



Co-funded by
the European Union



NEOLAIa

Transforming Regions for an Inclusive Europe

NEOLAIa Medicine and Health network

A directory

Working document for the network

Document History

This is a working document, not submitted to the same internal control as official reports of the alliance. It is reserved to internal use for the NEOLAiA Schools of Health and Medicine network and was produced by Clémentine Périnaud (UT, WP5 delegate) in July 2024, mostly thanks to the collection of information provided by the websites of the NEOLAiA partners, and additional information. This directory provides a snapshot of research at the date of its production and depends on the correct updating of its sources.

Building of the directory

The research teams of each of the 9 universities of the NEOLAiA alliance are classified according to the panel from the European Research Council (ERC panel). Though imperfect, it provides a consensual and cross-disciplinary classification of the research teams.

Defining Health

This document is mainly a directory of research groups hosted by schools of medicine and working on medical issues. Pharmaceutical and life science studies are not always fully represented.

Thus the scope of health research is narrowly defined here, missing research in social and human sciences working on the overall impact of the environment and societies on people's health and well-being.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Table of Contents

Table of Contents	3
1. Universidad de Jaén (UJA) : research groups	16
1.1. Biomedecine: Molecular, integrative and cell biology	16
CTS-446 Cardiac and Skeletal Myogenesis Muscle Regeneration	16
BIO-184 Cellular Stress and Age	16
1.2. Physiology in Health, Disease and Ageing	16
CTS-026 Study Group on Physical Activity, Physiotherapy and Health	16
CTS-1039 Experimental and Clinical Physiology and Pathology	17
BIO-221 Neuroendocrinology and Nutrition	17
CTS-442 Tumor Immunobiology	17
1.3. Immunity, infection and immunotherapy	17
CTS-105 Microbiology and Immunology	17
BIO-294 Immunogenetics	17
1.4. Neuroscience and disorder of the nervous system	18
BIO-302 Complex Systems and Organisms	18
CTS-283 Psychobiology	18
1.5. The mind and its complexity: cognitive sciences and psychology	18
HUM-338 Clinical Psychophysiology	18
HUM-469 Psychology of Educational Development and Intervention	18
HUM-642 Comparative Psychology - Learning, Attention and Memory -	19
HUM-836 Psychological Evaluation and Intervention	19
1.6. Prevention, Diagnosis and Treatment of Human Diseases	19
GEDEX - Ageing, Dependency, Disability, Universal Accessibility and Design for All	19
CTS-990 Care Management and Evaluation of Care Policies in Chronicity, Ageing and Palliative Care	19
1.7. Surgical sciences	20
CTS-380 Orthopedic Surgery	20
CTS-435 Epidemiology, Preventive Medicine and Surgery	20

1.8. Nursing sciences and healthcare.....	20
CTS-464 Nursing and Innovation in Healthcare	20
1.9. Biotechnology and Health	21
BIO-349 Biological Technologies	21
1.10. Doctorate programs related to health sciences.....	21
2. University of Nicosia (UNIC)	22
2.1. Research centers for Health and Medecine in Nicosia.	22
2.2. Biomedecine: Molecular, integrative and cell biology.....	23
Statistics-Computations-ML-AI-Bioinformatics: Despo Ierodiakonou - Avgis Hadjipapas - Photos Hajigeorgiou - Christiana Demetriou - Constantinos Koshariis - Vered Aharonson - Nicoletta Nicolaou - Achilleas Pavlou - Raoul Hecker - Vasilios Tanos	23
Stem Cells and Regeneration: Adonis Ioannides.....	23
Biomedical and biological sciences at the UNIC Department of Life Sciences.....	23
2.3. Physiology in Health, Disease and Ageing	23
Research Centre for Exercise and Nutrition	23
2.4. Immunity, Infection and Immunotherapy.....	24
2.5. Neuroscience and disorder of the nervous system.....	24
CENIBRE Fundamental molecular and cellular mechanisms of neuronal signaling in health and disease	24
CENIBRE Computational neuroscience, electrophysiological signal processing and advanced data analysis	25
CENIBRE Behavioural and brain determinants of mental health and neurodegenerative diseases and behavioural intervention.....	25
CENIBRE Promoting neurological and mental health in a public health context.....	25
Physiotherapy at the UNIC department of Health Science	25
2.6. Prevention, Diagnosis and Treatment of Human Diseases including Environmental health.....	25
Environmental Health (EH) Research Centre	26
2.7. Surgical sciences.....	26
2.8 Nursing sciences	26
Department of Health sciences - nursing.....	26
2.9. Pharmacology and synthesis of small molecules	27
Bioactive Molecules Research Center (BioMoReC) - Development of Peptide Drugs	27
Bioactive Molecules Research Center (BioMoReC) - Venoms from Endemic Species	27

Pharmacy and Pharmaceutical Sciences – Department of Health Sciences	27
2.10. Biotechnology and Health	27
Medical Technologies-Devices: Aleksandar Jovanovic - Philippos Patsalis - Nicoletta Nicolaou - Anastasia Hadjiconstanti - Peter karayiannis	27
Bioactive Molecules Research Center (BioMoReC) - Biomaterials	27
2.11. Medical Education	28
Unit for Diversity Competence (UDC) in Healthcare and Healthcare Education	28
Centre for Medical Education	28
3. Universität Bielefeld (UNIBI).....	29
3.1. The research in Health and Medicine at UNIBI	29
3.2. Biomedicine: Molecular, integrative and cell biology	29
Biochemistry and Molecular Medicine.....	29
Biophysical Chemistry and Diagnostics	29
3.3. Physiology in Health, Disease and Ageing.....	30
Microbial Diversity in the Human Habitat -	30
Physiology and Pathophysiology of Cells and Membranes	30
3.4. Immunity, Infection and Immunotherapy.....	30
Sustainable Environmental Health Sciences	30
3.5. Neuroscience and Disorders of the Nervous System	30
Cellular Neurophysiology	30
Anatomy and Cell Biology.....	31
"Brain - Impairment - Participation"	31
Intelligence Interactive Systems (IIS)	31
AE01: Neuro-Cognitive Psychology	31
AE14: Biopsychology & Cognitive Neuroscience	32
Cognitive Neurosciences	32
3.6. The Human Mind and Its Complexity	32
Life Perspectives: Opportunities and Adversities (Life Chances)	32
AE02: General Psychology II	32
AE03: Developmental psychology and psychopathology	33
AE04: Differential Psychology, Personality Psychology and Psychological Assessment	33
AE05: Social psychology	33

AE15: Applied Social Psychology and Gender Research	33
AE06: Psychological methodology and evaluation in psychology studies	33
AE07: Clinical psychology and psychotherapy of childhood and adolescence	34
AE11: Clinical Psychology and Psychotherapy	34
AE 17 Clinical Psychology and Violence Research	34
AE18 Clinical Neuropsychology & Psychotherapy	34
AE20 Clinical child and adolescent psychology and psychotherapy	35
AE09, AE12 and AE13: Chairs of Educational Psychology	35
AE16 Educational psychology with special consideration of heterogeneity and inclusion	35
AE10: Work and Organisational Psychology	35
3.7. Prevention, Diagnosis and Treatment of Human Diseases, including environmental and public health.....	36
Health systems, health policy and health sociology	36
Population Medicine and Health Services Research	36
Epidemiology and international Public Health.....	36
Secretary:.....	36
Prevention and Health Promotion	36
Health Economics and Health Care Management	36
Health Service Research and Nursing Sciences	37
Environment and Health	37
Demography and Health	37
General and Family Medicine.....	38
Sex- and Gender-sensitive Medicine.....	38
Clinical Linguistics.....	38
Working Group "Sustainable Environmental Health Sciences"	38
3.8. Nursing sciences	38
Institute for Nursing Science at the University of Bielefeld	38
3.9. Pharmacology and synthethis of small molecules	39
Translational Pharmacology	39
3.10. Robotics, artificial Intelligence and systems and Health.....	39
Medical Assistance System.....	39
Contact:	39

Digital Medicine.....	39
Intelligent Systems - Assistance - Interprofessional Networking.....	39
Interactive Robotics in Medicine and Care	40
3.11. Biostatistics and medical data sciences	40
Biostatistics and Medical Biometry	40
Website: https://www.unibielefeld.de/fakultaeten/medizin/fakultaet/arbeitsgruppen/biostatistik/	40
Service Center for Medical Data Science	40
Data Science for Medical Care.....	40
3.12. Medical Education	41
Medical Education.....	41
4. Ostravská Univerzita (OU)	41
4.1. The research in the university of Ostrava	41
4.2. Biomedicine: Molecular, integrative and cell biology	42
4.3. Physiology in Health, Disease and Ageing	42
Institute of Physiology and Pathophysiology	42
Centre for Nutritional Research and Obesity.....	42
Center for Research on Internal Medicine and Cardiovascular Diseases.....	42
Department of Histology and Embryology	42
The Blood Cancer Research Group.....	43
Institute of Molecular and Clinical Pathology and Medical Genetics	43
4.4. Neuroscience and Disorders of the Nervous System	43
The neurologic clinic of the Department of Clinical Neuroscience	43
Center for Clinical Neurosciences.....	43
Atherosclerosis Working Group	43
4.5. The human mind and its complexity	44
Psychiatric Department - Department of Clinical Neuroscience.....	44
4.6. Prevention, Diagnosis and Treatment of Human Diseases, including environmental and public health.....	44
Prevention, Early Diagnosis and Targeted Therapy of Solid Tumors	44
Healthy Aging in Industrial Environment - The 4HAIE Programme.....	44
Centre for Epidemiological Research	45

