



Medical Physics
The International Journal of Medical Physics Research and Practice

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

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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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**Editorial Vision for Medical Physics
Status and new developments**

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Medical Physics, Editor-in-Chief

Outline

- Core values and mission
- Recent initiatives and changes to *Med Phys* operations
- Transition to new publisher


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 design, optimization, planning, dosimetry, outcome/biology models, imaging for response and guidance
 - » RT, IG surgery, RFA/US ablation and thermal therapy
 - **Basic research:**
 - » Segmentation, registration, feature extraction, voxel labeling
 - » Image quality assessment and dosimetry
 - » Physiology, biology, statistics

Medical Physics: Core Mission

- To serve 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
 - Scientific or clinical novelty
 - Generalizable scientific data or conclusion
 - High potential impact on significant readership subset

Types of articles

- Research Article: report of original experimental or theoretical research
 - Up to 10 pages (9000 words) free: \$200/ page >10
- Technical Note (5 pages)
- Medical Physics Letter (5 pages)
 - Rapid review: highly novel, high impact development
- Medical Physics Dataset article 
 - Publically accessible dataset of interest to researchers
- Review article (18 Pages)
- Future of Medical Physics (formerly Vision 20/20) article
- Point/Counterpoint
- Task Group Reports and Special Reports

Heavily represented Med Phys Research Areas

- Image processing/analysis
 - Segmentation, feature extraction, registration
- Computational dosimetry and radiation detectors
- X-ray CT, CBCT, PET physics
 - Reconstruction, performance assessment, dose reduction, artifact mitigation, FPD development
 - Phase-contrast imaging
- Radiation therapy
 - Monte Carlo planning, plan optimization, IMPT, motion management, IGRT
- Breast imaging: Tomosynthesis, CBCT, CAD

Articles we don't encourage

- Educational articles and teaching innovations
- Peripheral/outside medical physics
 - Engineering technology, e.g., image processing, without clear translational or clinical application
 - Clinical studies with little medical physics content
- Limited novelty/impact
 - Clinical physics/QA/technical of narrow scope, i.e., evaluation of single commercial product
 - Duplication of existing studies
 - No new generalizable data or novel technology
 - Excessively incremental “salami” publications
 - Premature/underdeveloped
- Poorly written articles

Review Process: *Med Phys*

- **Single-blind review system**
 - Referees know who authors are
 - Associate editor (AE) and referees (Ref) are anonymous to authors
- **Process: for each manuscript**
 - One of three Editors (ED), Williamson, Das or Goodsitt, recruits an AE from our pool of 150 topical specialists, AEs, who in turn recruit two referees
 - AE makes recommendation to ED
 - ED makes final decision
- **Outcomes**
 - 2015 Acceptance rate: 45%
 - 2 to 3 cycles of review
 - Culture: we work with authors to improve their Ms.

Ms. Processing and Author Interface

- **Penny: the face of the journal for 20 years**
 - Author submissions, questions, reminders
- **Very difficult late 2014, early 2015**
 - Penny quite ill or undergoing treatments with sudden and rapid decline in late February
 - Many innovations and QA systems on hold
 - Hundreds of accumulated emails and Ms.
- **New model**
 - Interim Editorial Assistant: Ania Bukowski (AIPP)
 - » Handles all Ms processing, author queries, review team support
 - Interim Editorial Assistant: Viv Dennis (AAPM)
 - » Editor, WG, editorial board support

Innovations

- **New review template and author instructions**
- **New Medical Physics Dataset Article**
- **Modernized TOC and Topical classifications**
- **Review Article Co-editors**
 - Tim Zhu & Joao Seco: Therapy
 - John Rowlands & Ingrid Reiser: Imaging
 - Authors: submit proposal to Co-editors
 - Co-editors will develop topics and recruit prominent authors

