



# Medical Physics

The International Journal of Medical Physics Research and Practice

## Medical Physics Workshop: Editorial Vision and Guidance on Writing and Reviewing Papers

**Jeffrey F. Williamson, Ph.D.**

*Medical Physics, Editor-in-Chief*

**Shiva K. Das, Ph.D.**

*Medical Physics, Therapy Physics Editor*

**Mitchell M. Goodsitt, Ph.D.**

*Medical Physics, Imaging Physics Editor*

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### Outline

- Jeff Williamson: *Editorial vision and status of new initiatives*
- Shiva Das: *Guidelines and templates for Referees and Associate Editors*
- Mitch Goodsitt: *Writing good scientific papers and responding to critiques*

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# Medical Physics

The International Journal of Medical Physics Research and Practice

## Editorial Vision for Medical Physics Update and current status of new initiatives

**Jeffrey F. Williamson, Ph.D.**

Virginia Commonwealth University  
*Medical Physics, Editor-in-Chief*

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### Outline

- Core values and mission
- Recent initiatives and changes to *Med Phys* operations
- Outcomes

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### New Editorial Model

- With growth of journal, Editor's responsibility has evolved into a full-time position
- Starting January, 2014, a new model
  - Jeff Williamson, Editor-in-Chief (50%)
  - Mitch Goodsitt, Imaging Physics Editor (25%)
  - Shiva Das, Therapy Physics Editor (25%)
- Under Bill Hendee's and Colin Orton's leadership, *Medical Physics* has become the pre-eminent international journal in our field

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### Medical Physics: Core Mission

- Enhance *Medical Physics* status as the preeminent forum for exchange of cutting edge medical physics science
- To identify and publish the best contributions in
  - cutting edge basic science developments with potential for improving patient care
  - clinical translation and validation of previously developed basic science innovations
  - High impact clinical physics innovations that solve a significant clinical problem of broad interest
- Features of a publishable articles
  - Novelty
  - Generalizable scientific data or conclusion
  - Relevant to significant subset of our readership

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## Vision and Mission Statement

- **Bill Hendee (2005):** “...to continue the Journal’s tradition of publishing the very best science that propels our discipline forward and improves our contribution to patient care.”
- **The discipline is broad:** “...application of physics concepts and methods to diagnosis and treatment of disease”
  - **Medical imaging:** psycho-physics, system design, image reconstruction/restoration
    - » X-rays, US, MR, RF, etc. for anatomic, biomechanical, electrical, molecular, and physiological properties
  - **Therapy:** platform optimization, planning, dosimetry, outcome/biology models, imaging for response and guidance
    - » RT, IG surgery, RF/US ablation and thermal therapy
  - **Basic research:**
    - » Segmentation, registration, feature extraction, voxel labeling
    - » Imaging and dosimetry
    - » Physiology, biology, statistics

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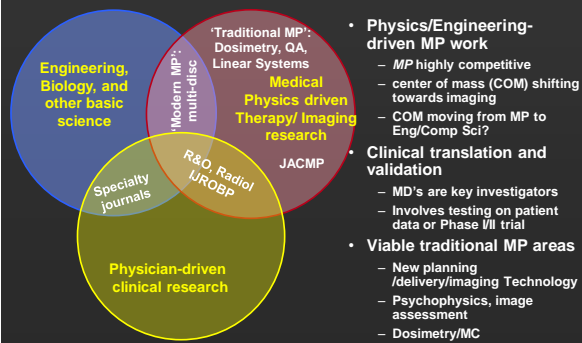
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## Disciplinary Domains, MP Readership, and Shifting Markets




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## Current Initiatives

- **Review improvements**
  - Move away from Guest Associate Editor (AE) model to in-house AEs
  - Improve selectivity & stabilize Journal growth
  - More thorough and uniform reviews
  - Better understand our audience and their needs
  - Improve reader experience
- **Smaller more active Editorial Board**
  - Advise editorial team, formulate policy, serve as AEs
  - Implement initiatives via Working Groups
    - » WG1: Review process efficiency, quality, selectivity
    - » WG2: accessibility, readability, and interactivity
    - » WG3: Data mining and evaluation of Journal quality
    - » WG4: Outreach: Non-MP scientific/ clinical communities

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## Review Process: 2-3 cycles

1. Ms. Received: Editor-in-Chief (EIC) Selects editor (ED)
2. ED preliminary review
  - a. Rejects paper (15%)
  - b. Recruits associate Editor (AE)
3. AE manages review
  - a. Solicits reviews from at least 2 referees
  - b. Makes recommendation to ED
4. Editorial Decision
  - a. ED reviews Ref and AE reviews
  - b. Makes decision and communicates to Author
  - c. EIC signs off on ED decision

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## Board of Associate Editors

- Create board of 100-120 AEs with 3 year term
  - More recognition for contributions
  - Expectation: Manage 10 articles/year
  - Training and evaluation
  - More uniform performance and policy implementation
- Status:
  - 74 current members
  - Along with 53 Editorial Board members, BAE manages 75% of 2014 submissions
  - Previously, 2/3 Guest AEs

**The Board of Associate Editors**  
 Members of The Board of Associate Editors provide experiential oversight of the review of manuscripts, which includes signing referees, conferring the working referees, sometimes providing their own referees, and writing summary statements/recommendations to the editors of acceptance or rejection.