Department of Hematooncology	45
Department of Oncology	45
Department of Gynecology and Obstetrics	45
Department of Clinical Studies	45
Department of Imaging Methods	45
Department of Pediatrics	46
Institute of Laboratory Medecine	46
Centre for Hyperbaric Medicine of Faculty	46
4.7. Pharmacology and synthesis of small molecules	46
Institute of Clinical Pharmacology	46
4.8. Robotics, artificial Intelligence and systems and Health	47
Institute for Research and Applications of Fuzzy Modeling (IRAFM)	47
Centre for Information Technology, Artificial Intelligence and Virtual Reality in Medicine	47
4.9. Surgical medicine	47
Institute of Emergency Medicine	47
Department of Surgical Studies	47
Department of Anesthesiology, Resuscitation and Intensive Medicine	48
Department of Anatomy	48
Department of Craniofacial surgery	48
Department of Dentistry	48
Department of Forensic Medecine	48
Department of Rehabilitation and Sports Medecine	48
4.10. Nursing science and Healthcare	49
Centre for Nursing Research	49
Department of Nursing and Midwifery	49
5. Universitatea „Ștefan cel Mare” din Suceava (USV)	49
5.1. The research at the university Ștefan cel Mare of Suceava	49
5.2. Biomedecine: Molecular, integrative and cell biology	50
Metagenomics Laboratory	50
Molecular biology Laboratory	50
Biochemistry Laboratory	50
5.3. Physiology in Health, Disease and Ageing	50

Nutrition and Food Technology Laboratory	51
5.4. Immunity, Infection and Immunotherapy	51
5.5. The Human Mind and Its Complexity	51
Department of psychopedagogy	51
5.6. Prevention, Diagnosis and Treatment of Human Diseases	52
5.7. Pharmacology and synthesis of small molecules	52
Plant Physiology Laboratory	52
5.8. Surgical Sciences.....	52
6. Šiaulių valstybinė kolegija / Higher Education Institution (SKV)	53
To complete with the list of researchers in Health and Medicine.	53
5.1. Prevention, Diagnosis and Treatment of Human Diseases, including environmental and public health.....	53
Physiotherapy.....	53
5.2. Applied research in nursing sciences and healthcare	53
The journal “Health Care and Social Work”	53
Professional Bachelor of Health Sciences, General Practice Nurse	53
7. Örebro universitet (ORU)	53
7.1. The research in Health and Medicine in Örebro	53
7.2. Biomedicine: Molecular, integrative and cell biology	54
Adaptive immunity in microscopic colitis and colon cancer	54
Bioinformatics	54
Cellular and molecular virology > See 7.4	54
Molecular Systems Biology.....	55
Systems medicine	55
7.3. Physiology in Health, Disease and Ageing	55
Molecular cardiovascular research	55
Platelet function and coagulation in health and disease	55
The ageing gut (TAG)	56
Inflammatory bowel disease and translational gastroenterology	56
Metabolomics and exposome research	56
Diabetes and Retinopathy	56
Diabetes, Endocrinology and Metabolism	56

Obesity and metabolic health	57
Physiotherapy, prevention and pulmonary function	57
Allergic, infectious and inflammatory diseases of the airway.....	57
Placenta research group.....	57
7.4. Immunity, Infection and Immunotherapy.....	57
Antimicrobial therapy.....	57
Cellular and Molecular Virology	58
Immunoprofiling of Inflammation (iPi).....	58
Infection & inflammation (i&i)	58
Inflammation, Genetics and Drug Discovery in Cardiovascular Systems	58
Inflammatory Response and Infection Susceptibility Centre (iRiSC).....	59
Innate immunity in cardiovascular disease	59
Viral pathogenesis and vaccine development.....	60
System Immunology and Microbiology (SIM)	60
Acute respiratory tract infections	60
Hepatitis B, D and C.....	60
7.5. Neuroscience and Disorders of the Nervous System	61
Psychiatric epidemiology.....	61
Experimental neuropsychiatry and ageing.....	61
Clinical and Experimental psychophysiology & Psychopharmacology.....	61
Cognitive medicine and biomarkers.....	61
Immunoneuropsychiatry (INP)	62
Neurodevelopmental disorders in children, adolescents and young adults.....	62
Nutrition Gut Brain Axis.....	62
Stroke and other CNS injuries	62
Cognitive Neuroscience of Ageing.....	62
7.6. The Human mind and its complexity.....	63
Development of criminal behavior across the lifespan.....	63
Emotion and behavior	63
EMBRACE Lab	63
Digital Psychological Treatment	64
Family and parenting.....	64

Migration, Integration, Discrimination (MIND)	64
Psychology and Pain	64
POCSUS: Psychology of Climate change and Sustainability	64
ReShape - Research in Sport, Health and Physical Education	65
Sleep Health	65
Time management skills in people with cognitive limitations (TOVA).....	65
Transformative Learning for Sustainable Development	65
7.7. Prevention, Diagnosis and Treatment of Human Diseases, including environmental and public health.....	66
BBC - Bowel and Bladder disorders in Children.....	66
Cancer Epidemiology	66
Circulating biomarkers for detection and surveillance of cancer	66
Clinical Epidemiology and Biostatistics	66
Geriatrics	66
Medical Imaging	67
Food and Health Programme	67
Enforce	67
Environment and Health	67
Swimming-induced pulmonary edema (SIPE)	67
Treatment in Upper and lower limb Malformation or Amputation (TUMA)	68
Wellbeing promotion using care environments and technologies (WellCET)	68
7.8. Surgical sciences.....	68
Chronic venous disease and venous ulcers	68
Contraception and menopausal hormone treatment.....	68
Emergency Medicine	69
Research group for the evaluation of health care practices including meta-research	69
Methods in acute life-threatening conditions.....	69
Orthopedics	69
7.9. Disability research (7 research groups).....	69
Deafblindness - from a multi-disciplinary research perspective.....	69
Disability - Society	70
Interdisciplinary Research in Clinical Audiology (IRCA).....	70

ReShape - Research in Sport, Health and Physical Education	70
SAFe - The Social Services' Work with People with Disability	70
Speak up	70
7.10. Nursing sciences and healthcare	71
Just in TIME.....	71
Older people's health and living conditions in a person-centred care	71
Palliative Care in Emergency Medicine (Pacem)	71
PEARL - Pain in Early Life	71
Perioperative care and Pedagogical Processes (PEPP).....	72
SCENTR: Swedish Centre for Skin and Wound Research.....	72
7.11. Biotechnology and Health	72
Development of novel chitosan-based scaffolds for cartilage repair	72
7.12. Robotics, artificial Intelligence and systems and Health	72
AI & Robotics in healthcare applications.....	72
7.14. Medical education	73
Research based education in the health professions.....	73
8. Università degli Studi di Salerno (UNISA)	73
8.1. The research in the university of Salerno.....	73
8.2. Biomedicine: Molecular, integrative and cell biology	74
Biochemistry, proteomics and metabolomics research for laboratory medicine.....	74
Epigenetic Med Chem Lab.....	74
Laboratory of Molecular Medicine and Genomics (LMMGe)	74
8.3. Physiology in Health, Disease and Ageing	74
molecular medicine for the study of musculoskeletal problems.....	74
molecular medicine for the study of cardiological problems	74
U.O.C. Cardiology Clinic.....	75
molecular medicine in pathology and vascular surgery.....	75
molecular medicine for the study of pharmacogenomics, nutrition and ageing.....	75
clinical and molecular medicine research for the study of endocrine and metabolic disorders	76
Clinical and molecular medicine research for the study of gastrointestinal diseases	76
Scientific Director: Pr Carolina Ciacchi (cciacchi@unisa.it) and Pr Paola Iovino (piovino@unisa.it)	76
Clinical and molecular medicine research for the study of pulmonological problems.....	76

Urology research	77
8.4. Immunity, Infection and Immunotherapy	77
Clinical and molecular medicine research for the study of inflammatory and immunological processes	77
Clinical and molecular medicine research for the study and prevention of Infectious Diseases	77
8.5. Neurosciences and disorders of the nervous system.....	78
Clinical and molecular medicine research in neurological, psychiatric and cognitive-behavioural sciences	78
8.6. The human mind and its complexity	78
Cultural Psychology of Sustainable Human Development - Laboratory of Psychology	78
Digital Method of Psychological intervention for resilience and sustainability in E-Health	79
Psychosocial Genomics, Integrated Mind-Body Psychotherapy and Hypnosis, 'Ernest Rossi'	79
Laboratory of life cycle health psychology	79
International lab for innovative social research.....	79
8.7. Prevention, Diagnosis and Treatment of Human Diseases	79
Clinical and molecular medicine research in oncology	79
Clinical and molecular medicine research for the use of stem cells in clinical, haematological and oncological settings	80
Clinical and molecular medicine research for the study of paediatric problems	80
Clinical research and 'evidence-based medicine' in nephrology	81
Clinical research in ophthalmology	81
Clinical Research in Obstetrics-Gynaecology	81
Public health	81
8.8. Surgical sciences.....	82
molecular medicine for the study of surgical problems.....	82
8.9. Pharmacology and synthesis of small molecules	83
Department of Pharmacy (DIFARMA)	83
8.10. Biotechnology and Health	83
Applied Physics Research	83
9. Université de Tours (UT)	83
9.1. The research in Health and Medecine in Tours.....	83
9.2. Physiology in Health, Disease and Ageing	83

