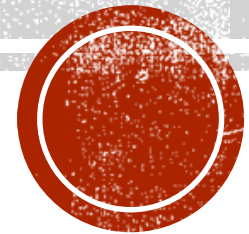


PROFESSIONALISM TRAINING IN RESIDENCY PROGRAMS: CURRENT STATUS AND FUTURE GOALS

Anna Rodrigues, Ph.D. Duke University Medical Center

Irina Vergalasova, Ph.D. Rutgers, Cancer Institute of NJ



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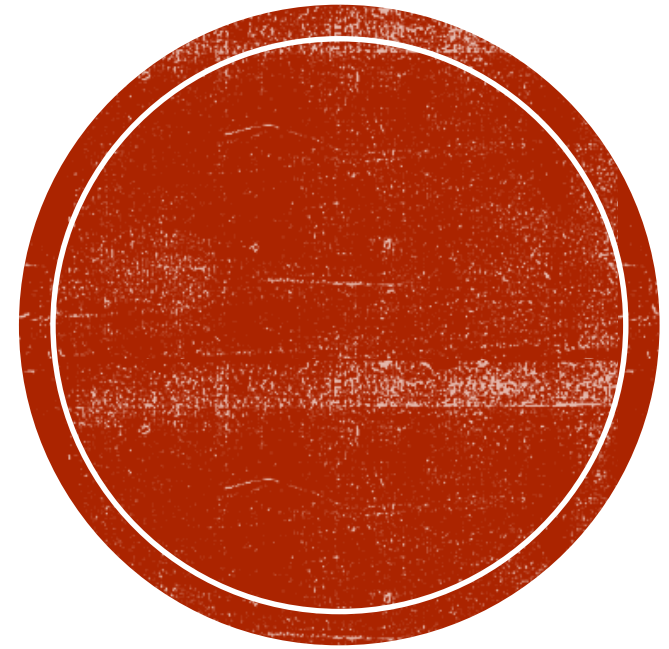
**Associate Director of Medical Physics
Residency Program**

