

Biomedical Informatics Grand Rounds

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Combining medical imaging research with EHR observational research. An OHDSI medical Imaging Extension

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Bio: Paul Nagy, PhD, FSIIM is Associate Professor in the Johns Hopkins University School of Medicine department of Radiology with appointments in the Department of Medicine, the Department of Biomedical Engineering in the School of Engineering, and Health Policy Management Department in the School of Public Health. He is a founding core faculty member of the Armstrong Institute for Patient Safety and Quality. He received his BS from Carnegie Mellon University and his PhD at the Medical College of Wisconsin. He is an informaticist leading change inside health systems with technology and informatics. His mission is to partner with clinical faculty to empower their clinic as an informatics laboratory. This program has over 60 graduate students including a Doctoral Program supported by an NLM T15 award. He serves as the deputy director of the Johns Hopkins Medicine Technology Innovation Center (TIC) with the goal of partnering with clinical inventors to create novel patient centric IT solutions. This team of 60 designers, developers, and data scientists work with inventors to build, deploy, and evaluate digital health solutions within the Johns Hopkins Medical System. He leads the Observational Health and Data Science Informatics (OHDSI) efforts at Johns Hopkins as part of the Precision Medicine initiative. In 2022 he received the OHDSI Titan Award for his contributions to the field of observational research. He is a past chair of the Society of Imaging Informatics in Medicine and the American Board of Imaging Informatics as well as the past president of the College of SIIM Fellows. He is the author of over 130 papers and over 200 national presentations in the field of informatics and implementation science.

Abstract: OHDSI is transforming how we conduct large scale observational research on real world medical records. Our goal is to bring medical imaging research into OHDSI to enable richer phenotypes derived from medical images as well bring outcome data from the EHR. This presentation will describe how to bring medical imaging acquisition parameters and features extracted from medical images into the OMOP data model.

Educational Objects:

- Discuss OHDSI and the OMOP Data model as a model for reproducible computational epidemiology
- Describe the use cases and extension tables to enable medical imaging source data as well as provenance from medical imaging features.
- Identify the semantics necessary to bring imaging terminology into the OMOP data model.
- Illustrate key conventions for enabling the OHDSI cohort discovery and analytics tools.

Disclosure Statement: The faculty and planners have no relevant financial relationship with ineligible companies whose primary business is producing, marketing, selling, re-selling, or distributing health care products used by or on patients.

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