

**TUESDAY, DECEMBER 17, 2024**  
**RESEARCH, INNOVATION & STRATEGIC PARTNERSHIPS COMMITTEE MEETING**

Lewis Von Thaeer, chair  
Reginald A. Wilkinson, vice chair  
Juan Jose Perez  
Bradley R. Kastan  
Joshua H.B. Kerner  
Phillip Popovich  
John W. Zeiger (*ex officio*)

Location: Mount Leadership Room, Longaberger Alumni House  
2200 Olentangy River Road, Columbus, Ohio 43210

Time: 1:30 – 3:00 p.m.

**Public Session**

*ITEMS FOR DISCUSSION*

1. *Quarterly Highlights for Research, Innovation and Knowledge – Dr. Peter Mohler* 1:30 – 1:40 p.m.
2. *Ohio State Innovation Highlights – Dr. Kotaro Nakanishi, Dr. Anil Parwani* 1:40 – 1:55 p.m.

ITEM FOR ACTION

3. Approval of August 2024 Committee Meeting Minutes – Mr. Lou Von Thaeer 1:55 – 2:00 p.m.

**Executive Session**

# **Research, Innovation and Knowledge – Quarterly Highlights**

December 2024





Nov 12, 2024

## Ohio State ready for next phase of Carmenton district

*Global developer Tishman Speyer to help implement innovation district plan with spaces to live, play and innovate*



# **New tenants at the Energy Advancement and Innovation Center**

Pelotonia and Ohio Life Sciences are among the first anchor tenants within the new Energy Advancement and Innovation Center (EAIC), creating a central location for collaboration and innovation in the life sciences in Ohio State's innovation district.



# Enhanced partnership with City of Columbus and Rev1 to expand entrepreneurial services

The city of Columbus, Ohio State and Rev1 Ventures announced a two-part plan to support regional startups:

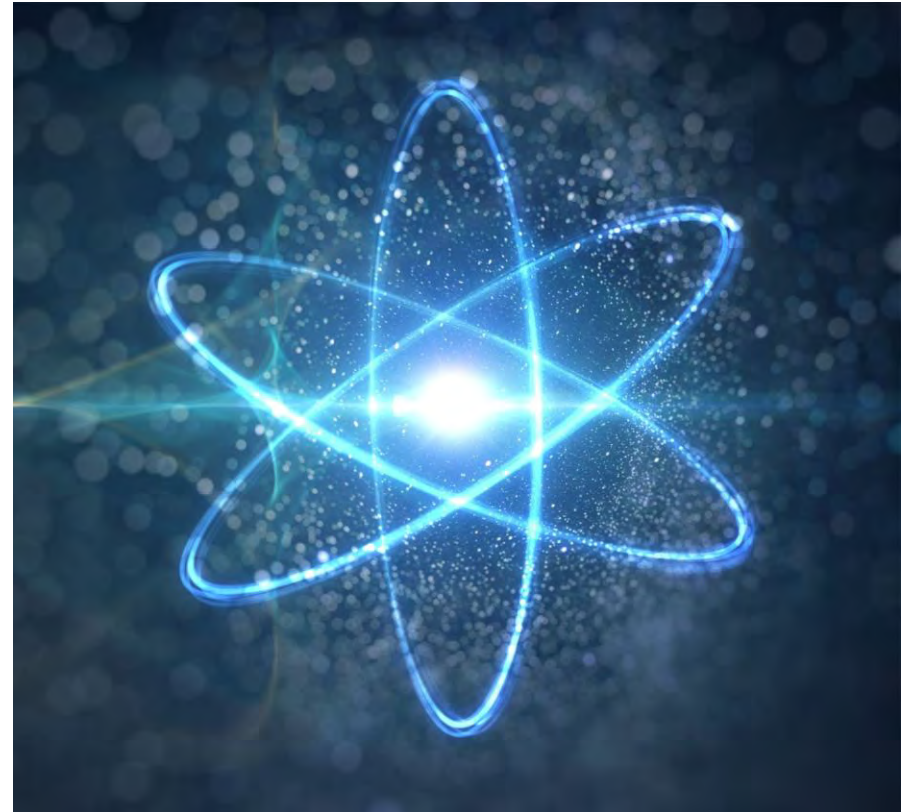
1. Rev1 is working with Ohio State and other partners on the development of additional wet lab space in the innovation district to support life science spinouts.
2. Rev1 is launching “Software Alley” in downtown Columbus. This dedicated space will offer additional services and support for software and advanced technology founders and will work closely with our Center for Software Innovation.



# Ohio State quantum information efforts lead to two new NSF awards

The National Science Foundation announced that Ohio State will participate in two new awards that will grow the university's footprint in quantum information sciences.

These awards place Ohio State in the national spotlight as an important location for driving progress in quantum information and highlights the expanding impact of Ohio State's institutional investments in quantum.



# Ohio State opens NeXUS facility with NSF funding



# Prof. L.S. Fan inducted into the Royal Academy of Engineering

College of Engineering Prof. L.S. Fan was one of six International Fellows inducted into the United Kingdom's Royal Academy of Engineering last month.

He was recognized for his exceptional contributions to the clean energy sector and his pioneering innovations in this space.





# State awards \$1M in Third Frontier funding to Ohio State

Ohio State received \$1 million in Third Frontier funding to help offset costs to validate novel technologies and allow technologies quicker access to early-stage funding.

The Third Frontier Commission evaluation report noted Ohio State's large deal flow from invention disclosures. Since 2015, Ohio State has funded 96 projects using these funds, resulting in 25 licenses of university technology and \$110 million in follow-on funding raised by 23 startups.



**Department of  
Development**

**Third Frontier Commission**

# Encouraging student entrepreneurs: Best of Student Startups (BOSS) finale

ERIK's Keenan Center for Entrepreneurship hosted the BOSS Finale last month, awarding \$50,000 in prizes to six student-led ventures. The event drew more than 80 applicants, showcasing the program's rapid growth and the entrepreneurial talent at Ohio State.

