電子情報通信学会 東海支部 平成 30 年度 第 1 回一般講演会のご案内

日時：2018 年 4 月 11 日（水）　16：30～17：30（予定）
場所：岐阜大学 医学部棟 7F 多目的室
http://www.fjt.info.gifu-u.ac.jp/guide/building.html

Grand Challenges to Advance Medical Imaging Research

Samuel G. Armato, III

Department of Radiology
The University of Chicago

Computer-aided diagnosis (CAD) has demonstrated value to the medical decision-making process. The development and evaluation of CAD methods, however, require years of effort from dedicated research groups around the world. Such groups, working independently, typically suffer from limited local resources in terms of patient data and access to the “ground truth” required to properly train and test their algorithms. When these research groups report their CAD methods in the literature, it is difficult for the medical imaging research community to compare the relative merits of different approaches, since the performance of these methods can greatly depend on factors such as database composition, subtlety of the target lesions, “truth” definition, and performance evaluation metric. Grand challenges make a valuable contribution to the field by allowing for a direct comparison of different algorithms designed for a specific radiologic task, with all algorithms following the same set of rules, operating on a common set of images, and being evaluated with a uniform performance assessment approach. Challenges equalize the various factors that make comparisons of different CAD methods so difficult. Comparisons among the methods of participating groups can help identify approaches that are the most promising for a specific clinical task. This presentation will describe the clinical motivation and results of recent challenges sponsored by the SPIE, AAPM, and NCI.

Samuel G. Armato III, Ph.D. is an Associate Professor in the Department of Radiology and Chair of the Committee on Medical Physics at The University of Chicago. His current research focus is in the field of computer-aided diagnosis (CAD), which combines the disciplines of physics, mathematics, computer science, and statistics to analyze medical images for the early detection and diagnosis of disease. His work includes the development and evaluation of computerized techniques for the quantitative analysis of medical images and the assessment of tumor response to therapy. More specifically, his research has involved the computerized detection and evaluation of lung nodules in thoracic computed tomography (CT) scans, the assessment of image quality and pathologic change in temporally subtracted chest radiographic images, the computerized evaluation of mesothelioma tumor and response to therapy in CT scans, critical analyses of image-based tumor response assessment for mesothelioma, the development of objective CT-based metrics for the quantification of mucosal inflammation due to sinusitis, the application of radiomics to the pre- and post-treatment CT scans of radiation therapy patients to predict normal lung tissue complications, and the evaluation of reference standards for CAD research. e-mail: s-armato@uchicago.edu

問い合わせ先：岐阜大学・藤田広志（058-230-6512）
電子情報通信学会東海支部ホームページ：http://www.ieice.org/tokai/