# PROCEEDINGS OF SPIE

# 15th International Meeting on Fully Three-Dimensional Image Reconstruction in Radiology and Nuclear Medicine

Samuel Matej Scott D. Metzler Editors

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CT-1	Iterative Reconstruction in CT <b>Xiaochuan Pan</b> , University of Chicago (United States) <b>Yusheng Li</b> , University of Pennsylvania (United States)
CT-2	CT Corrections J. Webster Stayman, Johns Hopkins University (United States) Zijia Guo, University of Utah (United States)
CT-3	CT Reconstruction and Imaging <b>Tobias Lasser</b> , Technische Universität München (Germany) <b>Grace Gang</b> , Johns Hopkins University (United States)
CT-4	Spectral CT / Material Decomposition <b>Peter Noël</b> , University of Pennsylvania (United States) <b>Korbinian Mechlem</b> , Technische Universität München (Germany)
EM-1	PET Reconstruction Georges El Fakhri, Harvard Medical School, Massachusetts General Hospital (United States) Zhaoheng Xie, University of California, Davis (United States)
EM-2	SPECT Imaging <b>Michel Defrise</b> , Vrije Universiteit Brussel (Belgium) <b>Paul Gravel</b> , University of Pennsylvania (United States)
EM-3	Quantitative Methods in PET Margaret Daube-Witherspoon, University of Pennsylvania (United States) Kuang Gong, Massachusetts General Hospital (United States)
DL-1	Deep Learning within CT Reconstruction Marc Kachelrieß, DKFZ (Germany)

Ruben De Man, Stonybrook University (United States)

DL-2	Deep Learning within PET Reconstruction Johan Nuyts, KU Leuven (Belgium) Arkadiusz Sitek, IBM Watson Health Imaging (United States)
DL-3	Image Denoising and Characterization Jinyi Qi, University of California, Davis (United States) Yannick Berker, German Cancer Research Center (Germany)
OT	Other Novel Applications and Approaches <b>Stephen Moore</b> , University of Pennsylvania (United States) <b>Fatma Terzioglu</b> , University of Chicago (United States)
P-1	Poster Session 1 <b>Scott D. Metzler</b> , University of Pennsylvania (United States) <b>Jianan Cui</b> , Massachusetts General Hospital and Zhejiang University
P-2	Poster Session 2 Samuel Matej, University of Pennsylvania (United States) Benjamin Auer, University of Massachusetts Medical School (United States)

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## Introduction

The 15th International Meeting on Fully Three-Dimensional Image Reconstruction in Radiology and Nuclear Medicine was held June 2-6, 2019 on the campus of the University of Pennsylvania, Philadelphia, PA, USA.

Fully3D is a workshop-style conference focusing on algorithmic and computational methods for reconstruction of multi-dimensional data sets typically acquired using CT, PET, or SPECT. It is well known for bringing together experts in the field in an informal setting for greater depth of discussion on issues pertaining to reconstruction. The fact that nearly all recent major advances in image reconstruction have been first presented at the Fully3D meeting emphasizes the high relevance of this meeting.

We would like to thank the many cooperative participants, who submitted very highquality abstracts and uploaded the final versions for this volume on time, the many reviewers that are listed in the organizing committee, who provided insightful and timely reviews, our corporate sponsors, who are listed above, and the personnel at SPIE for their extensive cooperation and accommodation in putting this together. We would also like to thank Dr. Stephen Moore, who has advised on the conference, Dr. Peter Noël, who advised on program decisions related to CT, and Drs. Paul Gravel and Yusheng Li, who provided extensive assistance in putting the program together.

> Scott D. Metzler, General Chair Samuel Matej, Program Chair