THE ANATOMIC PATHOLOGY RESIDENCY TRAINING PROGRAM

THE MODERN ANATOMIC PATHOLOGIST

Over the last few years, pathology has undergone unprecedented technological advances that have profoundly transformed the role of the anatomic pathologist. In the context of modern medicine, the anatomic pathologist acts as a "director," playing a crucial role in patient management. Indeed, in the era of precision medicine, traditional histomorphological examination by light microscopy has been integrated with molecular biology and artificial intelligence, opening new scientific frontiers and making anatomic pathology an increasingly dynamic field, rich in diagnostic and research opportunities.
Therefore, the modern pathologist must combine traditional histological and cytological evaluation with molecular data, with particular attention to clinical research.

RESIDENCY PROGRAM IN ANATOMIC PATHOLOGY

The Anatomic Pathology Residency Training Program of the University of Insubria offers training activities, a dynamic training network and national and international visiting scholars, with the aim of ensuring professional growth and increasing autonomy of future pathologists.

The Anatomic Pathology Residency Training Program belongs to the Diagnostic Medicine and Laboratory residency program group, Clinical Service Area, and lasts four years. In order to obtain the specialization degree, residents must collect 240 training credits (D.M. 4 February 2015 n. 68).
At the end of the residency program, the Anatomic Pathologist should possess theorical, scientific and professional mastery in the field of autoptic, macroscopic, microscopic, ultrastructural and molecular pathology, aimed to his specific clinical activity. He should be able to identify and diagnose morphological alterations of organs, tissues and cells, on a macroscopic and microscopic level.

In this regard, the Anatomic Pathologist should be able to correctly apply and interpret histological, cytological, histochemical, immunohistochemical, ultrastructural and molecular techniques, as well as to adopt appropriate methods for quality control and quantitative assessments.

The training objectives of the Anatomic Pathology Residency Program are:

TRAINING OBJECTIVES

Basic training objectives:

- Mastery of tools and techniques of the histology laboratories
- Basic knowledge in genetics, molecular biology, medical statistics, epidemiology, and morphometric assessment methods

Integrated training objectives (i.e., "common core")

- Knowledge in the disciplines that belong to the Diagnostic Medicine and Laboratory field and/or are inherent to the training program with special regard to molecular pathology, physiopathology, general pathology, immunology and immunopathology. Moreover, part of the "common core" activity will focus on clinical integration with the Medical Area and Surgical Area.

Training objectives specific to the Residency Program:

- Thorough knowledge of systemic anatomic pathology, techniques and diagnostics of autopsies, theoretical-practical basis of histochemistry and immunohistochemistry, ultrastructural pathology, diagnostic cytopathology (including fine-needle aspiration biopsy), and diagnostic-oriented molecular biology
- Complete mastery in diagnosing morphological alterations of cells, tissues and organs, and evaluating them in the light of their impact on patient management
- Ability to perform clinico-pathological correlations in the main subspecialty fields, such as neuropathology, cardiovascular pathology, dermatopathology, hematopathology, nephropathology, uropathology, gynecological pathology, pediatric pathology, bone and soft tissue pathology, gastrointestinal pathology, endocrine pathology, pulmonary pathology, oncologic pathology and everything concerning diagnostic morphology of cells, tissues and organs.

Integrative objectives are theoretical knowledge in medical genetics, epidemiology, imaging, occupational and preventive medicine, toxicology, legal medicine, deontology and bioethics.

Training activities which are mandatory to achieve the specific objectives of the Residency Program include:

- at least 40 certified autopsies, including histopathological assessment;
- gross handling of at least 1,200 surgical specimens;
- histological examination of at least 4,000 cases, with or without histochemical, immunohistochemical, ultrastructural and/or molecular biology analyses;
- cytological examination of at least 1,600 cases, including fine-needle aspiration biopsy specimens;
- participation in preparation and diagnosis of at least 200 intraoperative frozen section cases and at least 50 molecular analyses of tissue specimens

Furthermore, the specialist should:

- have a thorough knowledge of signs, symptoms and mechanisms of diseases, being able to integrate clinical and morphological data
- know the scientific background of pathology in terms of mechanisms of disease, diagnostic criteria e clinical significance
- be able to describe gross specimens, adequately documenting essential diagnostic data and using iconographic documentation techniques if necessary
- be able to perform gross sectioning of surgical specimens for histological examination following recognized guidelines;
- assess histological and cytological specimens with a logical and consistent approach, taking into account clinical data and addressing specific clinical questions posed by the referring physicians;
- be able to describe pathological findings concisely and in detail, focusing on observations aimed at formulating a complete, clear, and understandable report;
- know how to use digitization methods for histological specimens and be aware of the applications of virtual imaging in external diagnostic consultations and in teaching;
- be able to request and interpret appropriate additional tests (histochemical staining, immunohistochemical staining, biomolecular tests) when necessary to prepare the report;
- know and apply the legal regulation of necropsy medicine;
- be able to independently perform a complete necropsy diagnostic assessment and formulate a correct diagnosis;
- be aware of the medico-legal implications of specimen and report storage, as well as the protection of sensitive data.
- professionalizing activities include diagnostic shifts within the residency program training network, supervised by faculty members in the discipline. learning autopsy diagnostics involves attending the

autopsy room and performing autopsy diagnostic assessments under the supervision of the faculty member.

Residents will be able to get the specialization after completion of all professionalizing activities

EDUCATIONAL ACTIVITY

The educational activity of the Residency Program includes:

- Weekly meetings focused on the discussion of clinical cases and/or technical-organizational issues and/or updates on diagnostic-scientific themes; the meeting is handled by the faculty members of the Residency Program and takes place every Monday from 3.30pm to 4.30pm
- Weekly session of histological examination with discussion at a multi-headed microscope; the session is handled by the personnel of the Anatomic Pathology Unit and takes place every Thursday from 2.00pm to 3.00pm
- Participation in congresses and educational events at a regional, national, and European level
- Seminars held by the faculty members of the Residency Program
- Lectures and/or seminars held by renowned scientific figures in the fields of Anatomic Pathology, Basic Science, and Clinical Science

The professionalizing activity can be complete as the institutional case series encompasses all diagnostic fields and consists of over 100,000 exams in the sole main institution, including 32,000 histological exams, 5,000 cytological exams, 45,000 HPV tests, 4,000 molecular analyses, 16,000 PAP tests, and 70 autopsies (2025 data). The total number of exams is more than double if we consider all the institutions of the training network.



SETTING

The main setting of the Residency Program is the Laboratory of Anatomic Pathology and Somatic Molecular Diagnostics, which is located at the 3rd floor of building 6 of the Ospedale di Circolo/ASST dei Sette Laghi, viale

Borri 57, Varese. The Laboratory of Anatomic Pathology is a modern structure (certified ISO 9001:2015) with an extension of about 1000 m^2, and features novel automized systems for the laboratory activity, making it one of more advanced European laboratories with respect to standardization of the processes. The laboratories of immunohistochemistry and molecular biology also feature cutting-edge tools such as automized immunostainers and new-generation sequencers. The necessary equipment for digital pathology, including scanners for slides, high-definition screens and high-performance computers is available as well.

The Laboratory of Anatomic Pathology hosts the institutional Molecular Tumor Board, coordinates the institutional NGS facility and the rare disease network and serves as central hub for NGS sequencing and cyto-molecular screening of uterine cervical cancer.

The staff encompasses more than 50 people including medical doctors, biologists, laboratory technicians, administrative personnel, residents, scholarship holders, and PhD students



The training network includes the following institutions:

- Anatomic Pathology Unit, Ospedale Sant'Anna/ASST Lariana di Como
- Anatomic Pathology Unit, Ospedale Valduce di Como
- Anatomic Pathology Unit, Ospedale di Busto Arsizio/ASST Valle Olona

