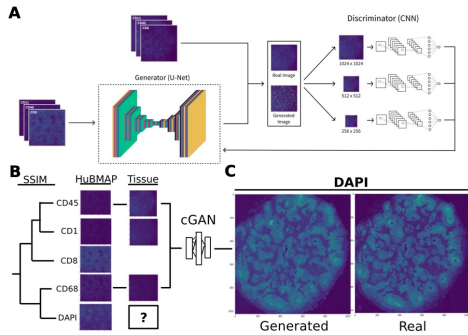# Luber Lab @ UTA (Department of Computer Science and Engineering + MICHI)
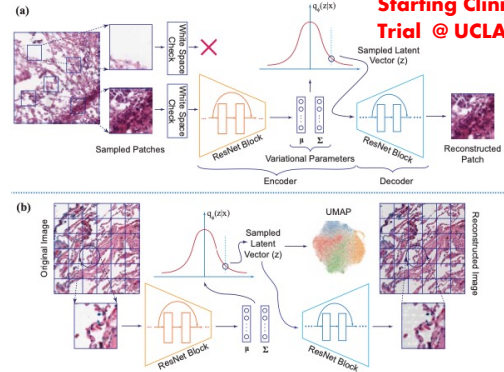## Combining Medical Imaging with `Omics at Scale with Deep Learning

1) Generative AI (like chatGPT) for Medical Imaging
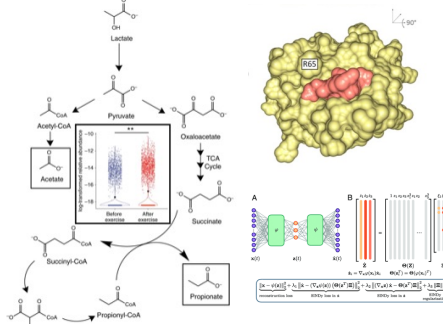

Saurav et. al., *In Review*

2) Deep Learning Based Petabyte Scale Pathology Compression, Search, & Integration w/ EHR
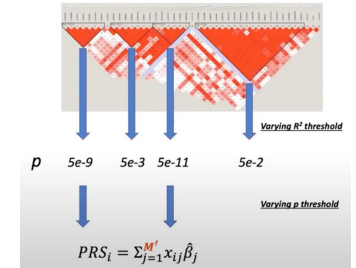
Starting Clinical Trial @ UCLA

Nasr* and Hajighasemi*, *In Press*, 2023 IEEE International Symposium on Biomedical Imaging

3) Computational Design of Microbial Immunotherapy Augmentations

Nature, 2017
Nature Medicine, 2019
Nature, 2022
Robben et. al., ACM Conference on Bioinformatics, Computational Biology, and Health Informatics CNB-MAC, 2022
Robben et. al., *In Press*, Journal of Computational Biology, 2023

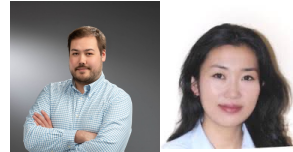**4) Integrating Polygenic Risk Scores w/ Imaging using ViT in the OR**

$$PRS_i = \Sigma_{j=1}^{M'} x_{ij}\hat{\beta}_j$$

In Preparation

Principal Investigator

Jacob M. Luber, Ph.D.
CPRIT Scholar in Cancer Research
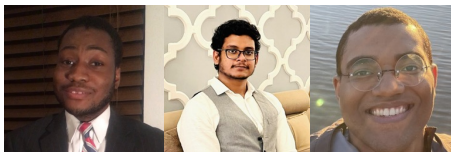PhD, Harvard Medical School, 2020
Postdoc, NIH/NCI, 2021

Postdoctoral Fellows & VAPs

PhD Candidates and PhD Students

Masters Students

Undergraduate Students

Student Accolades

PhD Acceptances: Carnegie Mellon CS (ranked #1 by csrankings.org)
Job Offers: Goldman Sachs
Internship Offers: Google Research, NVIDIA, Los Alamos National Lab, Lawrence Berkeley National Lab, Argonne National Lab

Papers

nature medicine | Science Immunology | nature (x2!) | Cell Host & Microbe | IEEE | JEM | Current Biology | Genome Biology | (GIGA)^n SCIENCE | PLOS COMPUTATIONAL BIOLOGY | Bioinformatics | acm Association for Computing Machinery

Funding

THE UNIVERSITY OF TEXAS SYSTEM — FOURTEEN INSTITUTIONS. UNLIMITED POSSIBILITIES.
$250,000 (2021-2023)

CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS
$2,000,000 (2021-2026)
Grant RR220015

Media Coverage of Our Science

The New York Times | ESPN | Forbes | SCIENTIFIC AMERICAN | CNBC | npr | Men'sHealth | NATIONAL GEOGRAPHIC | The Guardian | NEW YORK POST | Robb Report

Pending Awards (as PI)

NIH NHGRI | CHAN ZUCKERBERG BIOHUB | CISCO
$11.1M U54 | $800k | $100k

Research Collaborators

UCLA Health | UTSW | NIH NATIONAL CANCER INSTITUTE | UNIVERSITY of MARYLAND SCHOOL OF MEDICINE | Cedars Sinai | Meta | HARVARD MEDICAL SCHOOL | TCU | SMU SCHOOL of MEDICINE | Texas Health Resources | Cook Children's | USDA ARS