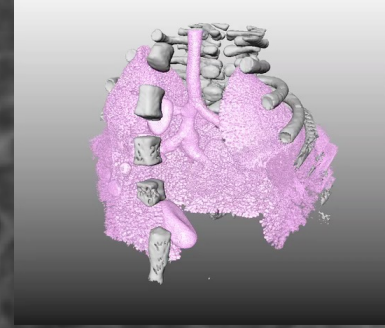# Tomographic reconstruction of Lungs

One user
One dataset
One environment
Three research infrastructures

Rajmund Mokso

Lund University, Sweden

currently at ETH Zurich/PSI

Krisztian Pozsa

Zdenek Matej

Jason Brudvik

Michael Schuh

User context

Lung imaging team: Sweden – Switzerland

| PSI
Data acquisition | PSI
Tomographic reconstruction | Lund
Image analysis | Lund
Medical interpretation |

notebook

Goran Lovric (PSI)
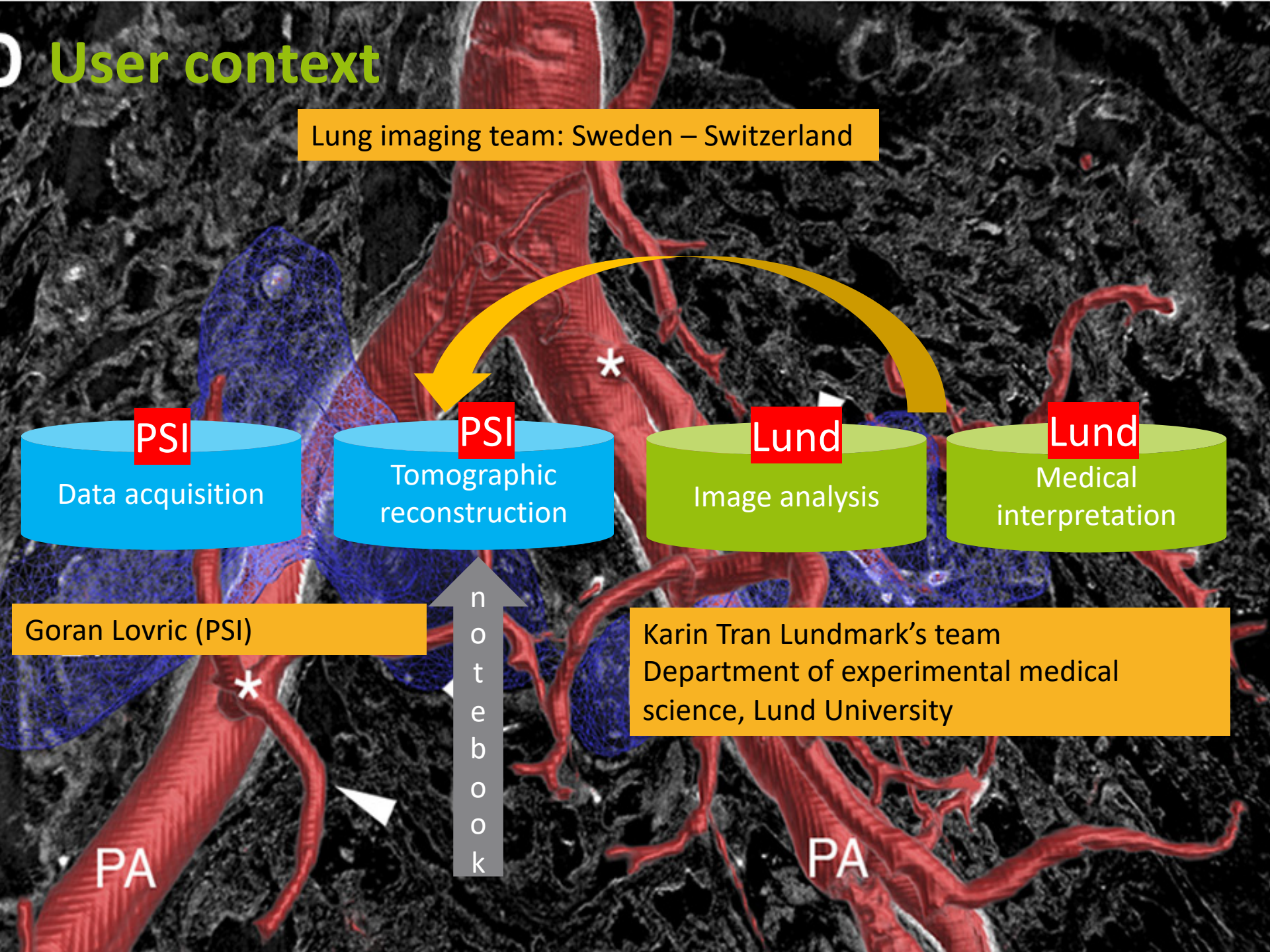
Karin Tran Lundmark's team
Department of experimental medical science, Lund University

PA

PA

Scientific context: Lung imaging

Pulmonary hypertension -> very high mortality.
Plexiform lession (vascular changes) is the histopathological hallmark
X-ray **tomographic microscopy** reveals heterogeneity of plexiform lessions

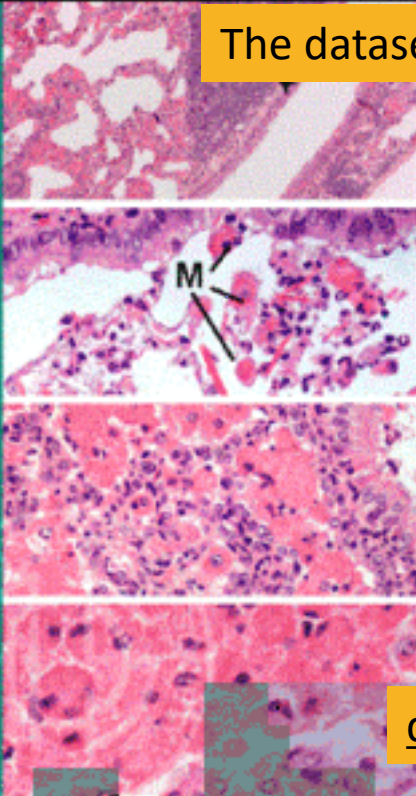The dataset in the notebook is connected to the publication in print:

Distinct Types of Plexiform Lesions Identified by Synchrotron-Based Phase Contrast Micro-CT

K. Christian Westöö[1], Christian Norvik[1], Niccolò Peruzzi[2], Oscar van der Have[1], Goran Lovric[3,4], Ida Jeremiasen[1,5], Phan-Kiet Tran[5], Rajmund Mokso[6,7], Vinicio De Jesus Perez[8], Hans Brunnström[9,10], Martin Bech[2], Csaba Galambos[11] and Karin Tran-Lundmark[1,5,12]*

[1,2]Lund University, Sweden
[3,4]ETH Zurich & Paul Scherrer Institute, Switzerland

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Lung Cellular and Molecular Physiology

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Technical solutions: reconstruction notebook

Tomographic reconstruction with open source tools:
http://tomopy.readthedocs.io

Dataset used in the manuscript and in the notebook is published with PSI:
https://doi.psi.ch/detail/10.16907/d699e1f7-e822-4396-8c64-34ed405f07b7

Reconstruction notebook developed in Lund as a pilot for setting up tomographic
jupyter hub environment at MAX IV (Jason Brudvik and Zdenek Matej)