Niche, Nutrition, Cancer and Oxidative metabolism - N2Cox - Inserm U 1069	83
Membrane Signalling and Inflammation in reperfusion injuries - ISCHEMIA Inserm UMR1327	84
Energy sensors and reproductive signaling – SENSOR Team (PRC unit)	84
9.3. Neuroscience and Disorders of the Nervous System	85
Imaging, Brain and Neuropsychiatry - IBrain - Inserm U 1253	85
Autism and neurodevelopment - AutisM – Ibrain Team.....	85
Genomics and physiopathology of neurodevelopmental and motor neuron disorders iDeALS – Ibrain Team.....	85
Morpho-functional imaging and ultrasound therapies - METU - IBrain Team.....	85
9.4. The human mind and its complexity	85
Quality of life and psychological health - QualiPsy RU 1901.....	85
Psychology of the Various Stages of Life and Adaptation – PAVeA RU 2114.....	86
Aging and Psychopathology of Memory – VIPsyM CERCA Team	86
Experimental and translational psychiatry – ExTraPsy - Ibrain Team	86
9.5. Immunity, Infection and Immunotherapy.....	86
Morphogenesis and Antigenicity of HIV, Hepatitis and Emerging Viruses - MAVIVHe - Inserm U 1259	86
Infectious Diseases and Public Health – ISP - UMR INRAE 1282	87
Bacteria and maternal/fœtal risk – ISP Bacteria Research Team.....	87
Bacterial Infections and Immunity in Ruminants – ISP Bacteria Research Team.....	87
Genomic Plasticity, Biodiversity, and Antimicrobial Resistance - ISP Bacteria Research Team.....	88
Microbiota, Monogastric and Salmonella - ISP Bacteria Research Team	88
Apicomplexa and Mucosal Immunity – ISP Parasitology Team.....	88
BioPharmaceuticals and Microorganisms Against Pathologies – ISP Parasitology Team	88
Control and Resistance of Macro-parasites – ISP Parasitology Team	89
Biology of Polyomavirus Infections – ISP Virology Team	89
Biology of Avian Viruses – ISP Virology Team	89
Infection and Innate Immunity in Monogastric livestock – ISP Virology Team.....	89
Research Centre for Respiratory Diseases - CEPR - Inserm U 1100	90
9.6. Prevention, Diagnosis and Treatment of Human Diseases	90
methodS in Patient-centred outcomes and Health ResEarch – SPHERE Inserm U 1246.....	90
Education Ethics Health - EES RU 7505	90

9.7. Pharmacology and synthesis of small molecules	91
Synthesis and Isolation of Bio-Active Molecules – SIMBA RU 7502.....	91
Plant Biocompounds and Biotechnology - BBV - RU 2106	91
9.8. Biotechnology and Health	91
Nanomedecines and Nanoprobes - CBM-NMNS - UPR 6295.....	91

1. Universidad de Jaén (UJA) : research groups

1.1. Biomedicine: Molecular, integrative and cell biology

CTS-446 Cardiac and Skeletal Myogenesis Muscle Regeneration

The research group is engaged in analyzing the molecular processes that govern the formation of the skeletal and cardiac muscle and which are also involved in muscle regeneration processes. The group is developing new patents that can serve for generating drugs.

Research lines : Analysis of the role of the Pitx2 transcription factor in cardiac development and arrhythmogenic diseases - Molecular study of ion channels in cardiac development and disease - Obtainment of cardiac cells derived from embryonic stem cells - Plasticity of adult and embryonic stem cells in myocardial regeneration - Gene expression analyses in experimental cardiac hypertrophy - Myogenesis and muscle regeneration - Non coding RNA function in skeletal muscle myogenesis and regeneration - Non coding RNA function in cardiac development and disease

Spanish website: <https://bit.ly/2EK3luk>

Coordinator: Amelia Eva Aránega Jiménez (aaranega@ujaen.es)

BIO-184 Cellular Stress and Age – The research group is specialized in the study of the molecular mechanisms underlying ageing and age-associated diseases.

Research lines: Searching for new drugs for the prevention and treatment of ischemic stroke - Therapeutic effect of virgin olive oil in fibromyalgia - Molecular and cellular mechanism of hypoxia and ageing - Genomic and proteomic neurodegeneration - Nitric oxide and antioxidant systems - Physiology and pathology.

Spanish website: <https://bit.ly/2Bwc1WM>

Coordinator: Dr. M^a Ángeles Peinado Herreros (apeinado@ujaen.es)

1.2. Physiology in Health, Disease and Ageing

CTS-026 Study Group on Physical Activity, Physiotherapy and Health – 12 members graduated in Physiotherapy, Physical Activity and Sport Sciences and Medicine.

Lines of research: Transfer of knowledge in the analysis and treatment of postural disorders - Research and promotion of health in special populations - Study of static and dynamic balance, falls and quality of life - Prevention, rehabilitation and functional readaptation of injuries - Active and healthy ageing and comprehensive geriatric assessment - Sarcopenia and fragility in elderly population - Assessment of physical condition and its link to quality of life associated with health and performance - Manual physiotherapy in managing pain and musculoskeletal function in specific populations- Motor control and neuromuscular training in dealing with dysfunctions of the neuromusculoskeletal system - Quality of life and processing at central level of pain and postural information in fibromyalgia syndrome- Metabolic and molecular adaptations through physical exercise and nutrition.

Website: <https://www.ujaen.es/investigacion-y-transferencia/grupos-de-investigacion/grupo-de-estudio-en-actividad-fisica-fisioterapia-y-salud>

Coordinator: Dr. Fidel María Hita Contreras (fhita@ujaen.es)

CTS-1039 Experimental and Clinical Physiology and Pathology - Created in 2003. 9 members, professors of physiology of the Department of Health Sciences, members of the neurology service, the biochemistry section and the immunology section of the University Hospital of Jaén.

Lines of research: Neuroendocrinology in drug dependence and tolerance - Neuroendocrinology of ageing - Neuroendocrinology of cancer - Website: <https://web.ujaen.es/investiga/cvi296/>

Coordinator: Dr. José Manuel Martínez Martos (jmmartos@ujaen.es)

BIO-221 Neuroendocrinology and Nutrition – The research group is engaged in the study of the molecular bases influencing the onset of highly prevalent diseases such as cardiovascular diseases, obesity or neurodegenerative processes. They enable the search for new therapeutic targets for the design of more effective drugs and the development of biological markers.

Research lines: Studies on peptidases Search for activators and inhibitors - Molecular mechanisms in hypertension Neuroendocrine regulation of blood pressure - Type of fat in diet and proteolytic activity Effects of fatty acids and cholesterol on the renin-angiotensin system - Thyroid hormones, hypertension and oxidative stress - Neurodegenerative diseases and proteolytic enzymes - Nutrients and metabolism of bioactive peptides Applications in the treatment of chronic diseases - Aminopeptidase activities as markers of kidney damage

Spanish website: <https://bit.ly/2CqAfmS>

Coordinator: Dr. Isabel Prieto Gómez (iprieto@ujaen.es)

CTS-442 Tumor Immunobiology

Lines of research: Olive oil and cancer - Molecular mechanisms in tumor evasion – Metastasis - Anti-tumor defense mechanisms – Apoptosis

Spanish website: <https://bit.ly/2SXV26E>

Coordinator: Dr. José Juan Gaforio Martínez (jgaforio@ujaen.es)

1.3. Immunity, infection and immunotherapy

CTS-105 Microbiology and Immunology

Lines of research: Action of olive oil and other fats on the immune system - Apoptosis and fatty acids - Peptide antibiotics – Probiotics - Experimental bacterial pathogenesis - Immune response modifiers – Biotechnology. -

Spanish website: <https://bit.ly/2ECAq04>

Coordinator: Gerardo Álvarez de Cienfuegos López (gcienfue@ujaen.es)

BIO-294 Immunogenetics

Research lines: Genetic polymorphisms and disease - Vector-borne diseases - Genetic diversity in animal populations - Genetic diagnosis - Internal medicine – Pharmacogenetics - response to treatment with pegylated interferon (IFN-Peg) plus ribavirin (RBV) in hepatitis C virus (HCV) infected patients

Spanish website: <https://bit.ly/2Lw1krD>

Coordinator: Dr. Francisco José Márquez Jiménez (jmarquez@ujaen.es)

1.4. Neuroscience and disorder of the nervous system

BIO-302 Complex Systems and Organisms – The research group is a multidisciplinary team engaged in the study and solving of problems ranging from basic matters pertaining to Biomedicine and Neuroscience, to the interaction of (human and non-human) organisms.

Research lines: Neurocomputational models for the study of awareness - Linear and nonlinear analysis of biosignals and their application in the field of severe mental illnesses – Infodemiology - Fractal analysis in neurological diseases - Systems biology in neurological diseases, mainly autism, multiple sclerosis and spinal cord injury - Systems biology in endometrial receptivity and blastocyst implantation - Application of cooperative play theory to the analysis of microarrays

Special equipments (EEG-ERP signals): 32-channel Brain Vision actiCHAMP, with a 32-channel Brainamp amplifier + 8 AUX channels, several 32-channel caps with Acticap active electrodes and an ERP StimTracker interface for sending markers.

Spanish website: <https://bit.ly/2CqXvBb>

Coordinator: Dr. Sergio Iglesias Parro (siglesia@ujaen.es)

CTS-283 Psychobiology - The Psychobiology research group studies the neurobiological mechanisms of learning, memory and motivational aspects as well as the psychobiological bases of addiction, particularly the connection between stress and the addictive consumption of alcohol, basically using animal models.

Research lines: Neurobiological bases of interoceptive learning - Psychobiology of resilience - Psychobiology of drug addiction - Stress and alcohol consumption - Psychobiology of learning, memory and emotion (anxiety/stress) - Clinical neuropsychology

Specialised equipments: Taste conditioning boxes - Place preference box - Metabolic registration boxes - Sand maze - Stereotaxic device for rodents - Smart 3.0 video-tracking system – Neuropsychological assessment tests.

Spanish website: <https://bit.ly/2rQEYBL>

Coordinator: Dr. Ángeles Agüero Zapata (aaguero@ujaen.es)

1.5. The mind and its complexity: cognitive sciences and psychology

HUM-338 Clinical Psychophysiology

Research lines: Relationship between psychological variables (stress, hostility, C pattern of conduct, depression, etc.) and health - Cardiovascular reactivity as a risk factor for cardiovascular disorders - Development of biofeedback techniques (respiratory sinus arrhythmia, baroreceptor reflex, CO₂ levels in the blood, etc.), cardiovascular reactivity as a risk factor for cardiovascular disorders Relationship between variables - Psychophysiology of cardiorespiratory coordination - Study of cognitive constructs in depression by means of evoked potential corticals - Biopsychosocial model in health and disease - Psychophysiological mechanisms mediating the relationship between psychological factors and health-disease- Emotional modulation of defensive reflexes.