**Director of Medical Physics Certificate
Program**

**Rutgers, The Cancer Institute of New Jersey
New Brunswick, NJ**

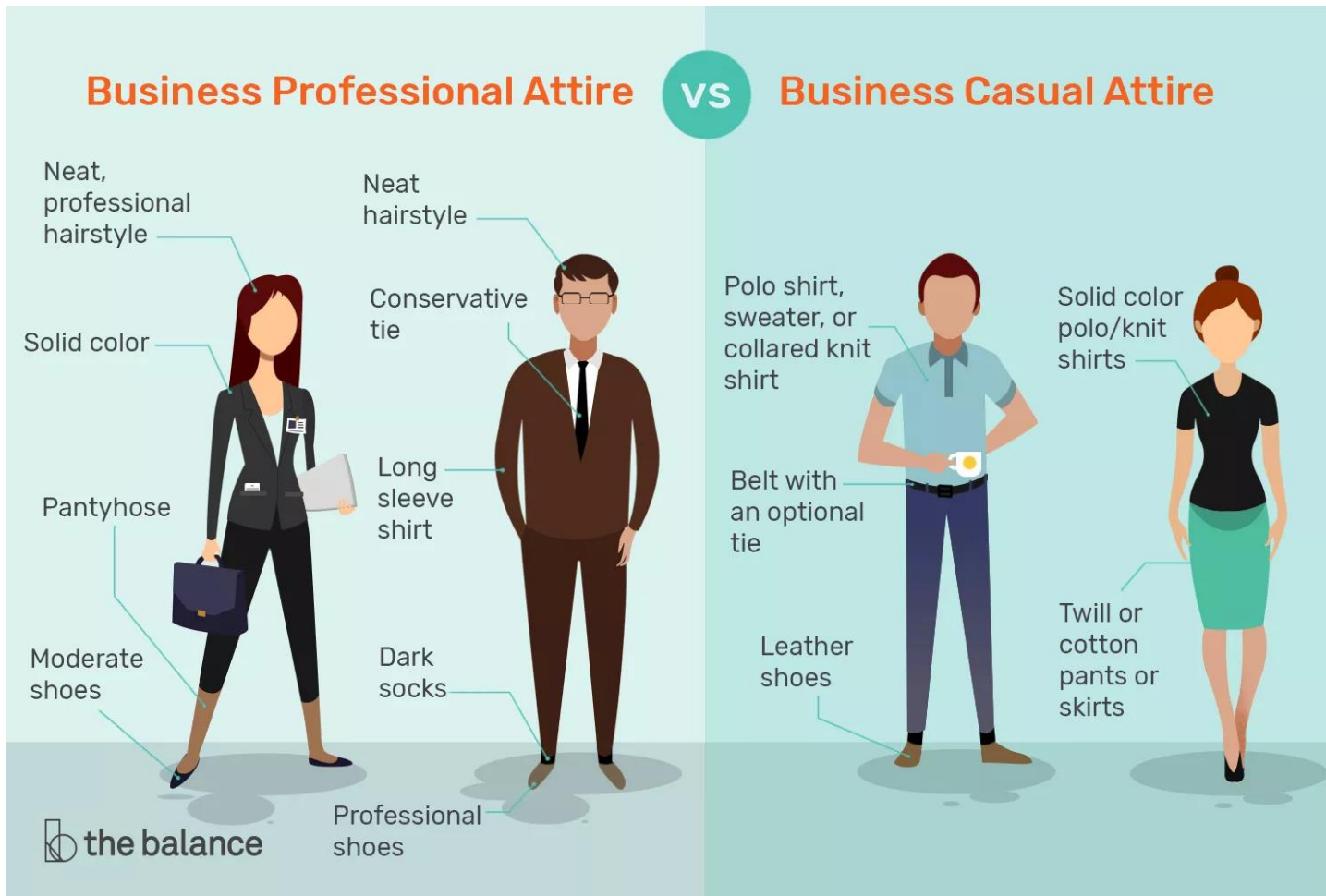


**HOW WOULD YOU DEFINE
PROFESSIONALISM?**





IS THERE A FORMAL DEFINITION FOR PROFESSIONALISM?



- Societal construct
- Variable and constantly changing
- Defined by the professionals themselves



AAPM REPORT 249

Programs should be mindful of the six core competencies specified by the American Board of Medical Specialties (ABMS) and the Accreditation Council for Graduate Medical Education (ACGME), and make efforts to integrate these competencies in their curricula and evaluation process. These competencies include: (1) patient care and procedural skills, (2) medical physics knowledge, (3) practice-based learning and improvement, (4) interpersonal and communication skills, (5) professionalism, and (6) systems-based practice.[5](#), [9-11](#) Below are some examples of how these six competencies may be evaluated in medical physics resident education.[10](#), [12](#)

Reference: Prisciandaro, Joann I., et al. "Essentials and guidelines for clinical medical physics residency training programs: executive summary of AAPM Report Number 249." *Journal of applied clinical medical physics* 15.3 (2014): 4-13.



AAPM REPORT 249

Professionalism . Medical physics residents should carry out all assigned duties, adhere to ethical principles, and show sensitivity to a diverse patient population. Residents shall develop professionalism by:

- a. demonstrating a commitment to carrying out responsibilities;
- b. understanding professional issues and participating in the activities of professional societies;
- c. showing leadership and adhering to ethical principles;
- d. demonstrating sensitivity to diverse patient populations;
- e. being responsive to the needs of patients and prioritizing those needs over self-interest;
- f. respecting patient privacy and confidentiality; and g. demonstrating a commitment to excellence and ongoing professional development.



ACGME and ABS
provide more detailed
description of what
characteristics make a
professional

Reference: Prisciandaro, Joann I., et al. "Essentials and guidelines for clinical medical physics residency training programs: executive summary of AAPM Report Number 249." *Journal of applied clinical medical physics* 15.3 (2014): 4-13.



CAMPEP STANDARD

8.6 Ethics and Professionalism Curriculum

These standards shall be fully addressed before completion of the resident educational programs. Indicate how the following topics are covered:

Professionalism

- Definition of a profession and professionalism
- Elements of a profession
- Definition of a professional
- Elements of professionalism (altruism, honesty, integrity, excellence, duty, accountability, respect for others)
- How is professionalism judged?
- Do's and don't's of professionalism
- Physician's charter and applicability to physicists

Leadership

...

Ethics

...



Professionalism and Ethics Content Guide

Last verified on June 19, 2017

Professionalism and Ethics content is included in the following ABR Medical Physics Exams:

- Part 1 – General
- Part 2
- Part 3 – Oral

The topics covered include but are not limited to:

- Ethical principles
- Historical perspective
- Ethical encounters or dilemmas
- Basic ethical values
- Relationships
- Clinical conflicts
- Continuing education
- Public responsibility
- Employer/employee relationships
- Conflict of interest
- Human research principles
- Scientific principles
- Scientific misconduct
- Publication practices
- Animal research
- Teacher education ethical issues
- Student education ethical issues

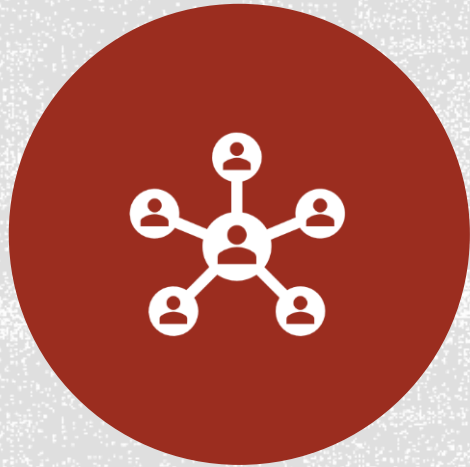
These topics are very similar to the material presented in:

- AAPM TG 159 “Recommended ethics curriculum for medical physics graduate and residency programs”
- AAPM Report TG 249 “Essentials and Guidelines for Clinical Medical Physics Residency Training Programs”
- ABR/ACR/RSNA/AAPM/ASTRO/ARR/ARS Online Modules on Ethics and Professionalism.
<http://www.aapm.org/education/onlinemodules.asp>

ABR 1, 2, 3 & MOC/OLA



ACR: GUIDE TO PROFESSIONAL PRACTICE OF CLINICAL MEDICAL PHYSICS 2018



RELATIONSHIPS

- **Medical Physicists**
 - professional and respectful
- **Physicians**
 - provide accurate, up-to-date information
- **Regulatory Agencies**
 - assist and cooperate with regulators in an honest and respectful manner
 - fully comply with regulatory requirements
- **Patients**
 - provide services in such a way that maximum benefit to the patient
 - must not offer medical advice
- **Public**
 - provide expert information
 - should base statements on scientific principles and fact
 - maintain standards of privacy and confidentiality.



