

The Cadaver as the First Patient: Early Integration of Pathology in the Preclinical Anatomy Laboratory

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Introduction

- Pathology observed during cadaveric dissection provides medical students a unique opportunity to **connect diseases with gross anatomical structures** and **supports early clinical exposure**.
- In traditional medical school curricula, **histology and gross anatomy** are taught as separate disciplines, with **formal exposure to pathology** typically occurring in the second year or during optional fourth-year electives, which may limit early opportunities to connect anatomical structures with underlying disease processes.
- To address this gap, the ***Sherlocks in the Lab*** initiative, developed by the Oakland University William Beaumont School of Medicine Pathology Interest Group, integrates pathology into the **first-year anatomy laboratory**.
- Through biopsy submission and histopathologic analysis, cadaveric donors are approached as students’ **“first patients,”** reinforcing connections between structure, disease, and **clinical reasoning**.
- This **early exposure** strengthens foundational learning, supports meaningful clinical application, and promotes sustained interest in pathology as a potential specialty.

Objectives

- The ***Sherlocks in the Lab*** initiative aims to provide **early and authentic exposure to pathology** through hands-on experiences in biopsy collection and donor specimen analysis, reinforcing students’ understanding of the relationship between gross anatomical structures and disease processes.
- By **fostering professional identity formation** and **cultivating enthusiasm for the field**, this collaborative project promotes interest in pathology and seeks to inspire the next generation of pathologists.

Figure 1: Sherlock's in the Lab Biopsy Event, October 2025

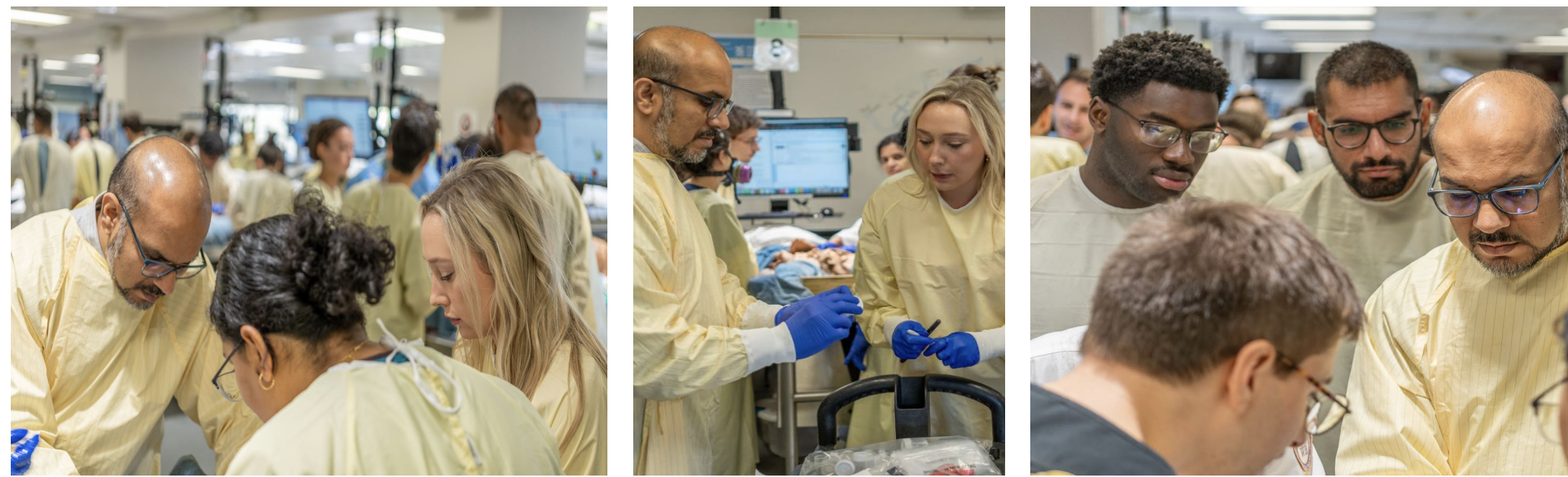


Figure 1. Sherlock's in the Lab Event Students actively participating in cadaveric specimen biopsy collection during the Sherlock's in the Lab event under the guidance of Dr. Muhammad Jawwad Arshad, OUWB Pathology Interest Group Faculty Advisor.