Spanish website: <https://bit.ly/2LuhlR>

Coordinator: Dr. Gustavo Adolfo Reyes del Paso (greyes@ujaen.es)

HUM-469 Psychology of Educational Development and Intervention

Research lines : Psychological Training of the Educator - Effects of family variables on the academic performance and psychosocial adjustment of offspring - Aptitudinal differences, motivation and performance - Violence in educational contexts

Spanish website: <https://bit.ly/2Bz7Cm0>

Coordinator: Dr. María Cruz García Linares (mcgarcia@ujaen.es)

HUM-642 Comparative Psychology - Learning, Attention and Memory - The research group studies learning, memory, attention and emotions from the triple cognitive, methodological and psychobiological perspective.

Research lines: Mechanisms for recovering information in animals and human beings - Contents of causal and instrumental human learning - History of psychology - Psychology of art - Associative and attentional mechanisms in animal and human learning - Psychobiological, psychogenetic and behavioral analysis of fear, anxiety and frustration - Risk factors associated with alcohol consumption in genetically selected rats - Psychophysical orientation applied to the study of learning - Psychological processes involved in olive oil tasting - Evolution of learning - studies on learning in invertebrates - Learning, cognition and memory in educational contexts

Spanish website: <https://bit.ly/2RaLCaO> and <https://www.ujaen.es/grupos-de-investigacion/hum642/>

Coordinator: Dr. José Enrique Callejas Aguilera (jecalle@ujaen.es)

HUM-836 Psychological Evaluation and Intervention - The research group has focused its interest on several spheres of action. From creating instruments for evaluating psychological variables (anxiety in high-risk pregnant women, expressed emotion, empathy, resilience, etc.) to diagnostic and intervention methods in hand tremors (bar tromometer) or mobile apps for women at risk of suffering abuse. Lately we are taking an interest in the child and youth population, particularly in anxiety-related problems, and in early intervention.

Research lines: Cognitive rehabilitation and psychosocial intervention in schizophrenia - Evaluation and intervention in the child and adolescent population - Study of risk factors and protection in drug use - Discrimination and prejudice.

Spanish website: <https://bit.ly/2Rd9Cdw> and <https://web.ujaen.es/investiga/hum836/>

Coordinator : Dr. Luis Joaquín García López (ljgarcia@ujaen.es)

1.6. Prevention, Diagnosis and Treatment of Human Diseases

GEDEX - Ageing, Dependency, Disability, Universal Accessibility and Design for All

The research group carries out its transfer through research and contracts with different administrations (national and international) to different global challenges related to inclusion and care for people from the paradigm of design for all and universal accessibility, responding thus to the diversity of citizenship, seeking to promote personal autonomy and independent life, all of this generating information exchange networks with the different European regions.

Website: <https://www.ujaen.es/investigacion-y-transferencia/grupos-de-investigacion/genero-dependencia-y-exclusion-social-gedex>

Coordinator: Yolanda María de la Fuente Robles (ymfuente@ujaen.es)

CTS-990 Care Management and Evaluation of Care Policies in Chronicity, Ageing and Palliative Care

The Research Group is a multidisciplinary group made up of graduates in Nursing, Medicine and Social Work. It collaborates with other research groups at the same university and with other universities such as the University of Granada, mainly with members of the Psychology Department. Our commitment to society leads us to direct our research towards the following objectives: To increase the quality of life in the ageing process as well as for people

diagnosed with a chronic disease. - To empower disadvantaged minorities in society. - To generate knowledge for the improvement of nursing education. - To improve health outcomes with effective multidisciplinary interventions. - Promote actions that contribute to sustainable development and improve the standard of living of the world's population through the transfer of knowledge and the reception and exchange of information with International Development Cooperation programmes.

The research group investigates the differences in health based on gender, in different geographical and cultural contexts. It also investigates the influence on health and quality of life of social factors in different countries. Currently, and within this line, an investigation is being carried out on the influence of cultural beauty canons on the health and care of women in different countries, another work is also being carried out that consists of a review of the attention to chronicity in the Palestinian territories, with a gender perspective.

Website: <https://www.ujaen.es/investigacion-y-transferencia/en/node/93>

Coordinator: Dra. M^a José Calero García (mjcalero@ujaen.es)

1.7. Surgical sciences

CTS-380 Orthopedic Surgery – 7 members, specialised in orthopaedic trauma hip surgery.

Research lines: Experimental research on fracture healing - Regional block anesthesia for foot and hand surgery - Postoperative analgesia after knee arthroscopy - Validation of patellofemoral imaging techniques - Physical examination and diagnostic tests of the musculoskeletal system

Key words: Fracture, Arthroplasty, Hip, Trauma Surgery, Hip And Knee Arthroplasty, Osteoarthritis, Osteoporosis

Coordinator: Alberto D. Delgado Martínez, MD (adelgado@ujaen.es)

CTS-435 Epidemiology, Preventive Medicine and Surgery

Research lines: Epidemiology and prevention of low birth weight - Meta-analysis - Epidemiology and prevention of nosocomial infection in surgery - Clinical epidemiology, particularly in surgery

Spanish website: <https://bit.ly/2LujpXj>

Coordinator: Dr. Miguel Delgado Rodríguez (mdelgado@ujaen.es)

1.8. Nursing sciences and healthcare

CTS-464 Nursing and Innovation in Healthcare

The research group works on driving research in healthcare and on promoting innovation in clinical nursing practice in the different healthcare fields: hospital, primary healthcare and residential environments. Collaboration with healthcare centers and institutions is a basic aspect in our activity. The group also conducts research on the training of Nursing students.

Research lines: Care for specific groups: children, youth, women and the elderly - Chronic wounds: epidemiology, prevention and treatment - Technological innovation in healthcare - Community health, health promotion and family care - Environmental health, climate change and sustainability.

Spanish website: <https://bit.ly/2rPcNda> and <https://cuidsalud.com/>

Coordinator: Dra. Carmen Álvarez Nieto (calvarez@ujaen.es)

1.9. Biotechnology and Health

BIO-349 Biological Technologies is a multidisciplinary group that covers different aspects related to research in the development of new strategies in the biotechnology field aimed at advancing sustainability and providing solutions to health issues.

Research lines: The improvement of agri-food production systems and their health repercussions - Natural processes and their interaction with man - Biotechnological advancement in the health sector: Preclinical Screening for New Anticancer Agents

Spanish website: <https://bit.ly/2SdZuOZ>

Coordinator: Macarena Perán Quesada (mperan@ujaen.es)

1.10. Doctorate programs related to health sciences

University PhD in Molecular cellular and Cellular biology – The programme aims at training PhD students in research fields of Molecular and Cellular Biology and in the corresponding applications related to Biomedicine and Biotechnology. In 2024, 15 PhD students in Biomedicine and Systems Biology.

Biomedicine and Systems Biology – Professors of UJA (with ORCID): Aránega Jiménez, Amelia Eva 0000-0002-0046-9410 Del Moral Leal, M^a Luisa 0000-0003-1661-0738 Dominguez Macias, Jorge Nicolás 0000-0003-4419-0929 Esteban Ruiz, Francisco José 0000-0002-7135-2973 Franco Jaime, Diego 0000-0002-5669-7164 Iglesias Parro, Sergio 0000-0001-9153-8743 Márquez Jiménez, Francisco José 0000-0002-1450-6235 Martínez Lara, Esther 0000-0002-4962-3634 Peinado Herreros, M^a Ángeles 0000-0003-3136-0706 Siles Rivas, Eva 0000-0003-4192-7008 Torres López, María Isabel 0000-0002-9309-3837 University Regional Hospital, Jaén: Mohamed-Balghata, Mohamed Omar Luque Barona, Rafael Sánchez Rovira, Pedro Castillo Rivera, Ana María

Biotechnology - Professors of UJA (with ORCID): Barroso Albarracín, Juan Bautista 0000-0002-9477-9195 Caruz Arcos, Antonio José 0000-0002-5788-7840 Fernández Ocaña, Ana M. 0000-0002-2686-9949 Luque Vázquez, Francisco 0000-0003-1354-3533 Pedrajas Cabrera, José Rafael 0000-0003-1998-0638 Valderrama Rodríguez, Raquel 0000-0003-2253-0101

Fundamental Molecular and Cellular Biology: Bullejos Martín, Mónica 0000-0003-3256-8840 Calvo García, Olga 0000-0002-9786-7916 Navarro Gómez, Francisco 0000-0002-8515-0547 Palomeque Messia, Teresa 0000-0002-7144-4931 Peragón Sánchez, Juan 0000-0002-7502-1119 Sánchez Baca, Antonio 0000-0002-6715-8158 Lorite Martínez, Pedro 0000-0002-9692-5870

Coordination: Diego Franco Jaime, Department of Fundamental Biology (dfranco@ujaen.es)

Interuniversity PhD in Health Sciences (UJA-US)

Clinical procedures, interventions and health outcomes – external professors mainly. Cruz Díaz, David 0000-0001-5070-0679 Aibar Almazan, Agustín 0000-0002-9386-9199

Gender and social determinants in health – professors of the university of Jaén: Balza Múgica, Isabel 0000-0001-8432-9310 Martínez Galiano, Juan Miguel 0000-0002-0878-8635 Grande Gascón, M^a Luisa 0000-0003-0803-534X Calero García, M^a José 0000-0003-3960-1543 Agrela Romero, Belén 0000-0001-8976-9710

Epidemiology, public health and health management - professors of the university of Jaén: Garrido Peña, Francisco 0000-0002-9790-238X Hita Contreras, Fidel 0000-0001-7215-5456 Gaforio Martínez, Juan José 0000-0003-2996-9301 Fernández Alcalá, Rosa M^a 0000-0002-3329-6624 Abriouel Hayani, Hikmate 0000-0002-0666-3978 Benomar el Bakali, Nabil 0000-0002-7297-6171 Martínez Amat, Antonio 0000-0002-9652-791X

Oral pathology and health: local and systemic implications.