TABLE II. Ethics/professionalism education.

Question	Response	% (n)
Did you receive any instruction in ethics/professionalism during your medical physics training? (N = 1377)	Yes	40 (550)
	No	60 (827)
Should ethics/professionalism be a component of continuing education in medical physics? (N = 1384)	Yes, mandatory	44 (612)
	Yes, voluntary	48 (659)
	No	8 (113)
Would you attend workshops or seminars offered during scientific/professional meetings that focused on ethics/professionalism? (N = 1386)	Yes	75 (1043)
	No	25 (343)

Support for continuing education in ethics/professionalism was above 90% (1271/1384), and about half of respondents preferred such education to be mandatory and half voluntary. Support for continuing education was stronger among women (95%, 313/328 vs 91%, 923/1016 for men; $P < 0.05$). 75% (1043/1386) of the respondents expressed interest in attending ethics/professionalism sessions held during professional/scientific meetings.

91% (1254/1385) of the respondents considered themselves moderately-to-very competent to address ethical/professional dilemmas in their current positions.

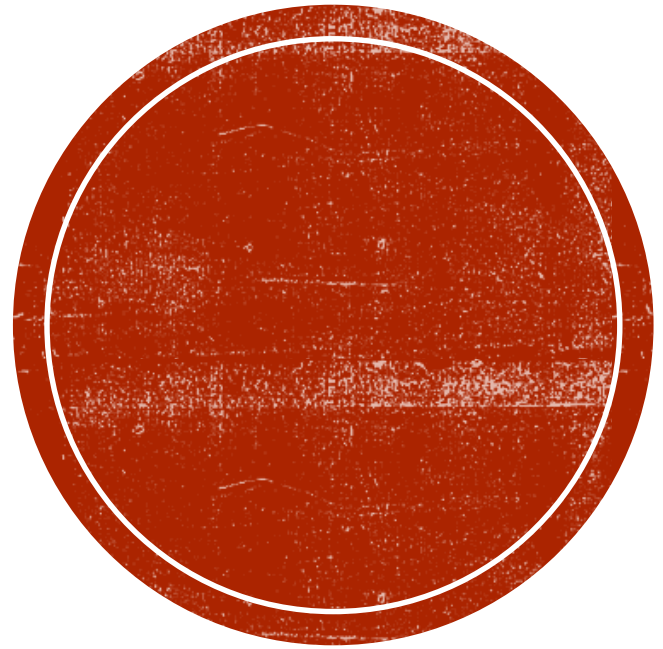
Reference: Ozturk, Naim, et al. "Ethics and professionalism in medical physics: a survey of AAPM members." *Medical physics* 40.4 (2013): 047001.

2012 SURVEY OF AAPM MEMBERSHIP ON ETHICS/PROFESSIONALISM

- To assess current education, practices, attitudes, and perceptions pertaining to ethics and professionalism
- Surveyed both mode of instruction/assessment and content
- Key results:
 - 60% had not received ethics/professionalism education in their training
 - 80% of those currently in training did
 - Periodic structured group discussions involving both faculty and trainee highest ranked mode of instruction



**DOES YOUR RESIDENCY
PROGRAM HAVE A FORMAL
ROTATION FOR TRAINING
PROFESSIONALISM SKILLS?**



HOW DO WE CURRENTLY TEACH THESE SKILLS?



Depends on perception of the definition of what professionalism includes

Leadership skills?

Emotional intelligence?

What's included in soft skills?



AAPM Online Ethics & Professionalism Training Modules (RSNA)

Likely most common approach

How do you evaluate that these skills translate after completing the modules?

How to remediate if skills are lacking?



Master-Apprentice model

Lead by example is another common approach

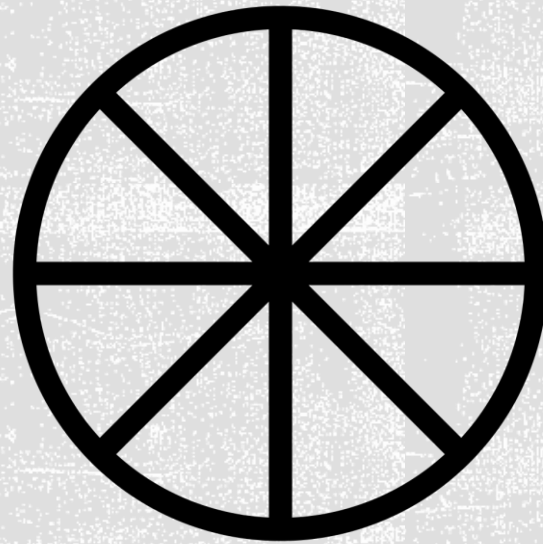
May not be failing, but still leaves room for improvement

Something more quantifiable, more standardized approach (what we like as scientists!!)



