

DEPARTMENT

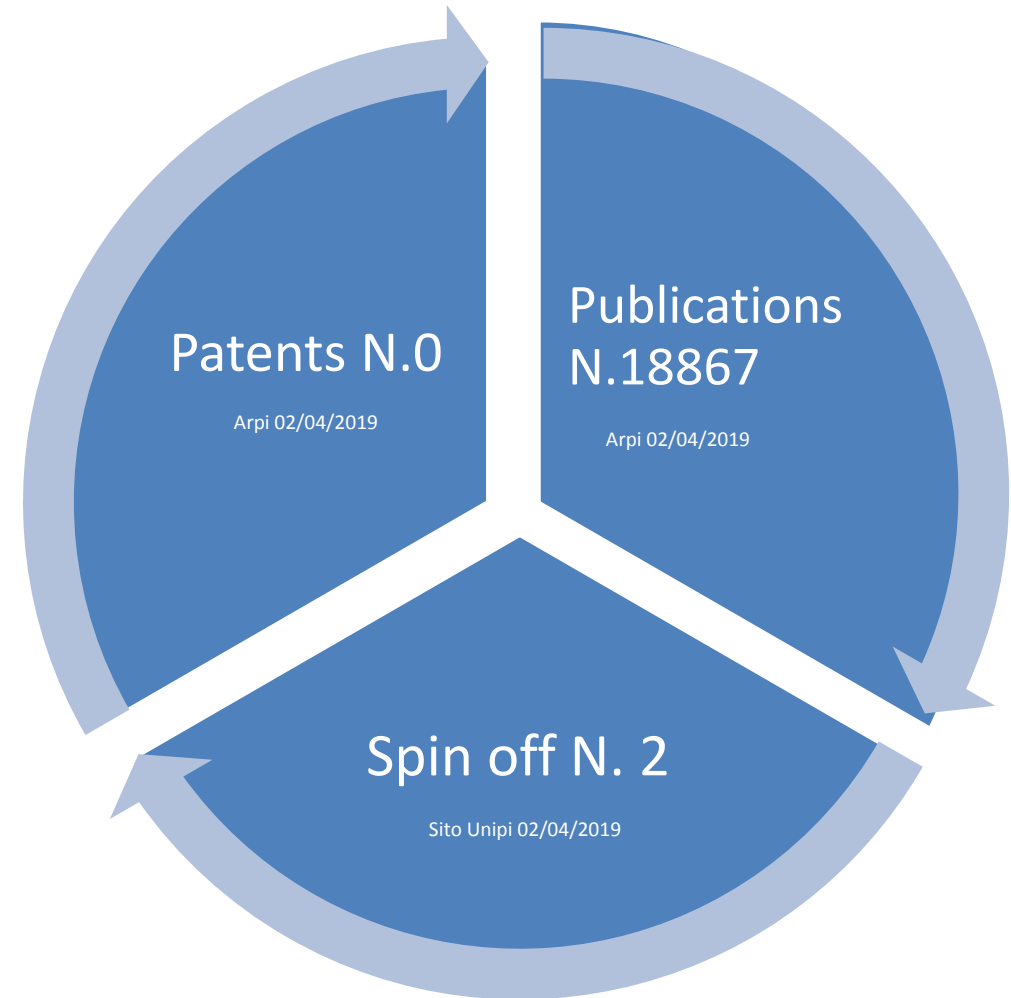
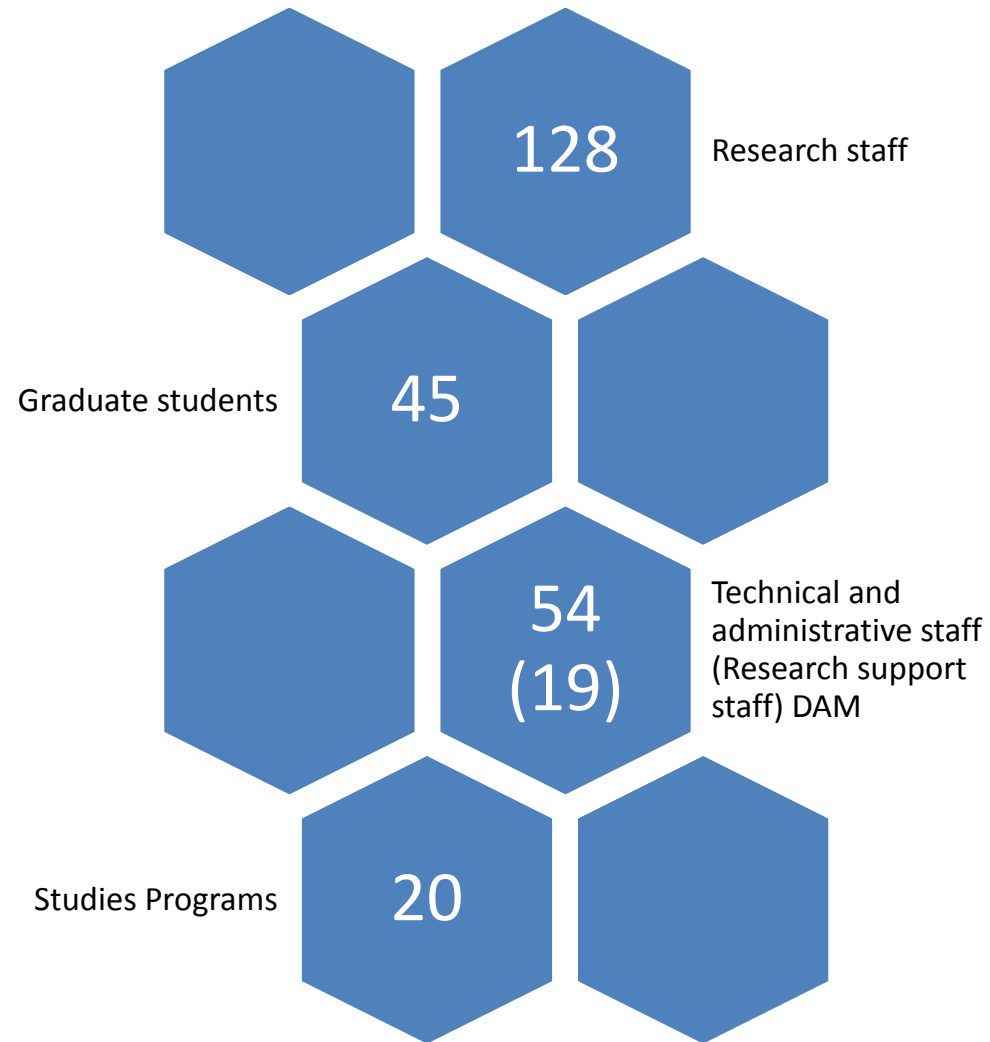
TRANSLATIONAL RESEARCH AND OF NEW SURGICAL AND MEDICAL TECHNOLOGIES