Coordination: Dra. Eugenia Gil García (egil@us.es) and Dra. M^a José Calero García (micalero@ujaen.es) from the Nursing department.

Interuniversity PhD in Integral Care and Health Services (UJA-UDL-UVIC) - Chronicity, Dependency and Health in the Community / Health services and utilization of health outcomes / Social policies and health practices. **Coordination:** D. Pedro L. Pancorbo Hidalgo (pancorbo@ujaen.es)

2. University of Nicosia (UNIC)

2.1. Research centers for Health and Medicine in Nicosia.

The Research at the University of Nicosia Medical School espouses the holistic concept of One Health and includes clinical, epidemiological, basic science and social science research. Multi-disciplinary and cross-departmental research is highly encouraged within the School and research projects are encouraged between more than one Research Priority Area and across Departments within or outside the School. **Out of its Medical School** (<https://pure.unic.ac.cy/en/organisations/medical-school>) **and School of Life and Health Sciences** (<https://pure.unic.ac.cy/en/organisations/school-of-life-and-health-sciences/persons/>), the university of Nicosia welcomes some research centres:

The Bioactive Molecules Research Center (BioMoReC) - BioMoReC is a unique center in Cyprus, that uses modern processes to discover and develop bioactive molecules, to enhance the drug development endeavors of the pharmaceutical industry and support the wider scientific academic community in Cyprus. The Center facilitates and support a continuum of research and development activities from discovery and characterization of bioactive molecules to development, regulation and evidence based clinical application both for human and veterinary purposes. It contributes to bridge the gap between basic drug research and clinical applications using existing research potential and existing know-how in pharmaceutical development and quality accreditation promoting the level of pharmaceutical and medical research at national level.

Center for neuroscience and Integrative brain Research (CENIBRE) - The University's Medical School carries out dedicated research in this field through its Center for Neuroscience and Integrative Brain Research. CENIBRE combines an interdisciplinary approach with the application of state-of-the-art technologies and innovative data analysis to investigate the nervous system in health and disease, and to develop novel preventive, diagnostic and therapeutic strategies to improve neurological and mental health. The Center builds on the broad and complementary expertise of its founding members, ranging from fundamental cellular and molecular mechanisms of neuronal signalling all the way to behavioural and wider determinants of population health and wellbeing.

The Environmental Health (EH) Research Centre is guided by the underlying principles of One Health and recognizes the intrinsic and complex connection between the health of people, biodiversity and the environment.

Research Centre for Exercise and Nutrition (RECEN) is a multidisciplinary research centre consisting of scientists from different life and health sciences disciplines. RECEN research aims to conduct high-quality

and innovative research activities focusing on the role of exercise and nutrition on health and quality of life-related parameters in various population groups, including healthy people of all ages and patients with chronic diseases. – **Dr Christoforos Giannaki**, Director (giannaki.c@unic.ac.cy).

2.2. Biomedecine: Molecular, integrative and cell biology

Researchers implicated in...

Molecular biology and genetics: Chloe Antoniou - Philippos Patsalis - Stella Voskou - Dionysis Vaidakis - Konstantinos Voskarides - Katerina Prokopiou - Constantina Constantinou - Annita Achilleos - Adonis Ioannides - Peter Karayiannis - Paola Nicolaides - George Tanteles.

Statistics-Computations-ML-AI-Bioinformatics: Despo Ierodiakonou - Avgis Hadjipapas - Photos Hajigeorgiou - Christiana Demetriou - Konstantinos Koshariis - Vered Aharonson - Nicoletta Nicolaou - Achilleas Pavlou - Raoul Hecker - Vasilios Tanos

Stem Cells and Regeneration: Adonis Ioannides

Biomaterials > see 2.7. Biotechnology and health

Biomedical and biological sciences at the UNIC Department of Life Sciences

Research in this fast-growing field encompasses a diverse spectrum of themes ranging from molecular to environmental biology. More specifically, faculty research interests include but are not limited to: biodiversity, ecology and conservation, signal transduction mechanisms responsible for the abnormal cell proliferation and/or cell apoptosis in cardiovascular and aging related diseases, the role of lipids in cell aging, the role of microRNAs in various physiologic and pathologic biological processes, molecular nutrition, isolation and identification of biologically active compounds occurring in natural products, effects of antioxidants on human health, understanding nutrient transport in the gastrointestinal track and its relevance to disease states, the role of the Unfolded Protein Response (UPR), the development and plasticity of the nervous system and effects of injury and drugs in the developing brain, aging and neurodegenerative diseases. **Contact?**

2.3. Physiology in Health, Disease and Ageing

UNIC Researchers implicated in...

Cancer: Danijela Antunovic - Christiana Charalambous - Annalisa Quattrocchi - Konstantinos Koshariis - Konstantinos Voskarides - Eleni Tolma - Constantina Constantinou - George Samoutis - Vasilios Tanos - Dimitrios Kanakis - Eirini Kampriani

NCDs-Metabolic and endocrine disorders: Chloe Antoniou - Danny Alon Ellenbogen - Christiana Charalambous - Dionysis Vaidakis - Katerina Prokopiou - Agnieszka Świąćicka-Mitsides - George Samoutis

Embryogenesis-Anatomy-Physiology: Danijela Antunovic - Elena Critselis - Konstantinos Voskarides - Annita Achilleos - Adonis Ioannides - Dimitrios Kanakis

Andrology: Agnieszka Świąćicka-Mitsides

Research Centre for Exercise and Nutrition (RECEN) is a multidisciplinary research centre consisting of scientists from different life and health sciences disciplines. RECEN research aims to conduct high-quality and innovative research activities focusing on the role of exercise and nutrition on health and quality of life-related parameters in various population groups, including healthy people of all ages and patients

with chronic diseases. Research is carried out in the Human Performance Lab using state-of-the-art equipment, including wearable technology allowing continuous data collection. Research aims to promote various aspects of health and quality of life, including physiological, biochemical, and physical fitness parameters, as well as sleep, cognition, and mental health.

Lines of research: Exercise, nutrition and sleep - Exercise, nutrition and gut microbiome - Sports & exercise nutrition - Healthy aging - Biomedical aspects of nutrition and health - Exercise and nutrition in chronic diseases - High-intensity exercise - Physical activity, nutrition and cognitive function - Genetics of exercise and nutrition - MicroRNAs, nutrition and exercise

Nutritional and sport sciences are key areas of the UNIC Department of Life Sciences:

The thematic research area of Nutritional Sciences examines the effect of diet on the organism's health. It includes focus areas such as health education and nutrition, behavior modification for weight management with special interest in the influence of early nutrition and weaning practices in childhood obesity, aging and nutrition, analysis of Cypriot nutrition and health database, sports and nutrition, as well as health education and dietetics. The Department also carries out research projects aiming at studying the role of diet in the development and progression of human diseases such as diabetes, cardiovascular disease and cancer.

The thematic area of Sports Science covers a multidisciplinary spectrum of research related to exercise. The focus areas include: effects of exercise training in the prevention and management of chronic diseases such as chronic kidney disease, diabetes, cardiovascular diseases and multiple sclerosis, sleep physiology/exercise, cardiovascular exercise physiology in health and disease, chronic hydration levels of adults and adolescents athletes, and potential effects on exercise performance and overall health, training adaptations, hematological, hormonal and immune responses to young and elite soccer players, nutritional intervention and exercise, High Intensity Interval Training (HIIT), and sport pedagogy and sport psychology, among other subjects.

Website: <https://www.unic.ac.cy/school-of-life-and-health-sciences/research-areas/>

Contacts: Dr Christoforos Giannaki, Director of the RECEN (giannaki.c@unic.ac.cy)

2.4. Immunity, Infection and Immunotherapy

Researchers implicated in...

Infectious diseases and Immunology: Danny Alon Ellenbogen - Annalisa Quattrocchi - Panagiotis Karanis - Ender Volkan - Peter Karayiannis

Allergy and immunology: Despo Ierodiakonou - Pascale Salameh - Annalisa Quattrocchi - Eirini Kampriani

2.5. Neuroscience and disorder of the nervous system

UNIC researchers implicated in...

