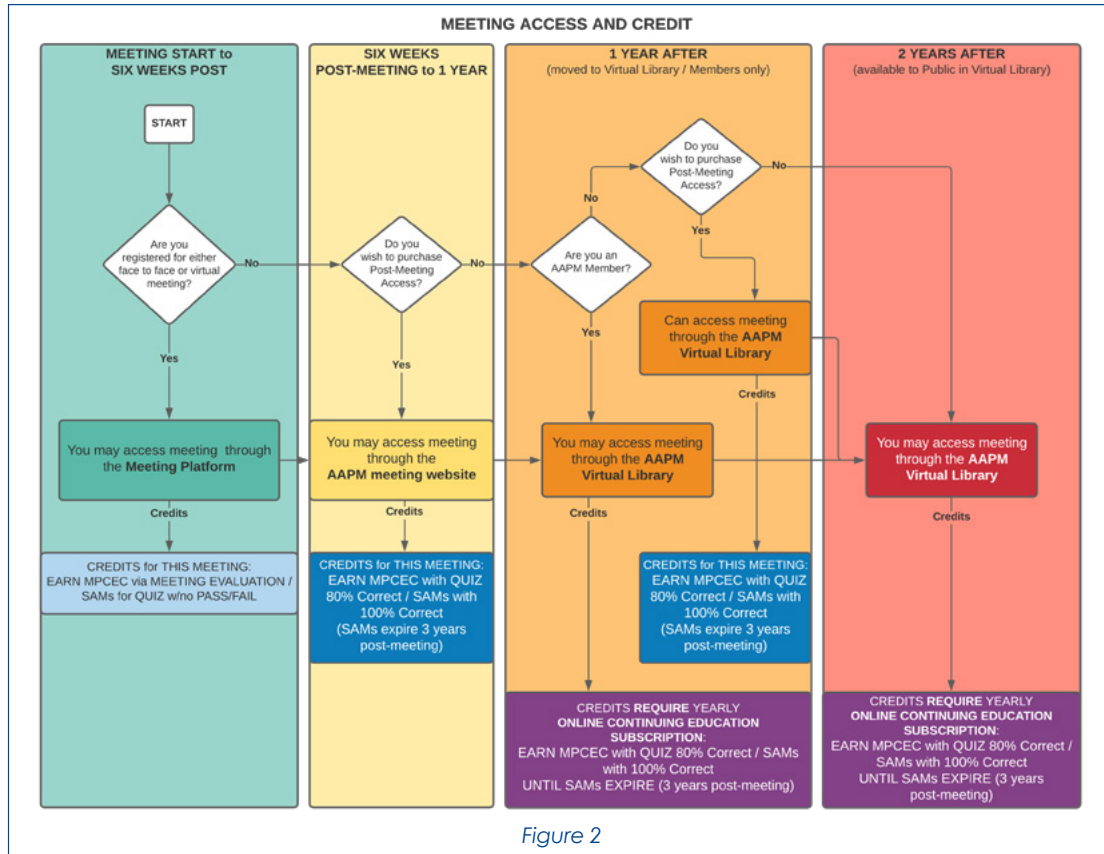


Figure 2

shown in Figure 2. The Board established that both AAPM members and non-members may purchase Post-Meeting Access during the interval to access the meeting content through the AAMP meeting website.

They agreed to make the post-meeting access to AAPM meeting content effective for future AAPM meetings starting in 2021. The Board of Directors approved this motion with a vote of 32 yes, 0 no, and 1 abstention.

The Board of Directors made these decisions in an effort to keep AAPM viable for its current and future members as it adjusts to changing revenue streams and operational models.

The AAPM Board of Directors is responsible for the sustainability and direction of AAPM through appropriate governance, financial management, and resources. The Board of Directors has fiduciary responsibilities, where the AAPM membership places their confidence and trust in

the board to act in the membership's best interest for the organization. The board is responsible for a number of oversight tasks, including Executive Director support and oversight; budget and resources; performance and results; stewardship, ethics, and financial integrity.

The Board of Directors also has strategic and generative responsibilities, where they scan the internal and external environment; assess AAPM's strengths, weaknesses, threats, and opportunities; and decide appropriate action. They participate in strategic thinking, learning, and planning and cultivate membership and outreach activities.

They work to help AAPM grow as an organization by promoting the meaning of what it is to be a medical physicist, by providing value where members have a professional home, and furnishing structure for members to access the latest science, education, and professional practice information. ■



## Make a Plan to MAKE A DIFFERENCE

Learn how a charitable gift can support medical physics research and education AND fit into your long-term financial future with **AAPM's Planned Giving website!**

<https://aapm.myplannedgift.org/>

### OUR CONDOLENCES

[William N. Salk, MS](#)

Michael J. Dennis, PhD

[Pietro Luigi Indovina](#)

*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 e-mail to: [2021.aapm@aapm.org](mailto:2021.aapm@aapm.org)

(Please include supporting information so that we can take appropriate steps.)

## HQ AT YOUR SERVICE

---

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

---



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

As you review the program for the 2021 Virtual 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 virtual exhibit hall** and **engage with AAPM Corporate Partners**. While the virtual experience has caused us to rethink how we engage, 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, even in a virtual setting, makes smart business sense, and they should continue to support AAPM and the medical physics community in this way.

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's 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 percent of AAPM's 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.

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 the 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 2022 Officers, Board Members-at-Large, and Nominating Committee Members will open on June 16th and will run through July 7th. 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. The election process will be online only, so be alert for e-mail announcements.

**Twitter:** @AngelaKeyser

**Email:** [akeyser@aapm.org](mailto:akeyser@aapm.org)

---

#### 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.

---

EXECUTIVE DIRECTOR'S REPORT, Cont.

---

### 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.

### New reports available online

- AAPM TG 201: *Quality Management of External Beam Therapy Data Transfer* (Early View) [View Report](#)
- AAPM TG 178: *Recommendations on the Practice of Calibration, Dosimetry, and Quality Assurance for Gamma Stereotactic Radiosurgery* (Accepted Article) [View Report](#)

### AAPM Funding Opportunities

#### RSNA Graduate Fellowship

(Application Deadline: May 28, 2021)

The AAPM RSNA Graduate Fellowship is awarded for the first two years of graduate study leading to a doctoral degree in Medical Physics (Ph.D. or DMP). Both BSc. and MS holders are eligible to apply. Applicants must be a member of the AAPM at the time of application (any membership category). Pending membership status not eligible. A stipend of \$13,000 per year, plus tuition support not exceeding \$5,000 per year, will be assigned to the recipient.

Graduate study must be undertaken in a Medical Physics Doctoral Degree program accredited by CAMPEP.

[View additional information and access the online application](#)

#### Research Seed Funding Grant

(Application Deadline: May 31, 2021)

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

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

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

[View additional information and access the online application](#)

### Your Online Member Profile

This is a reminder to keep your AAPM Membership Profile information up to date by going to [your profile page](#) and making any changes necessary. Please, upload your picture if you have not already done so.

Remember to review the "Conflict of Interest" area of the Member Profile to self-report conflicts per the [AAPM Conflict of Interest Policy](#).

AAPM recognizes that not everyone is interested in every topic that we communicate to our membership, so we are now organizing our e-mail communications into "campaigns" that are typically time and event-based. The first time you receive an e-mail about a particular event, you may opt-out of receiving future e-mails on this topic at the bottom where it says, "To inhibit future messages of this kind, click here." For example, if you know you aren't able to participate in the 2021 AAPM Virtual Annual Meeting and don't want communications about the meeting, you may opt out from any e-mail in the campaign or the [e-preferences screen in your member profile](#).

### Headquarters Happenings

It is with great pride that I share an important accomplishment of one of our HQ Team Members.

**Melissa Liverpool** recently earned the "Certified Public Accountant" designation through educational training, experience, and passing the CPA Exam. Melissa joined the AAPM team back in 2011 as the Staff Accountant and has served as Accounting Manager since 2013. Such an achievement!

AAPM's Director of Finance **Robert McKoy** has been elected to serve on the American Institute of Certified Public Accountants (AICPA) Foundation Board of Trustees. Established in 1922, the mission of the Foundation is to advance accounting as a learned profession and promoting its future through accounting education and outreach; scholarships and fellowships; and diversity and inclusion. I expect the Foundation will soon realize what an asset Robert will be to their good work and his passion for mentoring the next generation of CPAs. ■

# COLLABORATION AND THE DISMANTLING OF PROFESSIONAL SILOS

## PROFESSIONAL COUNCIL REPORT

Brent C. Parker, PhD | The University of Texas MD Anderson Cancer Center



While Longfellow was writing about the courtship of Elizabeth Haddon and John Estauch, he could just as easily have been referring to the interactions many of us have with our colleagues in other subfields of medical physics.

A plenary session from the 2020 RSNA virtual meeting stimulated an email exchange among AAPM leadership on the opportunities for collaboration between imaging and therapy professionals. While the RSNA presentation

focused on interactions between radiologists and radiation oncologists, the connection to potential collaboration between medical physicists of different subfields was obvious. AAPM's Professional Council (PC) was asked to consider the issue and make recommendations on how to encourage and establish these collaborations. A significant amount of time was thus devoted to this topic on the first day of the 2021 PC retreat. We discussed different scenarios (professional, educational, clinical, etc.) where these types of collaboration potential naturally exist. Providing some examples of how this type of collaboration could be beneficial might encourage AAPM members to seek out these opportunities. Thus, we decided that a newsletter article with some hypothetical scenarios would be our approach.

In a stroke of fortune, an AAPM member reached out to me the very next day with a real-life situation that arose in his clinic. His department is replacing their therapy CT simulator, and the administrators asked about reporting dose and protocols to the ACR registry and dose reporting to the institution's EMR. He informed them that the system would not be used for diagnostic imaging and that the requested information was therefore not required. His administrators requested a reference to support that position, but as a therapy medical physicist, he was not immediately familiar with the various reporting requirements or where to find the information. If only there existed some corporeal entity with this knowledge that could be consulted...

**Enter the imaging physicist!**

**What a perfect opportunity for him to engage a colleague.**

What are some other potential collaborations that PC identified? In the education realm, cross-teaching between therapy and imaging physics on specific topics was considered. As imaging continues to be a growing component of radiation therapy, wouldn't it be nice to have imaging physics experts teach on those topics? Personally, I would love to have an imaging physicist teach the various imaging modality components of our radiation oncology residents' physics course. In return, I could teach the basic interactions component of the radiology resident course.

Email: [bcparker@utmb.edu](mailto:bcparker@utmb.edu)

Professional Council would like to hear from you. If you have any stories of successful collaborations between subfields of medical physics, let us know.

"Ships that pass in the night,  
and speak each other in passing,

Only a signal shown and  
a distant voice in the darkness;

So on the ocean of life we pass  
and speak one another,

Only a look and a voice,  
then darkness again and a silence."

— Henry Wadsworth Longfellow  
(*The Theologian's Tale; Elizabeth*)

## PROFESSIONAL COUNCIL REPORT, Cont.

In the clinical environment, imaging physics involvement in radiation therapy imaging modalities is obvious. With the use of imaging in radiation therapy (CT-simulation, x-ray IGRT, MR-guided therapy), imaging physicists can assist in improving image quality and reducing radiation dose. Another suggestion to make the collaboration more equitable between departments was the opportunity for therapy physicists to work with our imaging colleagues in the implementation of the TG-100 methodology in an imaging environment. These types of collaboration can positively impact patient care.

There are also professional opportunities. One PC member stated that he requested a budget for imaging physics services when purchasing relevant new equipment. This included both imaging-specific equipment (e.g., CT-sim) and therapy equipment with imaging capabilities (e.g., IGRT). Advanced planning like this helps overcome administrative obstacles (e.g., budget and staff allocation) while reaping the benefits of their expertise.

Of course, there are always the practical aspects of implementation. For much of our history, imaging and therapy medical physicists lived under the same administrative, budgetary, and departmental roofs. In current times, however, that is frequently not the case. Staffing models and budget allocations for medical physics support can vary significantly between departments. At my previous institution, an imaging physics colleague and I developed a plan to teach in each other's residency program. However, we were unable to convince our administrations of the benefits of the collaboration and the idea died on the vine. From the email exchange that initiated this discussion, the perception is that larger academic centers have an easier time with this collaboration. Perhaps it is due to an abundance of resources, or maybe it's the culture of the academic environment to be more collaborative. Limitations also exist at the individual and institutional levels. Some medical physicists may not have the desire or time to contribute to activities outside of their department, or they may not feel they have relevant expertise to offer. Some facilities may not employ both therapy and imaging medical physicists thus limiting collaboration opportunities.

So how do we foster an interest in these collaborations? The first thing we must do is communicate the benefit to

the physicists and their institutions, and the benefits should be equitable to all parties. In the examples I provided, most of the information flow was from imaging to therapy. How do we identify opportunities for therapy physicists to provide benefits to our imaging colleagues? This will require reaching out to our colleagues to explore their needs and finding areas where we can contribute.

Once we identify areas of mutual benefit, we need to prepare future generations of medical physicists to be open to this model. One idea that came out of the PC discussion was to expose medical physics trainees to the roles of our colleagues in other subfields. This could involve things like residency rotations in other departments or cross-department journal clubs. The better we understand what our colleagues do on a regular basis, the easier it will be to identify areas where we can contribute.

Now that we have medical physicists ready to engage in these collaborations, the final step is to remove the barriers to and promote the development of these partnerships. One example for academic centers could be joint appointments in therapy and imaging departments. For smaller or private centers, this may require providing documentation on potential benefits to the patients while not adversely impacting budgets and staffing.

These types of collaborations have the potential to benefit the medical physicists as well as other stakeholders. The earlier example provided a learning opportunity for the medical physicist on regulatory requirements for his clinical equipment and some insight into the work of his imaging colleague. It also served to educate the department administrator on regulatory requirements, the role of the medical physicist in implementation of new technologies, and the value of that role. It's easy to imagine how engaging colleagues with specific knowledge and expertise can benefit patients. With the theme of the 2021 AAPM Virtual Annual Meeting and Exhibition being "Creative Science. Advancing Medicine.", these types of collaborations may offer creative solutions to real problems. The take-home message is that these collaborative opportunities exist if we are intentional in seeking them out and developing them. ■

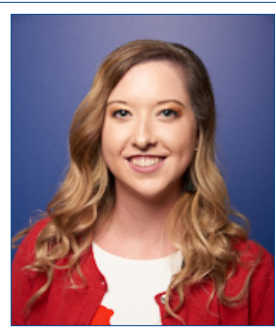
## INITIAL EXPERIENCE OF THE VOLUNTEER ENGAGEMENT PROGRAM (VEP) FROM AN EDUCATION COUNCIL PERSPECTIVE

### EDUCATION COUNCIL REPORT

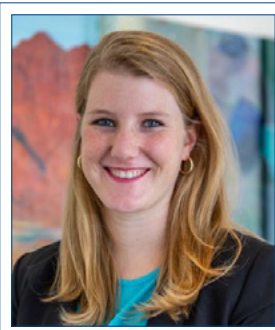
Joann Prisciandaro, PhD | University of Michigan  
Abigail Dare, MS | Vanderbilt University Medical Center  
Mary Peters Gronberg, MS | University of Texas MD Anderson Cancer Center  
Alison Roth, PhD | Barrow Neurological Institute



J. Prisciandaro

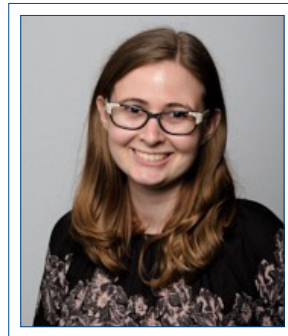


A. Dare



M. P. Gronberg

The success of AAPM is largely dependent on the volunteer efforts of our members. Approximately 19% of full and emeritus members volunteer in our 380+ groups<sup>1</sup> (e.g., Board of Directors, Councils, Committees, Subcommittees, Working Groups, Task Groups, Units<sup>2</sup>). These individuals volunteer their time and effort for a variety of reasons, including an interest in education; professionalism; science; and research; to participate and expand global initiatives; to network; and to pay it forward.



A. Roth

However, it may not be easy for interested, early career AAPM members to become involved in volunteer efforts. Some may apply through the Committee Classifieds, while others try to directly contact the Chair of a group to inquire about potential openings. Some become discouraged, especially if their inquiries go unanswered after multiple attempts. In **Dr. Cynthia McCollough's** 2018 President Elect's report,<sup>3</sup> she encouraged new AAPM members that are interested in volunteering to first identify a group(s) with which they may resonant, and then to "show up." By being present (physically or virtually) during the group's meeting(s), you can gain an appreciation for the group's efforts, and with regular attendance, learn about opportunities to volunteer. As Dr. McCollough stated, Chairs are looking for "energetic new members who are willing to roll up their sleeves" and become engaged in the group's efforts.

#### Twitter:

@Prisclaus2

#### Email:

joannp@med.umich.edu  
abigail.e.dare.1@vumc.org  
gronberg.mary@gmail.com  
alison.roth2020@gmail.com

---

 EDUCATION COUNCIL REPORT, Cont.
 

---

I recall one of my first attempts to volunteer for a committee. I had just passed the ABR Part III exam and was very interested in participating in the then Maintenance of Certification Task Group (TG), now a subcommittee. I recall approaching the TG Chair at the beginning of the meeting to introduce myself and to express my interest in working with the group. The Chair invited me to attend the group meeting, but politely informed me that the TG was not currently recruiting new members. I remember feeling discouraged, but was still interested in learning more about the group. I took a seat, listened to the discussion, and took note when the Chair requested a volunteer to assist with a project. Given other commitments, no TG member was identified. Although I do not recall the details of the project, I remember thinking to myself that I could assist. Several weeks later, I emailed the Chair, reintroduced myself, thanked him for giving me the opportunity to attend the TG meeting, and shared the work I had completed on the project that was identified during the meeting. By the end of the day, I received a response and invitation to become a member of the TG. That was nearly 15 years and 20+ committees ago.

During **Saiful Huq's** 2019 President Elect's report,<sup>4</sup> he indicated that following his discussion with members at Chapter meetings, he received a common request: to "create opportunities for early and mid-career professionals to participate in AAPM's councils, committees, sub-committees, working groups, and task groups." Taking this request to heart, Dr. Huq worked with the AAPM Executive Committee and in January 2020, the AAPM launched the Volunteer Engagement Program (VEP). The intent of the program is to provide opportunities to early career and student members to learn about the operations and inner-workings of the organization, and prepare them for active participation and leadership roles in AAPM. Additionally, the program is open to longer-term members who have not been involved in AAPM committees. All groups chairs were strongly encouraged to participate in the VEP. A year into this initiative, five Education Council groups have engaged a total of three participants in this new program (two VEPs are involved in two separate groups). These groups include the Education and Training of Medical Physicists Committee, the Public Education Committee, the Medical Physics Residency Training and Promotion Subcommittee, the Working Group on Medical Physics

Graduate Education Program Curriculum, and the Working Group on Public Education and Ask the Expert Website Content Review. To assess the overall experience and satisfaction with the VEP, participants were interviewed by Education Council leadership.

1. Prior to being a VEP participant (VEPP), did you have the opportunity to serve as a guest member on an AAPM group? If so, how does the VEP compare to being a guest member?

Two VEPPs previously served as a guest member on AAPM groups, including one that previously served as a guest member for the same group she is now a VEPP. For this later VEPP, the only real change she observed as a VEPP was a change in her membership status, not her role or interactions with the group's leadership. For one VEPP, this was her first experience on an AAPM group.

2. Was your role as a VEPP defined when you joined the AAPM group?

The VEPPs received an email with an outline about the VEP from AAPM, however, the VEPPs indicated that the program structure and details were vaguely defined in the mailing.

3. Were you able to attend AAPM group meetings? Did you feel that you were free to contribute to discussions during the meetings?

