

Animal Pathology – Human and Animal Genomics – Human and Animal Cancer Registries

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MVET-02/A – BIOS-08/A

Temporary staff - **Post-doc Fellow:** Dr.Pallotti S, Dr.Deiana G
- **Phd Students:** Dr.Beccacece L, Dr.Biagini L,
- **Research ass.:** Dr.Baldassari-Torbidoni B,
Dr.DeBellis D, Dr.Valentini A,
Dr.Manasse S, Di Biagi L.

AGRI-09/A

Permanent/temporary **staff ratio 4 / 9**



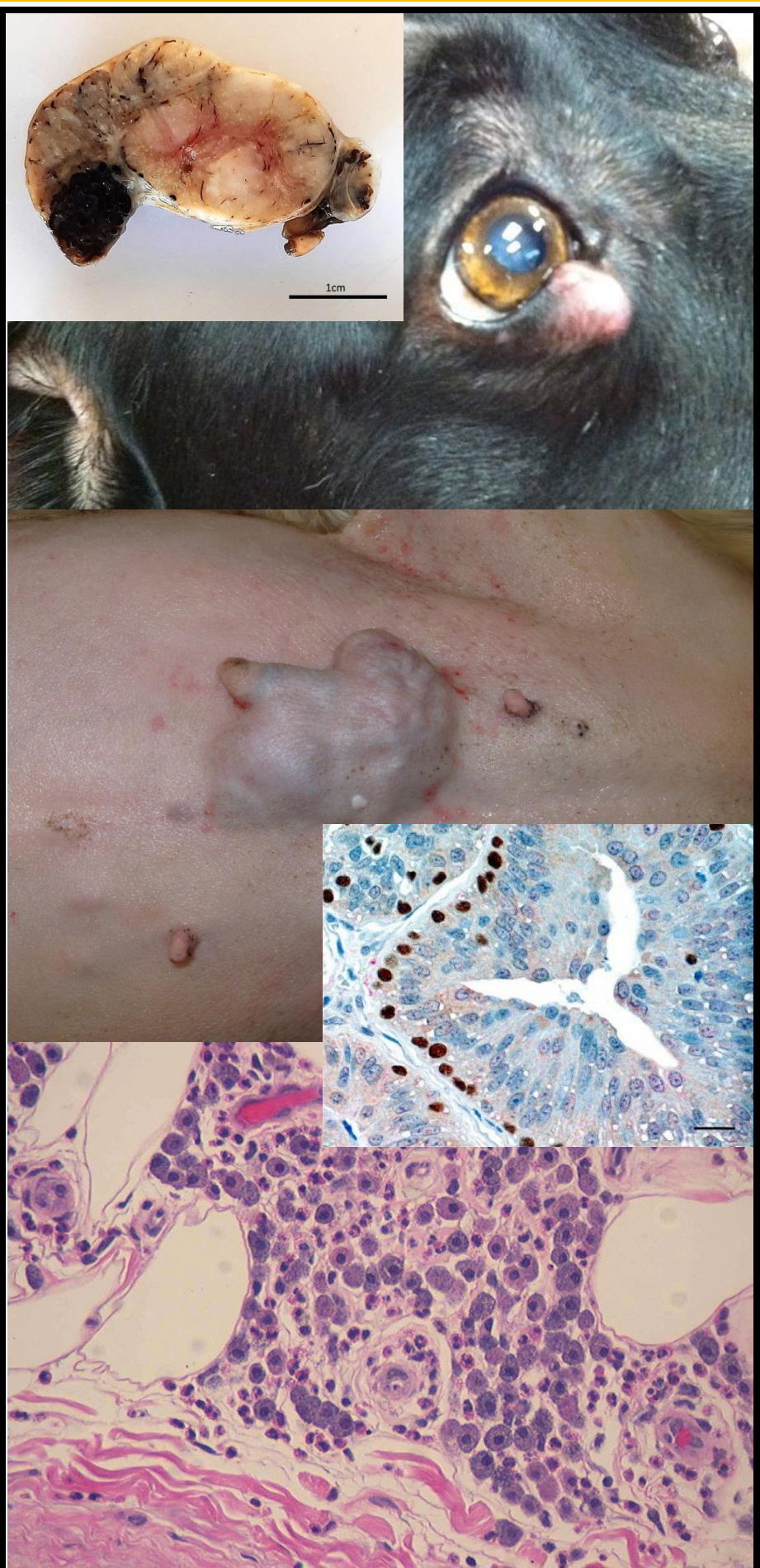
(1PO, 2PA, 1Res/5PhD Students, 2 Post-doc Fellow, 2 Research managers)