Funding for the prizes was provided through the Joan & Chester Luby Microgrant Prize Program.





## **Accelerating the innovation ecosystem: Techstars Demo Day**

Techstars is a partnership with the Center for Software Innovation. Twelve founders went through the second 13-week Techstars Accelerator program on Ohio State's campus. These companies hailed from Ohio, the greater Midwest, strong representation from both coasts and internationally from Canada and the UK.

Each company reported out their progress at an inspiring and informative event on Dec. 4.

# Ohio State drug discovery enters clinical phase, secures commercialization partner

A new oral drug discovered and developed at Ohio State targets cancer by stopping a key enzyme involved in the cellular metabolic processes that enable cancer to grow and spread.

Working with ERIK, Jabez Biosciences, a clinical-stage biopharmaceutical oncology company has licensed the drug and will soon be used for cancer treatment at the patient's bedside as part of an Ohio State-led clinical trial.



# Ohio State startup launched with \$135 Million in financing

Licensing technology from the College of Arts and Science's Kotaro Nakanishi, City Therapeutics Inc. is advancing the RNA interference (RNAi) therapeutics pipeline. RNAi therapeutics are designed to deactivate specific genes associated with diseases, effectively halting the production of harmful proteins.

In October, the company announced a \$135 million fundraiser, the largest "Series A" raise for an Ohio State startup to date.

The company aims to begin clinical by the end of 2025 and hopes to submit one to two new Investigational New Drug applications (INDs) each year starting in 2026.



**A conversation with Ohio State innovators**

# **Kotaro Nakanishi**

Associate Professor of Chemistry and Biochemistry  
College of Arts and Sciences

# **Anil Parwani**

Professor of Pathology and Biomedical Informatics  
College of Medicine

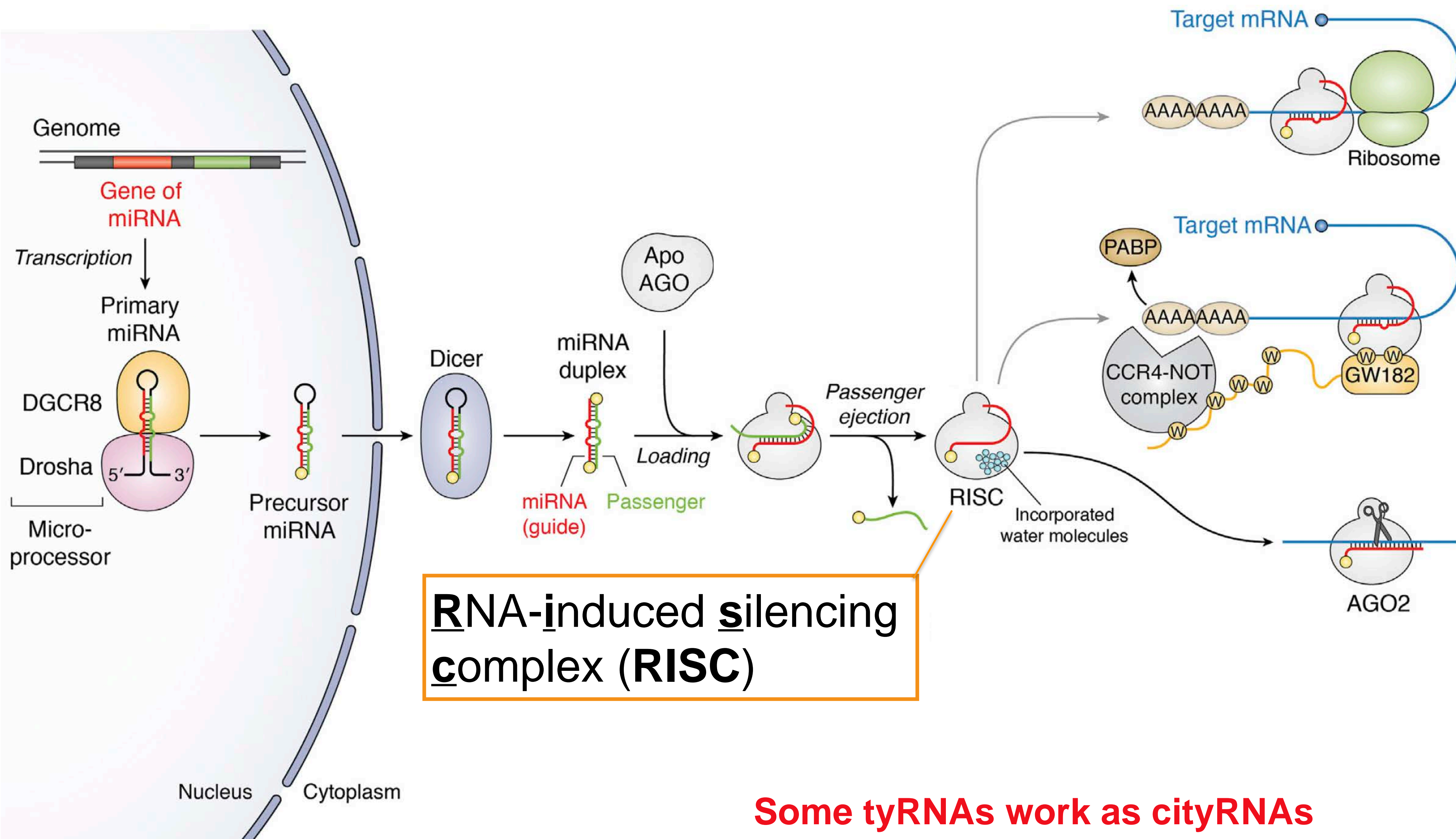


# Gene silencing by cityRNAs

Department of Chemistry and Biochemistry  
The Ohio State University

Kotaro Nakanishi

# miRNA biogenesis pathway



**RNA-induced silencing complex (**RISC**)**

**Some tyRNAs work as cityRNAs  
(Cleavage-inducing tiny RNA)**





Press Release Oct 8

# City Therapeutics Launches with \$135 Million Series A Financing to Lead the Future of RNAi-based Medicine

*Harnessing next-generation siRNA engineering to improve and expand the therapeutic reach of RNAi-based medicines*

