

Biomedical Informatics Grand Rounds
Wednesday, Oct. 27, 2021, 3:00 pm – 4:00 pm

The NCI Imaging Data Commons: Towards FAIR imaging data via standardization and openness for AI



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Remote Access

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Bio: Dr. Andrey Fedorov is an Associate Professor in Radiology at the Surgical Planning Laboratory (SPL), Department of Radiology, Brigham and Women's Hospital, and Harvard Medical School. Andrey joined SPL in 2009 after obtaining his PhD in Computer Science from The College of William and Mary in Virginia. His research is in translation and validation of medical image computing technology in clinical research applications, with the focus on quantitative imaging, imaging informatics, and image-guided interventional procedures. Andrey is committed to advancing the role of reproducible science, data sharing, and open source software in academic research. He has contributed to a number of open source projects, most notably 3D Slicer (<http://slicer.org>). Together with Ron Kikinis, he served as a co-PI of the Quantitative Image Informatics for Cancer Research (QIICR) project (<http://qiicr.org>) focused on developing open source informatics technology in support of quantitative imaging biomarker development, and interoperable sharing of the imaging biomarker data using the Digital Imaging and Communications in Medicine (DICOM) standard. Together with Dr. Kikinis, he is currently a co-PI of the team tasked with building the NCI Imaging Data Commons (<https://imaging.datacommons.cancer.gov>).

Abstract: The National Cancer Institute (NCI) Cancer Research Data Commons (CRDC) aims to establish a national cloud-based data science infrastructure. Imaging Data Commons (IDC) is a new component of CRDC supported by the Cancer Moonshot. The goal of IDC is to enable a broad spectrum of cancer researchers, with and without imaging expertise, to easily access and explore the value of deidentified imaging data and to support integrated analyses with nonimaging data. We achieve this goal by colocating versatile imaging collections with cloud-based computing resources and data exploration, visualization, and analysis tools. The IDC went into production in September 2021, and includes a growing number of radiology and digital pathology collections accompanied by annotations and analysis results. IDC provides access to curated imaging collections, and a growing number of analysis use cases that aim to demonstrate the value of a data commons framework applied to cancer imaging research. In this presentation, I will discuss the current status of NCI Imaging Data Commons and highlight the opportunities it presents towards improved reproducibility and openness for AI imaging research.

Educational Objects: Upon completion, participants should be able to:

- Gain a basic understanding of the NCI Cancer Research Data Commons
- Learn about the goals, approach, and current status of the NCI Imaging Data Commons
- Gain familiarity with the resources available from NCI Imaging Data Commons to support cancer imaging research, including sponsored cloud projects

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