Characterizing studies

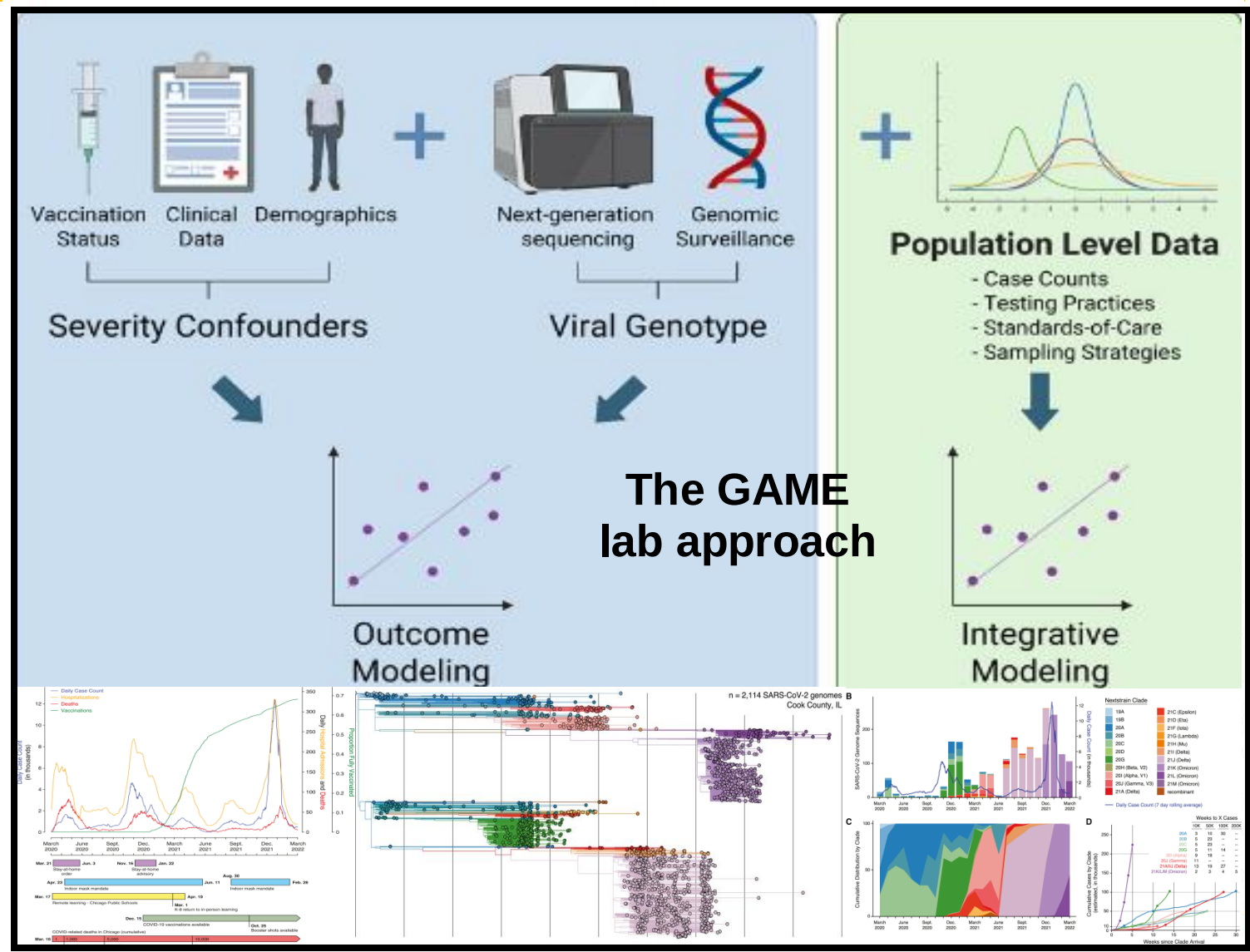
- **Animal Pathology:** comparative gastro-intestinal and hepatic pathology
 - >*fish pathology*; dermatopathology; animal immunopathology
 - >*canine & feline mammary gland neoplasia*; exotic & wild avian sp. pathology; animal models pathology; animal oncology.
- **EXTREMAL: EXTREMe** phenotypes for Aging and Longevity.
 - >*Identification of selection signals* for productive traits and environmental adaptation in livestock
 - >*Polygenic risk score* determination and validation for complex traits and multifactorial diseases.
 - >*Multi-omics data integration* for personalized genomic medicine.
- **Review of Neuroendocrine Neoplasms (NEN)** of the Gastro-enteropancreatic (GEP) System and Analysis of Italian Incidence
 - >*National Benchmarking of Childhood Cancer Survival* by Stage (BENCHISTA)
 - >*Genome sequencing of extreme phenotypes* in Luminal A Breast Cancer