HOW ARE OTHERS TEACHING PROFESSIONALISM? PHARMACY

We don't need
to reinvent the

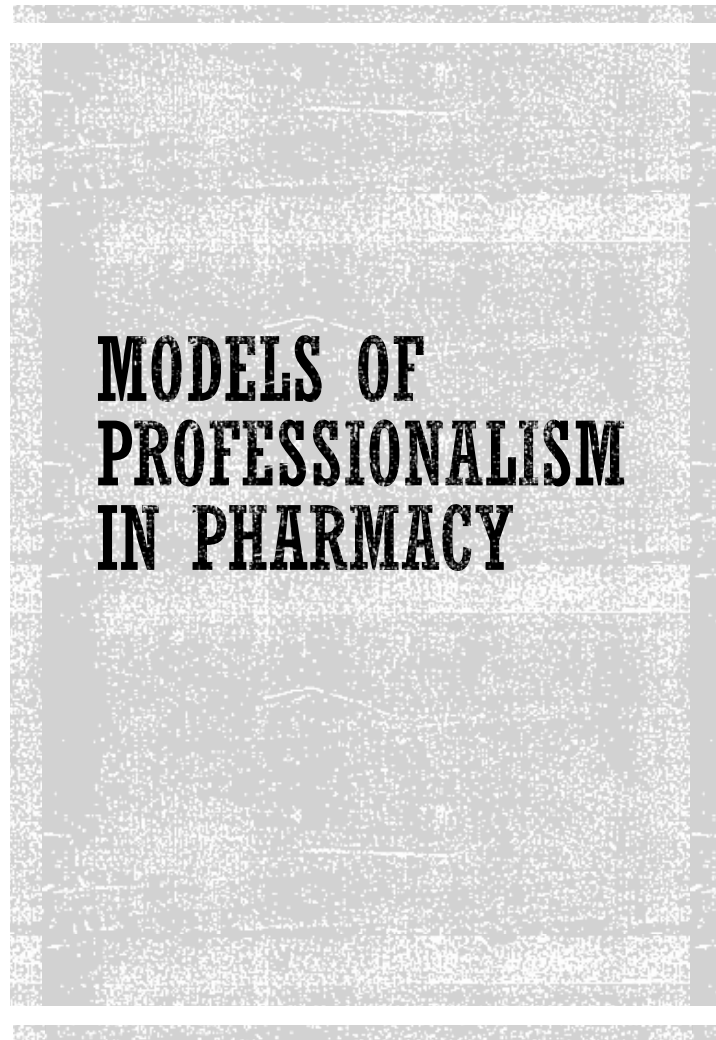


"Professionalism is a complex concept that is challenging to measure because it has no standardized definition and the existing literature related to the topic is limited."

The term 'professionalism' has been used in different ways. Professionalism has been defined as exhibiting beliefs, principles, and attitudes that serve the best interests of patients above practitioners' personal interests [23]. Professionalism, in general, can be defined as being useful to the community, acquiring autonomy to allow the individual to make professional judgments without outside help from others, having a sense of responsibility, and performing one's duty regardless of external rewards. Providing a definition of pharmacy professionalism involves, therefore, a complete clarification of the distinct role of pharmacists, rather than just providing a list of professional components [11]. Professionalism can also be described as behaviour or value aims that distinguish a profession [13].

Debated concepts and interpretations have evolved over time [24] and, while the definitions discussed above grasp the core of professionalism and share many of the elements of professional practice, the actual elements are mostly descriptive, relatively wide-ranging, and imprecise. As the American College of Clinical





"Professionalism is an active, multi-domain concept."