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| Medical Physics | | New Topical Headings and TOC Layout | |
| Volume 43, Number 8, August 2016 | | | |
| THERAPEUTIC INTERVENTIONS (Research Articles) | | | |
| Noninvasive microwave ablation area fall estimation using a ray CT image analysis Shawn Wilson, S. Nathan Goldberg, Yehia Nassarany, Joseph Soria, and Hans-Arno 4470-4483 | <ul style="list-style-type: none"> • Reduce topical categories from 13 to 7 | | |
| Validation of a pretreatment delivery quality assurance method for the CyberKnife Synchrony system C. Macchia, C. Vignati, C. Rossi, G. Pavesi, A. Fornaci, C. Dezi, D. Rizzi, B. A. Horevitz-Pines, and F. Calzavara 4485-4494 | | | |
| DIAGNOSTIC IMAGING (IONIZING AND NON-IONIZING) (Research Articles) | | | |
| Impact of beamline filter and object position on the two-dimensional noise power spectrum of a clinical SPECT system Dorel Corneliu Ciuraru, Juan Pablo Cruz-Garcia, Yu Li, Adam Rubin, Jerry Hsieh, and Guangming Chen 4495-4506 | | | |
| Multifunction inverse-gated CT: Part 1. System concept and development Binuo Di, Man, Jigar Usha, Jyotsna Bask, Dan Henrich, Ziyi Yin, Randy Longtin, Jianping Peng, Qi Wang, Qian William Jonathan Shiu, Lu Huihua, Joseph Reynolds, Y. Binjun Huanzhen, Wolfgang Florschütz, Suk Seung, and Robert Poon 4607-4616 | | | |
| QUANTITATIVE IMAGING AND IMAGE PROCESSING (Research Articles) | | | |
| General and robust method for automatic segmentation of PET images using an active contour model Mengdi Zhang, Rui A. J. O. Dávila, and Heiko Zell 4489-4494 | | | |
| EMERGING IMAGING AND THERAPY MODALITIES (Research Articles) | | | |
| Robotic path-finding in inverse treatment planning for stereotactic radiotherapy with continuous flow delivery Markus B. Vandenberg, Dennis M. Ahman, and David A. Jeffrey 4548-4557 | | | |
| COMPUTATIONAL AND EXPERIMENTAL DOSIMETRY (Research Articles) | | | |
| Use of radiochromic film as a high-spatial-resolution dosimeter for Bragg spectroscopy Jamal Ahmad Maza, Hyunok Park, So-Yeon Park, and Sung-Joon Ye 4320-4328 | | | |

Dilemmas: Efficiency vs. Quality

- We work intensively with authors to
 - Make poor articles with potential publishable
 - Make acceptable articles into great articles
 - Provide young scientists with apprenticeship in scientific writing
- We work hard to ensure only the high quality and innovative science gets accepted
- Downsides
 - 155 days to acceptance including average of 60 days for R0 preparation
 - Sr. scientists may view our approach as excessively critical

New Publisher

- In January, Wiley will become our publisher ending our 43 year-old partnership with AIP
- Timeline
 - July 2015: Ad Hoc Committee on Unifying Publishing Platforms (AHUPP) formed
 - Fall 2015: Request for Proposal completed
 - RSNA2015: Proposals from publishers
 - Jan 2016: presentations from 3 finalists (including AIP)
 - Feb 2016: Wiley selected, EXCOM begins contract negotiations
 - July 6 2016: contract signed, transition begins

New Publisher

- In January 2017, Wiley will become publisher of both Med Phys and JACMP
 - Peer review will be hosted on same peer-review management platform EJP
 - » Very similar to PXP platform used by AIPP for Med Phys
 - » MP and JACMP will share manuscripts and reviews with each other
 - » JACMP manual Ms processing/tracking time vastly reduced
 - Hosted on same online platform
- Advantages of large publisher: enhancing impact
 - Vast increase in institutional subscribers/access
 - Will support major data-driven author- and reader-focused marketing campaign
 - Social media, dynamic article, and interactive features
 - Wiley has financial incentive to grow Med Phys

Strategically Increase AAPM's Global Reach

We have developed a tailored approach to the markets we serve to ensure that we are securing the best possible outcomes for our partners. In mature markets, like North America and Europe, our focus is on protecting your existing market share. In growing markets, we leverage subscription sales, licensed and database access, third party aggregators, and philanthropic programs to bring AAPM content to interested students, scientists, and academics.



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