Medical Physics
The International Journal of Medical Physics Research and Practice

In Memory of Alex Turner
Medical Physics Workshop: Editorial Vision and Guidance on Writing and Reviewing Papers

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Outline

- Russell Tarver: *Memorial Tribute: Alex Turner*
- 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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Outline

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

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: pyscho-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, RF/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
  - Linac/MRI dosimetry
- X-ray CT, CBCT, PET physics
  - Reconstruction, performance assessment, dose reduction, artifact mitigation, FPD development
  - Phase-contrast imaging
  - Multispectral imaging: proton SPR mapping
- 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

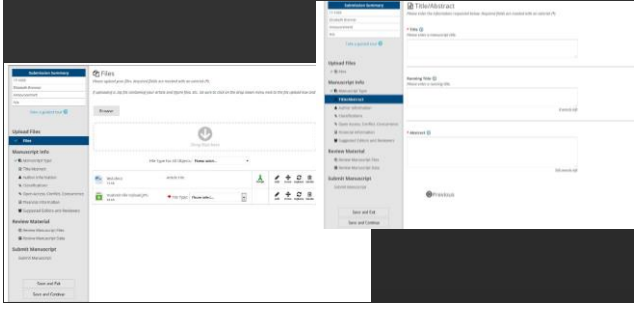
Review Process: *Med Phys*

- 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
  - 2016 Acceptance rate: 44%
  - 2 to 3 cycles of review
  - Culture: we work with authors to improve their Ms.

Innovations

- New publisher (Wiley) and editorial support team
  - Beth Brenner (Managing Editor) and Ella May Arevelo (Editorial Asst)
  - New more modern EJP-based submission interface, Vsubmit (Aug 2017)
  - New online platform, "Literatum" (1st qtr, 2018)
- New Medical Physics Dataset Article
- 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

Vsubmit manuscript submission interface



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
  - Median time: Submission-to-acceptance: 157 days including of 60 days of author revision time
  - Median time: Submission-to-first decision: 45 days
  - Sr. scientists may view our approach as excessively critical

Special Issues: 2017

- Best of "4th International Conference on Image Formation in X-ray Computed Tomography" (July 18 – 22, 2016, Bamberg, Germany)
  - Scheduled: September 2017
  - Guest Editors: Marc Kachelreiss and Frederic Noo
  - 16 cutting edge research articles
- Winning papers from: "2016 Low Dose CT Grand Challenge"
  - Scheduled: October 2017
  - Guest Editor: Cynthia McCollough
  - Three winning papers + Introduction
- "Current Challenges and Prospects in Particle Therapy"
  - Scheduled: December 2017 or Q1 2018
  - Guest Editors: Jonathan Farr and Katia Parodi
  - 14 Review/FMPA length papers from leading researchers

Proposed Special Issues: 2018

- AAPM-Sponsored "Practical Big Data Workshop" (Ann Arbor, MI May 2017)
  - Guest Editor: Chuck Mayo
- Possible Special Issue: "Machine Learning in Medical Physics Research"
  - Mixture of didactic papers to educate medical physicists and cutting-edge applications papers.