International and National impact of research

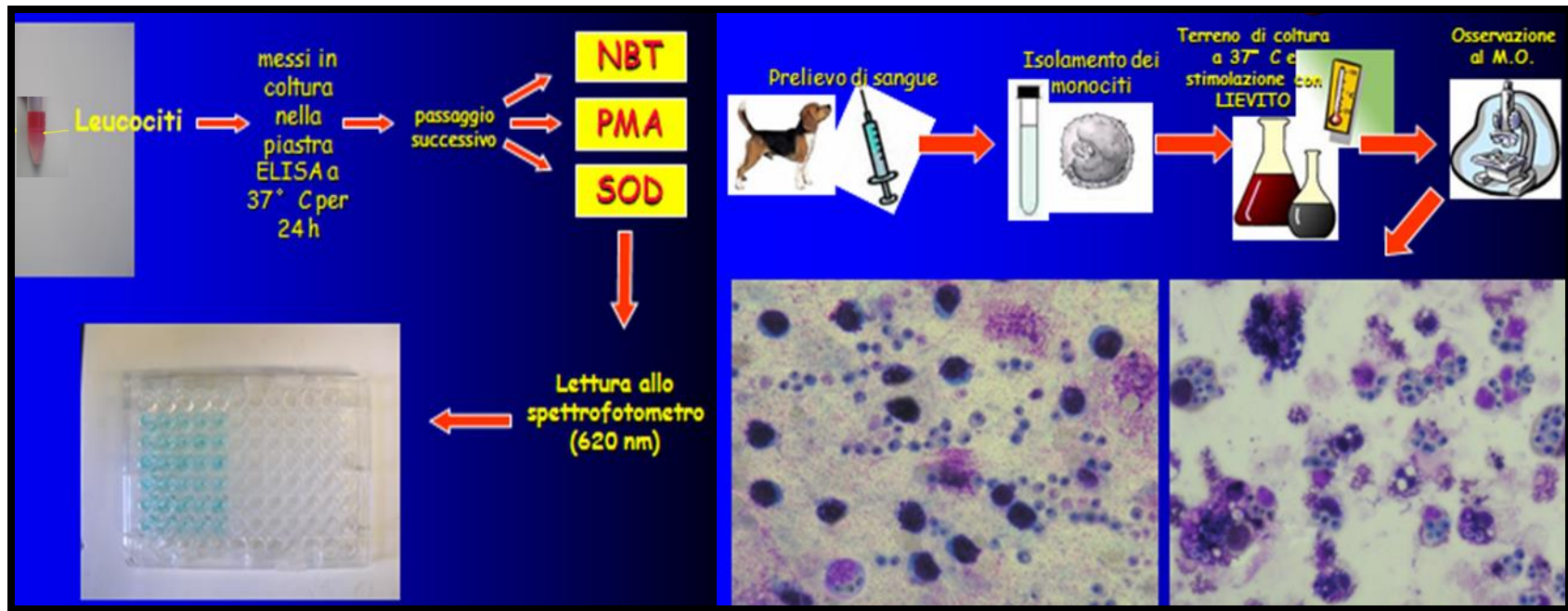
A **Population Cancer Registry**, both in human as in animal medicine is a tool that supports the epidemiological surveillance of cancer by:
1) **Monitoring** the disease within the territory, detecting possible changes in its patterns over time; 2) **Correlating** temporal and geographical variations with potential factors such as improved diagnostic capabilities, risk factors associated with habits and lifestyles, and environmental risk factors; 3) **Evaluating** secondary prevention activities; 4) **Supporting** public health planning.
The Population Cancer Registry began its recording activities by analyzing incidence trends starting from **2010 (in human)**, and **2017 (in animals)**. Collaborations with other national and international scientific societies have been developed to promote the integration and processing of clinical, genomic, imaging, and treatment data.
The Genomic and Molecular Epidemiology (**GAME**) Lab in an emerging hub of scientific innovation with significant national and international impact. The lab's multidisciplinary approach bridges the realms of human and animal genomics, emphasizing the genetics of complex traits. By harnessing cutting-edge genomic technologies and molecular epidemiological tools, the lab addresses fundamental questions in genetics (mechanisms underlying susceptibility to diseases and traits in humans and animals, i.e. neurological disorders, aging-related conditions, and multifactorial diseases). Genetic-environmental interactions that influence health.