*Building sustainable product engine for innovative RNAi therapeutics to make a significant impact for patients across multiple disease indications, with first program expected to enter clinical development at or around year-end 2025*

*Led by founding Alnylam CEO and RNAi therapeutics pioneer John Maraganore, Ph.D., as executive chair and co-founded by key scientists and business leaders in RNAi*

## Founders and Scientific Advisors



Mark Keating, MD  
Co-founder



Kotaro Nakanishi, PhD  
Co-founder



Yukihide Tomari, PhD  
Co-founder



Hans-Peter Vornlocher, PhD  
Scientific Advisor



Phillip Zamore, PhD  
Co-founder



John Maraganore, PhD  
Executive Chair

# De novo point mutations cause Argonaute syndrome.



AGO2



Kerri Krickhan...

Sunday, November 24,...

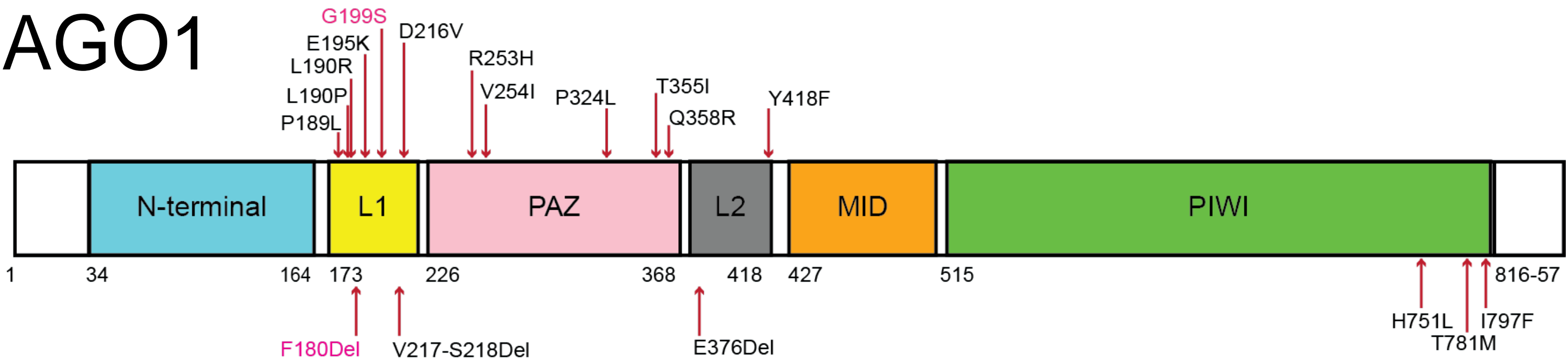
To: Nakanishi, Kotaro

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 This Message Is From an External Sender  
 This message came from outside your organization.  
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Hello!  
 My name is Kerri Krickhan. My son, Wyatt has AGO2 (Lessel - Kreienkamp syndrome) and I saw you've been doing some research on all of the AGOs. I just wanted to reach out in case you ever need participants in your research. We live in Cuyahoga Falls, about 2 - 2 1/2 hours away. I would love to be in the loop with any new information you stumble upon also!  
 Thanks!  
 Kerri  
 Sent from my iPhone

\* Kerri consented to share this information.

AGO1



Schalk et al. 2022, J Med Genet



# Acknowledgements

## The Nakanishi Lab

Huaqun Zhang  
GeunYoung Sim  
Audrey Kehling  
Vishal Adhav  
Cameron Divoky  
Andrew Savidge  
Mi Seul Park  
Nipun Malhotra  
Jackson Secor

## Cryo-EM Facilities

- CEMAS at OSU
- National Cryo-EM Facility at NCI
- S2C2 at Stanford
- PNCC at OHSU

## Foundations



R01 GM138991  
R01 GM124320  
R21 AI178624

## The Fu Lab (OSU)

Tian-min Fu  
Zhangfei Shen

## Conflict of financial interest



## The Tang Lab (OSU)

Wen Tang  
Benjamin Pastore



THANKS FOR YOUR ATTENTION!



Creating a Cancer-free World. One Person, One Discovery at a Time.