Neurosciences: Avgis Hadjipapas - Nicoletta Nicolaou - Katerina Prokopiou - Achilleas Pavlou - Annita Achilleos - Theodoros Kyriakides - Michael Davidson - Dimitrios Kanakis - Stelios Georgiades - Paola Nicolaides

Mental disorders: Styliani Spyridi - Michael Davidson - Dimitrios Kanakis - Stelios Georgiades - George Tanteles

CENIBRE Fundamental molecular and cellular mechanisms of neuronal signaling in health and disease -

This line of research employs methodology at the molecular and cellular levels to better understand intracellular signalling in health and disease. It aims to uncover and explain the mechanisms underlying development of tumours in the nervous system and a range of other pathologies including neurological and psychiatric disorders,

inflammatory conditions of the brain and the spinal cord, vascular diseases, demyelinating diseases, leukodystrophies, traumatic injuries, neurodevelopmental abnormalities and neuromuscular disorders. **Contact?**

CENIBRE Computational neuroscience, electrophysiological signal processing and advanced data analysis - This line of research investigates the function and measurement of neural circuits at a range of different spatial and temporal scales using recent advances in computational modelling and time series analysis of electrophysiological data collected at multiple spatial scales. The role of collective phenomena such as synchronization, resonance and oscillations in reduced neural network circuits and in the real brain is studied. There are particular applications in the study of dysfunctional brain states (epilepsy, neurodegenerative and mental health disease), anaesthetic-induced unconsciousness, sleep, and brain-computer interfaces. **Contact?**

CENIBRE Behavioural and brain determinants of mental health and neurodegenerative diseases and behavioural intervention - This line of research deals with behavioural and brain imaging or pathology data to predict mental health diseases such as schizotypy and schizophrenia and neurodegenerative disease such as Alzheimer's dementia, Pick's disease, and Parkinson's disease. The ultimate aim of this pillar is to develop behavioural and public health interventions in order to improve prognosis and the quality of life of patients with such diseases. **Contact?**

CENIBRE Promoting neurological and mental health in a public health context - This include the investigation of the determinants of neurological and mental health through the life-course using observational studies and systematic reviews, and the development of intervention programmes across all levels of prevention (primary, secondary and tertiary) and therapy. The aim is to promote the health and wellbeing of patients and their care-givers using lifestyle and community strategies, together with digital health technologies in neurology, psychiatry and surgery (among others: blockchain, artificial intelligence, machine learning, telehealth, augmented reality and the Internet of Things) **Contact?**

Physiotherapy at the UNIC department of Health Science

Research in the field of Physiotherapy focuses on the areas of musculoskeletal and neurological physiotherapy and rehabilitation. Specifically, research interests involve spinal biomechanics in relation to pathology of low back and neck pain, rehabilitation of peripheral nervous system injuries, effectiveness of neural mobilisation techniques in patients with spinal radiculopathies and effectiveness of manual therapy techniques in patients with cervicogenic dizziness. In addition, faculty members explore the central nervous system's adaptations following exercise and fatigue in regard to the motor control systems and in relation to the development of new techniques for neurophysiological assessment (Transcranial Magnetic Stimulation, Transcranial Direct Current Stimulation) and neurological rehabilitation. **Contact?**

2.6. Prevention, Diagnosis and Treatment of Human Diseases including Environmental health

Researchers implicated in...

Public health and epidemiology: Despo Ierodiakonou - Pascale Salameh - Photos Hajigeorgiou - Annalisa Quattrocchi - Christiana Demetriou - Souzana Achilleos - Kevork Hopayian - Constantinos Koshiaris - Elena

Critselis - Dionysis Vaidakis - Eleni Tolma - Constantina Constantinou - Raoul Hecker - Styliani Spyridi - Andreas Charalambous

Preventative medicine: Pascale Salameh - Danijela Antunovic - Annalisa Quattrocchi - Christiana Demetriou - Elena Critselis - Dionysis Vaidakis - Eleni Tolma - Nicoletta Nicolaou - Constantina Constantinou - Raoul Hecker - Vasilios Tanos

Social sciences and health: Chloe Antoniou - Pascale Salameh - Costas Constantinou - Soulla Nicolaou - Stella Loizou - Panayiota Andreou - Eleni Tolma - Alexia Papageorgiou - Maria Perdikogianni - Eirini Kampriani

Healthcare-Healthy ageing: Annalisa Quattrocchi - Kevork Hopayian - Elena Critselis - Panayiota Andreou - Constantina Constantinou - Raoul Hecker - George Samoutis - Styliani Spyridi - Danagra Ikossi - Paola Nicolaides - Chloe Antoniou - Danny Alon Ellenbogen - Christiana Charalambous - Dionysis Vaidakis - Katerina Prokopiou - Agnieszka Świąćicka-Mitsides - George Samoutis

Family medicine: Despo Ierodiakonou - Danny Alon Ellenbogen - Danijela Antunovic - Kevork Hopayian - Constantinos Koshariis - Dionysis Vaidakis - George Samoutis

NCDs-Other-Healthy ageing: Despo Ierodiakonou - Aleksandar Jovanovic - Eleni Tolma - Agnieszka Świąćicka-Mitsides - Theodoros Kyriakides - George Samoutis

Pharmacology, Toxicology and Chemistry: Aleksandar Jovanovic - Photos Hajigeorgiou - Christiana Charalambous - Katerina Prokopiou - Styliani Spyridi

Pediatrics: Maria Perdikogianni - Adonis Ioannides - Paola Nicolaides

Imaging and physics : Photos Hajigeorgiou - Anastasia Hadjiconstanti

Dermatology: Katerina Prokopiou

Medical ethics: Eirini Kampriani

Nuclear medicine : Anastasia Hadjiconstanti

Ophthalmology : Katerina Prokopiou

Physical medicine and rehabilitation : Kevork Hopayian

Radiation oncology : Chloe Antoniou

Environmental Health (EH) Research Centre Contact and axes ?

2.7. Surgical sciences

UNIC Researchers of the faculty of medicine implicated in...

Surgical sciences: Danagra Ikossi - Panos Economou

Emergency medicine : Danny Alon Ellenbogen - Raoul Hecker

Internal medicine: Danny Alon Ellenbogen - Danijela Antunovic

Obstetrics and gynecology: Dionysis Vaidakis - Vasilios Tanos

Anesthesia: Nicoletta Nicolaou

2.8 Nursing sciences

Department of Health sciences - nursing

Research in the field of Nursing covers all different Nursing disciplines. Specifically, members of the Faculty are working on general surgery and surgical nursing as well as surgery in specialties, development

of curricula for undergraduate and postgraduate nursing with special interest in clinical specialist courses development, cultural/spiritual aspects of health, issues related to refugees and emigrants health needs, hospital infections, diabetic patient care, chronic disease management and patient's empowerment, community nursing, nursing care education, cancer prevention and rehabilitation, fertility and family planning. **Contact?**

2.9. Pharmacology and synthesis of small molecules

Bioactive Molecules Research Center (BioMoReC) - Development of Peptide Drugs - BioMoReC houses a dedicated unit in peptide synthesis and analysis. At present, there are around 80 peptide drugs on the global market, and research into new peptide therapeutics continues at a steady pace, with more than 150 peptides in clinical development and another 400–600 peptides undergoing preclinical studies. **Contact?**

Bioactive Molecules Research Center (BioMoReC) - Venoms from Endemic Species - Over the years, animal venoms have been recognised as a rich source of drugs. There are currently more than 10 authorized medicinal products with venom origin in the market. The University of Nicosia supports the discovery of potent molecules from endemic species in Cyprus (i.e., scorpions, snakes, and other organisms). To this end, the Department recently entered into an agreement with MedVenome Ltd., a start-up company established in Cyprus focused on the production and supply of venom, venom peptides, and plant toxins. **Contact?**

Pharmacy and Pharmaceutical Sciences – Department of Health Sciences - The thematic area in Pharmacy aims to the discovery, synthesis and characterisation of new biological products for curing human diseases. Specific projects research the peptide synthesis and especially the development of radiolabelled peptides for the in vivo detection of neuroendocrine tumors overexpressing peptide receptors as well as the development of peptide-anticancer agents conjugated as pro-drugs for targeted chemotherapy. The Drug Discovery discipline focuses on the synthesis of anti-cancer compounds, as well as the design and synthesis of complex dendrimers, of novel small molecules as RNA ligands (Antibiotic Drugs) and of the biological evaluation of inhibitors for Mycobacterial Tuberculosis via the fragment-based approach (Tuberculosis Drugs). **Contact?**

2.10. Biotechnology and Health

Researchers implicated in...

Digital Health-AI applications: Constantinos Koshiaris - Dionysis Vaidakis - Vered Aharonson - Panayiota Andreou - Vasilios Tanos - Panos Economou

Medical Technologies-Devices: Aleksandar Jovanovic - Philippos Patsalis - Nicoletta Nicolaou - Anastasia Hadjiconstanti - Peter karayiannis

Bioactive Molecules Research Center (BioMoReC) - Biomaterials - Several research projects currently underway are focused on the use of materials derived from biomolecules of plants and animal origin for biomedical applications. More recently, novel biomaterials from biomolecules have been designed and fabricated precisely for applications in biomedicine, bioelectronics, etc. Tissue Engineering and Nanoscience Development, characterization, and evaluation of nanocarriers for targeted gene and drug delivery. The process also involves the development and implementation of predictive algorithms based on AI/ML technologies for predicting the performance of developed nanosystems based on formulation parameters, to reduce experimental time and cost. Polymeric and lipidic nanocarriers are being developed

for the encapsulation of plant extracts to improve their stability and effectiveness. An agreement was signed recently along these lines with RiMed Foundation in Italy, which aims in technology transfer and research collaboration in the area of tissue engineering and drug delivery system design. **Contact?**

2.11. Medical Education

Researchers of UNIC faculty of medicine implicated: Chloe Antoniou - Pascale Salameh - Costas Constantinou - Danny Alon Ellenbogen - Peter McCrorie - Aleksandar Jovanovic - Soulla Nicolaou - Stella Loizou - Stella Voskou - Vered Aharonson - Panayiota Andreou - Eleni Tolma - Nicoletta Nicolaou - Katerina Prokopiou - Achilleas Pavlou - Alexia Papageorgiou - Vasilios Tanos - Danagra Ikossi - Andreas Charalambous - Adonis Ioannides - Eirini Kampriani - Stelios Georgiades - Panos Economou

Unit for Diversity Competence (UDC) in Healthcare and Healthcare Education

Following the approval by the University Senate and Council, we are pleased to announce the formation of the **Unit for Diversity Competence (UDC) in Healthcare and Healthcare Education**, which will operate under the UNIC Health umbrella. The mission of the UDC is to nurture an inclusive and culturally competent environment within our healthcare community. The primary objectives of UDC are:

Training & Support: UDC will offer support and training in diversity and cultural competence in healthcare to staff, faculty and students of the Medical School, School of Veterinary Medicine, and School of Life and Health Sciences.

Guidance for Affiliates: UDC will provide support and guidance to all UNIC Health affiliated healthcare organisations in working effectively with diverse patients.

Research & Development: UDC will develop or participate in research projects and collaborations, and will publish in the area of diversity and cultural competence.