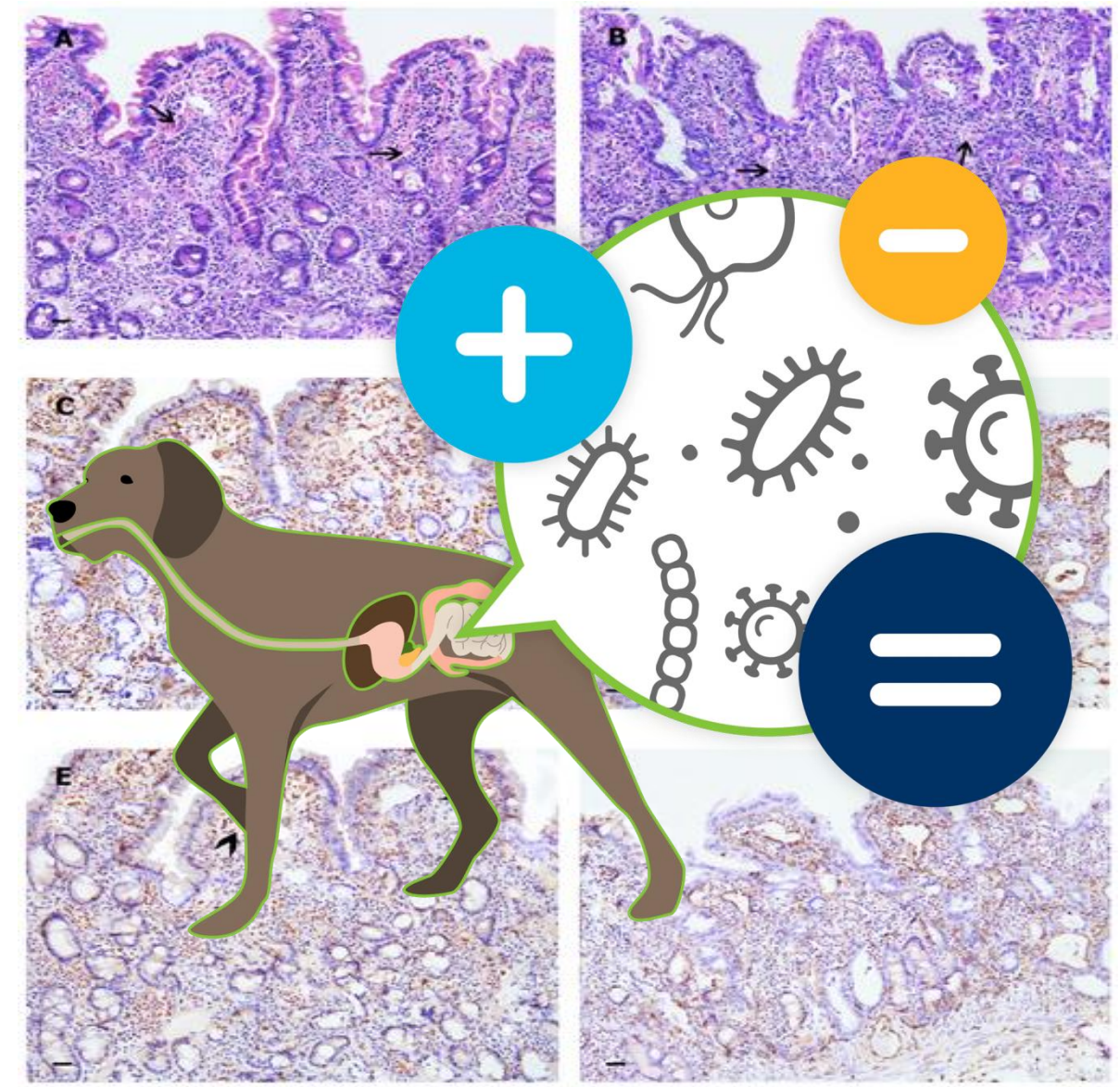
Gross and histopathological examination of animal tissues with lesions.