Methods

Figure 2: Cadaver Specimen Biopsy and Analysis Methods

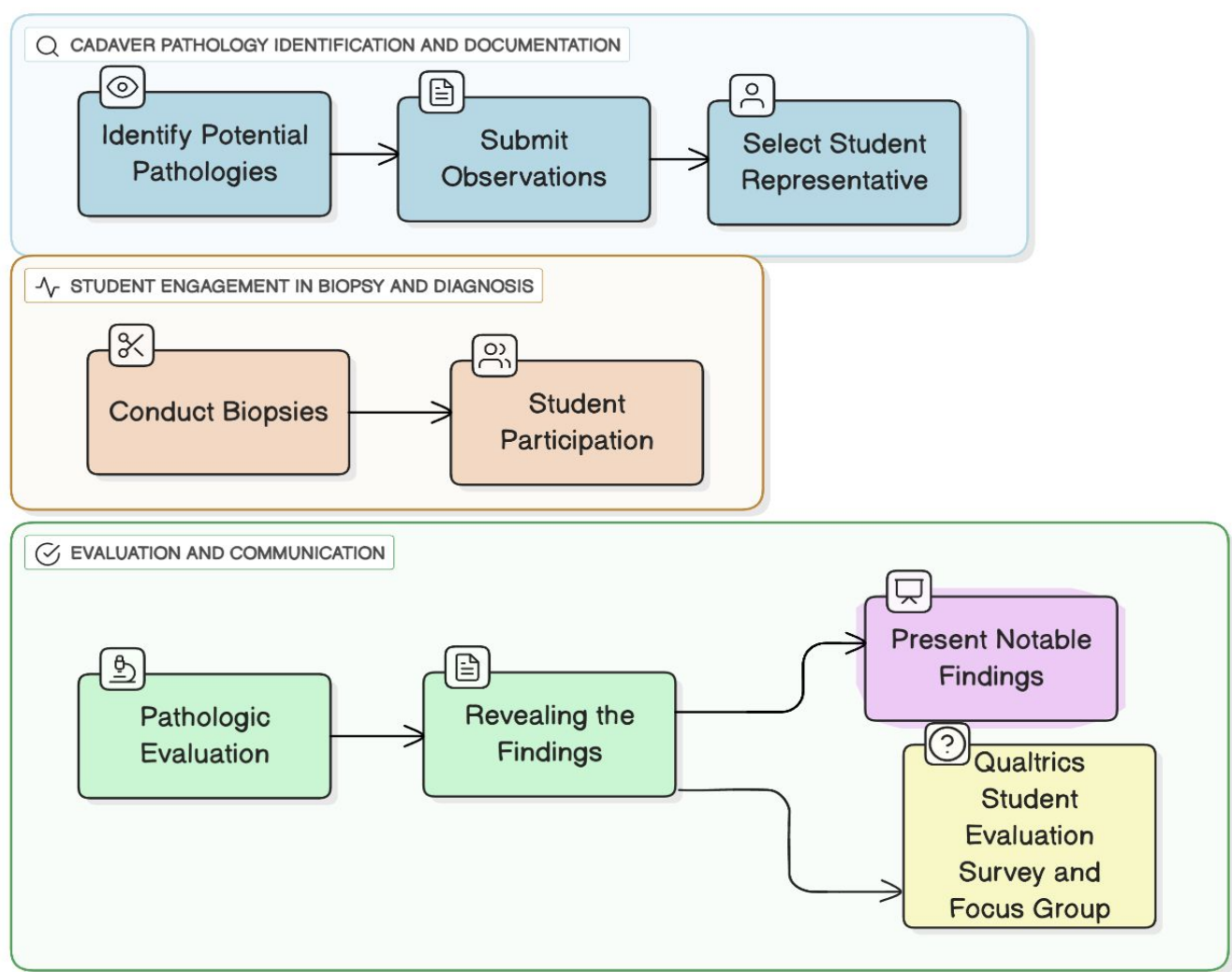


Figure 2. Methods overview illustrating the process of cadaver pathology identification, biopsy, evaluation, and student engagement, culminating in presentation of findings and student feedback collection.

- Groups with notable findings were encouraged to share their work at academic conferences.
- This ongoing medical effort has been conducted in the **2022 - 2025 cohort years**. 2025 cohort data was collected on October 24, 2025, with histopathological analysis underway.

Results

A total of **12 laboratory groups**, each consisting of five to six students, submitted biopsy requests as part of the ***Sherlocks in the Lab*** event for the 2025 - 2026 cohort.

Across these groups, biopsies were obtained from cadaveric donors, representing a wide range of clinically relevant pathologies. Students demonstrated strong engagement throughout the process, actively participating in specimen selection, asking questions of pathology faculty, and discussing the potential clinical implications of their findings.

The submitted biopsy specimens included:

1. **Renal pathology:** nodular right kidney; right kidney with suspected tumor or cystic changes; left cystic kidney.
2. **Hepatic pathology:** cirrhotic right hepatic lobe.
3. **Pulmonary pathology:** lung nodules,; left lung section; left lung lymph node, cavitory lung lesion.
4. **Gynecologic pathology:** uterine fibroids; cystic ovaries.
5. **Cardiovascular pathology:** hypertrophic left ventricular wall.
6. **Lymphadenopathy:** right common iliac lymph nodes; para-aortic lymph nodes; axillary lymph nodes.