# The James

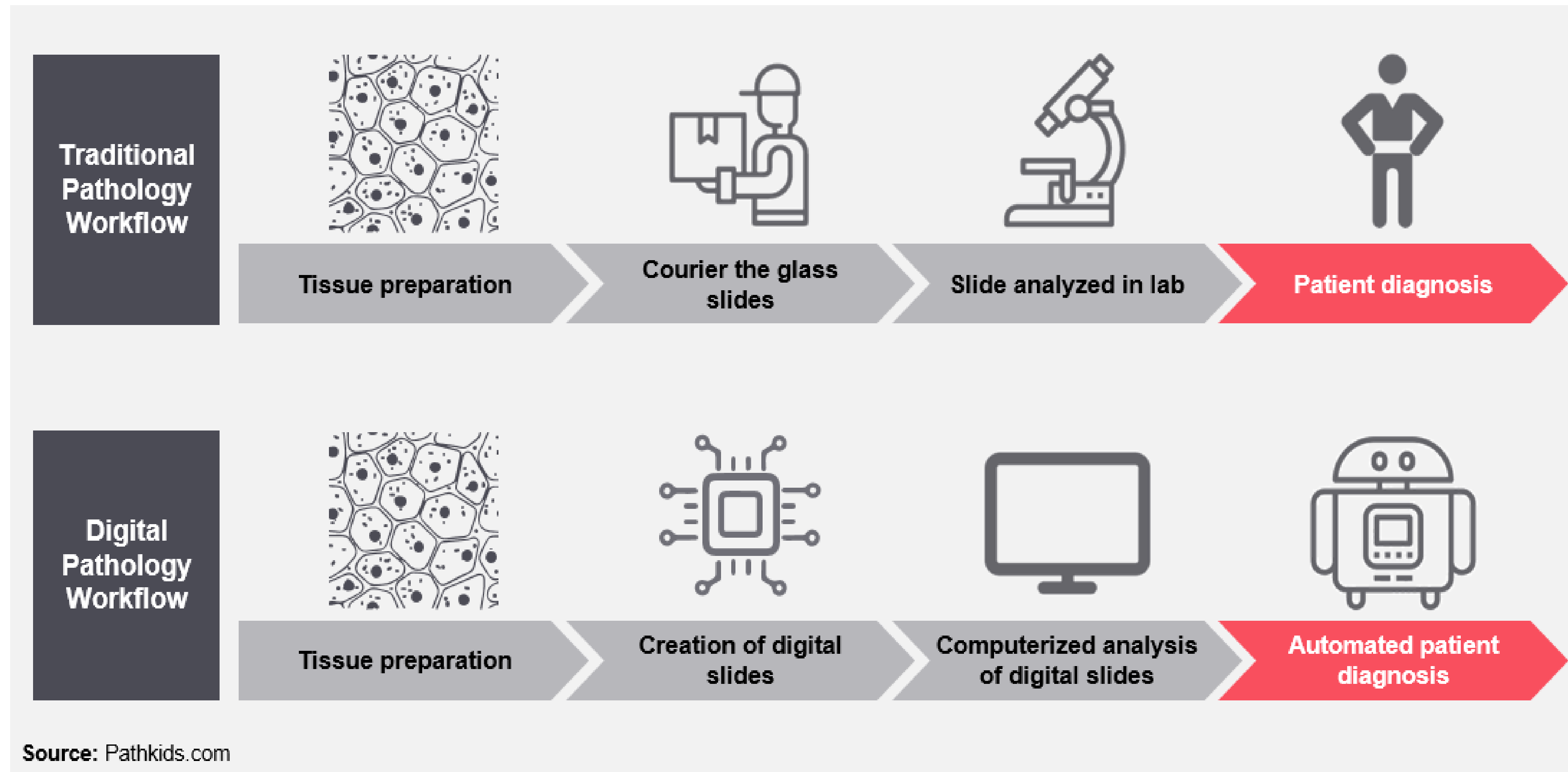


**THE OHIO STATE UNIVERSITY**  
WEXNER MEDICAL CENTER

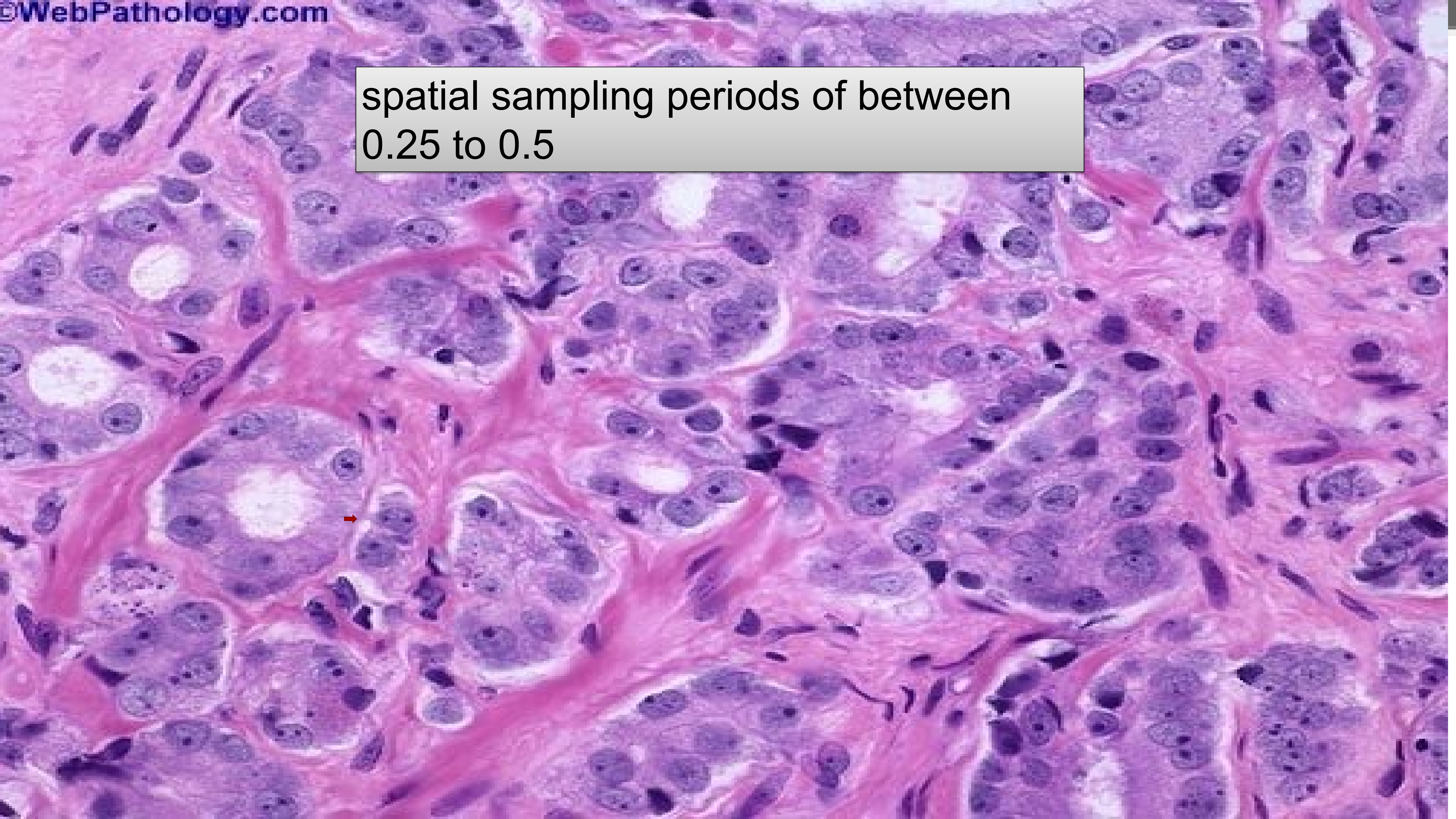
## **AI Meets Digital Pathology: Transforming Clinical Diagnostics and Prognostics**