All three members participated in virtual group meetings. One VEPP indicated that she was initially unsure of whether she was allowed to provide input during group meetings, however, following a discussion with the group chair she was encouraged to participate in group discussions and projects. The VEPPs indicated they felt engaged with the groups and that the groups sought their input as a student/trainee voice for the group.

4. Was a mentor clearly identified to you when you joined as a VEPP? If so, what role did the mentor play on the AAPM group (e.g., chair, vice chair, member)? Additionally, how frequently did you meet with the mentor and how accessible was the mentor?

One VEPP had a defined mentor, the group chair. Although the VEPP and chair only held one phone call

---

EDUCATION COUNCIL REPORT, Cont.

---

during the year, they exchanged a number of emails. The VEPP indicated that their discussions extended beyond work related to the group and included topics such as being a woman in medical physics.

5. Please comment on the strengths of the VEP.
  - Engagement with mentor
  - Networking opportunities
  - Better understanding of AAPM leadership structure
  - Better understanding of what it means to be an AAPM volunteer
  - Opportunity to gain confidence to interact with other group members
  - Normalizing and creating opportunities for students/trainees
  - Improve confidence to seek out other volunteer opportunities
6. Please comment on areas for improvement of the VEP.
  - More mentoring opportunities
  - Expand offerings, more classified ads
  - Empower VEPPs to become engaged in the group
  - Provide shadowing and networking opportunities during the annual meeting
  - Provide opportunities for VEPPs to meet and share their experiences with one another
  - Provide better guidance/education to chairs and students/trainees on their role in the VEP
7. Do you think the program has set you up for future participation as a regular AAPM member of a committee and would this have been possible without the program?

Yes, based on their experience, all three VEPPs indicated that they have since become involved in other groups as guest members. However, two indicated this may have also been possible serving as a guest member versus a VEPP.

8. Overall, how would you rate the quality of your experience as a participant of the VEP? Did you gain professionally from this program?

The VEPPs indicated this was a positive experience. They were able to join a group that genuinely interested them. However, they did indicate that the experience may not have been as positive if the relationship with the mentor or group chair did not work well.

Group chairs were also surveyed about their experience with the VEP. Four of five groups responded to the survey. Although one respondent indicated that AAPM's expectations of the VEP and mentor responsibilities were very clearly defined, the remaining group chairs indicated this was unclear to a little clear. Additionally, one chair indicated they were not aware that a VEPP served on their group, but rather thought the individual was a guest member. All chairs indicated that they might or would like training to serve as a mentor.

Overall, the VEP has the potential to provide opportunities to early career and student members. Based on the experience of VEPPs and group chairs that were engaged in the VEP within Education Council, there are areas that could be improved to enhance the experience of the participants. Suggestions include better communication regarding the goals of the program, guidance on the expectation of the participant and mentee, and periodic check-ins to ensure the VEP is running smoothly. Based on this feedback, Education Council will work with group chairs to enhance the VEP experience. Additionally, with the Professional Mentorship Working Group's soon to be launched Professional Mentorship Program, we expect useful resources and guidance on mentorships will be more readily available to all AAPM members. In the meantime, if you are interested in learning more about a group, reach out to group chairs and just "show up!" ■

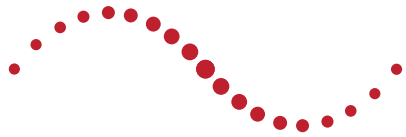
---

<sup>1</sup>Private communication with Michael Woodward

<sup>2</sup>AAPM Administrative Policy 114 A, <https://www.aapm.org/org/policies/details.asp?id=505&type=AP>, accessed April 1, 2021

<sup>3</sup>Cynthia McCollough, "How to Volunteer – and Lead – in the AAPM". *AAPM Newsletter*. 2018; 43(5): 4-6

<sup>4</sup>M. Saiful Huq, *A volunteer mentorship program within AAPM to build tomorrow's leaders today*. 2019; 44(6): 11-12

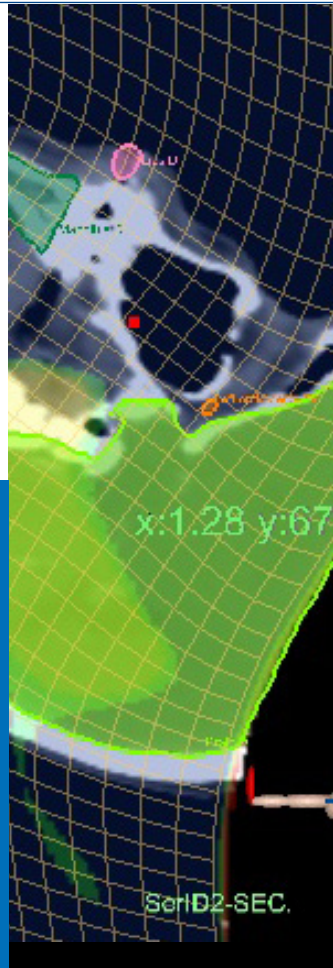


**ImSimQA™**

Imaging QA at your fingertips.

Complex DIR QA made easy.

Test cases, analysis, reports.



QA of DIR, RIR, adaptive planning, IGRT, AI, SABR, MR linacs and more.

Extensive library of editable test image data.

Virtual phantoms & DICOM cases.

3D design & print customised phantoms.

TG-132 recommended.



Oncology Systems Ltd

[inquiry@imsimqa.com](mailto:inquiry@imsimqa.com) | [imsimqa.com](http://imsimqa.com)

# Radcal Touches the World!



- Features:**
- Simple to use – Accurate and reliable
  - Customizable Touch Screen
  - Wi-Fi and USB Computer Connectivity
  - Report Generation

Need to check the performance of X-ray machines?

Then the Radcal Touch meter is your tool of choice.



**For further details:**

Contact us at +1 (626) 357-7921, [sales@radcal.com](mailto:sales@radcal.com) or [www.radcal.com](http://www.radcal.com)

## NRC REVISES PUBLIC MEETINGS POLICY

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



The Nuclear Regulatory Commission (NRC) revised its policy statement on how it conducts public meetings. The revised policy, which will be incorporated into agency procedures, became effective March 19, 2021. See full policy text [here](#).

The revision identifies three public meeting categories:

- **Observation Meeting** — Attendees observe NRC interactions with representatives from selected groups, including licensees, applicants or non-governmental organizations. While attendees may ask questions or make comments at designated points on the agenda, NRC will not actively seek comments on the issue being discussed.
- **Information Meeting with a Question and Answer Session** — NRC addresses applicable regulatory issues and NRC actions with meeting attendees. Attendees can ask questions of NRC or comment about the meeting topic, but NRC will not actively seek comments on regulatory decisions.
- **Comment-Gathering Meeting** — NRC meets with interested individuals for the purpose of receiving comments and soliciting feedback on regulatory issues and agency actions.

In the policy statement, the NRC affirms its commitment to transparency. ■

If you have any questions or require additional information, contact **Richard Martin, JD, AAPM Government Relations Program Manager**, at [richard@aapm.org](mailto:richard@aapm.org).



- Accuray
- Brianlab
- Duke University Medical Center
- Elekta
- Epic
- IBA
- Mevion Medical Systems
- MIM Software
- Mirada Medical
- OSL
- Philips Healthcare
- RaySearch Laboratories
- Reflexion Medical
- Sun Nuclear Corporation
- Standard Imaging Inc.
- University of California, San Francisco
- University of Michigan
- Varian
- Veterans Administration
- ViewRay
- Washington University of St. Louis
- West Virginia University

More information can be found at: [www.aapm.org/IHERO/](http://www.aapm.org/IHERO/)



# 2021 RSNA/AAPM GRADUATE FELLOWSHIP

The fellowship is awarded for the first two years of graduate study leading to a doctoral degree in Medical Physics. Both BSc and MS holders are eligible to apply. A stipend of \$13,000 per year, plus tuition support not exceeding \$5,000 per year is assigned to the recipient. The amount of tuition support granted will be at the discretion of AAPM. The award will be paid to the recipient's institution and distributed in accordance with the institution's disbursement procedures. It is AAPM's policy that none of the funds may be diverted to the institution's "facilities," "administrative," or other overhead categories and the full \$13,000 stipend must be provided to the recipient.

Sponsored by the [AAPM Education and Research Fund](#).

A list of Award Recipients can be found [here](#).

Each applicant must be a graduate of an undergraduate program in physics or equivalent majors (e.g., engineering-physics, math-physics, or nuclear engineering or applied physics) from an accredited university or college in North America. The undergraduate grade point average must be greater than 3.5 (based on a 4.0). Each applicant must have submitted an application for graduate study to one of the accredited programs with subsequent acceptance. Applicants must be a member of AAPM at the time of application (any membership category). Pending membership status not eligible.

#### Required Supporting Documentation:

- All post-secondary study transcripts (official transcripts only)
- Copy of Graduate Record Exam results (If applicable)
- TWO Recommendation Forms and TWO Reference letters.

- Acceptance letter from intended CAMPEP Accredited Program
- CV including GPAs and publications (use CV Template)

Merge all files into one PDF and upload the complete application (PDF).

#### Send supporting documentation to:

American Association of Physicists in Medicine  
1631 Prince Street  
Alexandria, VA 22314  
ATTN: Jacqueline Ogburn  
jackie@aapm.org

#### Award Duration:

**September 2, 2021 – September 2, 2023**

#### Application Deadline: May 28, 2021

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

**Recipient Notified on: June 24, 2021**

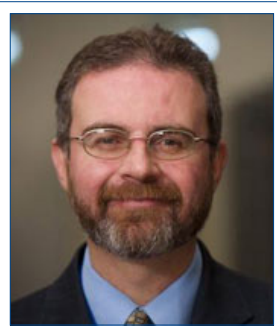


**FOR MORE DETAILS, VISIT: [gaf.aapm.org/#FELLOW](https://gaf.aapm.org/#FELLOW)**

## ABR UPDATE: REMOTE EXAMS

### ABR NEWS

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



M. Podgorsak, ABR Trustee



K. Kanal, ABR Trustee



R. Pooley, ABR Trustee

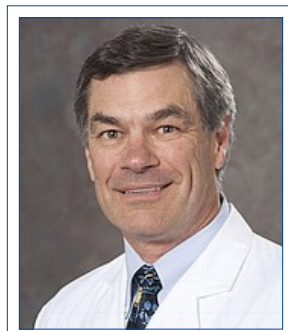
#### Twitter:

@KalpanaKanal  
@rapooley  
@ibbotibbott

#### Email:

Matthew.Podgorsak@RoswellPark.org  
kkanal@u.washington.edu  
pooley.robert@mayo.edu  
jaseibert@ucdavis.edu  
gibbott@theabr.org

- **Twenty-eight MP candidates took the oral certifying pilot exam in April.**
- **In this new model, examiners work in pairs, with a secondary examiner ready to take over if the primary examiner has a connectivity issue.**
- **While some minor technical issues arose, every MP candidate's exam was completed as scheduled.**



J. A. Seibert, ABR Governor



G. Ibbott, ABR Associate  
Executive Director

A year ago, when the extent of the pandemic became apparent, the ABR made a series of decisions to convert its exams to protect candidates, examiners, and staff (please see the [March/April 2021 issue of the AAPM Newsletter](#)).

Software was developed to allow candidates to take the computer (written) qualifying exams on their own computers, rather than at a Pearson VUE center. And a new interface was built to enable remote oral certifying exams.

The remote oral exams required months of development effort by ABR staff, with input from many volunteers. To test the functionality of the platform, a "dry run" was performed in February with staff, trustees, and volunteers playing the roles of candidates and examiners. After a few adjustments, successful pilot exams were conducted last month involving candidates seeking board certification in interventional radiology/diagnostic radiology (IR/DR), medical physics (MP), and radiation oncology (RO).

---

ABR NEWS, Cont.

---

All candidates eligible to take a certifying oral exam were given the opportunity to volunteer for the pilot. From this pool, 28 TMP candidates were selected by lottery. (Logistics prevented us from making the pilot exam available to DMP or NMP candidates.) There was no fee to participate and no risk to the candidates who volunteered. Pilot participants meeting all other certification requirements who passed the exam were issued certification. Those who did not pass are eligible to take the oral exam in May 2021 or a subsequent administration. For candidates who failed, the results of the pilot exam will not be included in their ABR record.

In developing the oral exam platform, the ABR focused on creating a satisfactory candidate experience without sacrificing exam security, validity, or credibility. We have tried to mimic as closely as possible the face-to-face oral exam experience. An important change is that candidates now choose their preferred exam location, subject to certain technical and logistical requirements. This allows candidates to take the exam at home, if they wish, ensuring their safety during the pandemic and saving the cost and time of travel.

Other changes involve steps that were taken to protect against technical failures. For instance, there is a 10-minute break after each exam period to allow make-up time for candidates who experience minor disruptions. In addition, two new roles have been established: a navigator and a secondary examiner.

All candidates are accompanied by an ABR exam navigator throughout their exam day. The navigator helps the candidate sign in, confirms their identity, and performs a room and workspace scan. Once the exam begins, the navigator turns off their camera and microphone, but they are available and ready to assist if either the candidate or examiner has a technical problem.

In addition to the candidate and the navigator, there are two examiners present in each session — primary and secondary. All examiners work in pairs. The primary examiner presents cases, and interacts with and scores the candidate. The secondary examiner observes the exam, scores candidates as if they were conducting the exam, and is ready to take over in the event the primary examiner has an internet outage.

The role of the secondary examiner was established to ensure continuity in the candidate's exam experience if the primary examiner loses their connection or has other technical problems that prevent them from continuing the exam.

A total of 22 MP examiners participated in the pilot oral exams. The full exams in May will require 120 MP examiners who will examine candidates in Diagnostic Medical Physics, Nuclear Medical Physics, and Therapeutic Medical Physics. Examiners are experts in their field who volunteer to perform this integral task in the candidate certification process. We would be unable to conduct these exams without the participation of our examiners.

Overall, the pilot exams were largely successful. As expected, they did reveal some minor areas for improvement. Based on the pilot exams, modifications are being made to the exam software that will be ready for the May exam administrations to enhance the experience for candidates and examiners. We greatly appreciate the contributions made by the volunteers who gave of their time and expertise to help make this final step in exam development possible.

Much of this article is taken from a recent article in the ABR publication, [The BEAM](#). ■

# ACR ACCREDITATION & MORE: UPDATES FOR MEDICAL PHYSICISTS

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



## Upcoming Changes to Nuclear Medicine and PET Accreditation Program

Over time, many facilities have submitted image sets that do not fully satisfy the submission protocol specified in the [NM and PET Program Requirements](#). Many phantom reviewers have historically been accommodating of the variance from the submission protocol in the Program Requirements, but others were less so, leading to inconsistent results. The Physics Subcommittee on Nuclear

Medicine Accreditation has come to a consensus on how to handle such submissions.

Beginning September 1, 2021, submissions that vary from the acquisition methods in the [Nuclear Medicine](#) and [PET Phantom Testing](#) instructions will be returned to the facility as not reviewable. Some specific examples of what will be returned as not reviewable are: planar uniformity and/or resolution images acquired using the wrong matrix size, wrong number of counts, or not clearly labeled with the camera head for multiple head cameras. Siemens uniformity images acquired intrinsically using the Siemens point source holder will not be accepted with or without curvature correction. SPECT images using the wrong phantom, matrix size, or number of counts will be returned. Also, PET images must include a secondary capture of the ROI with the region statistics; failure to include this will result in the images being returned as not reviewable.

Above is not an exhaustive list of the requirements. Facilities submitting applications should carefully review the Phantom Testing instructions for [Nuclear Medicine](#) and [PET](#) prior to acquiring data for submission. Medical physicists should especially have some ownership of the phantom imaging and submission process because they are often best positioned as the experts that can help facilities avoid [common mistakes that can lead to failure](#). As always, if you have questions, you may [create a support ticket](#) to get answers. Special thanks to **Beth Harkness**, MS, FACR, for her assistance drafting this section of the column.

## Update in the MR Accreditation Program

Due to the inability to obtain material used to manufacture the small MRAP phantom, the grid material has been changed. This is comparable to the change that occurred to the large phantom last year. While the functionality remains the same, there are obvious differences in the appearance. The original grid structure of slice #4 has been replaced by a solid piece of plexiglass with a 3x3 grid of 9 holes. The holes are spaced 32 mm apart, and there are no other relevant changes. Below are side-by-side images comparing the old and new versions of the small phantom, which you can find online [here](#), along with ACR's other MRAP resources at the [MRAP landing page](#).

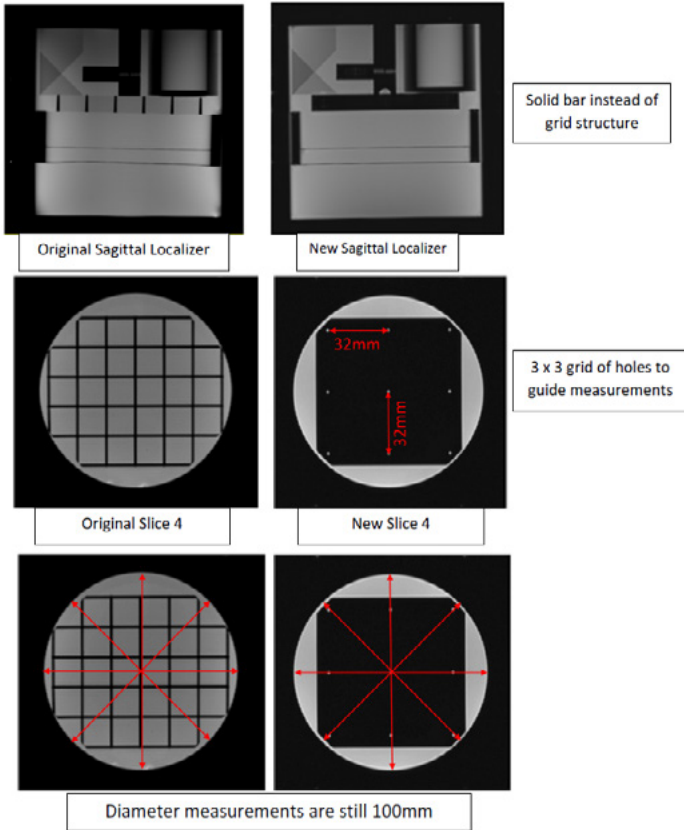
Twitter: @DustinGress

Email: [dgress@acr.org](mailto:dgress@acr.org)

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

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

ACR UPDATES, Cont.



**New publication to help medical physicists support participation in DIR-Fluoro**

As I have reported previously, a two-year pilot project was carried out at nine institutions beginning in early 2018 that included updating the [ACR Common lexicon](#), collecting clinical radiation dose indices from approximately 60,000

interventional radiology procedures, and comparing the dose index distributions collected to those reported in the Radiation Dose in Interventional Radiology (RAD-IR) study, which took place from April 1999 through January 2002. You can get some good foundational and technical information about the pilot group in [the paper they've published in JVIR](#).

The DIR Fluoroscopy Module is now available for enrollment and data submission. You can read about the features of the new interactive fluoroscopy standardized DIR reports in the [Knowledge Base](#). The pilot participants recently worked with some ACR staff to publish [a paper in JACMP](#) giving medical physicists a framework for providing leadership and value by facilitating participation in DIR Fluoro. DIR Fluoro is just getting off the ground and will be a very powerful tool for providing important information to the community regarding use of radiation dose in fluoroscopic procedures; I encourage my colleagues to seize this opportunity for leadership with their employers and/or clients.