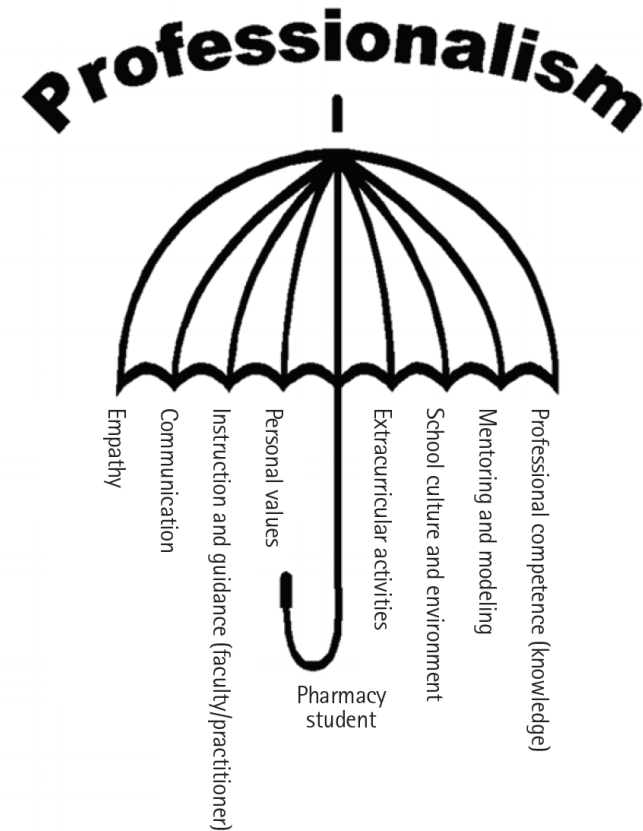


Fig. 2. The umbrella model of professionalism.

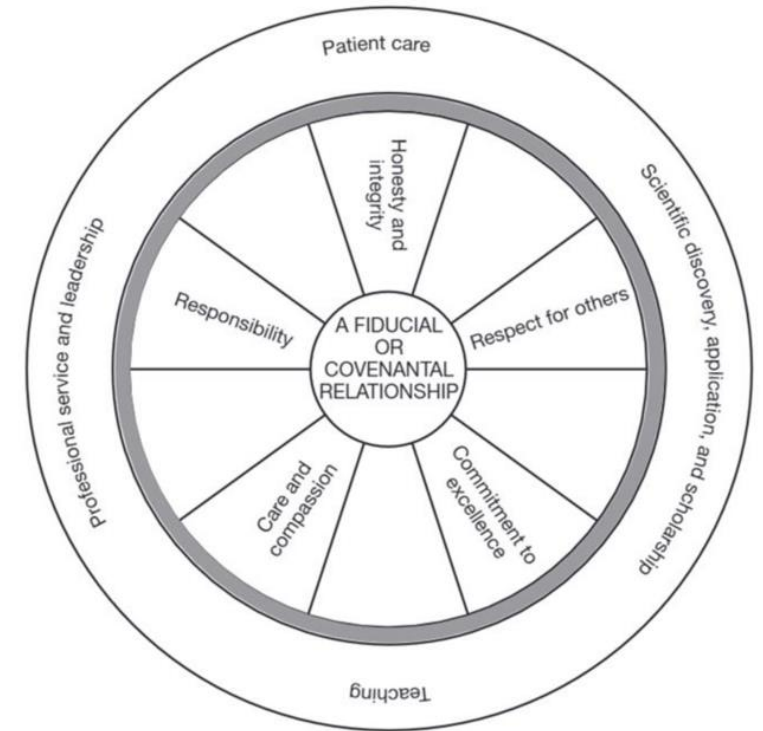


Fig. 3. The bicycle wheel model of professionalism.



Dubbai, H., et al., *Definition of professionalism and tools for assessing professionalism in pharmacy practice: a systemic review*. J Educ Eval Health Prof, 2019. **16**: p. 22

ASSESSMENT OF PROFESSIONALISM

- Instruments used to assess professionalism:
 - Behavioral Professionalism Assessment Instrument (BPAI)
 - Lerkiatbundit's instrument
 - Pharmacy Professionalism Instrument (PPI)
 - Professionalism Assessment Tool (PAT)
- Assessment method in all focused on self-administered surveys with rating scales
- Two measured professional behaviors and two explored the measurement of professionalism attitudes
- All built directly on the 6 domains of professionalism proposed by the American Board of Internal Medicine (ABIM)



ASSESSMENT OF PROFESSIONALISM

- **Instruments used to assess professionalism:**

- Behavioral Professionalism Assessment Instrument (BPAI)
 - 25-item survey instrument measuring professional behavioral aspects of pharmacy students' competence during postgraduate training.
 - 4 factors: responsibility, interpersonal relations/social skills, communication skills, and appearance
 - students were invited to evaluate their behaviors, and teachers were invited to rate their student's professional behaviors based on what they observed during the course.
- Lerkiatbundit's instrument
 - survey that measured changes in the professional attitudes of students across different curricula and classes in a single school of pharmacy
 - 6 factors of professionalism: professional commitment, professional organization, autonomy, public service, self-regulation, and continuing education.
- Pharmacy Professionalism Instrument (PPI)
 - Survey instrument measured professionalism among first-year students and new pharmacy graduates during their postgraduate training.
 - main purpose of this study was to create and validate an instrument to assess the attitudinal features of professionalism
 - 6 characteristics of professionalism from the ABIM, namely: excellence, respect for others, altruism, duty, accountability, and honesty/integrity
- Professionalism Assessment Tool (PAT)
 - 5-point instrument using the 5 performance levels: "knows, knows how, shows, shows how, does, is"
 - 33-item PAT included 5 domains: (1) upholding principles of integrity and respect; (2) relationships with others; (3) reliability, responsibility, and accountability; (4) citizenship and professional engagement; and (5) lifelong learning and adaptability