**Senior Associate Editors**

Alan Cowley (2013-14) Richard Kambhampati (2013-14) Babara Auer (2013-14)	David H. Green (2013-14) Joseph R. Marino (2013-14) Rena M. Steinberg (2013-14) Stephen D. Young (2013-14)	Margaret M. M. M. (2013-14) George M. (2013-14) Gregory J. (2013-14) John D. (2013-14)
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**Associate Editors**

Alexis A. (2013-14) Alexis C. (2013-14) Alexis D. (2013-14) Alexis E. (2013-14) Alexis F. (2013-14) Alexis G. (2013-14) Alexis H. (2013-14) Alexis I. (2013-14) Alexis J. (2013-14) Alexis K. (2013-14) Alexis L. (2013-14) Alexis M. (2013-14) Alexis N. (2013-14) Alexis O. (2013-14) Alexis P. (2013-14) Alexis Q. (2013-14) Alexis R. (2013-14) Alexis S. (2013-14) Alexis T. (2013-14) Alexis U. (2013-14) Alexis V. (2013-14) Alexis W. (2013-14) Alexis X. (2013-14) Alexis Y. (2013-14) Alexis Z. (2013-14) Alexis AA. (2013-14) Alexis AB. (2013-14) Alexis AC. (2013-14) Alexis AD. (2013-14) Alexis AE. (2013-14) Alexis AF. (2013-14) Alexis AG. (2013-14) Alexis AH. (2013-14) Alexis AI. (2013-14) Alexis AJ. (2013-14) Alexis AK. (2013-14) Alexis AL. (2013-14) Alexis AM. (2013-14) Alexis AN. (2013-14) Alexis AO. (2013-14) Alexis AP. (2013-14) Alexis AQ. (2013-14) Alexis AR. (2013-14) Alexis AS. (2013-14) Alexis AT. (2013-14) Alexis AU. (2013-14) Alexis AV. (2013-14) Alexis AW. (2013-14) Alexis AX. (2013-14) Alexis AY. (2013-14) Alexis AZ. (2013-14) Alexis BA. (2013-14) Alexis BB. (2013-14) Alexis BC. (2013-14) Alexis BD. (2013-14) Alexis BE. (2013-14) Alexis BF. (2013-14) Alexis BG. (2013-14) Alexis BH. (2013-14) Alexis BI. (2013-14) Alexis BJ. (2013-14) Alexis BK. (2013-14) Alexis BL. (2013-14) Alexis BM. (2013-14) Alexis BN. (2013-14) Alexis BO. (2013-14) Alexis BP. (2013-14) Alexis BQ. (2013-14) Alexis BR. (2013-14) Alexis BS. (2013-14) Alexis BT. (2013-14) Alexis BU. (2013-14) Alexis BV. (2013-14) Alexis BW. (2013-14) Alexis BX. (2013-14) Alexis BY. (2013-14) Alexis BZ. (2013-14)
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## WG1: Improving review process efficiency, quality, and selectivity

Mitch Goodsitt and J. Williamson, Co-chairs

- Create formal Associate Editor pool
- Process improvement achievements
  - AE and Referee templates and numerical impact scores
  - Training and revised instructions for AEs and Referees
  - Improving PXP workflows
- High priority future goals
  - Increasing selectivity of Journal
  - Increasing review consistency/quality
  - Code of conduct/ethics

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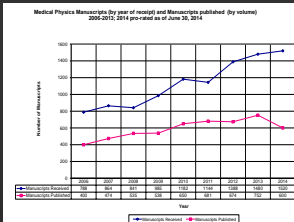


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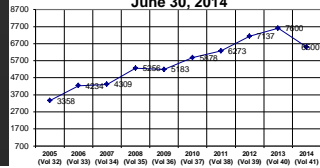
## Why increase selectivity?



- Growth is unsustainable
- Increase focus on
  - Best science
  - Widely read guidance, review, and opinion

- Use WG3 data to help us focus on what our audience reads and cites
  - Discourage orphan papers that are rarely cited or read

Total Number of Article Pages Published (By Volume) 2005 to 2013; 2014 pro-rated as of June 30, 2014



## WG2: Improving Reader Experience

D. Rogers and S. Armato, Co-chairs

- Better marketing/promotion of Med Phys content
- Experiment with interactivity and social media: blog-like electronic forums
  - Add interactivity to selected MP content starting with “Point/Counterpoint”
- Goals:
  - Have fun debating controversial issues
  - Improve value of MP as a platform for scientific exchange by facilitating peer-to-peer interaction
  - Clinical readers: encourage reader- author interaction

This is the website of the international scientific journal *Medical Physics*. *Medical Physics* is the scientific journal of the American Association of Physicists in Medicine, and is an official science journal of the Canadian Organization of Medical Physicists, the Canadian College of Physicists in Medicine, and the International Organization for Medical Physics (IOMP). It publishes research papers with the application of physics and mathematics to the science of diagnosis and therapy, emphasizing original theoretical or experimental work. Papers are published in English.