THE DEPARTMENT IS STRONGLY INVOLVED IN TEACHING AND RESEARCH BOTH IN BASIC LIFE SCIENCES AND CLINICAL MEDICINE.



DEPARTMENT AT A GLANCE



RESEARCH AREAS

Basic and Translational
Neurosciences

anatomy, physiology, imaging, neuropharmacology, rehabilitation

Surgery

innovative techniques and approaches, organ transplantation, simulation and robotic surgery, new prosthetic materials, rehabilitation

Cancer and non Communicable
Diseases Management

diagnostic methods and pathology, evaluation of new treatments and pathways of care, genetics

Communicable Diseases and
Microbiology

diagnostic methods, clinical and applied microbiology, epidemiology and prevention of communicable disease, antimicrobial resistance

Public Health

preventive medicine, healthcare management, hospital hygiene and surveillance and control of healthcare-associated infections, occupational health

RESEARCH PROJECTS

Cancer



- Innovative molecular diagnostics in pancreatic cancer (AIRC, ITT)
- Non invasive chemistry imaging in the whole human body (Horizon 2020)
- New imaging biomarkers in prostatic cancer (AIRC)
- Nanotechnology for tumor molecular fingerprinting and early diagnosis (Fondazione Pisa)
- Biomarkers of resistance to anticancer agents (ITT)
- Risk of breast cancer linked to shift and night work (BRIC Inail)

Surgery



- Augmented reality surgical systems (Horizon 2020)
- Electromagnetic guided in-situ fenestration of endovascular endoprosthesis (Health Ministry)
- Virtual and augmented reality for transcatheter valve implantation (Health Ministry)
- New polymeric aortic valve implantable through mini invasive robotic surgery (Regione Toscana)

New technologies applied to Medicine



- Early cortical sensory plasticity and adaptability in human adults (ERC advanced grant)
- FOMEMI: Photonics applied to medicine (Regione Toscana)
- TELE_AR : a platform for clinical teleconsultation with augmented reality (Regione Toscana)
- Wearable haptics for humans and robots (European Community)
- Data Intelligence for Social-Health Integration (Regione Toscana)
- Smart wearable negative pressure device for wound monitoring and therapy (European Community)

RESEARCH IMPACT

Local

- Patents and Spin off

Healthcare:

Implementation of innovation – technologies, ICT, management of care, diagnostics, clinical pathways, new knowledge- in patient care

Medical Education:

New approaches to education of healthcare professionals: simulation, virtual reality, distant learning

Health Promotion and Disease Prevention:

Interventions on behavioural factors, occupational health, vaccinology, health literacy