

# Quantitative Radiology Solutions



## Company Overview

Quantitative Radiology Solutions offers advanced body-wide quantification of medical images for applications in radiology, radiation oncology and surgery. Its unique Automated Anatomy Recognition (AAR) system supports localization and delineation of all major organs in multiple body regions using MRI, CT, and PET/CT images.

## Problem

In 2014, nearly 1M new cancer cases in the U.S. will have treatment that involves radiation therapy. Before a patient begins therapy, a trained professional identifies tumor and organ structures on MRI and CT images via contouring to maximize delivery of radiation to the cancer while minimizing exposure of healthy organs. However, contouring is still performed with low levels of automation, yielding a time consuming and error prone process. Reducing the time required to delineate organs will decrease costs associated with radiation therapy planning and allow highly skilled professionals more time with patients. Furthermore, changes occur in tumor and organ anatomy during the course of treatment. If these changes are not taken into account, they can affect the radiation dose delivered to the tumor and surrounding organs. Unfortunately, re-contouring is rarely done due to the time-consuming nature. Therefore, a need persists for technology that can automatically delineate changes in structure anatomy during a course of therapy to allow physicians to re-plan radiation dose delivery accordingly, which will lead to improved patient outcomes with fewer side effects.

## Solution

Automatic Anatomy Recognition (AAR) supports localization and delineation of all major organs in multiple body regions. When applied to the field of radiation therapy planning, AAR dramatically reduces the amount of time required for the radiation oncologist and dosimetrist to delineate organs, from several hours to less than 5 minutes. AAR operates on MRI, CT, and PET/CT images, so diagnosis and treatment planning can be performed using images that optimize visualization of the tumor(s). The approach supports learning of information on anatomical positioning and inter-relationships across a population, and uses this knowledge to improve accuracy of results.

## Team Information

Jayaram K. Udupa, PhD – Founder and CTO. Dr. Udupa, Chief, Medical Imaging Section and Professor of Radiological Sciences at University of Pennsylvania, has over 35 years of experience developing algorithms and software systems in medical imaging analysis. He can be reached at [jay@mail.med.upenn.edu](mailto:jay@mail.med.upenn.edu).

Drew Torigian, MD, MA, FSAR – Founder and CMO. Dr. Torigian, Clinical Director, Medical Image Processing Group and Associate Professor of Radiology at University of Pennsylvania, is a physician and research scientist with experience in oncologic, torso, and extremity imaging. He can be reached at [Drew.Torigian@uphs.upenn.edu](mailto:Drew.Torigian@uphs.upenn.edu).

Joe Camaratta, MS – President and CEO. Mr. Camaratta specializes in medical technology innovation and commercialization. He has over 20 years of executive experience with GE Healthcare and Siemens Healthcare. He can be reached at [joe.camaratta@medtechplaybook.com](mailto:joe.camaratta@medtechplaybook.com).

Contact:  
Michael Dishowitz  
Associate, PCI Ventures  
University of Pennsylvania  
[dishowit@upenn.edu](mailto:dishowit@upenn.edu)  
215.573.6571