



## Writing and Reviewing Papers for Medical Physics and JACMP

Professional Symposium WE-J-209

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

*Medical Physics, Editor-in-Chief*

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

*Medical Physics, Imaging Physics Editor*

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

*Medical Physics, Therapy Physics Editor*

**Michael D. Mills, Ph.D.**

*Journal of Applied Clinical Medical Physics, Editor-in-Chief*

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### Outline

- Jeff Williamson: **Medical Physics: Editorial vision and ongoing developments** (18 Minutes)
- Mitch Goodsitt: **Writing good scientific papers and responding to critiques** (18 Minutes)
- Shiva Das: **Improving manuscript quality via structured reviews, enhanced scientific category taxonomy, and outreach** (18 Minutes)
- Michael Mills: **Publishing in the JACMP; Present and Future Vision** (25 Minutes)
- You!: **Discussion**

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### Editorial Vision for *Medical Physics* and ongoing developments

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

Washington University  
*Medical Physics, Editor-in-Chief*

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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 applications: psycho-physics, system design, image reconstruction/restoration
    - › X-rays, US, MR, RF, etc. for anatomy, elasticity, electrical impedance, molecular state, physiology, etc.
  - Therapy: equipment optimization, planning, tracking, dosimetry, outcome modeling, biology, response imaging
    - › 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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### Types of articles

- **Research Article:** report of original experimental or theoretical research
  - 10 pages (9000 words) free: \$200/ page >10
- **Technical Note (5 pages):** \$200/ page >5
  - Focused technical innovation with only proof-of-principle data
- **Medical Physics Letter (5 pages):** \$200/ page >5
  - Rapid review: highly novel, high impact development
- **Medical Physics Dataset article (10 Pages)**
  - Publically accessible dataset of interest to researchers
- **Review article (20 Pages)**
- **Future of Medical Physics article: (15 pages)**
- **Point/Counterpoint**
- **Task Group Reports and Special Reports (30 pages)**

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### Review Process: general

- **Single-blind review system**
  - Referees know who authors are
  - Associate editor (AE) and referees (Ref) are anonymous to authors
  - Author communication limited to Editor (Ed) or Journal Manager
- **Decision categories**
  - Accept: No revision needed
  - Conditionally Accept: minor revision -Ed/AE review only
  - Conditionally Accept: Major revision –full peer review
  - Editorial decision deferred: Major revision with full peer review
  - Reject: not suitable for *Med Phys*: Refer to another journal
    - › Automatic transfer to JACMP
  - Outright rejection



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### Review outcomes and issues

- Journal statistics
  - 2017 Acceptance rate: 49%
  - 9 point impact score (1= outstanding; 9 = terrible)
    - » Weed out technically correct but overly incremental papers
    - » Decide on potentially high impact but premature/technically flawed papers
- Culture
  - We work with authors to improve their Ms.
  - Thorough, detailed reviews
- 2018 Review time performance
  - Typically, 2 to 3 review cycles
  - Median time to final decision: 79 days
  - Median time to acceptance: 149 days
  - Median time: submission to first decision: 47 days (2018)

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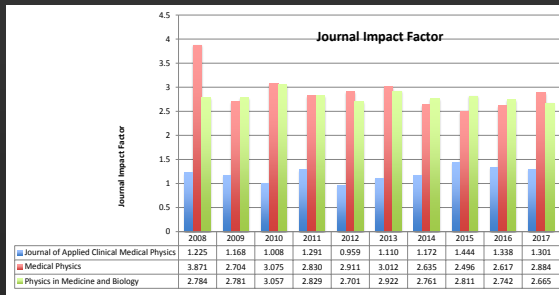
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### Two-Year Journal Impact is Recovering




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### Dilemmas: Efficiency vs. Quality

- We work with authors to
  - Make poor articles with potential publishable
  - Make acceptable articles into great articles
  - Provide young scientists with apprenticeship in scientific writing
- Strive to publish only high quality and innovative science
- Downsides
  - Median time: Submission-to-acceptance: 149 days including of 60 days of author revision time
  - Median time: Submission-to-first decision: 47 days
  - Sr. scientists may view our approach as excessively critical
  - Reviewers maybe tempted to re-architect the authors' study per their preference

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### Medical Physics: Core Mission

- Become the preeminent forum for exchange of cutting edge medical physics science
- Features of publishable articles
  - Novelty and/or high potential clinical/scientific impact
  - Present generalizable scientific data or conclusion
    - » Research articles: usually hypothesis-driven
  - Addresses unsolved problems of concern to our readership
  - Research problem must have clinical/pre-clinical relevance
  - In a mature research area, e.g., dosimetry or image recon
    - » Use quantitative performance metrics
    - » demonstrate benefit over current state-of-the-art
    - » Appropriate statistical analysis to support “more accurate than” statements

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### Heavily represented Med Phys Research Areas

- Image processing/analysis
  - Segmentation, feature extraction, registration
  - fashionable approach: machine learning, especially CNN/deep learning
- Computational dosimetry and radiation detectors
  - Linac/MRI dosimetry; diagnostic CT dosimetry
- X-ray CT, CBCT, PET physics
  - Reconstruction, performance assessment, dose reduction, artifact mitigation, FPD development
  - Breast imaging: Tomosynthesis, CBCT, CAD
  - Multispectral imaging: proton SPR mapping
- Radiation therapy
  - Plan optimization/adaptation, IMPT, motion management, IGRT, brachy
- MR Physics

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### Clinical Physics Articles

- Medical Physics is likely to reject articles that
  - Address a narrow clinical physics problem
  - Evaluate or share clinical experience with a particular vendor product unless very new and high impact
  - Potentially high impact clinical physics innovations of interest to a broad segment of our readership are welcomed
- We may refer you to our sister journal



- Open access journal with \$500 APC
- Electronic transfer from Med Phys to JACMP available

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### 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

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### Recent Innovations

- New publisher (Wiley) and editorial support team (2017)
  - Bath Brenner (Managing Editor) and Patrick Sylvestre (Editorial Asst)
  - New more modern EJP-based submission interface, Vsubmit (Aug 2017)
  - New online platform, “Literatum” (1st qtr, 2018)
- New Medical Physics Dataset Article (2017)
- New Review/Future of Medical Physics Article process (2016)
  - Tim Zhu & Joao Seco: Therapy Co-editors
  - Jason Stafford & Ingrid Reiser: Imaging Co-editors
  - Authors: submit proposal to Co-editors
  - Co-editors will develop topics and recruit prominent authors
- Manuscript transfer between *Med Phys* and *JACMP* (2018)
- New Point/Counterpoint Team: Habib Zaidi, Jing Cai, Jerry White

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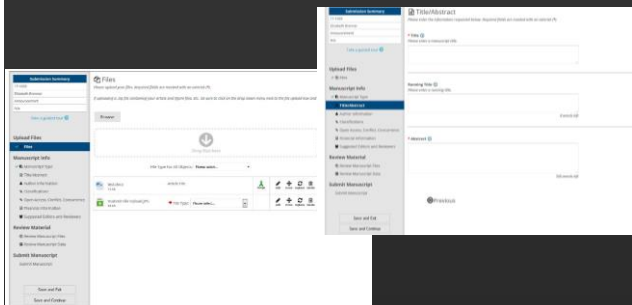
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### Vsubmit manuscript submission interface



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