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

More tips on getting started with DIR Fluoroscopy Module [here](#). ■

## SPECIAL INTEREST FEATURE: Women's Professional Subcommittee

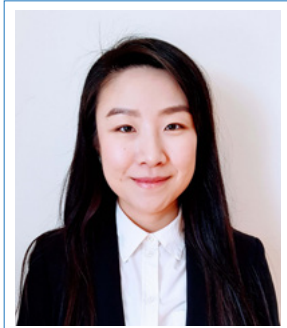
### INTERVIEW WITH AAPM PAST PRESIDENT DR. CYNTHIA H. MCCOLLOUGH

Elisabeth Shanblatt, PhD | Siemens Medical Solutions USA, Inc

Yiwen Xu, PhD | Princess Margaret Cancer Centre



E. Shanblatt



Y. Xu



C. McCollough

**Cynthia H. McCollough, PhD**, is the Brooks-Hollem Professor of Research at the Mayo Clinic in Rochester, Minnesota, where she holds the rank of professor in both medical physics and biomedical engineering. Dr. McCollough is a founder and director of Mayo's CT Clinical Innovation Center, where she leads a multidisciplinary team of physicians, scientists, and trainees to develop and translate into clinical practice new CT technologies and clinical applications. Dr. McCollough has contributed extensively to the fields of cardiac, dual-energy, and photon-counting-detector CT, and quantifying the impact of new CT technologies on diagnostic performance, as well as the measurement, management, and reduction of CT radiation dose and to the education of health care personnel and the public on the safety of medical imaging.

Dr. McCollough has over 400 peer-reviewed papers related to CT

imaging, is the principal investigator for multiple NIH grants, and is active in numerous professional organizations. She is a past president of AAPM and a fellow of the ACR, AAPM, and AIMBE. Dr. McCollough received her bachelor's degree in physics from Hope College in Holland, Michigan and her master's and doctorate degrees in medical physics from the University of Wisconsin-Madison.

#### 1. Who are your influential mentors?

**Richard "Rick" Morin** has been influential throughout my career. He was the proponent to hire me at Mayo in 1991 and was always just a phone call away if I needed any advice. He suggested for me to give presentations and co-author papers in my early years which really helped to launch my academic career. In addition to being a mentor, he was a great advocate for me and really opened a lot of doors, including

#### Email:

[elisabeth.shanblatt@siemens-healthineers.com](mailto:elisabeth.shanblatt@siemens-healthineers.com)

[yiwen.xu@rmp.uhn.ca](mailto:yiwen.xu@rmp.uhn.ca)

**"The most gratifying part of being President was the interaction I had with volunteers, particularly younger volunteers and members of the organization who didn't consider themselves "visible" in AAPM."**

— AAPM Past President  
**Dr. Cynthia H. McCollough**

---

SPECIAL INTEREST FEATURE | INTERVIEW, Cont.

---

introducing me to senior leaders in AAPM, ACR, and RSNA.

My other influential mentor is my advisor **Charles “Chuck” Mistretta** from the University of Wisconsin-Madison. He believed in me when I wasn't sure I had what it would take to get a PhD, both supporting me and challenging me during my graduate school years. He is also just a fantastic person with a love for God and humanity.

**2. What are you most proud of in your career?**

I think I am most proud of the environment that we have in my research lab and in our CT physics team. It is extremely team-oriented, and we genuinely care about one another, as individuals, and not just colleagues. I couldn't have built the successful program I have without them. A special shout out to **Lifeng Yu, Shuai Leng,** and **JG Fletcher**. Their partnership in science and in life is one of my greatest blessings.

**3. You were president of AAPM in 2019. What motivates you to take on leadership roles? What were some of the biggest challenges and lessons learned as president?**

I have held several leadership positions within AAPM, chairing task group reports and subcommittees, and serving on the Education and Science Councils. I have always felt that at some point it would be my time to step up and serve the

organization at that level. I was asked to run for President a few times and declined because my children were still at home. Once the youngest was off to college, I felt that I had the bandwidth to devote the time and energy that the role of President would demand.

One of the biggest challenges that I faced was wanting to get involved in everything, to the detriment of simple things like sleep. I am proud of the many accomplishments made during that year that I had a hand in, but looking back, I realize I didn't need to try to tackle every good idea that came my way. I also learned that not everyone held the same “All for One and One for All” attitude, and I found that to be the biggest challenge. Some people would resist a good idea simply because it was not theirs. I feel gratified that many of the issues I called attention to are now being addressed; I just needed to be a little more patient while others got on board with my ideas or came to the same realizations themselves.

The most gratifying part of being President was the interaction I had with volunteers, particularly younger volunteers and members of the organization who didn't consider themselves “visible” in AAPM. The members from traditionally under-represented groups who reached out to me after my Presidential Symposium were sincerely touched that the President of the organization would talk about things like

diversity, equity, and inclusion. I didn't become President to make all the established leaders happy — their needs were being met. I really wanted to reach out to the members who were largely invisible to the organization and meet their needs.

**4. What advice do you have for young physicists and future leaders, particularly women? What challenges do you see facing women in science and science leadership?**

Early in my career I attended a workshop for Female Junior Faculty in Academic Medicine. One thing I took away from that meeting is that leaders and bosses can't be aware of the good things we accomplish unless we tell them about it. Our department chairs are busy, they are not scouring news feeds and journal table of contents to find out when their people did something good. The workshop leadership advised us to occasionally drop a note to our Chairperson when we had gotten a particularly nice paper published, solved a significant clinical problem, gotten a grant, etc. I really struggled with this at first because it felt like bragging but over time recognized that department chairs want to hear about the good things their faculty and employees have accomplished. I highly advise making it a habit to do something like that at least twice a year. This is particularly important for women simply because of the unconscious bias

---

SPECIAL INTEREST FEATURE | INTERVIEW, Cont.

---

that exists in our society that too often jumps to the conclusion that the best man for the job is a man.

One of the biggest challenges facing women in science and science leadership remains the issues of juggling all their personal and professional responsibilities. Studies show women still tend to be responsible for a higher percentage of household responsibilities than their spouse or partner. Over time I think the balance is becoming more equitable in many households, but women particularly have to guard themselves from assuming they are responsible for everything. Self-care is a big deal and I neglected that far too often to get just one more thing done. I don't recommend that route.

**5. What do you think are the most important lessons from the COVID-19 pandemic?**

As a society we learned a great deal from the COVID-19 pandemic. There have been positives. People found clever ways to adapt. As a professional society, AAPM learned how to run virtual conferences and

virtual committee and board meetings. Unfortunately, we also learned about several kinds of divides that we have in our society. The caustic rhetoric has been a toxic presence throughout the pandemic. I am hopeful that as a society that we can learn to engage in civil discourse and respect each other, even when we don't agree with another person's position. The responsibility of each individual to communicate in an honest and civil manner is important to the fabric of our society and I hope we learn something from the past year to improve that situation.

**6. What is your vision for the future of medical physics?**

My vision for the future is that medical physicists engage with physicians and scientists in a way that is much more meaningful than simply performing routine tasks. As a field, we need to move beyond our traditional boundaries of medical imaging and radiation oncology. We need to be learning about Artificial Intelligence, data science, and applications of physics in medicine outside the

walls of radiology and radiation oncology departments. Physicists are taught to think about and solve problems, and we can do that in just about any discipline. This makes us a great resource for healthcare executives trying to control costs while delivering quality health care. I hope medical physicists take the approach I recommend for junior faculty in letting their chairperson know about their accomplishments. We must become known outside of our current sphere of influence and to do that, we need to increase our knowledge base and volunteer for activities outside the doors of our department. I also look forward to increased communication between medical physicists and patients, who ask a lot of great questions and deserve accurate answers stated in a way they can understand. It is important that we can explain the work we do to everyone, including non-experts. This will make medical physicists more approachable and help integrate them into the fabric of healthcare and academia. ■

## SPECIAL INTEREST FEATURE: Women's Professional Subcommittee

### FIRST IMPRESSIONS OF TWITTER: THE @AAPM\_WPSC ENTERS SOCIAL MEDIA Courtney R. Buckey, PhD | Mayo Clinic Arizona

Twitter: @AAPM\_WPSC

Email: buckey.courtney@mayo.edu

"We can't all be as stellar at tweeting as Steak-ummm, but we can try to capture a bit of that magic."

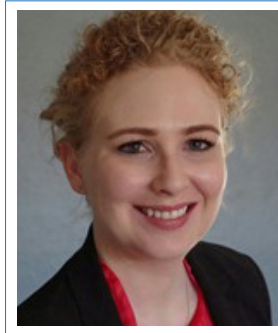
"We seek to magnify the voices of all people who have an interest in science, in supporting their peers, in helping to introduce the next generation to the incredible worlds of science and healthcare, and in recognizing that equity is a goal we must continue to work towards."

It is no secret that social media can be a dark, distracting, destructive force. Even knowing that, the potential benefits held such promise that on November 7, 2020 (Marie Curie's Birthday!) the Women's Professional Subcommittee joined Twitter.

The WPSC wanted to enter the Twittersverse to connect directly, and in nearly real-time, with those who are interested in our mission, our activities, and the voices we amplify. We surveyed a number of "how to be a scientist on social media" articles and took away two important pieces of advice that drive our interactions: build a strong network and be intentional.

To that end, we began an aggressive campaign to find and follow medical physicists, medical physics organizations, other scientists, science educators, science outreach programs, and platforms that feature the perspectives of women in the sciences. And as those folks found us, we followed them back. At the time of this writing, we have 601 followers, and we are following 881 accounts.

We started with a rather ambitious goal of at least one tweet per day, for the balance of 2020, and we were able to achieve that with a



mix of seriousness and humor—we can't all be as stellar at tweeting as Steak-ummm, but we can try to capture a bit of that magic. It is a fine line to walk, we want to be taken seriously, we want our tweets to convey meaning and dignified professional

messages, but they can't be painfully boring, or so bland that they sound like they were written by a focus group.

We have been spared much of the unsavory side of social media. All of the DMs we've received have been completely appropriate and thoughtful, no one has retweeted us with a snarky tone, and we've had excellent engagement with our followers and the community at large. In late December we shared our #chirptycircle, showing our growing follower list, and it was really the who's-who of #MedPhysTwitter. We were still pretty new, but to have so many connections led us to believe we were on the right track.

In 2021, we're posting less, but hopeful that each one rings true to our intentions and might catch your eye. We've shared extensively about our recent screening of *Picture a Scientist*, a film about the enduring struggle of women in the sciences to be heard, respected, and promoted

SPECIAL INTEREST FEATURE | FIRST IMPRESSIONS OF TWITTER, Cont.

— and we were thrilled to see so many positive messages surrounding the film and AAPM's sponsorship of the screening. We've posted about volunteer opportunities for medical physicists on both the local and national levels and expect to have more campaigns to share as social and physical distancing rules can relax. We've shared achievements of notable female physicists, past and present, and formed partnerships with other #MedPhys social media leaders to help them do the same.

After that success, we've recently launched into the world of Instagram as well. We're hoping to meet folks where they are on social media, if they are on social media at all. We seek to magnify the voices of all people who have an interest in science, in supporting their peers, in helping to introduce the next generation to the incredible worlds of science and healthcare, and in recognizing that equity is a goal we must continue to work towards. We hope you will follow us, tag us in your tweets, mention us when you think of

science using social media for good, and above all do what you can in your communities to further the impact of #WomenWhoCurie.

**Courtney R. Buckey, PhD**, is the inaugural WPSC Twitter manager, and **Ashley Tao, PhD**, is the first WPSC Instagram manager. They both use social media extensively in their personal lives and hope to bring diverse perspectives and fresh takes to your social media feeds. TikTok, Snapchat, Pinterest and MySpace positions are as yet unfilled. ■



## Circle 1

- [@nicoletranger](#)
- [@BazalovaCarter](#)
- [@ShirinAEnger](#)
- [@CGlideHurst](#)
- [@likethecoins](#)
- [@aapmHQ](#)
- [@rmmilman](#)
- [@stefparkerj](#)

## Circle 2

- [@SarahFuller\\_27](#)
- [@JulieLarkin305](#)
- [@aapmmpla](#)
- [@Psbasaran](#)
- [@hashim\\_eyesha](#)
- [@mmcnittgray](#)
- [@KalpanaKanal](#)
- [@DrLydiaJWilson](#)
- [@porraschaver](#)
- [@mpPaigeTaylor](#)
- [@McGillMedPhys](#)
- [@DrHaidyNasief](#)

Twitter interaction circle for @AAPM\_WPSC, generated in late December using Chirpty.

“I might run  
into a burning  
building for the  
SRS MapCHECK.  
It **keeps us safe**  
in a way we really  
weren't safe before.”

*Christopher Bowen, MS, DABR, Mosaic Life Care at St. Joseph, U.S.*

There's no turning back\* once you gain  
faster, filmless workflows and far greater  
insights for SRS/SBRT Patient QA.

Join the growing global community of  
~400 SRS MapCHECK® users.

[Start here](#) ▶

\* Please don't run into a burning building, even for an SRS MapCHECK.



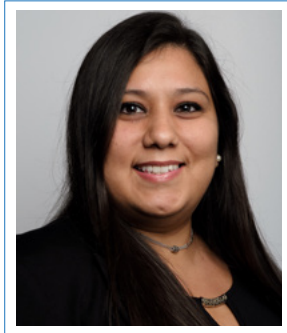
▶ Patient Safety  
Starts Here

## SPECIAL INTEREST FEATURE: Women's Professional Subcommittee

### CALL ME "DR.": CLAIMING THE HONORIFIC IS A MATTER OF GENDER AND RACE EQUITY

Judith N. Rivera, PhD, MS | Mayo Clinic Arizona

Since the elevation of Dr. Jill Tracy Jacobs Biden to her position as First Lady, a number of opinion pieces, articles, science blogs, etc. have championed and challenged her use of the title "Dr.", reigniting a standing controversy over who is considered deserving of the title and who should be permitted to use it.<sup>2,3,4</sup> Within the field of healthcare, the debate over who is entitled to use the term "Dr." is argued as one of confusion. Impassioned objections over the use of the title have resulted in several states enacting legislation prohibiting individuals with doctorates from using their title in clinical or healthcare settings.<sup>5</sup> However, many scholars, such as Dr. Cecilia E. Suarez would argue that this scholarship denial is a pernicious form of gatekeeping.<sup>6</sup>



Dr. Suarez argues that stripping away hard-earned academic accomplishments "further perpetuates inequitable stratified systems of power"<sup>6</sup> and contributes to the erasure of Black, Indigenous, Latinx, Chicax, and LGBTQI individuals and women from our respective fields.<sup>7</sup> Reports over several decades have confirmed the devaluation of labor from individuals in historically underrepresented groups, via "untitling" or

"uncredentiaing." Some of the most widely studied examples of this labor devaluation center on gender biases in the workforce, particularly on cis-gender, feminine-presenting, heterosexual women.<sup>8</sup>

A comprehensive study analyzing occupational

pay trends in U.S. Census data from 1950–2000 revealed that as the number of women in an occupation increased, the average salary for that occupation proportionally declined. Even when controlling for education and skill level, the average salary of an occupation was analogous to the number of males entering that field.<sup>9</sup>

Confirming this, the Bureau of Labor Statistics recently published data showing that women consistently earn lower wages across the spectrum of occupations and at nearly all levels of management.<sup>10</sup>

This macro-invalidation of the scholarship and labor of women has been substantiated even in highly prestigious fields, including both academia and medicine.

One study analyzing gender biases among physicians in Radiation Oncology revealed that women are disproportionately addressed using, "gender subordinating language" and are half as likely to be

Twitter: @j\_n\_rivera

Email: Rivera.Judith@mayo.edu

**"Together, we will build a world where the accomplishments of our daughters will be celebrated, rather than diminished."**

— Dr. Jill Biden<sup>1</sup>

## SPECIAL INTEREST FEATURE | CALL ME "DR.", Cont.

introduced using their formal title as compared to their male colleagues.<sup>11</sup> Another study analyzing gender segregation among earned doctorates showed that the prestige of the PhD for a given field was inversely correlated with the number of women in the field, stating that "men were overrepresented in the top prestige groups, while women's representation increased as ranking declined."<sup>12</sup> Consistent with this trend, multiple studies, including several published by AAPM, have shown that women are less closely associated with perceptions of competence,<sup>13</sup> less likely to be hired or hold leadership positions,<sup>14-16</sup> are awarded less grant funding,<sup>17, 18</sup> and less likely to win merit-based awards.<sup>19</sup> For women with high accomplishments, such as First Lady Dr. Jill Biden, assertion of these accomplishments is often met with backlash and refusal. The former

First Lady, Michelle Obama, wrote this in direct response to the criticism of Dr. Biden's use of her title.

"All too often, our accomplishments are met with skepticism, even derision. We're doubted by those who choose the weakness of ridicule over the strength of respect. And yet somehow, their words can stick—after decades of work, we're forced to prove ourselves all over again."<sup>20</sup>

Advocates of the more inclusive approach, the use of the title "Dr." to include all doctoral degree holders, contend that reasserting our claim to the title is critical to advancing racial and gender equity.<sup>21</sup> Not only does the title indicate significant contribution to our fields, it is critical to establishing respect from colleagues and students, communicates our authority as experts in our focus areas, enhances our professional

visibility, and empowers us to reclaim space in our fields.<sup>22, 23</sup>

But this is not the only reason you should call me "Dr." Titling me appropriately helps to attenuate the conditioned racist and sexist stereotypes that have resulted in the mass inequities in our country, inequities that have only been exacerbated by the global pandemic. As highlighted by the Black Lives Matter movement, we must take measures to abate sources of inequity. This includes asserting our claim to our earned titles and appropriately titling others, especially for WOC and other historically underrepresented groups. In the words of Dr. Suarez, "WOC PhDs serve as role models and mentors for GOC. Our existence communicates that doctorates are attainable by WOC, because **representation matters.**"<sup>16</sup> ■

## References

1. Biden, D.J. *Together, we will build a world where the accomplishments of our daughters will be celebrated, rather than diminished.* [Tweet]. 2020 Dec 13, 2020; Available from: <https://twitter.com/DrBiden/status/1338274399925972993>.
2. Treisman, R., *Op-Ed Urging Jill Biden To Drop The 'Dr.' Sparks Outrage Online*, in *National Public Radio*. Dec. 13, 2020; npr.org.
3. Epstein, J., *Is There a Doctor in the White House? Not if You Need an M.D. Jill Biden should think about dropping the honorific, which feels fraudulent, even comic.*, in *Wall Street Journal*. Dec. 11, 2020; wsj.com.
4. Collier, R., *Who is entitled to the title of "doctor"?* *Canadian Medical Association Journal*, 2016. 188(13): p. E305-E305.
5. Harris, G., *When the Nurse Wants to Be Called 'Doctor'*, in *The New York Times*. Oct. 1, 2011; nytimes.com.
6. Suarez, C.E., *What the 'doctor' title means for women of color with doctorates*, in *The Conversation*. Jan. 08, 2021; theconversation.com.
7. Miles, M.L., A.J. Brockman, and D.E. Naphan-Kingery, *Invalidated identities: The disconfirming effects of racial microaggressions on Black doctoral students in STEM.* *Journal of Research in Science Teaching*, 2020. 57(10): p. 1608-1631.
8. Bowles, H.R., L. Babcock, and L. Lai, *Social incentives for gender differences in the propensity to initiate negotiations: Sometimes it does hurt to ask.* *Organizational Behavior and Human Decision Processes*, 2007. 103(1): p. 84-103.
9. Levanon, A., P. England, and P. Allison, *Occupational Feminization and Pay: Assessing Causal Dynamics Using 1950-2000 U.S. Census Data.* *Social Forces*, 2009. 88(2): p. 865-891.
10. Bureau of Labor Statistics, U.S., *HOUSEHOLD DATA ANNUAL AVERAGES: Median weekly earnings of full-time wage and salary workers by detailed occupation and sex* Jan. 2020; BLS.gov.
11. Files, J.A., et al., *Speaker Introductions at Internal Medicine Grand Rounds: Forms of Address Reveal Gender Bias.* *J Womens Health (Larchmt)*, 2017. 26(5): p. 413-419.
12. Weeden, K., S. Thébaud, and D. Gelbgiser, *Degrees of Difference: Gender Segregation of U.S. Doctorates by Field and Program Prestige.* *Sociological Science*, 2017. 4: p. 123-150.

SPECIAL INTEREST FEATURE | CALL ME "DR.", Cont.

