



Should I submit my paper to *Medical Physics*?

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Outline

- Core values and mission
- Review process
- Journal performance statistics
- Papers we want and don't want
- Editorial vision
 - Revised editorial model
 - Proposed initiatives

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
- New Initiatives
 - Redesigning review process
 - Data mining and reconsideration of topic scope

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

Types of articles

- **Research Article:** report of original experimental or theoretical research
 - 10 pages nominal limit. Page charges for excess pages
- **Technical Note (4 pages)**
- **Medical Physics Letter (3 pages)**
 - Rapid review: highly novel, high impact development
- **Technical Report**
- **Review article**
- **Vision 20/20 article**
- **Point/Counterpoint**
- **Correspondence and editorials**

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
 - Outright rejection

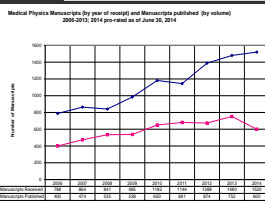
Review Process: 2-3 cycles

1. Ms. Received: 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

Review outcomes and issues

- Historical acceptance rate: 50%
 - Plan to increase selectivity, reducing acceptance rate to 40%-45%
 - We are moving to a 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
 - Starting in 2014, 75% of papers were managed by inhouse (Editorial Board or Board of Assoc Editors) AEs vs. 2/3 Guest AEs as in past
- Culture
 - We work with authors to improve their Ms.
 - Typically, 2 to 3 review cycles
 - Median time: submission to first decision: 42 days

Why increase selectivity?

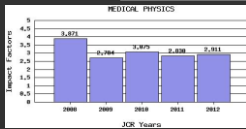


- Growth is unsustainable
- Increase focus on
 - Best science
 - Widely read guidance, review, and opinion

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



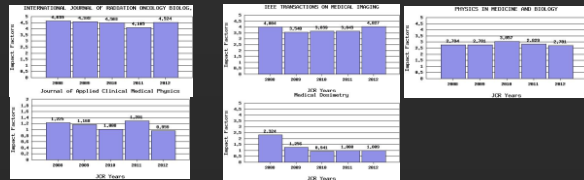
Journal Impact Factors



- MP is holding its own
- Developing performance metric more appropriate to our field

$$JIF(Y) =$$

Total cites in Year Y of articles in Y-1 and Y-2
No. articles published in Y-1 and Y-2



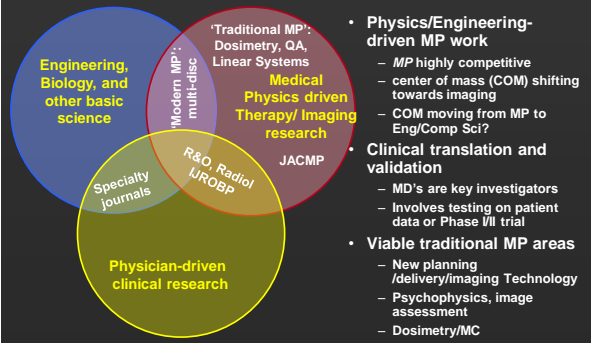
Medical Physics: Core Mission

- Maintain *Medical Physics* as the preeminent forum for electronic exchange of cutting edge medical physics science
- To identify and publish the best contributions in
 - Basic science developments with potential for improving patient care
 - clinical translation and validation of previous basic science innovations
 - High impact clinical physics innovations addressing a significant clinical problem of broad interest
- Features of publishable articles
 - Novelty and/or high potential clinical/scientific impact
 - Generalizable scientific data or conclusion
 - Addresses unsolved problems of concern to our readership

Heavily represented Med Phys Research Areas

- Image processing/analysis
 - Segmentation, feature extraction, registration
- X-ray CT, CBCT, PET physics
 - Reconstruction, performance assessment, dose reduction, artifact mitigation, detector
 - Phase-contrast imaging
- Radiation therapy
 - 2D/3D dosimetry, Monte Carlo planning, plan optimization, IMPT, motion management
- Breast imaging: new modalities, CAD
- Basic research: elastography, electrical impedance, fractal analysis

Disciplinary Domains, MP Readership, and Shifting Markets



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 content
 - Clinical studies without clear technical/MP content
- Limited novelty/impact
 - Clinical physics/QA/technical of narrow scope
 - Duplication of existing studies
 - No new generalizable data or novel technology
 - Excessively incremental "salami" publications
 - Premature/underdeveloped
- Poorly written articles

Recent structural changes

- Board of Associate Editors: 75 AEs
 - More recognition for contributions
 - More uniform performance and policy implementation
 - EB + BAE manages 75% of 2014 articles
- Smaller more active Editorial Board
 - Advise editorial team, formulate policy, serve as AEs
 - Design/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

Conclusion

- **Medical physics is rapidly changing**
 - More multidisciplinary
 - New submission rapidly increasing especially from Europe and Asia
 - Need to improve selectivity
- **Use data mining to help guide policy making and process improvement**
 - Quantify performance
 - Better understand readership and authorship needs
 - Opportunity to refine our understanding of medical physics research
- **Improve Journal impact and quality while nurturing positive aspects of MP culture**