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HOW ARE OTHERS TEACHING PROFESSIONALISM? MEDICAL SCHOOLS

ABSTRACT

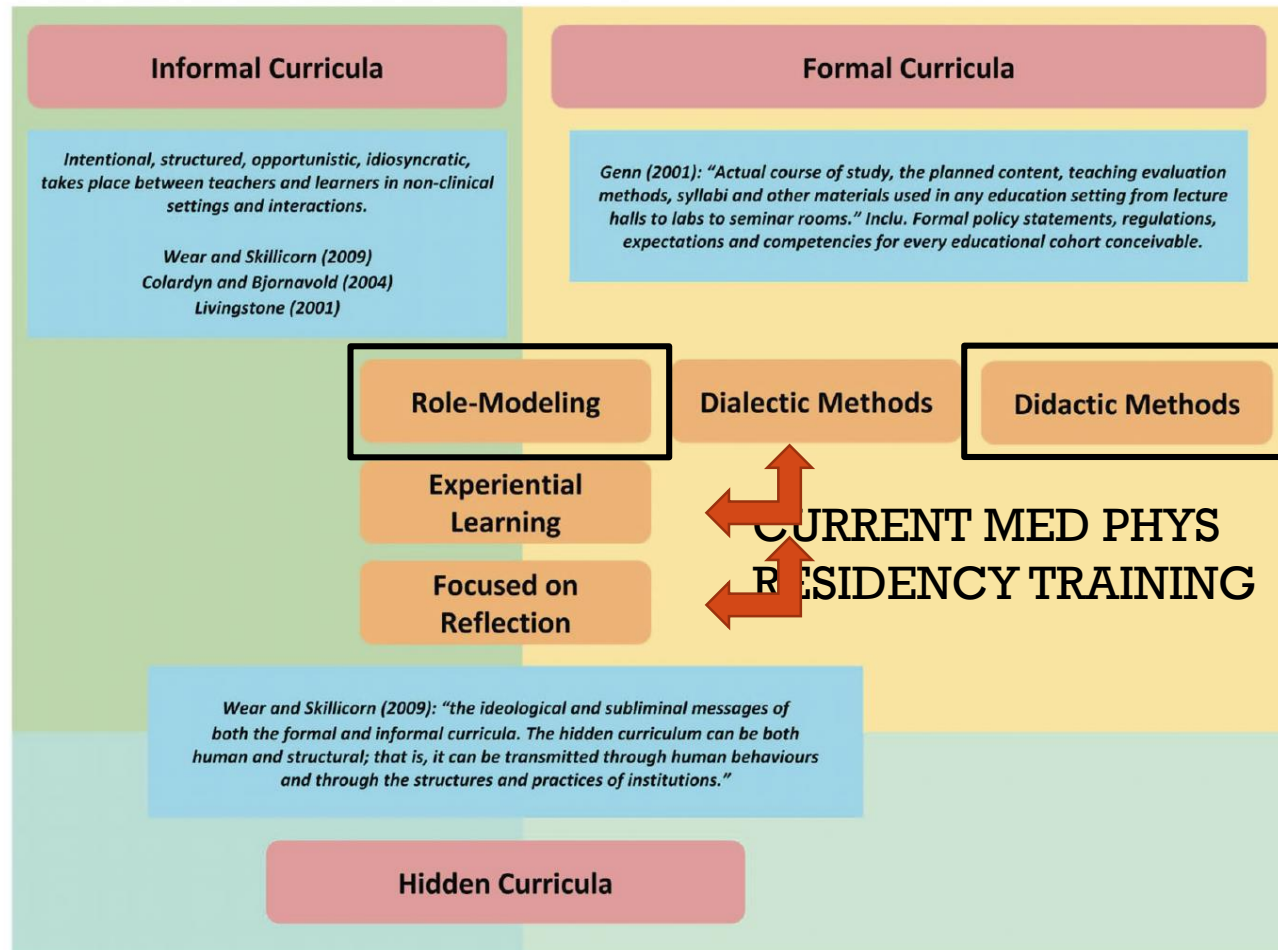
Introduction: Professionalism is an evolving, socioculturally informed multidimensional construct that influences doctor-patient relationships, patient satisfaction and care outcomes. However, despite its clinical significance there is little consistency in how professionalism is nurtured amongst medical students. To address this gap a systemic scoping review of nurturing professionalism in medical schools, is proposed.

Methods: Levac's framework and the PRISMA-P 2015 checklist underpinned a 6-stage systematic review protocol. Concurrent use of Braun and Clarke's approach to thematic analysis and directed content analysis was used to identify the key elements in nurturing professionalism.

Results: 13921 abstracts were identified from six databases, 854 full-text articles reviewed, and 162 full-text included articles were included. The 4 themes identified through thematic analysis are consistent with findings of the directed content analysis. These were the definition of professionalism, the approaches, content, barriers and enablers to teaching professionalism.

Conclusion: Informed by a viable definition of professionalism and clear milestones nurturing professionalism nurturing professionalism begins with culturally appropriate training in clinical competence, humanistic qualities and reflective capacity. This process requires effective evaluations of professional identity formation, and the impact of the learning environment underlining the need for longitudinal assessments of the training process.