13. Niemann, Y.F., *Lessons from the Experiences of Women of Color Working in Academia*, in *Presumed Incompetent*, Y.F. Niemann, Editor. 2012, Utah State University Press: Utah State University Press. p. 446-500.
14. Curtis, J.W., *Persistent Inequity: Gender and Academic Employment*. Apr. 11, 2011, American Association of University Professors [aaup.org](http://aaup.org).
15. Covington, E.L., J.M. Moran, and K.C. Paradis, *The state of gender diversity in medical physics*. *Med Phys*, 2020. 47(4): p. 2038-2043.
16. Tsapaki, V., S. Tabakov, and M.M. Rehani, *Medical physics workforce: A global perspective*. *Phys Med*, 2018. 55: p. 33-39.
17. Uzzi, B., *Women who win prizes get less money and prestige*, in *Nature*. 2019, Springer Nature Limited: [media.nature.com](http://media.nature.com). p. 2.
18. Flaherty, C., *Smaller Pots for Women*, in *Insider Higher Ed*. Mar. 5, 2019: [insidehighered.com](http://insidehighered.com).
19. Atir, S. and M.J. Ferguson, *How gender determines the way we speak about professionals*. *Proc Natl Acad Sci U S A*, 2018. 115(28): p. 7278-7283.
20. Folley, A., *Michelle Obama defends Jill Biden after op-ed: 'We could not ask for a better First Lady'*, in *The Hill*. Dec 14, 2020, [thehill.com](http://thehill.com).
21. Muhs, G.G.y., et al., *Presumed Incompetent*. 2012.
22. Lawlor, T.M. and T. Niiler, *Physics Textbooks from 1960–2016: A History of Gender and Racial Bias*. *The Physics Teacher*, 2020. 58(5): p. 320-323.
23. Ro, C., *Why we use women's professional titles less than men's*, in *British Broadcasting Corporation*. Feb. 24, 2021: [bbc.com](http://bbc.com).



# 2021 Virtual AAPM Review Courses

RADIATION THERAPY PHYSICS | DIAGNOSTIC | NUCLEAR MEDICINE

**SAVE THE DATE!**  
**MAY 22 - 23**

### Who would benefit from Review Courses?

Medical Physicists looking for a refresher taught by experts in the field, or those who are just entering the specialty and seeking an excellent review of fundamentals.

### Registration now available online!

[Deadline to cancel a registration in writing with no penalty: May 17]

[AAPM.ME/2021REVIEWCOURSES](http://AAPM.ME/2021REVIEWCOURSES)

## SPECIAL INTEREST FEATURE: Women's Professional Subcommittee

### FEATURED PHYSICIST: DR. KALPANA KANAL | UNIVERSITY OF WASHINGTON

Megan Lipford, PhD | Wake Forest School of Medicine

Kristi Hendrickson, PhD | University of Washington

**Twitter:**

@LipfordMegan

@KristiRGHendri1

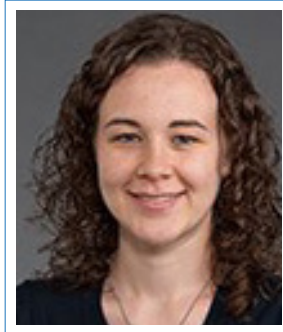
@KalpanaKanal

**Email:**

m.lipford@wakehealth.edu

krgh@u.washington.edu

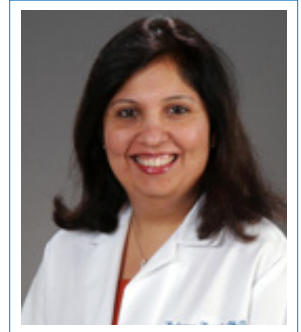
kkanal@u.washington.edu



M. Lipford



K. Hendrickson



K. Kanal

"As a woman in a primarily male dominated field, it is important for women to have support and mentorship during their career in medical physics.

My advice to young physicists — especially women — is to build a network of collaboration with other physicists and other professionals who can help you navigate and grow into your career."

— Dr. Kalpana Kanal

**Kalpana Kanal, PhD**, is an ABR board certified Diagnostic Medical Physicist. She is Professor and Section Chief of Diagnostic Physics in the Department of Radiology at the University of Washington in Seattle. She is also on the American Board of Radiology Board of Trustees representing Diagnostic Medical Physics. Thank you to Kalpana and to the WPSC for the opportunity to share this interview.

#### What led you to diagnostic medical physics as a career?

I was doing my MS in physics at University of Texas at Arlington and was thinking of pursuing a PhD. Unfortunately, this was around 1990 when jobs in physics were scarce. Being an international student, I had to decide pretty quickly what to do. A fellow graduate student mentioned medical physics as an option and asked me to check out the medical physics graduate program at UT Health Science Center in San Antonio (UTHSCSA). It was

the first time I had heard of medical physics, and it seemed pretty intriguing to me as it combined my love for medicine and physics. So, after doing some research, I visited UTHSCSA and met with the professors there to get a better feel for the field of medical physics. After that visit, I decided to pursue a PhD in medical physics at UTHSCSA. I was the first woman graduate student in this program, and it was an honor to start this tradition there. After getting exposed to the different courses in medical physics, I started working in **Dr. Gary Fullerton's** imaging lab. Dr. Fullerton is a diagnostic medical physicist who I enjoyed working with. After that I decided to pursue diagnostic medical physics as a career.

#### What is your favorite part of your job or professional activities?

My responsibilities can be divided into admin, clinical, teaching and research components. My favorite part of the job involves doing

---

SPECIAL INTEREST FEATURE | FEATURED PHYSICIST, Cont.

---

clinical work and especially work that directly influences patient care. It is most satisfying to me when a radiologist or referring physician consults with me or uses the resources I provide to make a decision that influences patient care. Consulting with radiologists on fetal dose or skin injury for interventional radiology is so impactful as it educates them to make good decisions for the patient. Teaching is also a favorite part of the job. I teach not only radiology residents and fellows but also provide in-services for technologists, nurses, and physicians. It is always satisfying to see when they understand what I am saying and can implement best practices regarding dose reduction to the patient and themselves. As for everyone, doing admin tasks is not desirable, but that is a necessary part of doing my job. I am not a grant writer, nor do I have dedicated time to do research. My research has primarily been focused on the practical questions I encounter in clinic. I have been fortunate to be able to publish my work. Mentoring junior colleagues — be they medical physicists or radiologists — is also a fulfilling experience for me. To share what I have learned in my career with young professionals just starting on their journey is rewarding. So, there is no one activity that I enjoy the most but, if I had to choose, I would go with the consults with the radiologists and other physicians that directly impact patient care.

**You have been very involved with the ABR during your career. What led you to this and what about it do you find rewarding?**

I have been very fortunate to have mentors who have thought of me

when new opportunities have arisen. **Dr. Richard Morin** first asked me to be involved in the ABR in 2009 as a member of the newly formed core physics question writing committee that was being formed for the new format of the radiologists' board exam, now called the core exam. In 2012, Dr. Morin asked me to be the chair of the physics core committee. I was chair until 2017 when I was nominated to be the ABR diagnostic medical physics trustee. I was the first woman medical physicist to be elected as trustee, and this was a great honor and a proud moment for me. Until I became a trustee, I was either a committee member or chair and fulfilled my responsibilities of writing and assembling physics questions for the core exam. After I became trustee, I was more involved in the behind-the-scenes responsibilities of the ABR and was responsible for oversight of several diagnostic medical physics and core physics examinations that ABR conducts. Being a trustee also meant making important decisions that impact the medical physics profession and community. This is a huge responsibility, and I feel very fortunate to be given this responsibility. We make decisions pertaining to the MP and radiologist exams and it is a very rewarding experience to be such a major part of the decision-making process. I enjoy working with the other MP trustees, the radiologists on the board of the ABR, and the ABR staff very much. The contributions I make as a trustee when making decisions that impact the future of the profession is equally rewarding. The last year has been challenging with moving from face-to-face to remote exams.

This has been an appropriate move, and to be involved in the day-to-day decisions has been interesting and the outcome rewarding.

**What advice do you have for young physicists, especially women?**

As a woman in a primarily male-dominated field, it is important for women to have support and mentorship during their career in medical physics. My advice to young physicists especially — women — is to build a network of collaboration with other physicists and other professionals who can help you navigate and grow into your career. Having mentors is a very important part of the process. AAPM has the women's luncheon every year at the annual meeting where you have the opportunity to meet other women physicists and learn from their experience. AAPM's Women's Professional Subcommittee is also a great resource for networking, identifying mentors and collaboration. It is important to have the right mentor and not necessarily a female mentor. Men make great mentors as well, and I would advise young physicists to have both male and female mentors. I would not be where I am in my career if I did not have the guidance of my mentors. As a woman I also think it is important to learn to speak up for yourself. This is hard for women to do in general, but this is especially important to ensure you are being treated with equality and progressing in your career just as your male colleagues are. A lot of the skills we learn are on the job. No one trains you to be a leader or deal with the different personalities at work. I would advise young people to try to observe leaders

SPECIAL INTEREST FEATURE | FEATURED PHYSICIST, Cont.

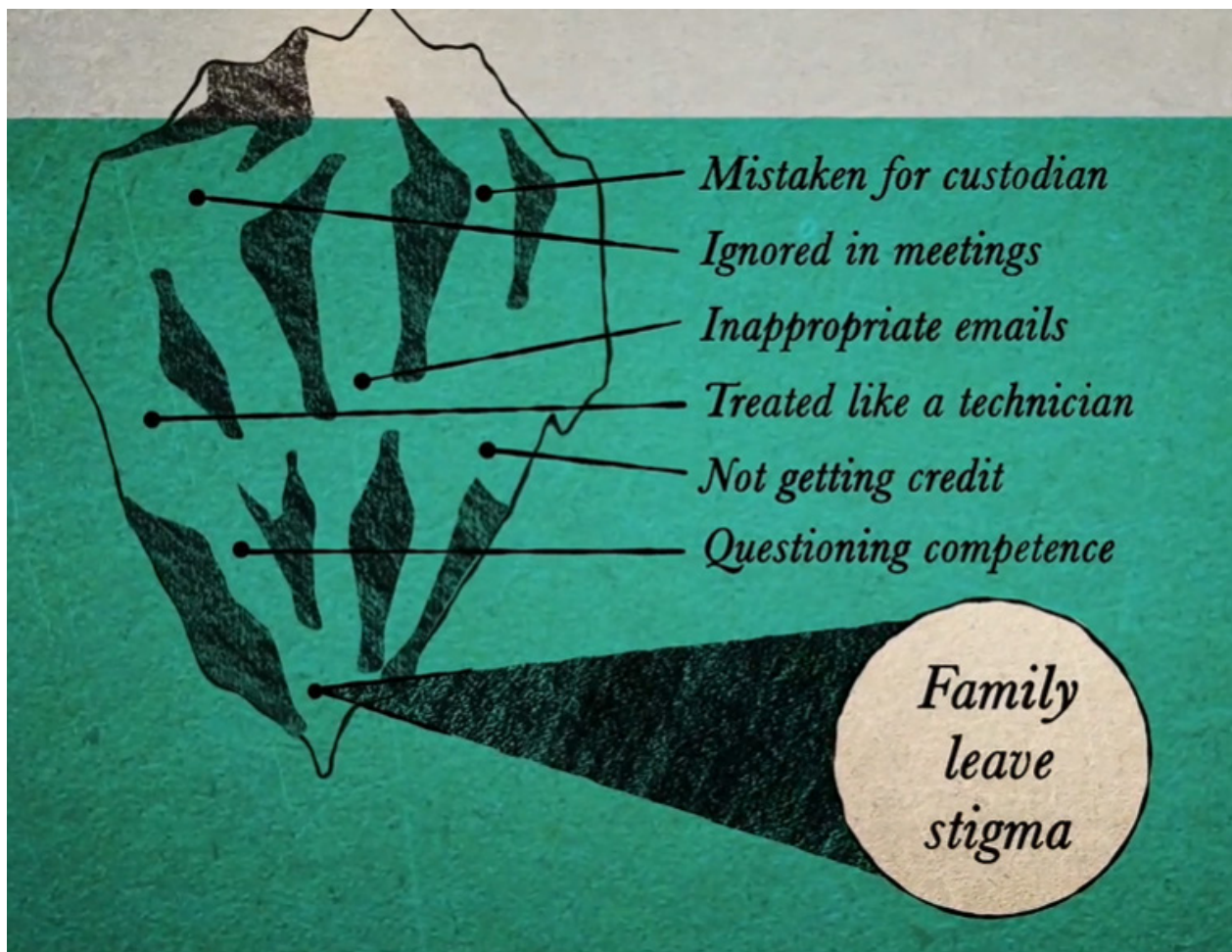
they admire and develop leadership skills and diplomacy as that comes in very handy particularly when you find yourself in leadership positions. Collaboration is key to success, be it with members of your department or from other departments. I have had the opportunity to work with not only radiologists but surgeons, anesthesiologists, urologists, etc. Step out of your comfort zone and form these relationships to help you be

more diverse and progress in your career.

**What are your interests or hobbies outside of work?**

I love to travel. One of my favorite sports is cricket, which I grew up watching. So, I have traveled to Australia, New Zealand, and England to see the cricket world cup matches. I also love pandas and travel to see the pandas at the zoos in the US and hope to travel to China someday.

Besides travel, I love to read, listen to music and volunteer. I have been volunteering at the COVID vaccine clinic in my neighborhood when possible. That is so rewarding during these challenging times. I am close to my family so I try to travel to India as often as I can even though I have not been able to travel in the last 15 months. My goal after retirement is to do more travel, volunteering, and social work. ■



Still from Picture a Scientist showing the iceberg of gender discrimination, where harassment is the visible component above water, but the majority of the issues lie in subtle biases that are not recognized as discrimination.

## SPECIAL INTEREST FEATURE: Women's Professional Subcommittee

---

### WPSC INSIGHTS AND REPORTS FROM PICTURE A SCIENTIST PANEL DISCUSSION Kristi Hendrickson, PhD, WPSC Chair | University of Washington

---

The WPSC organized the screening of the documentary film *Picture a Scientist*<sup>1</sup> for all AAPM members in March. This film uses a combination of personal stories, statistics and data, and an analysis of unconscious bias to unequivocally demonstrate the gender discrimination and sexual harassment that many women face in STEM fields like medical physics. An iceberg metaphor is used to visualize this discrimination: the visible part of the iceberg is sexual harassment, but the majority of the discrimination is invisible and consists of more subtle biases, such as assuming a black woman scientist working in her office is a janitor; ignoring women when they speak in meetings; not giving women credit for their accomplishments. While each individual incident of bias is small, the cumulative effect leads to women feeling excluded and undervalued at work. Some highly capable women are pushed out of STEM programs by these experiences, in search of careers and workplaces where the climate is more inclusive and less toxic. Some women endure, accommodate, or go along in order to be allowed to continue with their science passion. Most women do not report their experiences because the negative career repercussions of reporting typically fall on the person



harmed instead of the culprit.

Following the one-week screening, the WPSC moderated a panel discussion with AAPM members **Sunshine Osterman, Hania Al-Hallaq, Kristy Brock, and Eric Ford** on March 25, 2021. Many questions

were submitted from the audience on topics such as the roles of allies, bystander responsibility, and changing attitudes about addressing gender discrimination and sexual harassment in training environments and our workplaces, connecting the experiences documented in the film with the experiences of medical physicists. While this panel discussion was valuable, it is only a starting point and every AAPM member is encouraged to continue this discussion in their own workplace, with their colleagues. One suggestion from the panel for academic institutions was to make equity and diversity issues a standing topic at department faculty meetings, to keep these issues front and center.

If you did not have a chance to view the film during this screening, you may be able to access the film through your local university library. It is also being shown as part of the NOVA science series on PBS stations throughout the US, which premiered April 14, 2021. ■

**Twitter:** @KristiRGHendri1

**Email:** [krgh@u.washington.edu](mailto:krgh@u.washington.edu)

---

#### BE AN ALLY

*Both men and women are needed to step up to be active allies for women in medical physics.*

- Amplify voices of women and minority physicists in your organization.
- Work to hire and promote women across your institution/clinic/company.
- Mentor a young person in science and show them the power of diversity.
- Hold a workshop related to implicit bias.
- Take family leave and work within your department/clinic to destigmatize childcare, eldercare, and family leave.
- Work to create new internal mechanisms for reporting and addressing harassment.
- Educate yourself.

Source for the above list: *Picture a Scientist* film discussion guide. More on allyship is available from AWIS, the Association for Women in Science.

---

<sup>1</sup>"Picture a Scientist," directed by Sharon Shattuck and Ian Cheney, produced by Manette Pottle, Ian Cheney, and Sharon Shattuck. Film Platform, 2020. Alexander Street, <https://video.alexanderstreet.com/watch/picture-a-scientist>.

## SPECIAL INTEREST FEATURE: Women's Professional Subcommittee

### NOW IS THE TIME FOR ALLYSHIP

Julianne Pollard-Larkin, PhD | MD Anderson Cancer Center

Twitter: @JulieLarkin305

Email: jmpollard@mdanderson.org

I was supposed to write an article about the salient points of the American Institute of Physics (AIP) TEAM-UP report which focuses on key strategies to increase the number of African Americans in Physics (1). It's an amazing effort that I highly recommend to all people within STEM who want to see a marked increase in the numbers and retention of African American talent within our fields.

However, the recent turn of events has caused me to not be able to only suggest reading this timely report. As the chair of AAPM's Ad Hoc Committee on Diversity and Inclusion (AHCDI), as a medical physicist in one of the most diverse cities in the nation, as a mom and as a human being who tries her best to improve with each day, I cannot NOT write this piece today. For those of you personally and emotionally impacted by the hate crimes happening in America against primarily Asian Americans as well as other racially underrepresented groups, my heart goes out to you and I am here for you.

*The time for silence is over.*

*We must stand up against hate. In all of its forms.*



*We must choose to be more human.*

*Speak up, be an ally.*

As Dr. Martin Luther King, Jr. is credited with saying, "In the end, we will remember not the words of our enemies but the silence of our friends."

I am wholly aware that the rise in criminal and racist attacks we see happening in the US against Asian Americans causes some of us to fear getting involved. However, I am not asking you to put you or your family in danger. I am asking that you do **something**. Don't be like some who just turn away and pretend they did not observe anything. Call the authorities, render aid when safe, distract the attacker, help in any safe way you can.

You are more likely to witness microaggressions and verbal or written biased behavior in your professional life. Please disrupt bias when it happens around you so that it does not feel safe to fester in your environment. Be a safe haven for those around you of all backgrounds. Educate yourself on racism and bias by taking equity, diversity and inclusion trainings available online (such as the Harvard Implicit Association Test (2)) and through your workplace. Be an ally and not just a bystander.

SPECIAL INTEREST FEATURE | NOW IS THE TIME FOR ALLYSHIP, Cont.

I keep hearing from others how hard it is to do diversity work and how little anything changes anyway. I want to tell all of you reading this with as much passion as I can via the written word, we are physicists! We solve impossible problems on

the daily. That is what we do! We can easily challenge our personal and collective biases and recognize that if we can't respect each other's humanity, then we are willfully choosing failure.

So rise up, individually and collectively, to be the change we want to see in our world. ■

References

1. AIP TEAM-UP Report: <https://www.aip.org/diversity-initiatives/team-up-task-force>
2. Harvard Implicit Association Test: <https://implicit.harvard.edu/implicit/takeatest.html>

Save the Date!

AAPM  | 2022  
SPRING CLINICAL MEETING



MARCH 26–29  
NEW ORLEANS, LA

Hyatt Regency New Orleans



# 2021 RESEARCH SEED FUNDING GRANT

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

Sponsored by the [AAPM Science Council](#) through the [AAPM Education and Research Fund](#).

A list of Award Recipients can be found [here](#).

