



BEYOND THE FUTURE: MAKING IT OURS

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Horizontal lines for notes



DISCLOSURES



- Professor of Medical Physics at the University of Wisconsin
The President of the Center for the Assessment of Radiological Sciences, a 501(c)(3) non-profit Patient Safety Organization listed with the Agency for Healthcare Research and Quality, dedicated to improving quality and patient safety in radiotherapy and radiology. I receive no remuneration from CARS.



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LEARNING OBJECTIVES

- 1. Understand some of the challenges facing medical physics and the AAPM.
2. Understand how we should face the challenges to shape our future.

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MEDICAL PHYSICS AND HAPPINESS

- Surveys show medical physicists mostly to be happy.
- They are happy with the AAPM
 - (But no organization is perfect)
- They are happy with their jobs and what they do.
 - (Well, nowhere is perfect.)
- Also, mostly, they just want to get on with their work.
- However...



SOME OF THE CHALLENGES

- Decreases in funding:
 - For clinical medical physics
 - Decrease in CPT reimbursements for radiotherapy, No CPT for imaging.
 - For medical physics research funding
 - Almost none for radiotherapy physics, imaging hanging on by a thread, but for how long?
- Encroachment on medical physics positions
 - From other disciplines
 - BME, HPs
 - From medical physicists' assistants
- Changing face of medical physic
 - Increased automation
 - Big data and artificial intelligence





- Surely we can find out
- How many medical physicists are working
 - How long tasks take (how long does thinking take)
 - How long tasks should take
 - How many physicists would it take to do everything
 - How many do we lose each year
 - How many do we produce
 - How is the balance?
- And we are doing that. Are we done?

Reports that say that something hasn't happened are always interesting to me, because as we know, there are **known knowns**; there are things we know we know. We also know there are **known unknowns**; that is to say we know there are some things we do not know. But there are also **unknown unknowns** – the ones we don't know we don't know. And if one looks throughout the history of our country and other free countries, it is the latter category that tend to be the difficult ones.

Donald Rumsfeld, 2/12/2002,
based on comments by William Graham

WHITHER MEDICAL PHYSICISTS?

- In the clinic, the medical physicist may become more managerial
 - Fewer MPs needed
 - Supervising medical physicists' assistants and dosimetrist
- Much of the work will be automated
 - Automatic QA of units, imaging and therapy
 - Dosimetry and planning due to artificial intelligence
 - This is not a bad thing, and is what we have been working on for a long time
 - Notice that at least 39 of the 210 sessions at this meeting involve big data or artificial intelligence.

"THERE IS NO LINEAR TIME"



- Past performance is not indicative of future results.
- Linear interpretation over time ignores possible large changes.
 - As an example,



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KING CNUT ATTEMPTS TO HOLD BACK THE TIDE

- It did not work for him.
- It will not work for us.

(Footnote: He was not really trying, but demonstrating the king's limitations to flattering courtiers.)



YOU CAN CHOOSE!

- We can go along hoping that things don't change too much because we like where we are.
- Or, we can expect unexpected changes and try to own our future.



HOW SHOULD WE EXPAND OUR HORIZONS?

Robert Jeraj will discuss this next.



WHAT SHOULD WE DO?

Paul B. Brown will tell you.



WHAT DOES THIS PLANNING FOR THE FUTURE LOOK LIKE?

1. See what our situation is now.
 - a. What do we like?
 - b. What do we dislike?
2. Understand how that situation is changing now, but the change is divergent.
3. Understand why the situation is changing now, but realize it will not always be why.
4. Visualize many possible scenarios for the future that could be supportable.

Go to the next slide



WHAT DOES THIS PLANNING FOR THE FUTURE LOOK LIKE?

- 5. For the scenarios that sound good, think about what would have to happen to bring that about.
- 6. Think about what steps now could start in motion the forces that can create what would have to happen for the good scenario.
- 7. Start working on those steps...now!
- 8. Keep in mind there are going to be many scenarios to work on.



WHAT IS THE AAPM DOING NOW TO SHAPE THE FUTURE

- We are reinforcing, reshaping and reinvigorating our relationships with our sister societies.
- We have just approved a new strategic plan.
- We have the Future Working Group.
- We have the Medical Physics 3.0 Committee – Visit their booth in the exhibit hall.



WHAT CAN YOU DO NOW?

(Well, after lunch)
 Participate in the President's Workshop, where we will generate ideas on how to get wherever it is we want to go (those are two questions).
 1:45 p.m. – 3:45 p.m. in the Davidson Ballroom C



THE FUTURE

- Of course, we have to have some idea of what we want the future to look like.
- Do not hope that things will not change.
- The future is ours to make if we make our opportunities and go boldly.
