



Guest Editor's Introduction

THE TRANSITION TO a new editor (Dr Steven Horii) and to a new publisher (Springer-Verlag) has resulted in a situation in which it has become prudent to work on multiple issues of the *Journal of Digital Imaging* in parallel. I have been given the privilege to serve as guest editor for 2 of the issues of the *Journal*, this edition and the following “theme” issue that focuses on research related to technologist staffing, productivity, and workflow.

I have been quite impressed with the overall quality of articles submitted from throughout the world to the *Journal of Digital Imaging* during my brief tenure as guest editor and have enjoyed the opportunity to work with the authors and reviewers who have contributed to this issue who have helped to provide an extraordinarily rapid turnaround time to help us publish these manuscripts in a timely fashion. It also has been very satisfying for me to facilitate the process of taking the superb work of the authors of these manuscripts and fine tuning them with the insightful and expert suggestions of our reviewers. I would like to particularly thank the authors and reviewers for being so understanding of our need for a quicker-than-usual turnaround and for the outstanding quality of their contributions.

This edition of the *Journal* begins with an exceptional review of the current state-of-the-art of computer-aided detection and diagnosis, which has become a very hot area of research and clinical interest. Dr Erickson provides a thoughtful perspective on the current state of the art and future trends in a very understandable and well-written review. In a second paper, Dr Erickson describes his original research in which he tests the efficacy of a semiautomated

quantitative algorithm developed by him and his colleagues in the estimation of the severity of carotid artery stenosis using contrast-enhanced magnetic resonance imaging (MRI). His results, which compare his algorithm to the currently accepted practice of visual assessment for these images using conventional angiography as a gold standard, suggest an intriguing and promising alternative to the current accepted practice.

Another hot topic during the past few years, especially with the recent release of the JPEG 2000 standard has been the use of lossy (so called “destructive”) compression. In a very timely contribution, Dr Kim and colleagues share one of the earliest clinical evaluations of this recently released standard as applied to computed radiographic (CR) chest images. Megibow et al also share their research which involves an interesting test of compression (not the JPEG 2000 standard in this case) for abdominal computed tomograph (CT) imaging in patients with acute appendicitis. Relatively little has been published thus far on the use of compression with CT of the abdomen. In their report, they explore the impact of the use of varying degrees of compression on the ability to make an accurate diagnosis.

The development and use of “Open Source” software has, unfortunately, not caught on in the medical imaging community nearly to the extent that it has with other industrial and

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medical groups. Dr Steve Langer describes the concept of “Open Source” and makes a compelling case for its potential advantages and use in the development and dissemination of RIS and PACS software. He describes an interesting, ongoing project to accomplish this goal and describes its potential for use by the general medical imaging community. In a similar spirit of sharing with the medical imaging world, Dr Langer, in a second manuscript, describes a library of spreadsheets that have been developed for diagnostic imaging quality assurance. He has made these spreadsheets and standard templates freely available on the Internet using a Gnu public license in the expectation that readers of the *Journal of Digital Imaging* and others will not only find them useful in their practices but also will add improvements and submit them back to him to “be shared with the diagnostic physicist community at large.”

Finally, the tremendous success of the digital imaging and communications in medicine

(DICOM) standard has resulted in its general acceptance and use throughout the world. However, because the way in which diagnostic imaging is practiced varies in different areas of the world, DICOM, already a very flexible standard, may have to expand to adapt to the requirements of various local imaging communities. Dr Kimura and colleagues make a very strong case for the need to develop extensions of the DICOM standard for use in Japan and propose specific extensions that could serve as a model for use in other parts of the world.

I hope you find this excellent and thought-provoking collection of papers to be as interesting and helpful to your understanding and practice of diagnostic imaging as I have and hope that the new *Journal of Digital Imaging* continues to receive manuscripts of this quality.

Eliot Siegel, MD