**Anil V. Parwani, MD, PhD, MBA**

# Traditional versus Digital Pathology Workflow

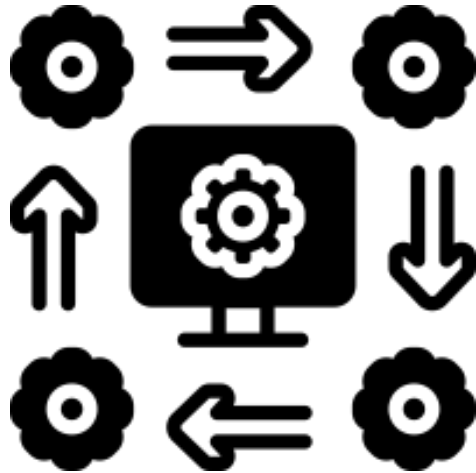


spatial sampling periods of between 0.25 to 0.5



# Digital Pathology/AI at OSU - Timeline

2016



The James and DOP work together to implement a comprehensive digital pathology workflow solution

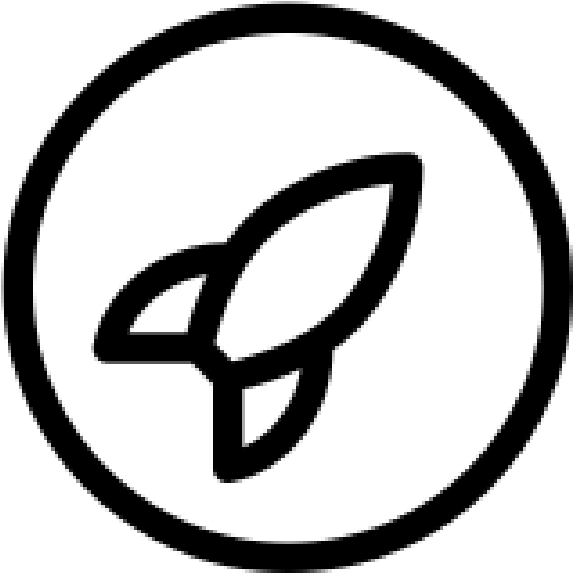
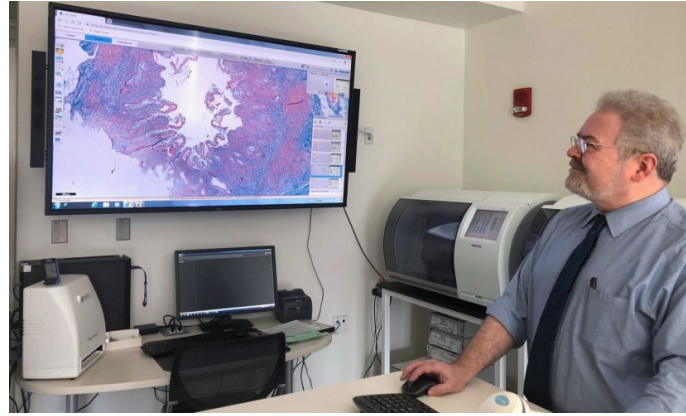
Full scale digital pathology scanning services launched enabling the digital pathology team to convert their traditional glass slides into high-resolution digital images for faster and easier viewing

2019



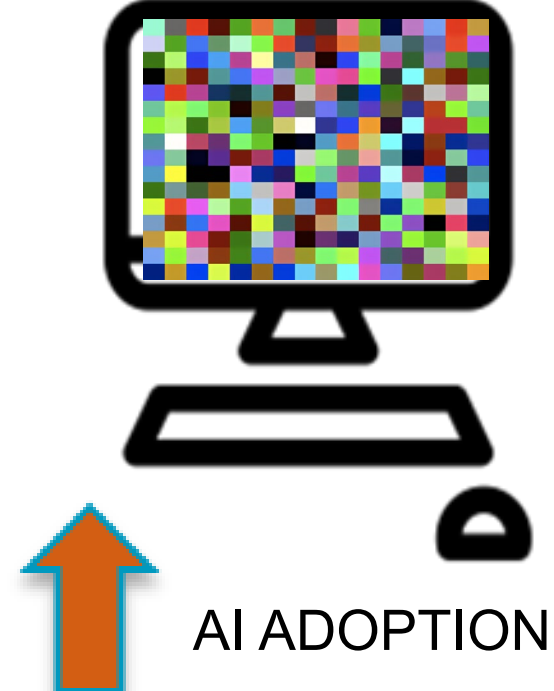
EPIC Beaker goes live. This allows for easy access to a list of scanned slides, as well as the ability to sort slides by Part ID, Block ID, Slide ID, and Image Creation Time

OSU surpasses 4.2 M slides scanned and digitized. This represents one of the largest digital pathology assets in the world. This provides OSU with a significant advantage over other institutions regarding research opportunities (internal and external) and technology development.