PROFESSIONALISM TRAINING APPROACHES



Ong, Y.T., et al., *Nurturing professionalism in medical schools. A systematic scoping review of training curricula between 1990-2019*. Med Teach, 2020: p. 1-14.

BARRIERS

- **System-level**
 - Informal curricula undermining formal curricula
- **Institution-level**
 - Lack of consistent focus on professionalism training
 - Lack of faculty development
 - Lack of monetary or administrative support
 - Difficulty of assessing professionalism objectively and fairly
- **Faculty-level**
 - Lack of understanding of what professionalism is
- **Individual-level**
 - Disinterest in professionalism training due to skepticism or conflicting commitments

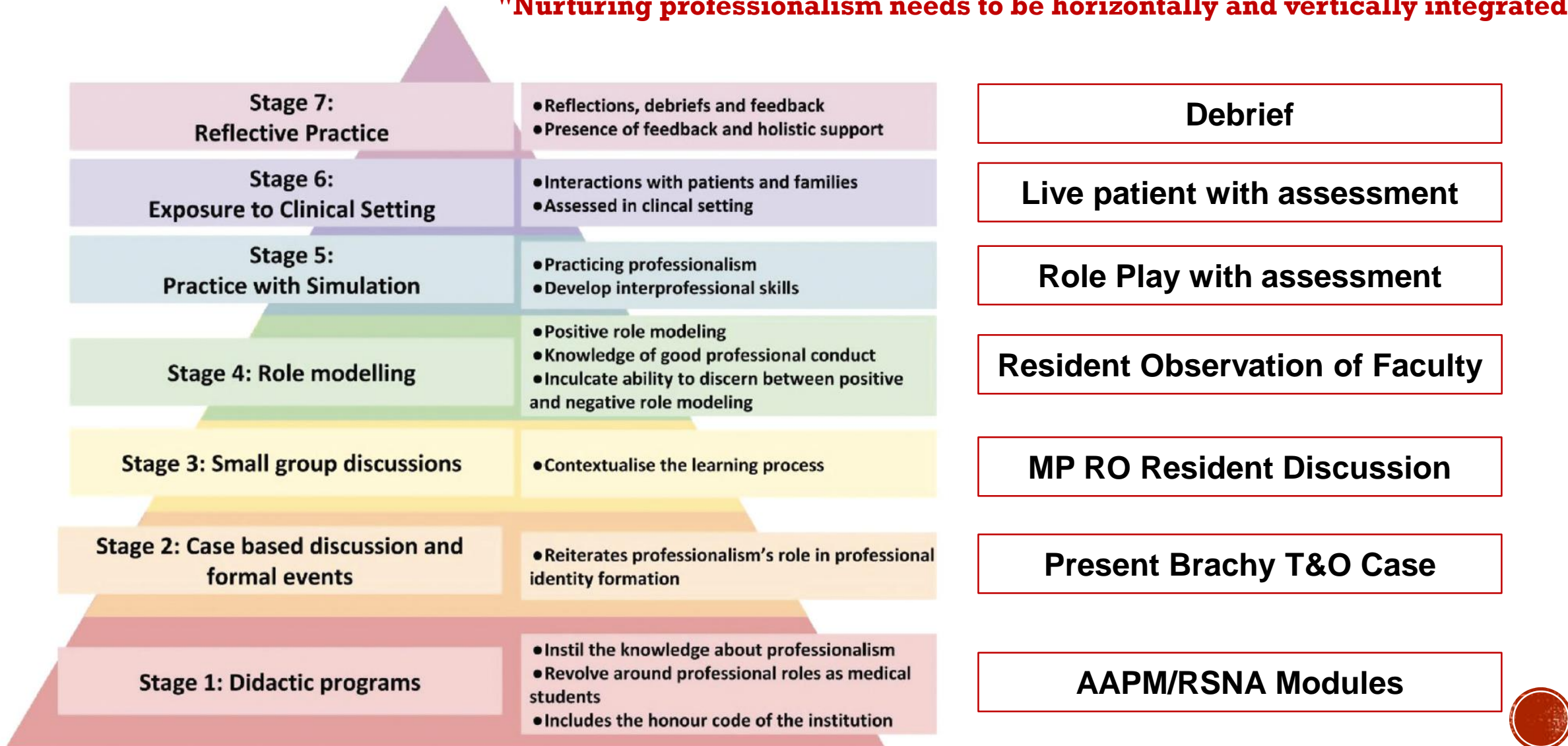
ENABLERS

- **Active student involvement**
- **Motivating students to learn about professionalism**
 - enhancing self-directed learning and propagating interest in professionalism training
- **A platform to discuss discrepancies in what they learn and observe**
 - This builds trust between faculty and students to allow for open communication and subsequent remediation if needed
- **Support from institutions and faculty is vital**



PROPOSED PROFESSIONALISM TRAINING

"Nurturing professionalism needs to be horizontally and vertically integrated."