The GAME lab multidisciplinary approach, bridges human and animal genomics, leveraging cutting-edge genomic technologies and molecular epidemiological tools.



In vitro evaluation of macrophage respiratory burst and phagocytosis in attempt to evaluate cell-mediated immunity.



Canine gastroenterology and microbiome studies

Relation with companies

GAME lab's research activities are strengthened by active collaborations with both multinational and national private companies, such as **Loro Piana S.p.A.** in Milan, the **Genome Research Center for Health (CRGS)** in Salerno, **Clinica Montevergine** (Gruppo GVM S.p.A.) in Avellino, and **Polo Genomics, Genetics & Biology (GGB)** in Siena. These partnerships aim to integrate genomic data into clinical practice, enhance disease prediction, and advance animal genetic improvement. The Animal Pathology Lab collaborates with different companies in attempt to identify common objectives in order to create links between the enterprise and academia, and to promote development and technology transfer in veterinary biomedical, diagnostic and therapeutic fields. In particular the most important collaborators are: **Mendes Srl** in Lugano; **OrbioTeck Srl** in Ginevra; **Novafarma** in Dubai; **GSK** in Siena; **Genefast** in Modena; **EuBiome Srl** di Padova; **Ciam Srl** di Ascoli; **Chemivit** di Reggio Emilia; **Candioli** di Torino. Relationships with **International Agency for Research on Cancer (IARC)**; **European Network of Cancer Registry (ENCR)**; **London School of Hygiene and Tropical Medicine**; **University College London**. The GAME collaborates also with **Agenzia Sanitaria Regionale**, Regione Marche; **Fondazione IRCCS "Istituto Nazionale dei Tumori" (INT)** Milano.

Role in Scientific Societies and International networks

The researchers belonging to this group are part of several scientific sciences and international networks including:
American College of Veterinary Internal Medicine (**ACVIM**); European College of Veterinary Pathology (**ECVP**); European College of Clinical Pathology (**ECVCP**); European Comparative Gastroenterology Society (**ECGS**); European College of Zoological Medicine (**ECZM**); European Association of Fish Pathologist (**EAFP**); Associazione Genetica Italiana (**AGI**); European Federation of Animal Science (**EAAP**); European Alzheimer Disease DNA Biobank (**EADB**); European Society of Human Genetics (**ESHG**); Società Italiana Genetica Umana (**SIGU**).

Fundings

Private fundings (activities of pathological diagnostics for privates veterinary clinics and hospitals). **EU-Regional fundings – PRIN, Private Companies' contractor; Agenzia Sanitaria Regionale**, Regione Marche; **Fondazione IRCCS "Istituto Nazionale dei Tumori" (INT)** Milano. **Fondazione Ricerca Fibrosi Cistica (FFC)**. **Associazione Malattie Infiammatorie Croniche Intestinali (AMICI)**.