Section dedicated to medical offices and didactic activity



The laboratories

Macroscopy Laboratory



Laboratory of automatic processing and embedding



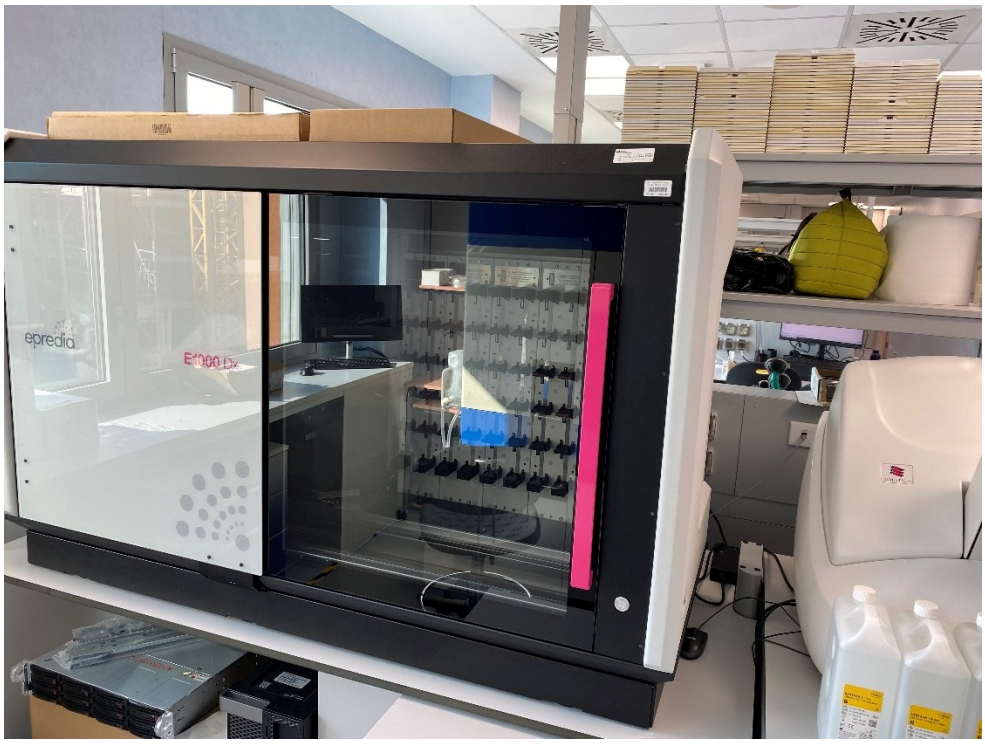
Laboratory of manual embedding and cutting

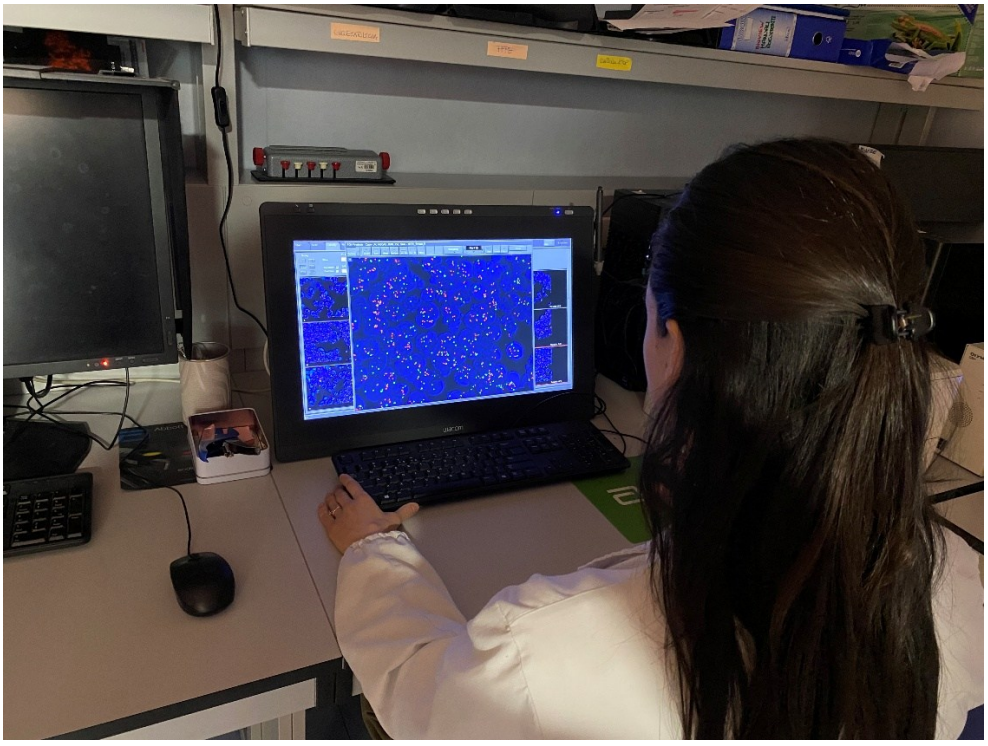


Laboratory of automatic cutting



Digital Pathology





Laboratory of immunohistochmistry



Laboratory of Molecular Pathology