#### Eligibility:

- 5 years or less since awarding of PhD
- Must be a member of AAPM at the time of application (any membership category); pending membership status not eligible

- No previous grants >\$50,000 as principle investigator
- Previously funded projects are ineligible
- Prior Seed Grant recipients are ineligible

#### Application Requirements:

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

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

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

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

#### Review Criteria

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

**Application Deadline:** May 31, 2021  
(All supporting documents are due by the application deadline.) **You must log onto the AAPM website to view the apply button.**

**Award duration:**  
August 31, 2021 – August 31, 2022

**Recipients notified by:**  
June 22, 2021



**FOR MORE DETAILS, VISIT:**

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

## SPECIAL INTEREST FEATURE: Women's Professional Subcommittee

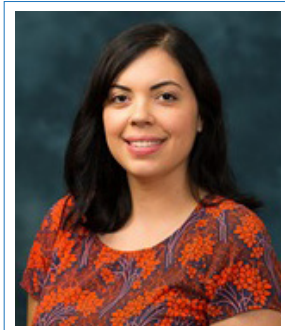
### BREAKING DOWN ROADBLOCKS TO DIVERSITY: MANAGING BIAS IN HIRING

Kelly C. Paradis, PhD | University of Michigan

Elizabeth L. Covington, PhD | University of Alabama-Birmingham



K. Paradis



E. Covington

Unconscious or implicit biases are associations that unconsciously influence our thoughts and decision making.<sup>1</sup> Increasing the representation of minorities in the sciences and medicine faces challenges as implicit bias impacts the recruitment and retainment of qualified applicants. In a double-blind study, faculty members in the sciences routinely rated male applicants significantly more hireable and competent upon reviewing application material where the only difference was the gender-indicating name.<sup>2</sup> In a study of a medical school admissions committee, all members were shown to have implicit white preference with men and faculty having the strongest bias measures.<sup>3</sup>

A straightforward and accessible method to mitigate unconscious bias in the medical physics residency selection process is blinding features of applications that may introduce bias. This could include elements

such as the applicant's name, age, race/ethnicity, gender, and photograph.

At the University of Alabama – Birmingham (UAB), we have completed two cycles of the medical physics residency match with application blinding. Applications are

downloaded and converted from a portfolio to individual PDFs. Due to security features that prevent editing, transcripts are removed from the PDFs. Application reviewers are recommended to contact the program director with any questions that would require transcript review. Adobe Acrobat Pro is used to perform blinding by searching for the applicant's name and any gender indicating words (e.g., Mr., Mrs., Ms., daughter, son, she, her, him, his, etc.). Applications are also blinded for age, visa status, and any other identifying information such as email addresses and phone numbers. Applications are unblinded after the interview candidates are finalized. Prior to interviews, reviewers attend a meeting to discuss issues of bias and microaggressions. Reviewers are also provided articles with more in-depth discussion of these topics.

University of Michigan blinded applications of name, gender,

#### Twitter:

[@DrKCParadis](https://twitter.com/DrKCParadis)  
[@elizapowerpuff](https://twitter.com/elizapowerpuff)

#### Email:

[kyoung@med.umich.edu](mailto:kyoung@med.umich.edu)  
[ecovington@uabmc.edu](mailto:ecovington@uabmc.edu)

SPECIAL INTEREST FEATURE | BREAKING DOWN ROADBLOCKS TO DIVERSITY, Cont.

photographs, and race/ethnicity for the first time during this year's residency match cycle. We use a process similar to UAB, where gender-indicating words are removed in batch mode across all applications, and applicant names are blinded by using the redact feature on individual applications. Manual review of the applications is required to verify that blinding is appropriate and complete. Some pitfalls in this process include names not being recognized on scanned applicant transcripts (we use a slightly different process from UAB and chose not to remove transcripts), and the redacting of acronyms that look like gender words

such as Mr. and Ms. After the first round of blinded review, a subset of applicants is selected for first-round online interviews, after which the applications were unblinded.

We recognize that there are pros and cons to the blinding of applications. Though this strategy may help to mitigate bias, a potential criticism is that blinding prevents an institution from ensuring that they have a diverse interview pool. Additionally, knowing more about an applicant's background allows a reviewer to place the applicant's achievements in context with the resources that may have been available to them.

More data is needed to know how blinding applications impacts the medical physics interview pool. The overall impression from the teams reviewing applications at both of our institutions has been positive and participants felt that the redactions did not hinder the review process. Some faculty reported that blinding applications in fact made them more cognizant of gender. Others felt constrained by not being able to look up a candidate's publications when making decisions on who to interview.

A study conducted by Self *et al.* showed that requiring reviewers



AMERICAN ASSOCIATION  
*of* PHYSICISTS IN MEDICINE

# 2021 AAPM ELECTIONS

A chalkboard background with the word "choice" written in white chalk. The word is centered and flanked by two white arrows pointing outwards. Above the word, there is a small white arrow pointing upwards.

choice

Open for online voting: **JUNE 16**

Deadline to submit your vote electronically: **JULY 7**

---

SPECIAL INTEREST FEATURE | BREAKING DOWN ROADBLOCKS TO DIVERSITY, Cont.

---

to explain why certain candidates were chosen for interviews over others helps to reduce bias against women and minority applicants.<sup>4</sup> This was in contrast to the situation when reviewers were instructed to purposefully ensure a diverse interview pool, which created both a bias favoring women and minority applicants, and a greater resentment by reviewers of the process. Additionally, in a study of orthopaedic residency application review, underrepresented minorities (URMs) were still invited for interviews at a higher rate than non-URM applicants with application blinding.<sup>5</sup>

Blinding occurs during the initial application review and is complementary to other approaches to ensure equitable assessment of

applicants. For example, diversity in Alpha Omega Alpha Honor Medical Society was increased at one institution by blinding applications as well as by increasing the diversity of the review committee and equally weighting academic achievement and professional contributions during application review.<sup>6</sup> Another important strategy that is discussed elsewhere in this newsletter is to encourage reference writers to decrease the use of gendered language in their letters.<sup>7</sup>

Bias can also be reduced, with or without blinding, by clearly defining objective candidate qualifications which are agreed upon in advance by all applicant reviewers. Previous studies have suggested that subjectivity in the review process

is the primary source of bias in the selection of job candidates.<sup>8</sup> This occurs because the definition of merit may be consciously or unconsciously adjusted in the mind of a reviewer based on an applicant's demographics. The American Association of Medical Colleges recommends structured interviews with rubrics to increase fairness and minimize the impact of unconscious bias.<sup>9</sup>

Finally, while improving the interview and evaluation processes are critical, they don't address the issue of increasing the URM applicant pool. We strongly support continued outreach efforts such as early exposure opportunities<sup>10</sup> and second look weekends.<sup>11</sup> ■

---

## References

1. Marcelin JR et al. The Impact of Unconscious Bias in Healthcare: How to Recognize and Mitigate It. *The Journal of Infection Diseases*. 2019;220:S62-S73.
2. Moss-Racusin CA et al. Science faculty's subtle gender biases favor male students. *PNAS*. 2012;109(41):16474-16479.
3. Capers Q et al. Implicit Racial Bias in Medical School Admissions. *Acad Med*. 2017;92(3):365-369.
4. Self WT et al. Balancing Fairness and Efficiency: The Impact of Identity-Blind and Identity-Conscious Accountability on Applicant Screening. *PLoS ONE*. 2015;10(12):e0145208.
5. Caldwell LS et al. Does Removing the Photograph and Name Change the Reviewer's Perception of Orthopaedic Residency Applicants? *J Am Acad Orthop Surg*. 2021; Jan 7; Publish Ahead of Print. doi: 10.5435/JAAOS-D-20-00213.
6. Teherani A et al. Toward Creating Equity in Awards Received During Medical School: Strategic Changes at One Institution. *Acad Med*. 2020;95(5):724-729.
7. Pawlicki T, Page-Robertson CM, and Miller R. Professional Letters of Reference: Being conscious of unconscious bias. *AAPM Newsletter*, May/June 2021.
8. Uhlmann EL and Cohen GL. Constructed Criteria: Redefining Merit to Justify Discrimination. *Psychological Science*. 2005;16(6):474-480.
9. <https://www.aamc.org/media/44746/download> accessed March 25, 2021.
10. Spottswood SE et al. Design, Implementation, and Evaluation of a Diversity Program for Radiology. *Journal of the American College of Radiology*. 2019;16(7):983-991.
11. Tunson J et al. Increasing Resident Diversity in an Emergency Medicine Residency Program: A Pilot Intervention with Three Principal Strategies. *Acad Med*. 2016;91(7):958-961.

# Delta<sup>4</sup>

by ScandiDos

We drive the development  
of solutions for safer  
radiation therapy

DELIVERY DOSAGE  
ENSURED

INDEPENDENT VERIFICATION  
DURING TREATMENT

OPTIMIZED CLINICAL  
WORKFLOW

[delta4family.com](http://delta4family.com)

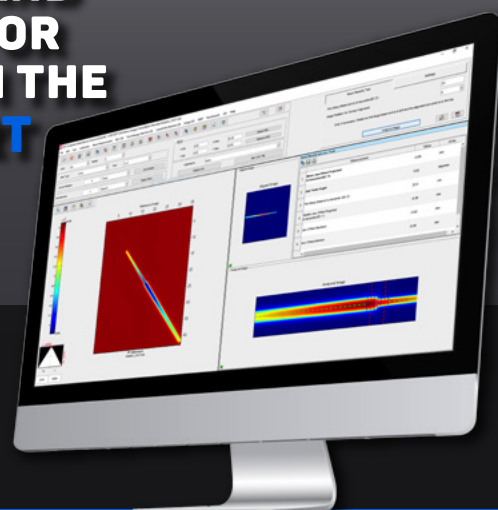
# RITG148<sup>+</sup>

## PERFORM COMPREHENSIVE TG-148 QA WITH RIT SOFTWARE

### TOMOTHERAPY® AND RADIXACT® QA FOR COMPLIANCE WITH THE TG-148 REPORT



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



VISIT [RADIMAGE.COM](http://RADIMAGE.COM) TODAY TO DEMO YOUR PERFECT SOFTWARE  
PACKAGE FROM RADIOLOGICAL IMAGING TECHNOLOGY, INC.

Call 1.719.590.1077, Opt. 4 or email [sales@radimage.com](mailto:sales@radimage.com)

©2021, Radiological Imaging Technology, Inc.



## SPECIAL INTEREST FEATURE: Women's Professional Subcommittee

**BOOK REVIEW: *EDGE: TURNING ADVERSITY INTO ADVANTAGE*, BY LAURA HUANG (2020)**  
Jennifer Pursley, PhD | Massachusetts General Hospital

Although written principally for entrepreneurs looking for a competitive business edge, *Edge: Turning Adversity into Advantage* by Laura Huang contains insights that anyone can employ in their professional life. Dr.



Huang is an associate professor at Harvard Business School and has spent her academic career studying interpersonal relations and implicit bias, after working in investment banking, consulting, and management. Her inspiration for this book came from her research and realizing that while we are taught that success comes from hard work, it's not that straightforward in the real world. Instead, some people naturally have an advantage, and those who don't have to create one to succeed; they must create their own advantage, i.e. find their "edge." Dr. Huang's goal is to help those who are underestimated and disadvantaged to find strategies that will help them get access to opportunities to succeed.

The book is divided into four concepts: Enrich, Delight, Guide, and Effort. Dr. Huang explains each concept, tells several stories for demonstration, and talks about how to employ the concept. To "Enrich" is to provide value, which is important; but to have an edge

you must be able to demonstrate how you uniquely provide value. Dr. Huang recommends self-knowledge tools such as inverse thinking to identify specifically how you bring value; with an understanding of your true assets and shortcomings, you'll be

able to effectively communicate your own unique advantages.

The second concept, "Delight," is harder to define, but I'd describe it as creating a connection with your audience that convinces them to listen. As Dr. Huang emphasizes, to delight your audience requires honesty and sincerity, not flattery, and your connection must feel authentic. Humor and shared interests can be good ways to create that connection, but it will vary for each person and each audience. One barrier to delight can be overpreparation; when you overprepare, you focus too much on details and not enough on the big picture the audience wants to see.

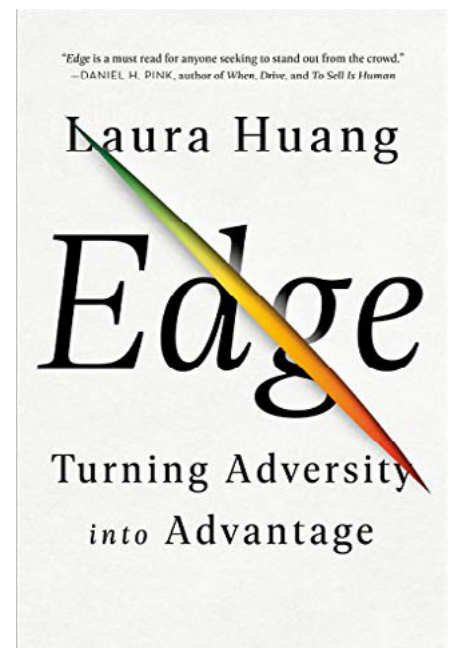
The third concept, "Guide," is particularly valuable. Dr. Huang makes the point that every person has bias; we are genetically programmed to use stereotypes to make quick judgements, and culturally programmed with specific stereotypes. It's important for you to know how an audience

**Twitter:** @jenpursley\_phd

**Email:** jpursley@mgh.harvard.edu

**"[G]aining an edge requires hard work, plus. You need hard work, but when so many decisions are driven by the outside perceptions of others, you also need to know how to allocate effort."**

— Laura Huang, *Edge*

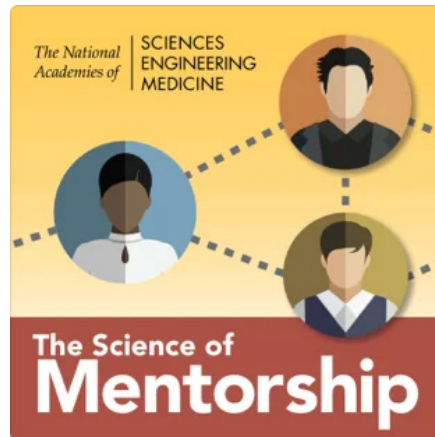


SPECIAL INTEREST FEATURE | BOOK REVIEW, Cont.

might perceive you; the American investment (and scientific) climate is predominantly white and male, so women, people of color, and non-native English speakers will face doubts about their ability to succeed. If you are aware of how your audience sees you, you can guide and redirect their perception to overcome the stereotypes and appreciate the value and edge you bring.

The fourth concept, "Effort," is the one we started with — hard work is necessary to succeed. But hard work alone isn't enough! You must also be able to guide the outside perceptions of others, delight them enough to listen, and communicate how your ideas provide enrichment. Although I won't be starting my own business, I enjoyed this book and learning to think more critically about how I can present my ideas and suggestions to increase the chance that they will be accepted.

**Podcast Review:** *The Science of Effective Mentoring in STEMM*



The National Academies of Sciences, Engineering and Medicine (NAEM) has a podcast! The Science of Effective Mentoring in STEMM (Science, Technology, Engineering, Mathematics, and Medicine) committee compiled and analyzed current research on the characteristics and behaviors of effective mentors and mentees

in STEMM. They developed a report published in 2019, an online resource guide, and now, a 10-episode podcast. Each podcast episode focuses on a different mentoring topic and interviews one senior scientist about their experiences on that topic as a mentee early in their career and as a mentor now. The first episode interviewed Dr. Gilda Barabino, a biomedical engineer and an African American woman, on the topic of finding support when isolated as the sole minority in your environment. Another episode interviewed Dr. Akiko Iwasaki, a professor of immunology at the Yale School of Medicine, on the topic of having multiple mentors and surviving the sometimes-toxic environment of academia as a Japanese woman. I found each 15-minute episode interesting, engaging, and informative. I'm glad I found this great practical resource to guide me in evidence-based best mentoring practices! ■

## WGNC Event

**Join us for Happy Hour this May!  
Hosted by the Working Group for Non-Clinical Professionals**

Calling all industry, regulatory, and academic physicists...  
and anyone interested in working or learning about working outside of the clinic!

The Working Group for Non-Clinical Professionals would like to invite you to attend a virtual networking "Happy Hour" to meet your fellow colleagues. Join us Monday, May 10, 2021 at 7:00pm East / 4:00pm Pacific on Zoom and feel free to BYO! If you have any questions, want to learn more about what we're doing, or have a non-clinical professional matter to address, please e-mail us at [2021.wgnc@aapm.org](mailto:2021.wgnc@aapm.org).

*For May Happy Hour Meeting ID and Passcode, please e-mail WGNC member [Alison Roth](mailto:Alison.Roth).*

## SPECIAL INTEREST FEATURE: Women's Professional Subcommittee

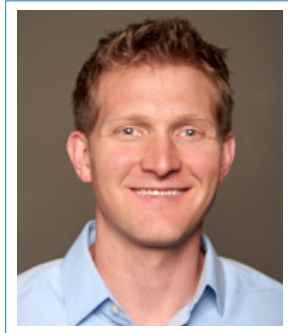
---

### OUT OF THE SHADOWS: WHAT IT MEANS TO BE AN INDUSTRY PHYSICIST

Tyler Blackwell, MS | Radformation

---

**G**o on, admit it: you've probably had at least some curiosity about what it's like working outside of the clinic in industry. Maybe you've heard that there are no late nights doing IMRT QA, no last-minute physics plan checks on Friday afternoon, no weekend scanning... don't worry, I won't tell anyone if you want to know more. You're in good company. Maybe you want to know what's it like working on the "dark side?"



to fill positions such as product manager, customer support, and product development. There are also physicists that train and instruct customers, some that hold leadership positions within the company (CEO, VP, director of product portfolios, etc.),

and some that focus on things you might not associate with medical physics, like business development, sales/marketing, and UI/design. For the latter, a clinical background adds unique value and perspective.

#### Why Work for Industry?

When talking casually with fellow physicists about why they chose medical physics in the first place, it's pretty common to hear about the impact we can have on patient care by applying our technical skills. Working in the clinic, you hear the stories of patient success and interact with patients regularly, so in that way, the influence clinicians have on patient care is very tangible.

Patient contact isn't as common for physicists working with commercial partners. But in reality, the impact of our work has big potential, scalable potential, as the solutions we create for clinicians can have widespread implementation.

Industry is where bright ideas shine. It's a playground where physicists

In a way, working in industry is analogous to working in theater, where you might imagine clinicians on stage delivering a masterful performance while commercial partners take their place backstage to provide the tools and support to give the actors their best chance at receiving a standing ovation. Having made the switch to industry from the clinic just 18 months ago, I can provide my perspective to help unveil what's behind the curtain. Along the way, I've asked some friends to lend their take as well.

What is there for a physicist to do within industry, anyway? Having a limited field of view at just one company, I asked counterparts at both Varian and Sun Nuclear to fill in the gaps. It seems that there is some overlap, with physicists tending

**Twitter:** @TylerABlackwell

**Email:** tylerblackwell@outlook.com

---

**"Once I discovered what gave me meaning and purpose in my life, and realizing my previous role was unable to fulfill that desire, I knew it was time to change course."**

— Adam Schoen

**"All the problems you see in the clinic can be solved in industry. You just design a product that solves the issue."**

— James Kerns

---

SPECIAL INTEREST FEATURE | OUT OF THE SHADOWS, Cont.

---

can devote time to innovative ideas to improve the way we treat patients. According to **James Kerns**, software engineer and product manager at Radformation, “All the problems you see in the clinic can be solved in industry. You just design a product that solves the issue.”

For others, what draws physicists toward positions in industry is the opportunity to leverage their clinical expertise to improve workflows. Interpreting customer needs through a clinical lens positively impacts customer support and product implementation. According to Varian Clinical Applications Specialist **Adam Schoen**, “After 10 years in the clinic, I realized I derived great satisfaction from supporting other RadOnc professionals. I enjoyed the teaching aspect of my job that would arise working with residents and interns.” Schoen now trains customers on the proper use of new products, a job that he sees as a good fit for his skill set and background.