Head of unit: Pr Costas Constantinou (constantinou.c@unic.ac.cy)

Centre for Medical Education

Characterization: The Centre for Medical Education is part of the University of Nicosia Medical School; it is related to both departments of Basic and Clinical Sciences and Primary Health and Epidemiology. **Mission**

To provide a resource for the medical and veterinary schools to optimise faculty development, teaching, learning and assessment and educational research.

Vision: The CME aspires to become a stronghold of excellence for medical and vet education in this country. It will strive to empower individuals to achieve their true academic and professional potential.

Our Core Values: Professionalism, Equality, Equity, Diversity and Inclusion, Collaboration and Respectfulness within the Health Care Education Community, Excellence in Research, Social Responsibility.

Strategic Goals

- Provide faculty and staff with continuous professional activities and programmes in order to enhance their existing knowledge and skills
- Enhance student teaching, learning and assessment experience
- Increase health care educational research and assessment
- Provide health education and health promotion to the institutional and broader community
- Improve funding and resources of the centre to facilitate accomplish its mission

Coordinator: Dr. Alexia Papageorgiou (papageorgiou.a@unic.ac.cy)

3. Universität Bielefeld (UNIBI)

3.1. The research in Health and Medicine at UNIBI

The research profil “Medicine for People with Disabilities and Chronic Diseases” of the Medical School OWL – Chronic diseases and disabilities confront the entire care system, from (general) medicine to nursing, with complex, interprofessional questions. The faculty therefore follows a translational approach that focuses on basic research and clinical research as well as on outpatient and inpatient regular care. The research field can build on the established and proven structures and networks both at Bielefeld University and in the region of Ostwestfalen-Lippe as a whole. In order to strengthen the research on health care provision, a network of private practices is being planned, which will realize projects together with the faculty. The research profile "Medicine for People with Disabilities and Chronic Diseases" includes the research areas "Brain - Impairment - Participation" and "Intelligent Systems - Assistance - Interprofessional Networking". Both focal points follow the guiding principle of interdisciplinarity and build on the expertise of the existing faculties in basic and care research. Other important cooperation partners in this context are the clinics of the University Hospital OWL, which is currently being established, general practitioners and specialists in private practice and other research institutions.

The School of Public Health - The School of Public Health works in an interdisciplinary manner, thereby combining the various professional, scientific and methodological approaches of its members into a productive diversity. The primary concern of health sciences / public health is to further improve the basic conditions for keeping all population groups healthy and to reduce the incidence of disease and its potential consequences as much as possible. It provides a framework for addressing pressing socially relevant issues related to health and disease. It hosts 8 research groups.

The Department of psychology - The Faculty of psychology and sport science hosts the department of psychology that has 18 research units and two major foci about life perspectives and intelligent interactive systems. > The Human mind and its complexity. The faculty of biology hosts units specialized in cognitive neurosciences.

3.2. Biomedecine: Molecular, integrative and cell biology

Biochemistry and Molecular Medicine – 6 researchers and research assistants

The working group conducts research into rare genetic brain and muscle diseases caused by defects in the formation and function of cell organelles (including peroxisomes and the T-tubule system). The working group is also working on a novel gene regulation mechanism based on translational readthrough, i.e. the targeted over-reading of stop codons. The methods used include: Protein biochemistry, lipids, in vitro systems, iPSC, CRISPR/Cas, microscopy (live, FRET, ultra-high resolution), cell and mouse models.

Website: <https://www.uni-bielefeld.de/fakultaeten/medizin/fakultaet/arbeitsgruppen/>

Group leader: Prof. Dr. Sven Thoms in biochemistry (sven.thoms@uni-bielefeld.de)

Biophysical Chemistry and Diagnostics

Our interdisciplinary working group focusses on the perception of light. We analyse the structure and function of receptors that control the circadian rhythm, among other things, and are used in optogenetics. We investigate in

particular the structure and the fundamental mechanism of cryptochrome, which acts as a central component of the biological clock in humans and as blue light receptor in animals, plants and microorganisms. We are developing infrared spectroscopy in aqueous media as a diagnostic tool on living cells and human cell lines.

Website: <https://www.uni-bielefeld.de/fakultaeten/chemie/ag/pc5-kottke/index.xml>

Group leader: Prof. Dr. Tilman Kottke (tilman.kottke@uni-bielefeld.de)

3.3. Physiology in Health, Disease and Ageing

Microbial Diversity in the Human Habitat - research profile "Medicine for People with Disabilities and Chronic Diseases", the Medical School OWL – The function of the microbiome in the healthy organism as well as its role in the development of disease and therapy options will be researched. Among other things, the influence of the microbiome on the development and therapy of neuropsychiatric diseases and impairments will be investigated. **Website and contact?**

Physiology and Pathophysiology of Cells and Membranes

The composition of cellular membranes influences membrane properties, including lipid orientation, membrane fluidity, and protein functionalization, that impact cell function. An important lipid component is the family of sphingolipids, which are more than just structural components of a biological lipid membrane making them still as fascinating and mysterious as when they were first reported by J.L.W. Thudichum back in 1884. It is now known that this family of lipids with their sphinx-like enigmatic nature impacts lipid membrane phases, membrane liquid ordering, membrane fusogenicity, vesicular trafficking, signal transduction and functionalize transmembrane proteins, such as transporters, ion channels and receptors. Our group is interested in sphingolipids and cellular membranes in the kidney in the following areas: Carcinogenesis initiated by chronic exposure to toxic metals and changes in sphingolipids in toxic metal-induced oncogenic transformation. - Organelle dysfunction by cadmium - Oncogenic multidrug resistance through the drug transporter ABCB1 and evasion of programmed cell death - Tumor cell biology and intercellular communication - Ferroptosis in renal cancer.

Website: <https://www.uni-bielefeld.de/fakultaeten/medizin/fakultaet/arbeitsgruppen/cells-membranes/>

Group Leader: Prof. Dr. Wing-Kee Lee (wing-kee.lee@uni-bielefeld.de)

3.4. Immunity, Infection and Immunotherapy

Sustainable Environmental Health Sciences – 13 researchers.

The working group contributes to the One Health approach by participating in various projects in the field of infectiology (including multidrug-resistant pathogens, surveillance, pandemic management, derivation of prevention approaches), especially through trilateral networking of academic medicine, laboratory diagnostics and public health.

Website: <https://www.uni-bielefeld.de/fakultaeten/medizin/fakultaet/arbeitsgruppen/environment/#>

Head of the working group: Claudia Hornberg, DM (claudia.hornberg@uni-bielefeld.de)

> See also 3.7 Environmental and public Health

3.5. Neuroscience and Disorders of the Nervous System

Cellular Neurophysiology – 10 researchers and research assistants

The working group investigates signal transduction processes that control the activity of excitable cells. We use cellular and molecular biological as well as electrophysiological methods to clarify how changes in these signalling



pathways can be identified as the cause of pathological symptoms. These can be excitation disorders in neurons or heart cells caused by altered electrical activity of certain transmembrane proteins. These membrane pores (ion channels) enable the extra- and intracellular exchange of charged particles. They are subject to a strictly coordinated regulation and determine the activity of the cells and tissues. If mutations occur in such ion channels (channelopathies), their physiological function changes and disease symptoms of entire organs occur. So far, about 150 ion channel mutations have been identified in the nervous system, the heart, the kidney and the immune system, which are associated, for example, with certain forms of epilepsy, atrial fibrillation, nephrogenic diabetes insipidus or myasthenia gravis.

Website: <https://www.uni-bielefeld.de/fakultaeten/medizin/fakultaet/arbeitsgruppen/neurophysiologie/>

Group leader: Prof. Dr. Erhard Wischmeyer (erhard.wischmeyer@uni-bielefeld.de)

Anatomy and Cell Biology – 16 researchers

The focus of the working group is on how microglia, as resident immune cells of the central nervous system (CNS), influence the development, functional maturation, physiological functions and the development and progression of brain diseases. The aim of the fundamental neurobiological research is to find out which endogenous factors can influence the differentiation and maturation as well as the immunological functions of microglia. Our focus is on transforming growth factor beta 1 (TGFβ1) and its effects on microglia under physiological and pathological conditions. In addition, we are investigating in mice what influence the complete loss of the microglia population has on the morphology and functions of the CNS.

Website: <https://www.uni-bielefeld.de/fakultaeten/medizin/fakultaet/arbeitsgruppen/anatomie-zellbiologie/>

Group leader: Prof. Dr. med. Björn Spittau (bjoern.spittau@uni-bielefeld.de)

"Brain - Impairment - Participation"

research profile "Medicine for People with Disabilities and Chronic Diseases", the Medical School OWL

- The interactions between neuropsychiatric/psychosomatic clinical pictures with the environment and behavior are being investigated. In particular, the focus is on related functional impairments and disabilities, how they are managed and the effects on participation possibilities. The focus is currently on three disease patterns or model diseases: Epilepsies, stress and somatoform disorders and cerebrovascular diseases. **Website and Contact ?**

Intelligence Interactive Systems (IIS)

Department of Psychology (Faculty of psychology and sport sciences) – One of the two research foci of the department is on the neurocognitive basis of human information processing as well as on the interaction between natural and artificial intelligence (intelligent systems) considering the healthy as well as the impaired mind and brain. The research focus covers the whole range of information processing from attention to memory and language processes, emotion, and motor functions. We cooperate with **CITEC (Center for Cognitive Interaction Technology)** and the Bethel Foundation. **Contact ?**

AE01: Neuro-Cognitive Psychology

CITEC - We investigate attentional processes in visual perception, memory and action control by means of psychophysics, cognitive and neuro-psychology methods as well as by computational modeling.

Website: <https://www.uni-bielefeld.de/fakultaeten/psychologie/abteilung/arbeitsgruppen/01/>

Chair: Prof. Dr. Werner Schneider (wxs@uni-bielefeld.de) works on relationships between visual perception and motor action control (eye movements), Visual working memory, perception, and motor action control.