2017

2024 and Beyond

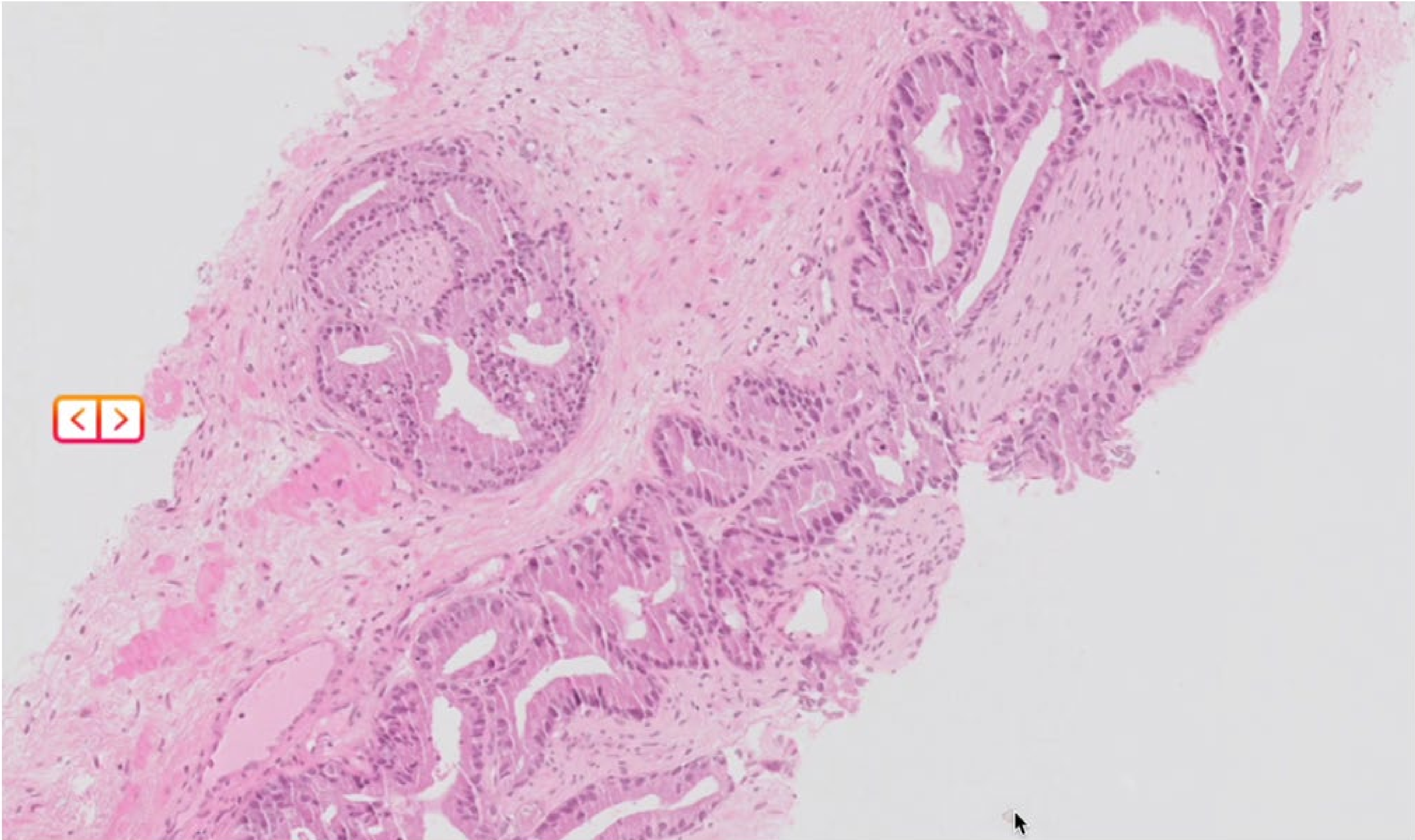


AI ADOPTION



4,274,676 slides scanned

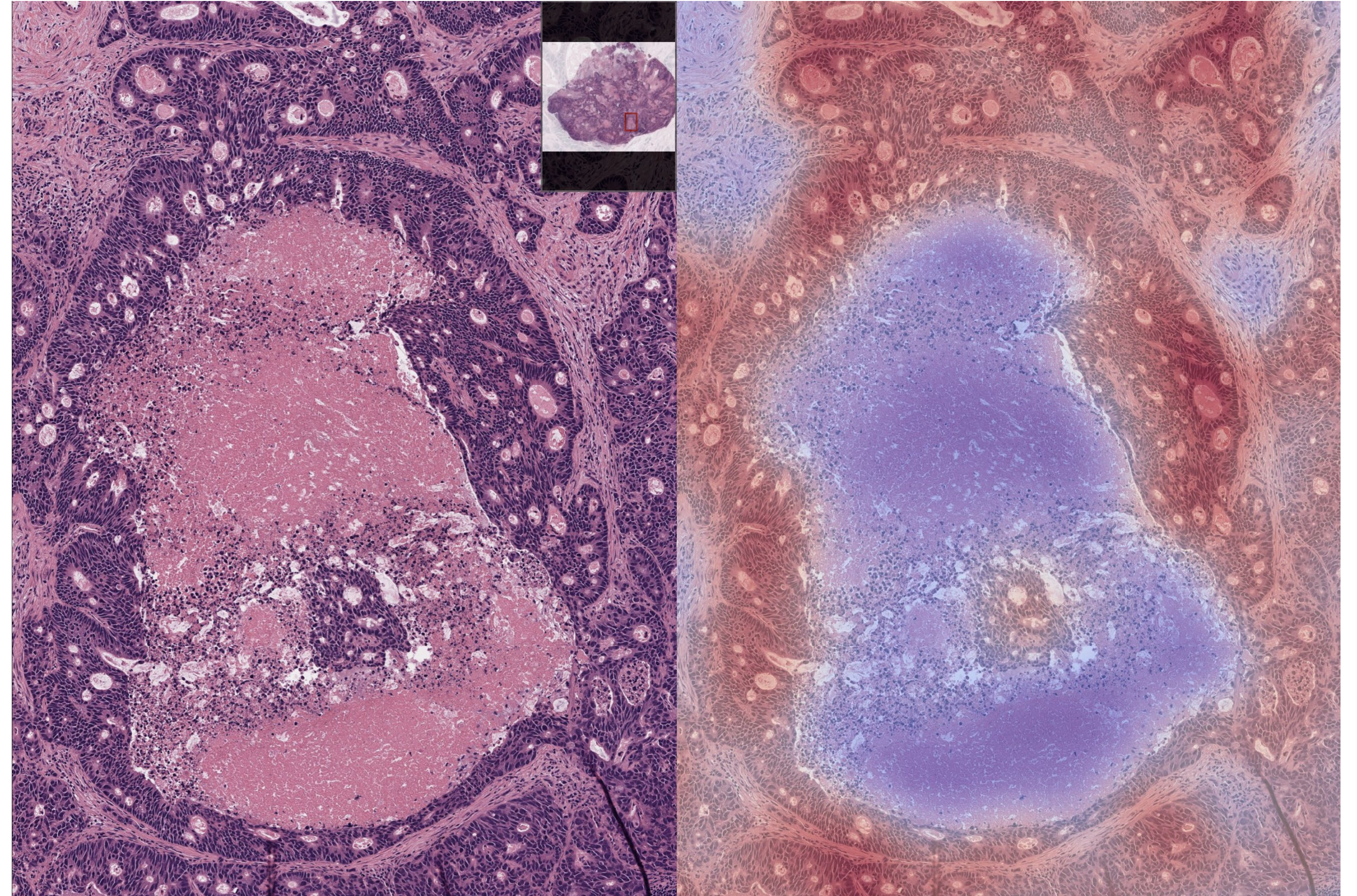




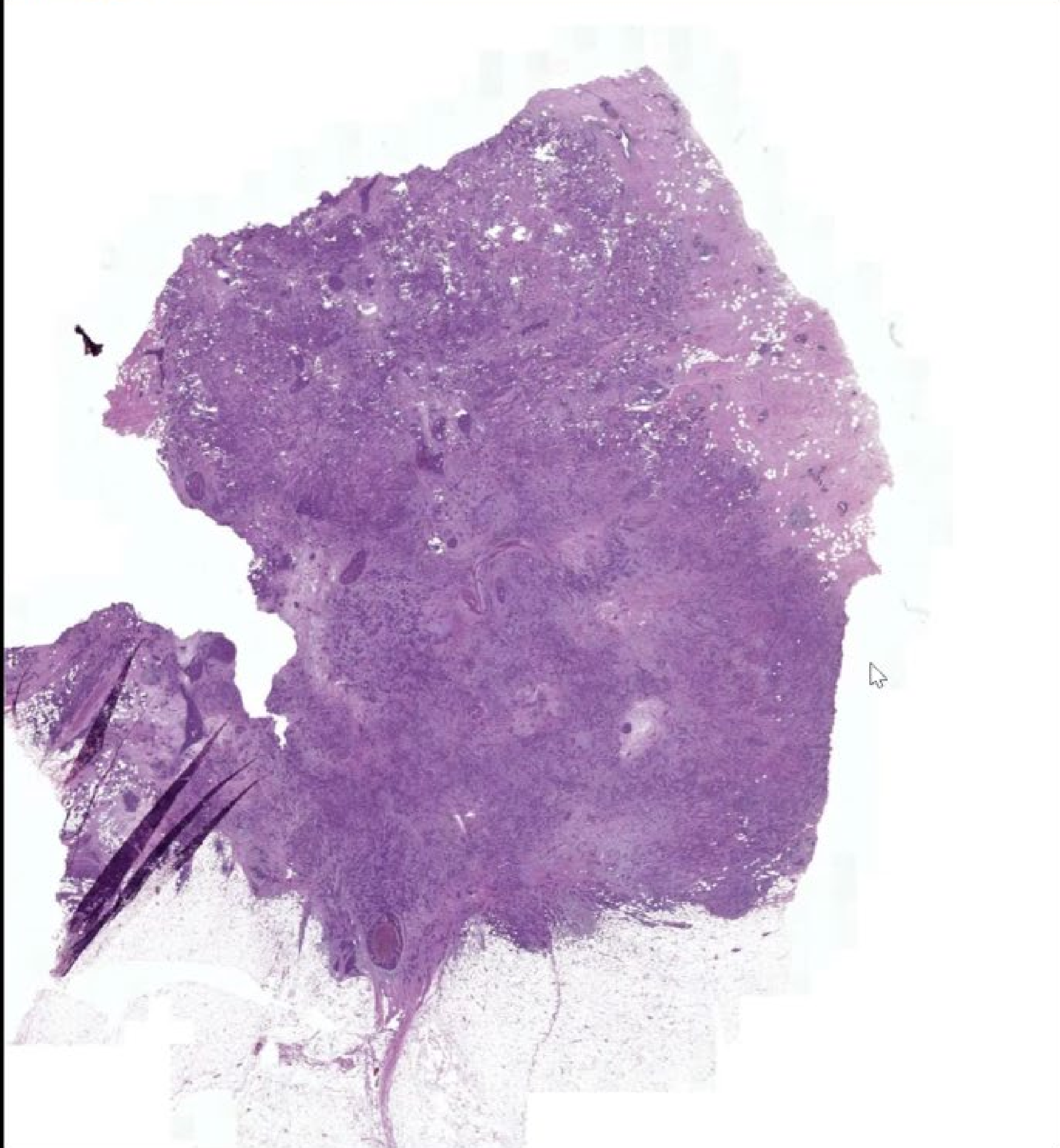
# Classification of Tumor in lymph nodes

Tissue site: **Lymph node**

Prediction	Confidence
Colorectal	0.9996
Esophagogastric	0.0003
Endometrial	0.0000



5 mm



1869

## Suggested Diagnosis:

- Atypical Fibroxanthoma
- Spindle Cell Melanoma
- Leiomyosarcoma
- Spindle cell SCC