### Working from Home: Blessings and Blights

Working outside the clinic can be a change of pace. In many cases—even in the absence of COVID—telecommuting is an option or even the standard in industry. For example, the team at Radformation is completely remote, with employees from San Deigo to Vermont (and everywhere in between!) But there are pros and cons to the setup, as we have all experienced over the past year with the changes brought on by a global pandemic.

### Working from Home PROS

- Closer to family and creature comforts. The people you love (and let's be honest, the snacks you crave) are within your grasp when you need them. According to Schoen, “it seemed like a small thing at first, but eating lunch with my family is the best part about working from home.”
- More perceived schedule flexibility. Errands are easier to run, and depending on what's on the to-do list, starting later, ending earlier, or taking a long lunch break is much easier to manage when there are no firm work hours.
- Casual environment. You like X-men? Those Wolverine slippers are fine...
- Fewer interruptions. The clinic can be a very busy place. Some that work from home encounter reduced distractions. According to Kerns, “I typically work with fewer people, so it's less distracting and more tight-knit.”
- No commute. This might mean you miss your chance to keep up with your favorite podcast, but it also means less time in traffic.
- Work from any location. If cabin fever is getting the best of you, the coffee shop is a fun place to work if you need a change. During the pandemic, I've worked from our vacation getaway a number of times. If you've got internet, you can take your work with you!

### Working from Home CONS

- Not as much separation between work and home life. Many of us have seen the raw side of working

from home during COVID, when we had no choice but to figure out how to do our jobs from the kitchen table. Being more intentional about where you work in the home can help, but without a doubt work and life can bleed together.

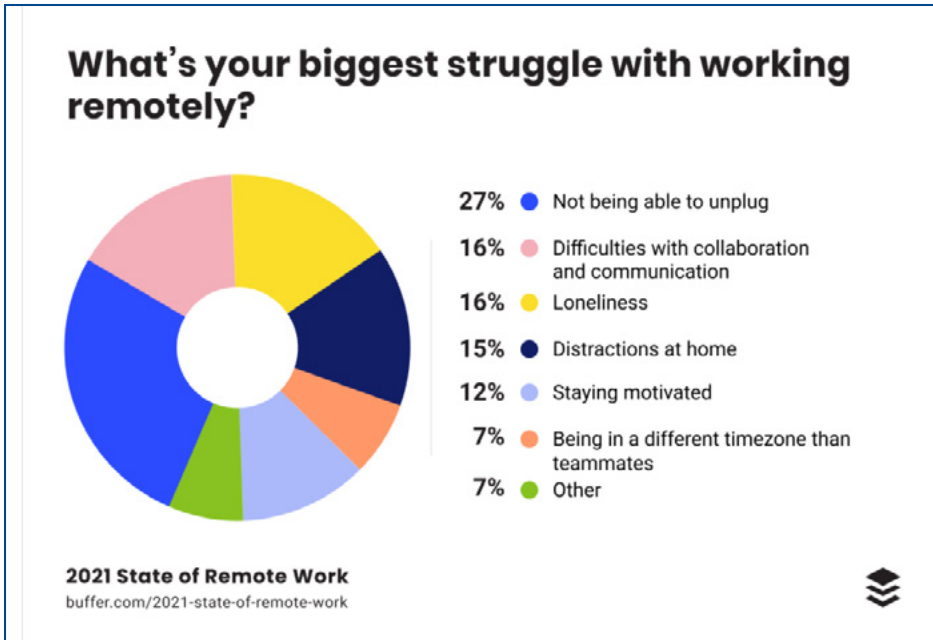
- Requires a little more self-discipline and motivation. No one is around to observe your work habits, so being a self-starter is helpful to staying on task.
- Miss out on social aspects of on-site work. Remote teams try their best to create community. But for those that have left the clinic, there is a noticeable decrease in daily banter. “I miss the people and the relationships I made, as this field is full of amazing people,” says Schoen.
- Hard to stop working when you're done working. According to the Buffer 2021 State of Remote Work survey of over 2,300 employees, the biggest struggle with working remotely is the ability to completely turn off when finished working.

### Getting in the Door

According to data from AAPM, the number of members that designate their primary work function as something commercially related is small. Just 288 of 6,953 members — 4.1% — disclosed that their primary work function involved marketing/sales, commercial R&D, or customer support.

So perhaps it's no surprise that these jobs don't come up as frequently as clinical gigs do. Sometimes, landing in

SPECIAL INTEREST FEATURE | OUT OF THE SHADOWS, Cont.



industry involves a convoluted story. **Jennifer Hamilton** from Sun Nuclear details her story:

“When I started using the first version of the 1D Tank from SNC, I hated it. It wasn't ready for use when it was released. Consequently, I wrote up a six-page explanation of why the tank was *unusable*, complete with graphs and figures. My boss promptly sent it to Bill Simon (founder of Sun Nuclear)

and it made the rounds. Because of this and other feedback, SNC actually redesigned the tank. After that the head of sales called and offered me a job! I'm glad I took the risk, it's a great company to work for.”

Finding a physicist position at a commercial vendor may require more effort than a clinical post. Though companies may post open positions on the AAPM Career

Services page, many don't. So for those that are interested in a position, that can mean visiting each individual company's job page frequently for updated listings. Word of mouth is still big with companies. Kerns admits he just “got a text from Nathan Childress, CEO of Mobius, after hearing I knew how to program.”

*Once I discovered what gave me meaning and purpose in my life, and realizing my previous role was unable to fulfill that desire, I knew it was time to change course.” — Adam Schoen*

### Final Act

For those that like a fast pace, can handle change, and prefer a more casual, flexible work environment, a job in industry poses unique opportunities that may provide a perfect fit for some physicists. Now that you've got a taste of industry and we've cast light to illuminate the “dark side,” let's close the curtain so we can get back to business doing what we do best: fighting together as partners to elevate cancer care. ■

### Sources

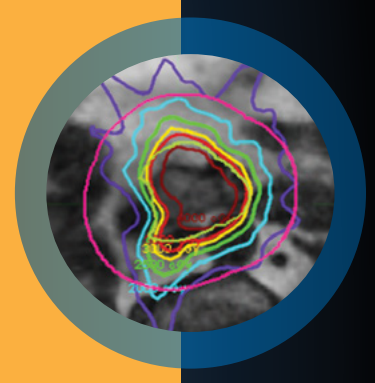
[Buffer State of Remote Work – 2021 survey of 2300 remote workers](#)  
[2020 MedPhys Match Statistics](#)

### Acknowledgments

James Kerns, PhD, Radformation  
Adam Schoen, MS, Varian Medical Systems  
Jennifer Hamilton, MEng, Sun Nuclear Corporation  
Michael Woodward, PhD, AAPM

2021

AAPM  
SUMMER  
SCHOOL



## Modern Applications of MR in Radiation Therapy

JUNE 26 – 29 | ▷ VIRTUAL

**Register Now!**  
[aapm.me/school](http://aapm.me/school)



**This four-day program provides an introduction to the fundamental principles and practical implementation of MRgRT and includes four interactive debates relevant to the daily topics.**

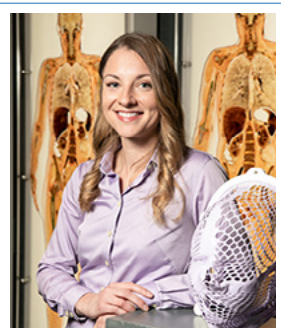
Don't miss this first-ever virtual summer school on the use of MR in RT for physicists and other radiation oncology professionals to learn from early adopters.

Registration includes participation live June 26 – 29 AND on-demand post-meeting.

*Program to be submitted for both SAM and CAMPEP credit.*

## SPECIAL INTEREST FEATURE: Women's Professional Subcommittee

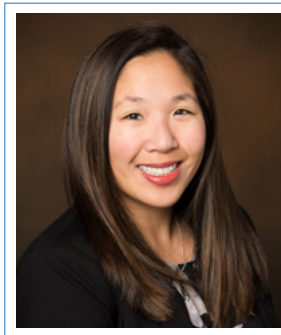
**VIRTUAL OUTREACH EXPERIENCES AT THE  
CONFERENCE FOR UNDERGRADUATE WOMEN IN PHYSICS 2021**  
Jessica Fagerstrom, PhD | Northwest Medical Physics Center  
Jennifer Pursley, PhD | Massachusetts General Hospital  
Ashley Tao, PhD | Gundersen Health System



J. Fagerstrom



J. Pursley



A. Tao

Although in-person meetings continue to be put on hold, virtual conferences have flourished, and have some unique benefits for outreach and increased participation. Every January the American Physical Society (APS) organizes the Conference for Undergraduate Women in Physics (CUWiP). CUWiP 2021 went virtual, and three members of the WPSC were able to participate from across the US. Here are their experiences, tips, and encouragement!

*Jennifer Pursley:*

I attended CUWiP both as a session moderator and as a booth exhibitor during the virtual networking fair. The booth was sponsored by the APS' group on medical physics (GMED), and GMED members developed handouts on careers in medical physics for attendees to download. The booth could also play a video for attendees, so we linked to [this AAPM video](#). During the two-

hour networking fair, three GMED members and I were available at the virtual booth to chat with attendees and answer their questions. APS used the Gather.town app for the networking fair, allowing for a virtual reality type of experience. When attendees were close to each other, their video and audio feeds were displayed, and they could choose to stop and talk or pass by. The GMED booth was very popular and we had a crowd of attendees all evening; some were familiar with medical physics while some had never heard of it before. The questions from the undergraduate physics majors included: *How did you get into the field? What specifically do you do? What's the difference between biomedical engineering and medical physics?* The two hours flew by; there were usually 5–10 attendees around at any given time. It felt surprisingly similar to being on the floor of a convention center!

**Twitter:**

@PhysicsJess  
@jenpursley\_phd

**Email:**

JFagerstrom@nmpc.org  
jpursley@mgh.harvard.edu  
attao@gundersenhealth.org

## SPECIAL INTEREST FEATURE | CUWiP, Cont.

During the conference, I moderated three speaker breakout sessions and one session of attendee lightning talks. The conference ran 9:00 am–8:00 pm ET on Saturday and 9:00 am–8:00 pm ET on Sunday. To accommodate attendees on Pacific time, the early morning parallel sessions were repeated in the afternoon, with keynote sessions presented only once in the middle of the day. The sessions were in Zoom webinar format, with attendees able to ask questions within the Zoom Q&A or Chat. After the session, each speaker went into a separate Zoom breakout room to directly interact with the attendees. The lightning talks were five-minute research presentations by nine attendees with three minutes for questions. Talks were grouped by research area; there was no medical physics session, so I moderated a session on high-energy physics. This was my favorite part of the conference; all speakers stayed on time, gave great talks, and actively participated in asking each other questions. I was impressed with the variety of interesting research projects these outstanding undergraduate women were undertaking! Another aspect of the conference were the "Speed Geeking" sessions. These were randomized Zoom breakout rooms, with attendees shuffled to a new room after five minutes. This provided the opportunity to network with other attendees, and I met several who connected with me later through LinkedIn and Twitter.

This was my first time attending a CUWiP so I cannot compare it to

the usual in-person conference. I attended some of the parallel sessions and keynote sessions, which were impressive for their diversity of speakers, perspectives, and topics. There were about 300 attendees at the networking fair and over 1,000 registered conference attendees, so this was a great outreach opportunity to raise awareness of medical physics among undergraduates and it was also a lot of fun to participate!

*Jessica Fagerstrom:*

I feel fortunate to have recently represented medical physics on a Q&A career panel at CUWiP 2021. The panel was held twice, each time for 45 minutes with each followed by 30-minute "speaker chat" breakout sessions. Our panel consisted of five physicists with very different backgrounds, specialties, interests, and educational experiences. Attendees heard from physicists applying their expertise in fields varying from quantum computing, entrepreneurship, technology, and scientific publishing. I really enjoyed getting to know my fellow panelists as we connected via video conferencing in the weeks leading up to CUWiP, as well as during the conference.

At the time of the event, I personally had not used Zoom's Q&A feature. I found it intuitive and essential for facilitating sessions that at peak attendance had about 90 participants with a range of interests and questions. Panelists could volunteer to answer questions without interrupting productive and ongoing discussions, and attendees offered

insightful questions that resulted in an engaging dialogue between panelists and attendees. With only 45 minutes to answer a diverse series of questions about undergraduate courses, internships, and job experiences, I was grateful for the additional 30 minutes that could be devoted to more specific questions for attendees focused on medical physics. During these breakout sessions, we discussed topics including undergraduate coursework, CAMPEP programs, day-to-day responsibilities of a clinical medical physicist, and the variety of career opportunities in medical physics. During the main panel discussion with a larger number of attendees, I intentionally discussed AAPM's Summer Undergraduate Fellowship Program (SUFF) and Diversity Recruitment through Education And Mentoring (DREAM) experiences. The virtual format made it simple to drop links about these programs directly into the chat. The panels took place a week and a half before the SUFF and DREAM application deadlines, and I fielded multiple follow-up emails about the programs in the few days after the conference so I am hopeful that CUWiP contributed to recruitment for these two fantastic undergraduate programs.

I highly encourage AAPM members to engage in similar opportunities, including future CUWiP events. The early-career physicist attendees I had the opportunity to meet during my brief involvement at CUWiP were engaging, thoughtful, and eager to learn. AAPM's committee tree offers a myriad of opportunities for

---

SPECIAL INTEREST FEATURE | CUWiP, Cont.

---

mentorship, education, and outreach for interested physicists. As Dr. Ashley Tao noted about her involvement in 2020 CUWiP<sup>1</sup>: the future is bright!

*Ashley Tao:*

This was my second year volunteering to be on the career panel for CUWiP and while the conference was virtual this year, the goal of providing a space for undergraduate women and gender minorities majoring in physics to experience a professional conference was still a success. One main difference between last year's in-person career panel vs. this year was the addition of the breakout sessions after the main career panel session. I would venture to say that I think this meeting was more successful than last year because of these breakout sessions. I really enjoyed having these personal discussions with the students and hope that they include them when in-person meetings resume.

The Careers Beyond Research session was moderated by Dr. Crystal Bailey,

Head of Career Programs at APS and the panel consisted of a diagnostic medical physicist, Dr. Clair Sullivan, a data scientist, Nathalya Ramirez, a high school Physics and Chemistry Teacher, and me. I enjoyed getting to know each member of the panel leading up to the conference. To start the session, we each shared our career journey. This was followed by a stimulating discussion about the versatility of a physics degree and how it allows one to develop foundational skills to be successful in a wide range of careers outside of academia. When the topic of seeking mentorships outside academia came up, I was excited to elaborate more about medical physics and introduce AAPM's Summer Undergraduate Fellowship and DREAM programs.

During the breakout session the students wanted to know what my typical workday was like, courses I had to take in university, and how to get involved at an undergraduate level if they were interested in

medical physics but were not sure if it was the route that they wanted to pursue. Beyond talking about my career, I shared with the students a little bit about therapeutic medical physics, health physics and industry positions related to medical physics.

If I had one minor critique of the conference format this year, I would have preferred a longer panel session as opposed to two 45-minute sessions, which would have allowed for more in-depth discussions. However, the students appeared to appreciate the flexibility of the schedule, so in that regard, the meeting structure worked out well.

CUWiP is a rewarding opportunity for AAPM members to inspire young women and gender minorities to enter the field of medical physics. Consider volunteering for CUWiP 2022 as it does not require a large time commitment and is an easy way to get involved if you are interested in outreach. ■

---

**References**

1. A Tao. Inspiring the next generation of women in physics. *American Association of Physicists in Medicine Quarterly Newsletter*. 45(5) 2020.

## SPECIAL INTEREST FEATURE: Women's Professional Subcommittee

### NEW LEADERSHIP SPECIALTY MEETING ALERT FOR 2021

We are excited to announce that AAPM will be hosting a specialty meeting entitled "Accelerating Women and Underrepresented Mid-Career Medical Physicists in Leadership" later this year!

#### What is the goal?

AAPM wants to empower women and underrepresented minority mid-level physicists with knowledge and skills needed to fairly and equally advance within the field of medical physics and AAPM. During the conference, invited speakers will share methods and strategies in areas of leadership and professionalism that will help accelerate the participants' advancement in their careers. Attendees will have several opportunities to practice implementing these tools learned during the meeting to help translate the ideas into practice. Participants may use dedicated discussion times

and session breaks to reflect, network, and connect during the meeting.

#### Why is this so important?

The diversity of women and underrepresented minorities within STEM and medicine does not match with the changing demographics of the U.S. population — affecting women and minority individual and population health outcomes. AAPM understands increasing women and underrepresented minority leaders will attract more to enter and stay in the field to improve health through medical physics. Through this meeting, attendees will experience an empowering and inspiring conference dedicated to their unique needs and concerns.

#### Who is this for?

Mid-career women and underrepresented minorities wanting to develop leadership skills and tools necessary to grow and thrive in our

profession are encouraged to attend. Early-career medical physicists may also benefit from the meeting content as part of their career planning.

#### When is it?

The two-day meeting will be hosted live on August 19-20, 2021 using a virtual format similar to the other AAPM meetings in 2021.

#### How do I participate?

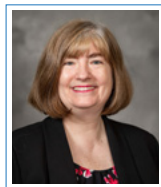
More details about the event will be coming soon, so please keep a lookout for information for registration for the event. If you have any questions, please feel free to reach out to the [planning committee](#). ■

#### References

1. <https://www.americanprogress.org/issues/women/reports/2021/02/01/495209/women-lose-jobs-essential-actions-gender-equitable-recovery/>
2. <https://nces.nsf.gov/pubs/nf19304/digest/about-this-report>
3. <https://orwh.od.nih.gov/about/director/messages/research-shows-us-how-address-underrepresentation-women-academic-medicine>



**Ashley Cetnar, PhD**  
The Ohio State University –  
James Cancer Hospital  
Twitter: @isoCetnar  
Email: Ashley.Cetnar@osumc.edu



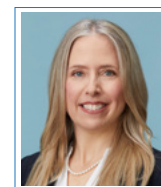
**Jean Moran, PhD**  
University of Michigan  
Medical Center  
Twitter: @JeanMoranPhD  
Email: jmmoran@med.umich.edu



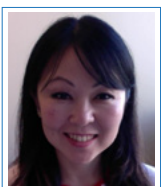
**Laura Cervino, PhD**  
Memorial Sloan Kettering  
Cancer Center  
Email: cervinol@mskcc.org



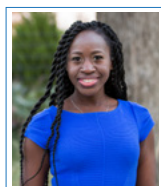
**Angelica Perez-Andujar, PhD**  
Memorial Sloan Kettering  
Cancer Center  
Email: perezana@mskcc.org



**Jennifer Johnson, PhD**  
Kelsey-Seybold Clinic  
Twitter: @ms\_jl\_johnson  
Email: jjjohnson@aapm.org



**Emily Hirata, PhD**  
University of California  
San Francisco  
Twitter: @emily\_hirata  
Email: emily.hirata@ucsf.edu



**Julianne Pollard-Larkin, PhD**  
MD Anderson Cancer Center  
Twitter: @JulieLarkin305  
Email: jmpollard@mdanderson.org



**Toni Roth, MS**  
Washington University  
School of Medicine  
Email: toni.roth@wustl.edu

## SPECIAL INTEREST FEATURE: Women's Professional Subcommittee

### WPSC NEWS BITES

Jennifer Pursley, PhD | Massachusetts General Hospital

#### Congratulations to All New AAPM Fellows and Awardees!

The WPSC would particularly like to recognize the exceptional group of women who received the distinction of

FAAPM: **Erlin Chen, MS;**

**Grace Gwe-Ya Kim,**

**PhD; Holly Lincoln, MS; Rebecca**

**Milman Marsh, PhD; Andrea Molineu,**

**MS; Ke Nie, PhD; Jennifer O'Daniel,**

**PhD; Stephanie Parker, MS; Marianne**

**Plunkett, MS; Julianne Pollard-Larkin,**

**PhD; Koren Smith, MS; Neelam Tyagi,**

**PhD; Michelle Wells, MS; and Xiaowei**

**Zhu, MS.**

#### Keep an Eye out for WPSC Annual Meeting Event Announcements!

The WPSC intends to hold another virtual Women's Luncheon after-hours event at the AAPM 63<sup>rd</sup> Virtual Annual Meeting and Exhibition, July 25–29; details will be announced closer to the meeting date. The WPSC is also organizing a Professional session entitled "Picture a Scientist: Toward gender equity and a more diverse medical physics workforce" to continue the discussion of what AAPM members can do to create a more welcoming environment for members of groups historically under-represented in physics. This will be a continuation of our discussion from the AAPM-sponsored viewing of "*Picture a Scientist*" in March; the



film had its US broadcast premiere on PBS NOVA on April 14, 2021. Please join us, and thank you again to the panelists and participants for their engagement during our webinar on March 25, which is summarized in another article in this newsletter.

