



**Press release**

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## **Lung nodule classification grand challenge set for SPIE Medical Imaging 2015**

### ***U.S. National Cancer Institute and medical physicists to assess quantitative image-analysis methods***

*A grand challenge in Lung Nodule Classification being conducted by the U.S. National Cancer Institute (NCI), the American Association of Physicists in Medicine (AAPM), and SPIE, the international society for optics and photonics, will be an important initial step toward evaluating and improving clinical decision support tools, say organizers. Training sets will be released this month, and results will be presented and discussed at SPIE Medical Imaging in Orlando, Florida, in February.*

### **5 November 2014**

BELLINGHAM, Washington, USA – A grand challenge on developing quantitative image-analysis methods for the diagnostic classification of malignant and benign lung nodules is among highlights planned for [SPIE Medical Imaging 2015](#). The conference is the internationally recognized premier forum for reporting state-of-the-art research and development in medical imaging. Sponsored by SPIE, the international society for optics and photonics, the event will run 21-26 February at the Renaissance Orlando at SeaWorld.

The grand challenge is being conducted by SPIE, the U.S. National Cancer Institute (NCI), and the American Association of Physicists in Medicine (AAPM), with **Karen Drukker** (University of Chicago) serving as the Challenge Evaluator.

Training sets for the SPIE-AAPM-NCI Lung Nodule Classification Challenge will be released 21 November. Release date for test datasets without truth is 9 January, and participants will submit test set classification results on 7 February.

Results will be presented and discussed at SPIE Medical Imaging. Poster presentations from participants will be on display for four days during the conference, and challenge participants may demonstrate their algorithms during a live demonstration workshop during the week.

The challenge will provide an important first step in addressing the long-term effort to evaluate clinical decision tools, said organizers **Lubomir Hadjiiski** (University of Michigan Health System), **Georgia Tourassi** (Oak Ridge National Lab), and **Samuel Armato** (University of Chicago).

“With multiple research groups expected to participate, the grand challenge will provide a unique opportunity for participants from academia, industry, and government to evaluate and compare different algorithms in a structured, direct way using the same data sets,” Hadjiiski said.

In addition, the grand challenge will be important in exploring the potential of grand challenges to become important for CAD (computer-aided diagnosis) research and development and to decision support system evaluation.

“By efficient planning and coordination among key organizing institutions, CAD grand challenges can play a vital role in the selection of promising classes of algorithms and systems for further clinical translational efforts, prompting advances in computer-aided diagnosis and ultimately precision medicine,” Hadjiiski said.

The winners of the challenge will join a special panel discussion about grand challenges as part of the CAD conference on Tuesday afternoon, and will receive a conference registration fee waiver for SPIE Medical Imaging.

An estimated 1,000 papers will be presented at SPIE Medical Imaging, in conferences on CAD, digital pathology, ultrasonic imaging, image-guided procedures, robotic interventions, the physics of medical imaging, image processing and archiving, biomedical applications in imaging, image perception, observer performance, and PACS and imaging informatics.

Plenary speaker **Douglas Packer** of the Mayo Clinic will speak on “4/5D imaging for guiding intracardiac and extracorporeal ablation of cardiac arrhythmias.”

Keynote talks will be given in each conference, on topics such as quantitative imaging as a cancer biomarker, machine learning in clinical decision support, and the open microscopy environment.

Keynote speakers include **Eliot Siegel** (Hospital of the University of Pennsylvania), **Mark Anastasio** (Washington University in St. Louis), **Tanveer Syeda-Mahmood** (IBM Almaden Research Center), **David Mankoff** (Hospital of the University of Pennsylvania), **Jason Swedlow** (University of Dundee and the OME Consortium), **Mike Fitzpatrick** (Vanderbilt University), **Dianne Georgian-Smith** (Harvard Medical School and Brigham and Women’s Hospital), **Daniel Sodickson** (New York University Medical School), and **Ulysses Balis** (University of Michigan Health Systems).

Eleven courses and workshops on related topics are being offered, and networking opportunities include a Student Lunch with Experts and Women’s Networking Lunch.

Conference proceedings will be published online in the [SPIE Digital Library](#) after the event as manuscripts are approved, with CD publication following when all manuscripts are in. Presenters are being encouraged to submit their work for the proceedings volume as well as for the new [Journal of Medical Imaging](#), published by SPIE under Editor-in-Chief **Maryellen Giger** of the University of Chicago.

**David Manning** of Lancaster University and **Steven Horii** of the University of Pennsylvania Health System are symposium chairs.

[SPIE is the international society for optics and photonics](#), a not-for-profit organization founded in 1955 to advance light-based technologies. The Society serves nearly 256,000 constituents from approximately 155 countries, offering conferences, continuing education, books, journals, and a digital library in support of interdisciplinary information exchange, professional networking, and patent precedent. SPIE provided more than \$3.2 million in support of education and outreach programs in 2013.

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