

Biomedical Informatics Grand Rounds

Wednesday, March 1st, 2023 3:00 pm – 4:00 pm



Clinical-grade Computational Pathology: Hype and Hope for Cancer Care

Thomas J. Fuchs, Ph.D.

*Co-Director, Hasso Plattner Institute for Digital Health,
Dean of Artificial Intelligence (AI) and Human Health,
Professor of Computational Pathology and Computer Science,
Icahn School of Medicine at Mount Sinai*

Remote Access

Join Zoom Meeting <https://stonybrook.zoom.us/j/95617197636?pwd=KytzZ2pVRG9SZGpKZUtpNXJISjNjZz09>

Meeting ID: 956 1719 7636 Passcode: 924293

In-Person talk: Laufer Center Lecture Hall 101

Bio: Thomas J. Fuchs, Dr.Sc, is a scientist in the groundbreaking field of Computational Pathology, focused on the use of artificial intelligence to analyze images of tissue samples to identify disease, recommend treatment and predict outcome. In October 2020, he has been appointed Co-Director of the Hasso Plattner Institute for Digital Health at Mount Sinai, Dean of Artificial Intelligence (AI) and Human Health, and Professor of Computational Pathology and Computer Science at the Icahn School of Medicine at Mount Sinai. In this role, he will lead the next generation of scientists and clinicians to use artificial intelligence and machine learning to develop novel diagnostics and treatments for acute and chronic disease.

Dr. Fuchs's work includes developing novel methods for analysis of digital microscopy slides to better understand genetic mutations and their influence on changes in tissues. He has been recognized for developing large-scale systems for mapping the pathology, origins, and progress of cancer. This breakthrough was achieved by building a high-performance compute cluster to train deep neural networks at petabyte scale.

Before joining Mount Sinai, Dr. Fuchs was Director of the Warren Alpert Center for Digital and Computational Pathology at Memorial Sloan Kettering Cancer Center (MSK) and Associate Professor at Weill Cornell Graduate School for Medical Sciences. At MSK he led a laboratory focused on computational pathology and medical machine learning. Dr. Fuchs co-founded Paige.AI in 2017 and led its initial growth to the leading AI company in pathology. He is a former research technologist at NASA's Jet Propulsion Laboratory and visiting scientist at the California Institute of Technology. Dr. Fuchs holds a Doctor of Sciences from ETH Zurich in Machine Learning and a MS in Technical Mathematics from Graz Technical University in Austria.

Abstract: The development of decision support systems for pathology and their deployment in clinical practice have been hindered by the need for large manually annotated datasets. Dr. Thomas Fuchs will discuss the promises and challenges of developing AI- based tools that perform at a clinical level and generalize across data sources.

Educational Objects:

1. Understand the impact of AI on clinical practice in pathology.
2. Illustrate the difficulties of training an AI in pathology.
3. Learn to differentiate between hype and real-world evidence in AI.

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.

Continuing Medical Education Credits: The School of Medicine, State University of New York at Stony Brook, is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. The School of Medicine, State University of New York at Stony Brook designates this live activity for a maximum of **1 AMA PRA Category 1 Credits™**. Physicians should only claim credit commensurate with the extent of their participation in the activity.