#### Black in Physics Week

October 26, 2020, kicked off #BlackInPhysicsWeek, as highlighted in [this article](#) from *Physics Today*.

Each day the organizers spotlighted a different physics discipline: physics education research; high-energy physics and astrophysics; atomic, molecular, and optical physics; condensed-matter and materials physics; soft-condensed-matter physics; and nuclear and medical physics. The conversation continues today; check out [blackinphysics.org](http://blackinphysics.org) and [@BlackInPhysics](#) on Twitter, and let's prepare to highlight our field for the next #BlackInPhysicsWeek!

#### International Women's Day March 8, 2021

Although this global day to celebrate women has passed, it's always a great day to recognize women's contributions to science! On March 8, the APS journal *Physics* ran two interesting articles on [why more women study physics in Muslim countries](#) and what it's like working

**Twitter:** [@jenpursley\\_phd](#)

**Email:** [jpursley@mgh.harvard.edu](mailto:jpursley@mgh.harvard.edu)

**Seeking contributors! The WPSC Newsletter is published biannually in the spring and fall and we are always on the lookout for news, stories, ideas, and features related to Women in Medical Physics to include in future editions. Contributions and suggestions can be sent directly to the WPSC at [2021.WPSC@aapm.org](mailto:2021.WPSC@aapm.org).**

SPECIAL INTEREST FEATURE | WPSC NEWS BITES, Cont.

in an environment where women scientists are the majority. It's also great to see growing recognition of some of the great contributions of women in science, such as this feature on Myriam Sarachik in the *NY Times* and the new biography "A Radiant Life" of Sylvia Fedoruk, co-developer of Cobalt-60 technology. Hopefully more science historians like Sheila Tobias will become science activists highlighting the achievements of women in the physical sciences!

#### Busting the Myth That Men Are Better at Physics

A team of researchers lead by Tatiana Erukhimova of Texas A&M University analyzed the exam scores

and final grades of over 10,000 students enrolled in their introductory physics courses and found no consistent differences between men and women. This contradicts the results of many studies that used concept-inventory standardized tests and found that men scored higher than women; but there some key issues that make standardized tests problematic for evaluating performance differences by gender. The bias that exists in standardized tests is also why graduate programs are moving away from using GRE scores to evaluate applicants.

#### Resources for Working From Home

With the arrival of vaccines, the pandemic finally seems like it could

be controlled. However, a new survey suggests that at least 16% of American employees will remain at-home workers, with even more working part-time remote. The abrupt switch to remote work didn't allow time to plan, and employees felt the strain with many working longer hours than before, feeling stressed, and suffering a loss of work-life balance. Several studies indicate a gender-disparity to the effects of remote work in STEM fields, with women more negatively impacted than men. Going forward, employers can implement strategies to reduce these disparities. For employees, there are many tips out there for staying motivated and productive as remote work continues. ■

IT'S YOUR TIME  
BE PRECISE

STANDARDIMAGING



Every day we spend our time  
optimizing ways to make  
QA easy and reliable.

Ask us how our solutions  
can benefit you.

WWW.STANDARDIMAGING.COM

## JAMES R. HALAMA, PHD, FAAPM, FACR AWARDED CENTRAL CHAPTER – SNMMI'S GOLD MEDAL

### PERSON IN THE NEWS



Chicago, IL — The Central Chapter of the Society of Nuclear Medicine and Molecular Imaging (CCSNMMI) honored **James R. Halama, PhD, FAAPM, FACR**, Professor of Radiology for Loyola University Medical Center as the Steven M. Pinsky, MD Distinguished Service Award recipient. The Distinguished Service Award is the highest

honor the CCSNMMI can bestow upon a member, and Dr. Halama was recognized during the **CCSNMMI Virtual Annual Spring Meeting** on Saturday, March 20th. The awarding of the Gold Medal was to recognize his outstanding leadership in organized medicine, community relations, and his many years of dedicated service to radiology and nuclear medicine.

Dr. Halama received a Bachelor of Science Degree in 1972 from the University of Wisconsin-Eau Claire and a Bachelor of Science Degree in Nuclear Medicine Technology in 1973 from the University of Arkansas Medical Center. He received his Master of Science Degree in Medical Physics in 1979 and his PhD Degree in Medical Physics in 1983 from the University of Wisconsin, Madison.

In 1983 he began his long relationship with Loyola University, being appointed Assistant Professor of Radiology for the Stritch School of Medicine and Nuclear Medicine Physicist for the Loyola University Medical Center. In 2003, Dr. Halama was promoted to Associate Professor of Radiology and in 2014 was named full Professor of Radiology, the position he holds today.

Within the Loyola University Medical Center, he was appointed Nuclear Medicine and Diagnostic Medical Physicist in 2001, added sister facility, Gottlieb Memorial Hospital in 2012, and Assistant Radiation Safety Officer in 2013. From 1993-2005 he was a member of the Medical Center Committee on Academic Computer Users. From 1992-2014 he was a member of the Loyola University

Medical Education Network Committee, and from 2012 to the present is a member of the Department of Radiology Safety Committee.

Dr. Halama has been active in a number of national organizations, including the American Association of Physicists in Medicine, American College of Radiology, International Electrical and Technical Commission, The American National Standards Institute, the American Registry of Radiologic Technologists, and the American Board of Radiology. Dr. Halama received a Fellowship in the American Association of Physicists in Medicine in 2010 and a Fellowship in the American College of Radiology in 2019. He has given numerous lectures on nuclear medicine and PET instrumentation and quality control at nuclear medicine and physicist annual and chapter meetings. Along with Robert Henkin, MD, he started and operated the Loyola University Nuclear Information System (LUNIS) in 1990.

He joined the Society of Nuclear Medicine and Molecular Imaging in 1981 and has been active in the Society at the National and Chapter Level. Starting in 2004 to the present, he has been a member of the SNMMI Computer and Instrumentation Council, serving as a board member, Secretary-Treasurer and President in 2008-2010. He was also a member of the Scientific Exhibits Committee and a reviewer for a number of scientific journals.

Dr. Halama joined the Central Chapter in 1995 and became a member of the Board of Governors in 2012. He was elected Secretary-Treasurer in 2014, President-Elect in 2015, and President in 2016. As President, he was instrumental in balancing finances between the Chapter and Technologist Section, leading to two additional technologists being elected to the Board of Governors.

Dr. Halama and Alta, his wife, live in Warrenville, IL, where they enjoy gardening, church, and community volunteering. Always willing to share his experience as a scientist, for 13 years, he has served as a Science Fair Judge for local schools. Dr. Halama will be retiring in 2021 but will continue as a consultant to local healthcare facilities. ■

# Connecting medical physicists with the finest jobs



Find your future at  
[aapm.org/careers](https://www.aapm.org/careers)



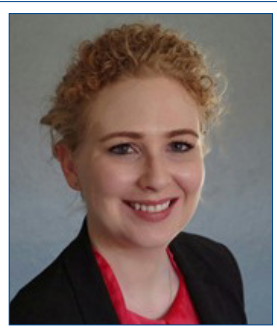
## SUGGESTIONS FOR FASTER IMPLEMENTATION OF RISK-INFORMED QUALITY MANAGEMENT

### TIP SHEET FOR TG-100 IMPLEMENTATION

Kelly Paradis, PhD | University of Michigan  
Courtney Buckley, PhD | Mayo Clinic Arizona



K. Paradis



C. Buckley

Written on behalf of the  
AAPM Working Group on  
TG-100 Implementation

It's important to recognize that risk analysis is nothing new; you're already doing it. The tools recommended in the TG-100 report simply provide you with a structured way to

approach it, thereby providing greater value for the effort you're expending.

By working together as a clinical team to map your processes, you're likely to discover opportunities for process efficiencies and simplification — so the effort is not purely additive to your workload.

Start small. It's OK to only focus on process mapping initially without any effort to perform FMEA or FTA if you are not making changes to your quality control or quality assurance. Simply discussing your process as a team will likely bring significant insight, clarity of the process and everyone's part in it, and awareness of potential risks.

For designing QC or QA for changes in your process, FMEA can simply be a listing of potential failure modes without ranking, since all risks need to be covered.

We recognize that resources available for risk analysis are often limited in busy radiotherapy clinics. Here, we have gathered a few select publications that describe efficient implementation of these techniques, with a focus on how teams can maximize the derived patient safety impact.

1. Brief tutorial videos on the core concepts in the TG-100 report: <https://www.aapm.org/QualitySafety/TG100/ImplementationGuide.asp>
2. Virtual Library presentation from 2018 Annual Meeting on experiences with implementation: <https://aapm.org/education/VL/vl.asp?id=13064>
3. Schuller BW, Burns A, Ceilley EA, et al. Failure mode and effects analysis: A community practice perspective. *J Appl Clin Med Phys* 2017;18:258-267.
4. Ford EC, Smith K, Terezakis S, et al. A streamlined failure mode and effects analysis. *Med Phys* 2014;41:061709.
5. Paradis KC, Woch Naheedy K, Matuszak MM, et al. The fusion of incident learning and Failure Mode and Effects Analysis for data-driven patient safety improvements. *Pract Radiat Oncol* 2020;11:e106-e113. ■

#### Email:

[kyounge@med.umich.edu](mailto:kyounge@med.umich.edu)

[buckey.courtney@mayo.edu](mailto:buckey.courtney@mayo.edu)

**"By working together as a clinical team to map your processes, you're likely to discover opportunities for process efficiencies and simplification — so the effort is not purely additive to your workload."**

## 2022 Call for AAPM Newsletter Editor

AAPM invites applications for the position of Newsletter Editor. The AAPM Newsletter is intended to provide useful and timely information for the membership and to serve as a forum for lively debate about issues of interest.

The Editor has overall responsibility for the bimonthly publication of the Newsletter. The Editor:

- a) reviews all material submitted for publication for suitability and timeliness
- b) reviews with the editorial board, when necessary, any material that is questionable or inflammatory
- c) solicits articles and news items of interest
- d) may edit articles and letters to limit space
- e) monitors the interest of the membership on coverage and format
- f) meets with the Editorial Board at the AAPM Annual Meeting and at the RSNA Meeting

AAPM Headquarters provides assistance to the Newsletter Editor in the form of a Programs Manager to coordinate Newsletter activities, and a Graphic and Web Designer to create the design and layout of each issue.

The AAPM Electronic Media Coordinating Committee, chaired by George C. Kagadis is the committee tasked with conducting a search for the new Editor. The President-Elect will appoint the Editor, with concurrence of the AAPM Board of Directors. The initial appointment is for a three-year term, once renewable. Applicants should send a resume and a cover letter indicating their commitment to the highest standards of journalism that maintains respect for individuals as well as their opinions. The Editor must also ensure that the Newsletter presents a balanced publication of articles and letters in a fair and even manner so that all viewpoints are equally represented, while simultaneously meeting deadlines and staying within budget.

**The deadline for receipt of applications is June 07, 2021. Applications and inquiries should be sent to:**

[2021.EMCC@aapm.org](mailto:2021.EMCC@aapm.org) with the subject "2022 Newsletter Editor Search".



## 2021 AAPM VIRTUAL ANNUAL MEETING AND EXHIBITION UPDATE

### ANNUAL MEETING SUBCOMMITTEE REPORT

Ingrid S. Reiser, PhD | The University of Chicago  
Kristy K. Brock, PhD | UT MD Anderson Cancer Center



I. Reiser



K. Brock

We have another great virtual Annual Meeting planned for this year. The live meeting program starts at 10:30 am EST and runs through 6:00 pm EST every day, Sunday, July 25 through Thursday, July 29. Similar to last year, there are seven parallel tracks of programming, plus a

vendor showcase track to facilitate interactions with our industry partners.

The live program includes six hours of sessions in two-hour blocks. Use the 30-minute breaks to stretch your legs, get a coffee, or live-chat with a presenter in the **interactive e-poster sessions** — this is a new e-poster category where presenters are available for a live video chat in their own e-poster room! We hope you will enjoy this opportunity to directly speak with the presenters and peers who might be viewing the same poster.

If you can't get away, or if there are just too many interesting topics at the same time — all sessions are available to attendees on-demand for a full year after the meeting.

After an exciting day of science, education, and professional development, the show goes on: Like last year, we are planning an **after-hours program** with opportunities for participants to socialize and discuss the latest innovations, mix with peers and leadership, get ready to face cybersecurity threats, or just have fun at one of the Game Nights.

This year we are bringing back much of the routine programming that was paused in 2020, including Council symposia on Sunday morning! Come find out about the new International Council (Sunday, July 25, 10:30–11:30 EST).

Don't miss the opportunity to celebrate and honor our members in the virtual **Awards and Honors Ceremony** on Tuesday night, July 27, 6:00–8:00 pm EST. Join in remembrance at the **John Cunningham Memorial Symposium** (Wednesday, July 26, 3:30–5:30 pm EST) and the session in Memory of **Ed Jackson** (July 26, 11:30 am–12:30 pm EST).

The **Ultrasound Specialty Track** is back! Sessions range from educational, such as the hands-on Ultrasound QA/QC workshop, US application, such as pressure-wave elastography, quantitative lung ultrasound and image

#### Twitter:

@kkgobblue

#### Email:

ireiser@uchicago.edu

kkbrock@mdanderson.org



ANNUAL MEETING SUBCOMMITTEE REPORT, Cont.

guidance, as well as therapeutic applications. The *Carson-Zagzebski Distinguished Lectureship on Medical Ultrasound* this year will be on “Ultrasound-based Neurotherapeutics and Imaging of Cardiovascular Disease and Cancer” presented by **Elisa Konofagou** of Columbia University.

**Nancy Obuchowski** is the speaker of *The Anne and Donald Herbert Distinguished Lectureship in Modern Statistical Modeling* and will present “Importance of Quantitative Imaging Biomarkers’ Technical Performance Characteristics in Designing and Analyzing Clinical Trials” on Tuesday, July 27 from 2:00–3:00 pm EST.

Join us Monday, July 26 for the *Presidents’ Symposium* from 1:00–3:00 pm EST to hear about President **Jim Dobbins’** vision on “Creative science. Advancing medicine” and see the top research by trainees and early career medical physicists during the Early Career Investigator Symposium from 3:30–5:30 pm EST!

The professional program offers many timely sessions on equity, diversity and inclusion, from the benefits of diverse teams, “Managing and Mentoring Diverse Teams to Achieve Equity, Diversity and Inclusion (EDI) and Greater Success”, LGBT inclusion “An Introduction to LGBTQIA+ Issues in Radiation Oncology from the Medical Physicist’s Perspective”, as well as an update on activities in our own

association, “Overview of Equity, Diversity and Inclusion (EDI) Efforts in AAPM”. Join your peers in a discussion on “*Picture a Scientist: Toward Gender Equity*, an eye-opening documentary that was screened at many institutions.

AAPM global outreach continues in the virtual environment with a professional session on “Increasing the Contribution of Radiology and Imaging Physics to Global Health Initiatives”. Join the evening program to learn about “Virtual Global Mentoring: Now More Than Ever” and how to connect globally. Calling on our Korean colleagues: the after-hours program includes two evening sessions organized by the Korean Society of Medical Physicists — Trivia question: What time is it in Seoul at 6:00 pm EST?

Vendor showcase presentations will be held in a dedicated track, with content available on-demand. Partners-in-Solutions is all about AI with sessions on “Artificial Intelligence in Imaging” and “Adaptive Therapy AI Software Delivery Systems”.

Check out the meeting program for the many exciting sessions that the science, education, and professional programs have planned. While all presentations are pre-recorded, all speakers will be available during sessions for a live Q&A. ■



**Early-Career Investigator Symposium Winners**

<b>1<sup>st</sup> Place:</b> <b>Rachel Ger</b> Computer Vision Mechanical QA: The Future Is Automation	<b>3<sup>rd</sup> Place:</b> <b>Mahbubur Rahman</b> Clinical Treatment Planning System for Electron FLASH Radiotherapy
<b>2<sup>nd</sup> Place:</b> <b>Daniel Alexander</b> MR-Linac Isocenter Coincidence Verification Using Cherenkov Imaging	<b>Best Poster Winner</b> <b>Lee Xu</b> Single-Segment Spine SBRT On a Ring-Gantry Halcyon Linear Accelerator: Evaluation of Planning Techniques and Rotational Setup Errors

# ABOUT THE REPORT OF THE AD-HOC COMMITTEE TO HELP INTEGRATION OF EFFORT (AHHIE)

## AHHIE REPORT

Written on behalf of Ad-Hoc Committee to Help Integration of Effort

### 1. Introduction

AAPM has over 350 councils, committees, subcommittees (SubCs), working groups (WGs), units, and task groups (TGs), collectively referred to as “groups.” This sometimes has led to redundant and overlapping or wasted efforts, lack of involvement by some relevant stakeholder groups within AAPM, and the potential for contradictory approaches or recommendations. The hierarchical organizational structure of AAPM is used to facilitate the work of the society, and this approach works well in many situations. However, it has also fostered silo mentalities that impede cooperation between groups in different parts of the organization. Establishing cooperation between groups that share substantial interests in a topic will ensure that the topic is considered from different perspectives, which will strengthen the work of AAPM and lead to more consistent and multi-disciplinary recommendations. Different, and often complementary, views add depth, breadth, and diversity to groups, and lead to more robust, integrated, and comprehensive solutions.

It is easiest to recognize communication and cooperation problems when looking from outside a given group. Most groups believe that they communicate and collaborate well with others, and this has been true in many situations. However, sometimes effective communication and close cooperation between groups has been achieved only as a result of the particular persons involved. Sometimes impediments to communication and collaboration are also due to the particular persons involved. Communication and collaboration have been difficult to achieve in an increasing number of situations due to the barriers imposed by the current organizational structure of AAPM, which reinforces “silos.” This restricts activity in an area to only those within the “right” groups. AAPM cannot depend on personalities for cooperation across its organization — AAPM’s structure needs to foster and support connectedness, not separateness.

The recommendations from this committee are targeted at simplifying AAPM’s organizational structure where possible. Most importantly, the recommendations create a structure that, by default, reinforces communication and cooperation across the organization. The recommendations provide constructs to bridge related activities occurring in different committees or councils, or between members with different backgrounds, all while minimizing major disruptions in the society. The silo approach, where activities must be forced into one committee or council or a different committee or council, never both, is dismantled by building a community approach, where inclusion of all relevant skill sets and experiences is easily accomplished and becomes the normative approach.

[Read the Full Report Here >](#)



---

AHHIE REPORT, Cont.

---

## 2. Recent Changes to Improve Coordination and Cooperation

Several changes have taken place in AAPM, outside of the recommendations of this ad-hoc committee, to help coordinate effort and cooperation among groups. Science Council has taken much of the lead in this work. Examples include:

- Recommending to the Board to change the governance documents to allow co-parenting of groups when there is significant overlap in interests;
- Standardizing the TG formation workflow by implementing an RFP process, which includes consulting with other councils, if potential overlap seems likely – the AHHIE recommends that the process for WG and SC formations also be formalized;
- Involving the Clinical Practice Committee to review task group reports;
- Coordinating with the Subcommittee on Practice Guidelines on whether an MPPG should be initiated related to a report from a task group.