Effective teaching and
assessment models



Resources and support for
implementation



Train the trainer

FUTURE GOALS



FUTURE GOALS: RESOURCES AND SUPPORT

AAPM COMMITTEE TREE

Medical Physics Residency Training and Promotion Subcommittee (MPRTP)

- bookmark this page (bookmarks show under "My AAPM" in the menu to left)

Committee Website | Directory: Committee | Membership

Email You may send email to this group now using [gmail](#) or [outlook](#).
- or -
You may save the address 2020.MPRTP@oapm.org
to your local address book. This alias updates hourly from the AAPM Directory.

Charge The objectives of the Medical Physics Residency Training and Promotion Subcommittee are to:

1. provide recommendations, regarding clinical residency training essentials,
2. provide recommendations, regarding DMP training essentials, and
3. develop a plan to promote residency training programs.

Bylaws: Not Referenced. Rules: Not Referenced.

Approved Date(s)

Committee MPRTP
Keywords:

Chair



Hanita Al-Hallaq
Subcommittee Chair

AAPM COMMITTEE TREE

Work Group on Periodic Review of Medical Physics Residency Training (WGMPRT)

- bookmark this page (bookmarks show under "My AAPM" in the menu to left)

Committee Website | Directory: Committee | Membership

Email You may send email to this group now using [gmail](#) or [outlook](#).
- or -
You may save the address 2020.WGMPRT@oapm.org
to your local address book. This alias updates hourly from the AAPM Directory.

Charge To establish a working group to periodically review the Essentials and Guidelines for Hospital-Based Medical Physics Residency Training Programs to ensure it is current with standard clinical practice and includes the necessary level of detail.

Bylaws: Not Referenced. Rules: Not Referenced.

Approved Date(s)

Committee diagnostic, nuclear, periodic, programs, residency, therapy, training.
Keywords: WGMPRT

Chair



Jonathon Nye
Workgroup Chair

+ Professional Issues Committee

Charge

The Professional Issues Committee will examine needs and demands on directors of academic programs for providing high standard education, improving educator practice, promoting best practice and policies that support the academic program directors as well as providing recommendations on SDAMPF professional policy and work, as appropriate.

Send email to this group: professional.issues.committee@sdamp.org

Send email to the Chair of this group: chair.professional.issues.committee@sdamp.org



Fang-Fang Yin, PhD
Chair (voting)
02/05/2019 - 12/31/2021



Rajat Kudchadker, PhD
Member (voting)
02/05/2019 - 12/31/2021



John Rong, PhD
Member (voting)
04/02/2019 - 12/31/2021



Irina Vergalasoza, PhD
Member (voting)
04/02/2019 - 12/31/2021



Christopher Watchman, PhD
Member (voting)
04/02/2019 - 12/31/2021



Dandan Zheng, PhD
Member (voting)
04/02/2019 - 12/31/2021

AAPM COMMITTEE TREE

Medical Physics 3.0 Committee (MP30C)

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Committee Website | Directory: Committee | Membership

Email You may send email to this group now using [gmail](#) or [outlook](#).
- or -
You may save the address 2020.MP30C@oapm.org
to your local address book. This alias updates hourly from the AAPM Directory.

Charge To integrate MP 3.0 activities to enact, express, and enhance the full value of physics towards human health into the council working space of the AAPM. That includes practice, administrative, scientific, and educational goals. To identify and explore other areas besides radiotherapy and imaging where medical physicists can work in healthcare.

Bylaws: Not Referenced. Rules: Not Referenced.

Approved Date(s)

Committee No Keywords Entered
Keywords:

Chair



Ehsan Samei
Committee Chair

AAPM COMMITTEE TREE

Medical Physics Leadership Academy Committee (MPLAWG)

- bookmark this page (bookmarks show under "My AAPM" in the menu to left)

Committee Website | Directory: Committee | Membership

Email You may send email to this group now using [gmail](#) or [outlook](#).
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to your local address book. This alias updates hourly from the AAPM Directory.

Charge The Medical Physics Leadership Academy (MPLA) Committee oversees and organizes the MPLA, a leadership and business knowledge and skill development program specific to medical physicists. AAPM members are leaders and are able to realize and fulfill their personal potential by relating with others in ways that provide meaning, value, and structure to make a difference. MPLA specifically educates its participants through didactic, coaching, and questioning modes of instruction. Specific activities may include but are not limited to:

- Design and implementation of an ongoing MPLA program.
- Develop and review MPLA core and complementary curriculum covering topics of business administration and leadership development.
- Review and if necessary develop needed MPLA resources.
- Collate MPLA-related resources through an MPLA website.
- Develop and employ participant progress assessment of participation in the MPLA program.
- Provide MPLA content using face-to-face sessions at AAPM meetings and examine other digital modes of material delivery.
- Develop a participant community for shared learning and connection.
- Market and publicize MPLA to the AAPM community.

Chair



Jennifer Lynn Johnson
Committee Chair



ACKNOWLEDGEMENTS

- Hania Al-Hallaq
- Laura Padilla
- Derek Brown
- Kristi Hendrickson
- Leah Schubert
- SDAMPP Professional Issues Committee
- AAPM Medical Physics Residency Training and Promotion Subcommittee