Discussion

- Students reported **increased appreciation for pathology’s clinical relevance and complexity**, noting that the opportunity to directly observe and interact with pathologists significantly enriched their learning experience.
- In the 2025 cohort, **12 of the 22 donor groups identified significant pathologies**, leading to presentations at academic conferences.
- Ongoing analysis includes characterization of donor pathologies identified in the current 2025 cohort, complemented by **narrative student feedback** to further assess the educational impact of the initiative.

Figure 3: Histopathology Results
2025 Donor Cohort

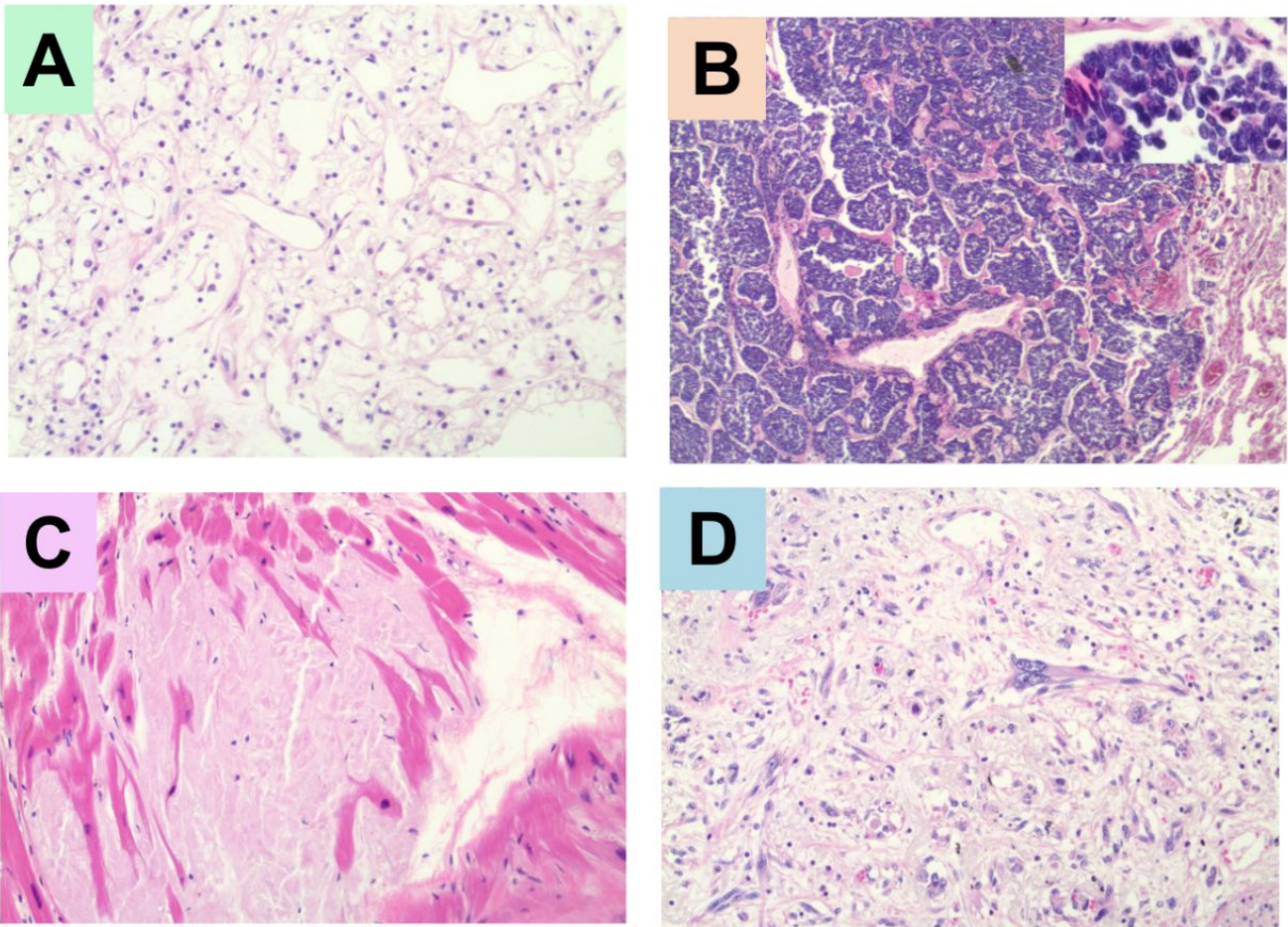


Figure 3:
Select Histopathology Results

1. **A:** Clear Cell Renal Carcinoma
2. **B:** Left Lung Nodule - Neuroendocrine Tumor
3. **C:** Amyloid Deposits in Left Ventricular Muscle - Restrictive Heart Disease
4. **D:** Atypical Sarcomatoid Lung Tumor

Conclusions

Integrating clinical pathology into the first-year anatomy lab offers students a more connected and enriching introduction to diagnostic medicine. By linking anatomical study with real disease processes, the experience **strengthens early clinical thinking** and invites students to appreciate the role of pathology in patient care. This innovative model **bridges basic and clinical sciences**, creating a memorable educational experience.

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