Learn about [medphys.org](http://medphys.org) and what *Medical Physics* has to offer.

**The Editorial Team**

Editor-in-Chief	Editor	Editorial Board
Jeffrey W. Williamson	John C. DeWerd	Board of Associates (editors)
	Executive Editor	

**Open Access Articles**

Many of the articles published in *Medical Physics* are available at no cost and can be accessed without a password. See the following categories:

- Medical Physics Letters
- Brief Communications
- Clinical Applications
- Point/Counterpoint
- Review Articles
- Special Issues
- Special Issues Papers
- Errata
- Editorial Publications
- Call for Abstracts

**Submit an Article**

Attached Volumes (available to subscribers only)

Subscribe to *Medical Physics*

Advertise in *Medical Physics*

**Find Read This Month**

- A 2013-2014 Special Issue is being released on June 1, 2014.
- A special and historical collection of papers published in the 1960s and 1970s.
- Medical Physics continues to publish a wide range of content.
- Submission to the AAMPD is open for the 2014-2015 submission period.
- A special collection of papers and book reviews for the 50th anniversary of the journal is being published.
- A special collection of papers and book reviews for the 50th anniversary of the journal is being published.

## WG2 Progress

- Improved design of medphys.org
- Efforts to increase submissions on hold
- Work begun on adding reader interactivity to Point/Counterpoint
- Soliciting applications for a Review Article Editor

## WG3 Data Mining/Quality Evaluation

George Kagadis, Chair

- Revive Gary Fullerton data mining effort
  - Market composition and growth
  - Individual article scientific impact
  - Reader satisfaction
  - Overall journal and review quality
- Journal quality
  - Identify successful articles: no. of citations, downloads, page views, advertising hits, etc.
  - Use data mining to assess what makes a good article
    - » Topic? Professional identity of authors? Referee impact score? Funding or not?
  - Guide editors in avoiding “poor” articles
  - Evaluate success of our initiatives

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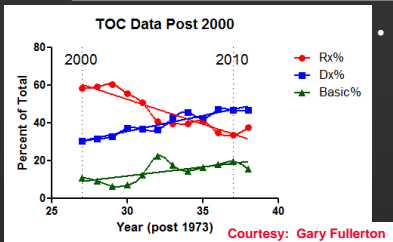
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## Shifts of Research Domain



- Key questions for data mining
  - Who are the PI's?
  - how inter-disciplinary?
  - Who is funding research?

- The Journal needs to
  - ‘Follow’ its research community if it expands beyond radiology/Rad Onc depts
  - Identify its readership and address its changing needs

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## WG4: Tracking Expanding MP Boundaries

Shiva Das and Andy Karellas, co-chairs

- Attracting potential new or growing audiences
  - Physics-fluent radiologists and radiation oncologists
  - Engineers (BME and EE), computer scientists, biologists
  - Asian and European markets
- Strategies
  - Invite targeted community reps onto Editorial Board
  - Become peer-review venue for specialty meetings
    - » Example: special online issue of selected papers from 3<sup>rd</sup> CT signal formation conference in Salt Lake City
  - Very different challenges presented by 3 groups
  - We get lots of submissions: want higher quality multi-disciplinary papers

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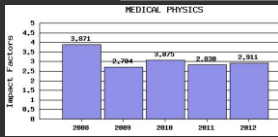
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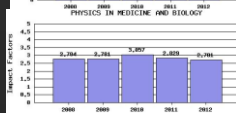
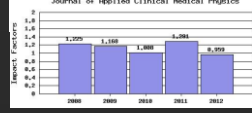
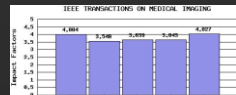
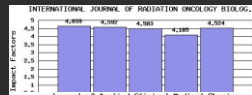
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## Journal Impact Factors

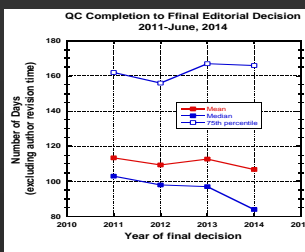
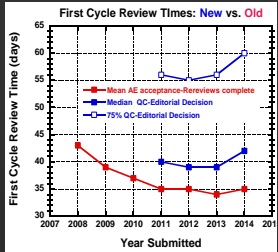


- MP is holding its own
- WG3: will develop performance metric more appropriate to our field

$$JIF(Y) = \frac{\text{Total cites in Year Y of articles in Y-1 and Y-2}}{\text{No. articles published in Y-1 and Y-2}}$$



## Review Time



- Median time to initial editorial decision: 42 days
- Median time to final decision (excluding revision time): 86 days

## Conclusion

- Medical physics research is rapidly changing
  - More multidisciplinary
  - More focus on imaging even in therapy
  - New submission rapidly increasing especially from Europe and Asia
- *Med Phys* needs to adapt, too
  - Faster, more interactive
  - Better understand and serve readership/authorship needs
  - Appreciate our broad international and multidisciplinary audience
- Improve *Med Phys* impact and quality while nurturing positive aspects of its culture