The Administrative Council has also advanced the cause with two actions:

- The formation of the Keyword Taxonomy Working Group to generate a unified set of keywords used to identify topics of interest for all groups in AAPM, as well as for the abstracts at meetings, videos in our library and articles in our journals. ESTRO and the ABS have expressed interest in sharing the use of these keywords;
- The formation of the Topics Coordination Dashboard Working Group, which, upon formation of any group, automatically sends notice to all other groups that share keywords. At least nine other societies and organizations have expressed interest in participating in the dashboard.

There have also been great organizational improvements in coordination across meetings by the Meeting Coordination Committee, and between the Public Education Committee and the Regional Organization, and between the Regional Organization and the Corporate Advisory Committee.

These are good steps toward coordinating our efforts, and several are included in the report of the AHHIE. There are additional ways that AAPM could streamline the organization to improve.

## 3. Approaches to Improving Structure

In addition to some administrative actions that will help in communicating topical activities, the ad-hoc committee recommends that structural changes in the organization could also reap benefits. The committee presents four model types of changes with examples of what they could look like in practice. *The examples are not recommendations to be implemented, but examples of possibilities.* The models look at possibilities of merging groups and creating new groups that could solve some overlap problems and questions. The report also gives illustrations of how the models could be combined.

## 4. Guidelines for Change

The following are important concepts for understanding the report. The bold emphasizes important concepts to keep in mind while considering changes to AAPM's structure.

1. **The examples following each recommendation are intended to clarify the recommendations and to present one of several possible approaches to addressing overlapping interests; they should not be seen as prescriptive recommendations but as starting points for discussion.**
2. **Changes to AAPM groups and organizational structure require input from, and consideration of, all stakeholders that might be affected. This applies to all levels of the hierarchical structure.**
3. All groups should discuss possible changes to their structure — with an open mind to possibilities.
4. Changes will be given pilot durations long enough to evaluate their effectiveness, for example four years, and be evaluated at least by the end of the duration.
5. Assessment of the effects of changes must look for unintended consequences in addition to increased coordination and communication.

---

AHIE REPORT, Cont.

---

6. To ensure that all relevant skill sets and experiences are brought to bear on an activity or work product, AAPM must embrace an integrated organizational model and break down the wall of silos that inhibit coordination.

This change likely will be less disruptive than it may sound. The biggest impediments, however, to integrating the effort of groups within AAPM that work on similar topics are *inertia* and *resistance to change*, which in some cases has been strong. Organizational changes almost always face resistance simply because “that is not how things

have always been done.” Maintaining the status quo is easy — it is familiar and comfortable. Adopting new approaches can be challenging simply because they are new, different, and take us out of our comfort zone. Nonetheless, organizational changes needed to achieve a more desirable outcome must be pursued, regardless of individual preferences and past experiences or anecdotal examples where the current system is perceived to be working very well. The only way to achieve the desired results is to just start — *to take action*. ■



# MEDPHYS 3.0

## WEBINARS

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

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

Thursday, May 13, 2021 | 12:00 pm ET | *Speaker: Todd Pawlicki, UC San Diego*

**For additional details and a complete list of upcoming events,  
visit [www.aapm.org/announcements/MedPhys30WebinarSeries.asp](http://www.aapm.org/announcements/MedPhys30WebinarSeries.asp)**

## HIGH DOSE PER FRACTION, HYPOFRACTIONATED TREATMENT EFFECTS IN THE CLINIC (HYTEC)

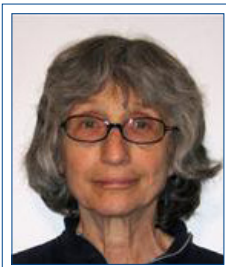
### RED JOURNAL SPECIAL ISSUE ON RESULTS FROM WORKING GROUP ON BIOLOGICAL EFFECTS OF HYPOFRACTIONATED RADIOTHERAPY/SBRT (WGSBRT): NOW AVAILABLE ON THE AAPM WEBSITE

Ellen Yorke, PhD | Memorial Sloan-Kettering Cancer Center • Jimm Grimm, PhD | Geisinger Health System

Andrew Jackson, PhD | Memorial Sloan-Kettering Cancer Center

Lawrence B. Marks, MD | University of North Carolina at Chapel Hill

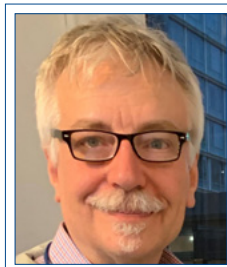
Brian D. Kavanagh, MD | University of Colorado School of Medicine • Jinyu Xue, PhD | NYU Langone Medical Center



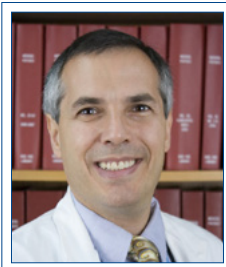
E. Yorke



J. Grimm



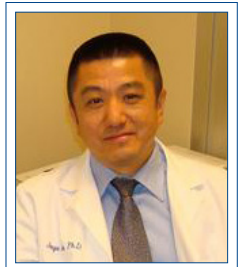
A. Jackson



L. Marks



B. Kavanagh



J. Xue

The goal of the HyTEC (Hypofractionated Treatment Effects in the Clinic) initiative of the AAPM Working Group on Biological Effects of Hypofractionated Radiotherapy/SBRT (WGSBRT) is to systematically pool and review published (hence peer reviewed) clinical data and to distill resulting normal tissue complication probability (NTCP) and tumor control probability (TCP) data in a clinically-useful format. HyTEC is a collaborative effort, involving more than 100 members and authors including clinical physicists, physicians, radiobiologists and biomathematicians. HyTEC authors who were not AAPM members were given guest access to the AAPM web utilities needed for the project. The resulting HyTEC papers will be published in a special issue of the *International Journal of Radiation Oncology, Biology, Physics* (IJROBP, aka the *Red Journal*) on May 1 of this year. Its content covers the main anatomic sites treated with SBRT — Cranial, Head and Neck, Thoracic, Abdominal, Pelvic, and Spinal — with articles addressing tumor control outcomes for nine disease sites and normal tissue complications for associated risk organs. Each site-specific paper has been reviewed by experts selected by AAPM and IJROBP. Like QUANTEC, the HyTEC introductory article includes a table summarizing the major dose-volume findings of each of these papers.

There are also three intentionally speculative “Vision” papers on novel radiobiological principles proposed for SBRT and an educational article on the modeling methods used by HyTEC.

Through an agreement with the Red Journal, the HyTEC special issue will be accessible to AAPM members via the [publications section of the AAPM website](#).

We are indebted to our many AAPM colleagues who assisted with this effort and are thankful to the AAPM leadership for their ongoing support and encouragement. ■

#### Email:

[yorkee@mskcc.org](mailto:yorkee@mskcc.org)

[JimmGrimmJr@yahoo.com](mailto:JimmGrimmJr@yahoo.com)

[jacksona@mskcc.org](mailto:jacksona@mskcc.org)

[marks@med.unc.edu](mailto:marks@med.unc.edu)

[Brian.Kavanagh@ucdenver.edu](mailto:Brian.Kavanagh@ucdenver.edu)

[jinyu.xue@nyumc.org](mailto:jinyu.xue@nyumc.org)

#### Useful Links:

[WGSBRT members](#)

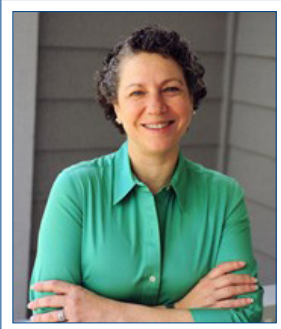
[QUANTEC papers](#)

[HyTEC papers](#)

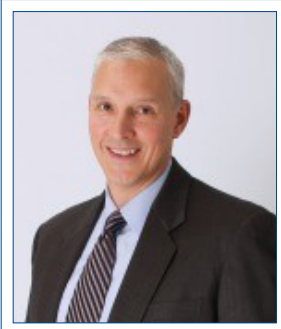
## LETTERS OF REFERENCE: BEING CONSCIOUS OF UNCONSCIOUS BIAS

### PROFESSIONAL SERVICES COMMITTEE (PROFS) REPORT

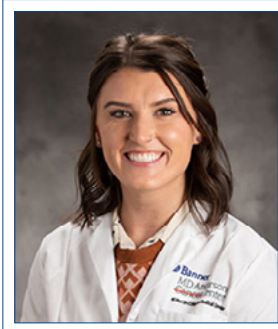
Robin Miller, MS | Northwest Medical Physics Center • Todd Pawlicki, PhD | UC San Diego  
Chelsea Page-Robertson, MS | Banner MD Anderson Cancer Center



R. Miller



T. Pawlicki



C. Page-Robertson

How much do words matter? For a letter of reference there is substantive evidence that the number of words matters, the phraseology matters, as do the letter writer's blind spots. A letter of reference is a commonly used selection criteria for employment, promotions and receiving awards or honors. In this article, we aim to bring attention to areas that can be improved and feature some helpful strategies in order to identify and avoid some of those most commonly identified unconscious bias misunderstandings. The focus is mainly on gender bias; however, bias comes in many forms and can be subtly and not so subtly conveyed in letters of reference.

What is unconscious or implicit bias? According to [Ethics Unwrapped](#) from the McCombs School of Business at the University of Texas in Austin, "Implicit bias exists when people unconsciously hold attitudes toward others or associate stereotypes with them."<sup>1</sup> Bias is measurable, and an online test is publicly available. The Implicit Association Test (IAT) measures beliefs that people may or may not be willing to acknowledge.<sup>2</sup> See, for example, the IAT test from Harvard [here](#) for ways to measure different types of bias.

There are a few ways in which a letter of reference can unintentionally raise a doubt about a candidate. Trix and Penska describe examples of recommendation letters being longer for males than females.<sup>3</sup> A shorter letter may indicate a lack of personal knowledge about the applicant, a potential lack of something positive to say or a lack of effort on the part of the recommender. Not stating something negative outright, but neither stating something positive is often a not so subtle indication that the reader should "read between the lines." A shorter letter can also omit direct examples of relevant accomplishments or skills whereas a longer letter can be perceived as more persuasive in comparison. Both letter readers and letter writers should be aware of this bias and work to mitigate its impact on the decision making process.

**Twitter:**

[@toddpawlicki](#)

**Email:**

[robin.miller95@gmail.com](mailto:robin.miller95@gmail.com)

[tpaw@ucsd.edu](mailto:tpaw@ucsd.edu)

[chelseapager@gmail.com](mailto:chelseapager@gmail.com)

---

PROFS REPORT, Cont.

---

Another area of concern in reference letters are statements of minimal assurance or doubt raisers.<sup>3,4,5,6</sup> These are phrases that may create uncertainty though not necessarily intentionally.

Examples of Doubt Raisers:

<b>Negative language</b>	Not the best resident in our program
<b>Faint praise</b>	Slight lack of confidence
<b>Potentially negative</b>	Completes tasks as assigned
<b>Hedges</b>	Appears to get along with classmates and staff
<b>Irrelevant</b>	Likes to cook

Irrelevant information, though not inherently negative, may indicate a lack of better examples or lack of professional knowledge of the applicant. Even one doubt raiser mentioned in a letter can create a negative perception of the applicant.<sup>5</sup>

A potential pitfall is describing female candidates using "grindstone" adjectives. A grindstone adjective, though not fundamentally negative, describes a woman in terms of their work ethic or effort whereas a male candidate might be described in terms of ability or standout adjectives.<sup>7</sup> Female-associated grindstone adjectives can include hardworking, dependable, thorough, dedicated and male-associated standout adjectives can include unparalleled, exceptional, extraordinary.<sup>11</sup>

A proven effective approach for overcoming gender bias can be found in the music industry in the changes made to how auditions are held for musicians. Orchestra auditions are often performed behind a screen to obscure the musician's gender. After this practice became adopted in the 1970's, women musicians increased from 5% to nearly 40% today.<sup>12</sup> Some institutions have adopted the practice of obscuring the name/gender when evaluating applicants for residency and employment.

**Recommendations for reviewing your letter (or reading a candidate's letter):**

- Does the letter contain concrete examples and direct indications of accomplishments and skills or are grindstone words used?
- Check the language for doubt raisers. Comment directly on the skills and characteristics listed in the job description.
- Check [here](#) for adjectives that may unintentionally be biased. A cautionary note: online tools and computer models can be limited by a lack of context.
- Are you overusing the same phrase? Such as "team player"? Is there an example that demonstrates this trait or characteristic in a more compelling way?
- Check for consistency in how an applicant is addressed, as in Dr. Quimby or Edith or both? Is the author of the letter being professional in how applicants are addressed? Using a first name can imply a dynamic that may or may not be considered subtly negative.

**Example letters of reference.** Can you guess which is for the female candidate? And which is for the male candidate?

Example A:

Dr. Gray is easy to get along with, is kind to colleagues and compassionate with patients. Dr. Gray has multiple peer reviewed papers.

Example B:

Dr. Gamma has superb research skills and has published extensively in peer reviewed journals. Dr. Gamma has outstanding interpersonal skills with colleagues and patients alike.

**A case study on overcoming bias** [here](#) for a quick actionable guide.

**A guide for writing letters of reference to avoid racial bias** [here](#). ■

---

PROFS REPORT, Cont.

---

**References**

1. <https://ethicsunwrapped.utexas.edu/video/implicit-bias> accessed March 7, 2021
2. <https://implicit.harvard.edu/implicit/iatdetails.html> Project Implicit, accessed Feb 3, 2021
3. TRIX F, PSENKA C. Exploring the Color of Glass: Letters of Recommendation for Female and Male Medical Faculty. *Discourse & Society*. 2003;14(2):191-220. doi:10.1177/0957926503014002277
4. Barker, Lecia, Avoiding Unintended Gender Bias in Letter of Recommendation (Case Study 1). Reducing Unconscious Bias to Increase Women's Success in IT , <https://www.ncwit.org/resources/how-can-reducing-unconscious-bias-increase-women's-success-it/avoiding-unintended-gender>, accessed Feb 3,2021
5. Flaherty, Colleen, Help That Hurts Women, June 19, 2018, <https://www.insidehighered.com/news/2018/06/19/study-finds-recommendation-letters-inadvertently-signal-doubt-about-female>, accessed Feb 3, 2021
6. Hebl, Mikki, Nittrouer, Christine, Corrington, Abigail, Madera, Juan, HBR: How We Describe Male and Female Job Applicants Differently, Sept 27,2018, <https://hbr.org/2018/09/how-we-describe-male-and-female-job-applicants-differently>, accessed Feb 3, 2021
7. Akos P, Kretchmar J. Gender and Ethnic bias in Letters of Recommendation: Considerations for School Counselors. *Professional School Counseling*. January 2016. doi:10.5330/1096-2409-20.1.102
8. Ziv, Stav, Your Reference Letters for Women Might (Unintentionally) Be Less Stellar – Here's How to Fix them, <https://www.themuse.com/advice/reference-letters-women-how-to-avoid-gender-bias>, accessed Feb 3,2021
9. Madera JM, Hebl MR, Martin RC. Gender and letters of recommendation for academia: agentic and communal differences. *J Appl Psychol*. 2009 Nov;94(6):1591-9. doi: 10.1037/a0016539. PMID: 19916666.
10. <https://asa-idea.org/resources-to-take-action/recommendations/> accessed 3/16/21
11. Soll, Jack B., Milkman, Katherine L., Payne, John W., Outsmart Your Own Biases, May 2015, <https://hbr.org/2015/05/outsmart-your-own-biases>, accessed Feb 3,2021

*Example A uses grindstone adjectives and is more likely to apply to a female candidate whereas example B uses standout adjectives and is more likely to be attributed to a male candidate.*



AMERICAN ASSOCIATION  
of PHYSICISTS IN MEDICINE

# DO YOU HAVE YOURS?



## ORDER YOURS TODAY!

[www.aapm.org/merchandise](http://www.aapm.org/merchandise)

*Because AAPM branded merchandise is made to order, please allow 4-5 weeks for delivery.*

## AAPM MERCHANDISE

### Have You Noticed?

More and more AAPM Members are wearing this custom designed, signature merchandise with pride. Isn't it time you ordered yours?

Every creation is handmade to your order preference. These distinctive, high-quality pieces are made in America. Choose from:

- Neck ties
- Bow ties
- Scarves [rectangular, square, and infinity]
- Pocket squares

Shop for yourself, team members, or purchase as a gift for your favorite medical physicist.

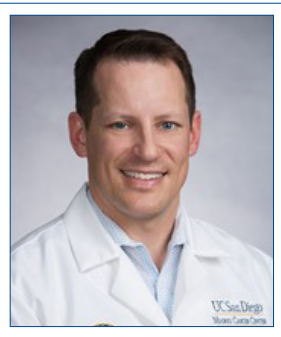
## 2020 AAPM TIME CAPSULE, NOW AVAILABLE FOR REVIEW AND CONTRIBUTIONS UNTIL THE END OF 2021

### HISTORY COMMITTEE UPDATE

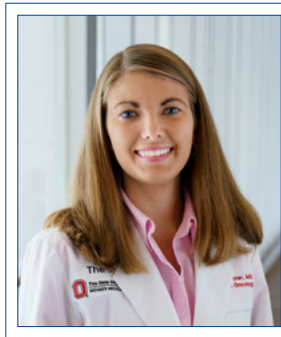
Natalie Viscariello, PhD | University of Washington • Jeremy Hoisak, PhD | UC San Diego  
Ashley Cetnar, PhD | The Ohio State University



N. Viscariello



J. Hoisak



A. Cetnar

Written on behalf of AAPM Unit 62: History Time Capsule Development

2020 was a year of personal and professional adjustment and uncertainty as the COVID-19 pandemic changed the world. In addition to adapting our personal lives to this new reality, we as medical physicists have had to consider ways to adapt our professional lives as well.

Aside from having to wear masks and adjust staffing models, the pandemic has changed the way we practice as medical physicists, and how we interact with one another. For some, this has meant navigating virtual meetings with co-workers, collaborators, and customers. For others, being at home has removed distractions created in the typical workplace but may have introduced new distractions from family obligations. The shift to remote work may have taken away the stimulating conversations you can only have through face-to-face meetings, including chance encounters in the hallway where many new ideas and projects are born. Conferences have been challenging to plan with uncertain travel restrictions, especially internationally, but some have enjoyed the new possibilities afforded by easily switching between sessions and new ways of interacting with speakers and audiences.

The AAPM Unit 62 History Time Capsule Development team was formed to identify, highlight, and document the voices of our members throughout this challenging year, conducting a series of virtual interviews (over Zoom no less) to collect the personal histories of select AAPM members across a diverse cross section of experiences and perspectives. Members at various stages of their careers were interviewed, ranging from residents to chief physicists, and represent multiple contexts including perspectives from the clinic (both small and large), research, academia, publishing, and industry.

When reflecting on the state of medical physics today and in the future, most interviewees had a sense of optimism. It was shared that trainees coming out of residency are well prepared for the clinic. We're in a time of automation and innovation that we, as medical physicists, can use to our advantage. Many viewed the changes arising from the pandemic as an acceleration of positive dynamics already at work in our field. ■

#### Twitter:

@dr\_viscaravioli  
@jerinsd  
@isoCetnar

#### Email:

nvisc@uw.edu  
jhoisak@health.ucsd.edu  
Ashley.Cetnar@osumc.edu

**This collection of interviews is now available for access by all members on the AAPM website within the History section until the end of 2021.**

**It is our hope that all AAPM members can use this resource to reflect on how we have been affected by the pandemic, how we responded to it, and what lessons it holds for the future of our profession. Once sealed at the end of 2021, this time capsule will be re-visited through the sharing of select interviews at the 75th anniversary of AAPM and will serve as a historical record for later generations of medical physicists. Members wishing to contribute their thoughts and insights to the time capsule can continue to do so through the end of 2021 by completing the form.**



1631 Prince Street, Alexandria, VA 22314 | p. 571-298-1300 • f. 571-298-1301 | [aapm.org](http://aapm.org)