Recommended IHC

Recommended Publications

AI Assistant

Ask a question or make request

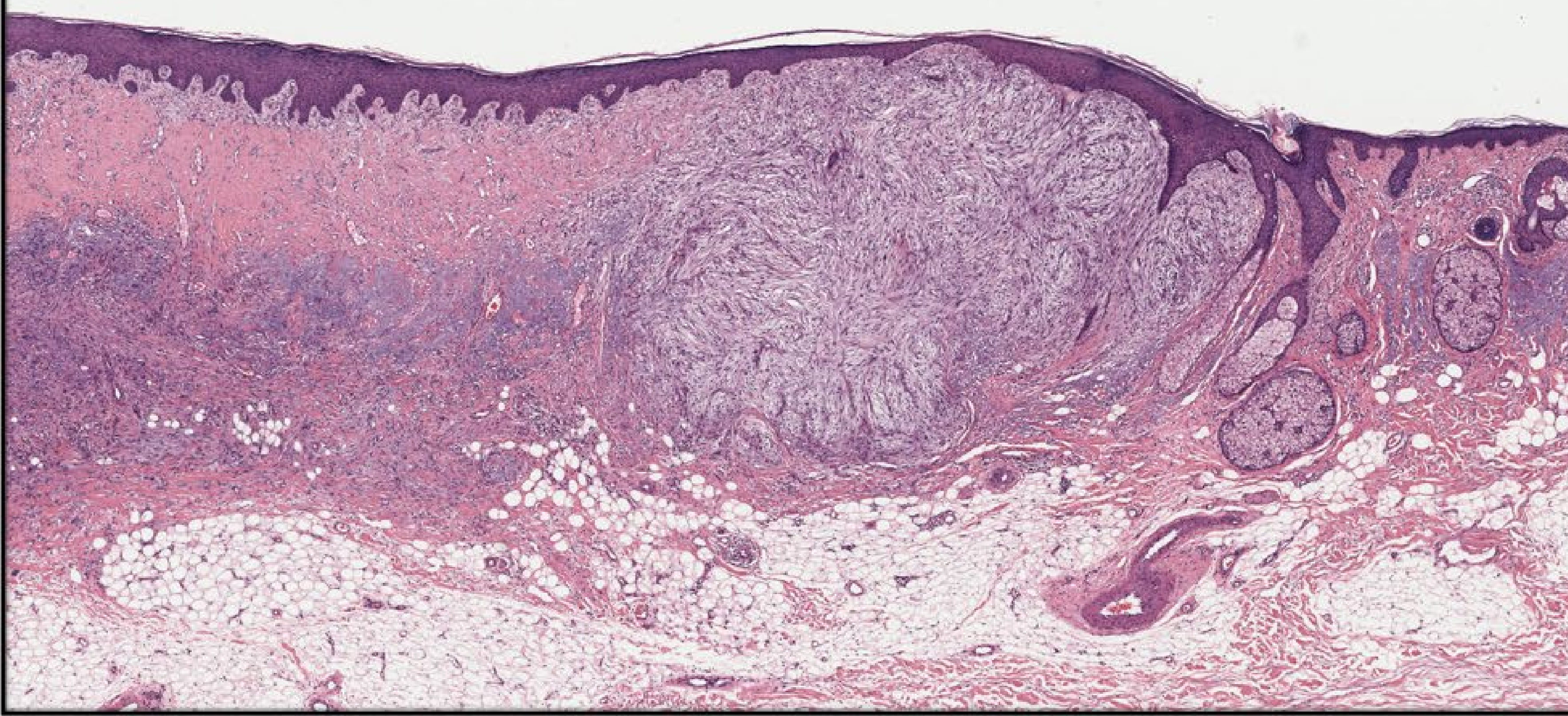
## FEATURES

Sun damaged skin

Pleomorphism

Spindle cell proliferation in dermis

Scattered mitosis





## **SUMMARY OF ACTONS TAKEN**

*August 22, 2024 – Research, Innovation & Strategic Partnerships Committee Meeting*

### **Members Present:**

Lewis Von Thae  
Reginald A. Wilkinson  
Juan Jose Perez

Bradley R. Kastan  
Joshua H.B. Kerner  
Phillip Popovich

John W. Zeiger (ex officio)

**Members Present via Zoom:** N/A

**Members Absent:** N/A

## **PUBLIC SESSION**

The Research, Innovation & Strategic Partnerships Committee of The Ohio State University Board of Trustees convened on Thursday, August 22, 2024, in person at Longaberger Alumni House on the Columbus campus. Committee Chair Lewis Von Thae called the meeting to order at 12:58 p.m.

### **Items for Discussion:**

1. Quarterly Highlights for Research, Innovation and Knowledge: Peter Mohler, executive vice president for Research, Innovation and Knowledge, presented highlights of Research, Innovation and Knowledge from the last quarter.

(See Attachment X for background information, page XX)

2. Ohio State Faculty Recognition: Dr. Mohler conducted a conversation with Rattan Lal, distinguished university professor of soil science with the College of Food, Agricultural and Environmental Sciences. Dr. Lal spent a few moments talking about his work. The Board congratulated him on his recent prestigious award – 2024 Gulbenkian Prize for Humanity.

(See Attachment X for background information, page XX)

### **Item for Action:**

3. Approval of Minutes: No changes were requested to the May 16, 2024, meeting minutes; therefore, a formal vote was not required, and the minutes were considered approved.

## **EXECUTIVE SESSION**

It was moved by Mr. Von Thae and seconded by Mr. Perez that the committee recess into executive session to consider business-sensitive trade secrets required to be kept confidential by federal and state statutes and to consult with legal counsel regarding pending or imminent litigation.



A roll-call vote was taken, and the committee voted to move into executive session with the following members present and voting: Mr. Von Thaer, Dr. Wilkinson, Mr. Perez, Mr. Kastan, Mr. Kerner, Dr. Popovich and Mr. Zeiger.

The committee entered executive session at 1:12 p.m., and the meeting adjourned at 2:22 p.m.

DRAFT