AE14: Biopsychology & Cognitive Neuroscience

CITEC (Cluster of Excellence in Cognitive Interaction Technology)

Website: <https://www.uni-bielefeld.de/fakultaeten/psychologie/abteilung/arbeitsseinheiten/14/>

Chair: Prof. Dr. Tina Lonsdorf (tina.lonsdorf@uni-bielefeld.de)

Cognitive Neurosciences

CITEC - Our mission is to understand the neurophysiological and computational principles underlying sensory perception, decision making and active behavior. Our research combines behavioural studies with neuroimaging (M/EEG), virtual reality and computational modeling. Current work focuses on hearing and multisensory perception. In everyday life, we rely on the proper interplay of our different senses to perceive the world. For example, we can selectively combine or segregate the evidence provided by each sense to guide our actions, e.g. when using lip movements to 'hear better' in a noisy environment. Our work seeks to understand when and how the brain selects and combines sensory and other information to guide behavior.

Website: [https://www.uni-](https://www.uni-bielefeld.de/en/fakultaeten/biologie/forschung/arbeitsgruppen/cns/index.xml)

[bielefeld.de/en/fakultaeten/biologie/forschung/arbeitsgruppen/cns/index.xml](https://www.uni-bielefeld.de/en/fakultaeten/biologie/forschung/arbeitsgruppen/cns/index.xml)

Head of research group: Prof. Dr. Christoph Kayser (christoph.kayser@uni-bielefeld.de)

3.6. The Human Mind and Its Complexity

Life Perspectives: Opportunities and Adversities (Life Chances)

Department of Psychology (Faculty of psychology and sport sciences) – The research focus is on the impact of intrinsic and environmental factors including their subjective representations on the lives of individuals as well as groups. The development within a life course depends on the perception, appraisal and handling of (social) life circumstances as well as coping with or profiting from these. Among others, we investigate processes of personality and identity development, learning, psychological as well as social (co-)regulation as well as coping with disability and (severe) illness. We cooperate with the faculty of Sociology, Public Health, Economy, and Educational Science.

Contact?

AE02: General Psychology II

Research Goals and interests: The Affective Neuropsychology Group studies: Emotional processing in humans, Its underlying neural mechanisms It is interested in the influence of emotions on attention and memory processes modulation, Communicative aspects of emotions in the processing of language and faces, The role of emotions in man-machine interactions.

Study Focus: Typical processes in healthy people and Atypical processes as observed in neurological and psychiatric disorders

Objectives: Gain a comprehensive understanding of emotional processing, especially of residual brain functions in patients with severe brain injuries (unresponsive wakefulness and minimal consciousness state) and in developing ways to improve their disease-course with emotional stimulation

Website: <https://www.uni-bielefeld.de/fakultaeten/psychologie/abteilung/arbeitsseinheiten/02/>

Chair: Prof. Dr. Johanna Kißler (johanna.kissler@uni-bielefeld.de) works on neural and behavioral mechanisms underlying emotional cognitive interactions (emphasis on emotion – communication and emotion, stress, memory), the neuropsychology of emotional disorders



AE03: Developmental psychology and psychopathology

Developmental psychology investigates development-related changes in experience and behaviour, while developmental psychopathology examines the development and changes in mental health and mental disorders over the lifespan.

Website: <https://www.uni-bielefeld.de/fakultaeten/psychologie/abteilung/arbeitsseinheiten/03/>

Chair: Prof Dr Sakari Lemola (sakari.lemola@uni-bielefeld.de) – chair - and Prof Dr Arnold Lohaus (arnold.lohaus@uni-bielefeld.de) – senior professor

AE04: Differential Psychology, Personality Psychology and Psychological Assessment

Website: <https://www.uni-bielefeld.de/fakultaeten/psychologie/abteilung/arbeitsseinheiten/04/>

Chair: Dr. Daniel Ernst (daniel.ernst@uni-bielefeld.de) works on Visual attention, Visual search, Eye movements, Expectations

AE05: Social psychology

Website: <https://www.uni-bielefeld.de/fakultaeten/psychologie/abteilung/arbeitsseinheiten/05/>

Chair: Prof. Dr. Gerd Bohner (Gerd.Bohner@uni-bielefeld.de) works Social cognition and motivation (especially persuasion, social influence, stereotyping, influences of moods, emotions and other subjective experiences, applications in the field of advertising) - Attitudes and social cognition in the areas of sexual violence and sexual harassment - Social and emotional aspects of human-machine interaction - Gender differences from an evolutionary psychological and socio-cultural perspective - Methods of social psychology, in particular indirect methods of attitude measurement on Visual attention, Visual search, Eye movements, Expectations.

AE15: Applied Social Psychology and Gender Research

Focusing on psychological aspects of human-machine interaction, we conduct empirical studies on evaluation, acceptance, and usability of robots and technical systems in everyday life (e.g., during robot development in the VIVA-project, in smart environments homes, in education). In this context, we investigate attitudes towards robots and intelligent systems, the perceived quality of human-machine interaction, and user behavior during the interaction. *Moreover, the work group investigates determinants and consequences of gender stereotypes, sexism, sexual objectification, and sexual harassment.*

Website: <https://www.uni-bielefeld.de/fakultaeten/psychologie/abteilung/arbeitsseinheiten/15/>

Chair: Dr. Daniel Ernst (daniel.ernst@uni-bielefeld.de) works on Visual attention, Visual search, Eye movements, Expectations

AE06: Psychological methodology and evaluation in psychology studies

Website: <https://www.uni-bielefeld.de/fakultaeten/psychologie/abteilung/arbeitsseinheiten/06/>

Chair: Prof. Dr. Axel Mayer (axel.mayer@uni-bielefeld.de) works on developing new methods for investigating if, how, and for whom an intervention, such as a psychotherapeutic treatment or a health training, has an effect. His methodological research emphasis is on development and application of models for analyzing average and conditional (causal) effects, causal mediation models and models for latent change. An important aspect of his research is the development of user-friendly statistical software, to make modern statistical methods and models available for a broader audience.



AE07: Clinical psychology and psychotherapy of childhood and adolescence

The Clinical Psychology and Psychotherapy of Childhood and Adolescence Unit is involved in a wide variety of areas. These primarily include research into risk and protective factors, diagnostics, prevention and therapy, teaching, public relations and the promotion of young researchers. We cooperate with both national and international partners and endeavour to anchor and network our research worldwide. We want to involve interested students in the research and work area of clinical psychology and psychotherapy with children and adolescents at an early stage and ultimately offer them high-quality training. The mental health of our children and adolescents and their parents is a central and very promising topic for the future. This is why we also try to contribute our scientific knowledge and expertise outside the university in order to contribute to their well-being.

Website: <https://www.uni-bielefeld.de/fakultaeten/psychologie/abteilung/arbeitsseinheiten/07/>

Chair: Prof. Dr. Angelika Schlarb (angelika.schlarb@uni-bielefeld.de) – **Contact:** psyae7@uni-bielefeld.de

AE11: Clinical Psychology and Psychotherapy

We provide a comprehensive education in Clinical Psychology and Psychotherapy for students in the BSc and MSc courses in Psychology, postgraduate education, the supervision of PhD students as well as continuing education in psychotherapy. Our facilities include a psychophysiological lab including a multi-channel EEG and an outpatient clinic for psychotherapy (directed by Hanna Kley). Our research focuses on the causes and consequences of traumatic events such as child maltreatment and war violence.

Website: <https://www.uni-bielefeld.de/fakultaeten/psychologie/abteilung/arbeitsseinheiten/11/>

Chair: Prof. Dr. Frank Neuner (frank.neuner@uni-bielefeld.de) and Prof. Dr. Claudia Catani (claudia.catani@uni-bielefeld.de)

AE 17 Clinical Psychology and Violence Research

The Clinical Psychology and Violence Research Unit headed by Tobias Hecker focuses on the consequences and prevention of violence and maltreatment of children and adolescents. A core part of the research is the international and global perspective on trauma, violence and maltreatment in childhood and adolescence. We study the consequences of maltreatment at very different levels, e.g., clinical symptom level, behavioral level, cognitive level, and biological and molecular level (e.g., cortisol, epigenetics). The focus of research is on intervention studies using rigorous and experimental research methods (e.g. Cluster Randomized Controlled Trials).

Website: <https://www.uni-bielefeld.de/fakultaeten/psychologie/abteilung/arbeitsseinheiten/17/>

Head of unit: Prof. Dr. Tobias Hecker (tobias.hecker@uni-bielefeld.de) works on Violence against children: global prevalence, drivers, consequences and prevention - Child abuse and neglect - Psychological trauma and trauma-related disorders - Mental health in conflict and crisis regions

AE18 Clinical Neuropsychology & Psychotherapy

Fields of research: I Post-stroke mental health: development and therapy – II Cognitive Stimulation Therapy for mild-to-moderate dementia – III Neurofeedback for ADHD in childhood – IV Multimethod attention diagnostics in childhood – The fields of research are detailed here: <https://www.uni-bielefeld.de/fakultaeten/psychologie/abteilung/arbeitsseinheiten/18/forschung/>

Website : <https://www.uni-bielefeld.de/fakultaeten/psychologie/abteilung/arbeitsseinheiten/18/>

Head of unit: Prof Dr Katja Werheid (katja.werheid@uni-bielefeld.de)

AE20 Clinical child and adolescent psychology and psychotherapy

Chair: Prof. Dr. Nina Heinrichs (nina.heinrichs@uni-bielefeld.de), member of the UNESCO chair of Childhood maltreatment lead by Catherine Belzung (IBrain – UT)

AE09, AE12 and AE13: Chairs of Educational Psychology

Educational psychology deals with the description and explanation of the psychological components of educational, teaching and socialization processes. The scope of application covers all instances and institutions of the education, education and socialization systems of different societies and cultures. Parent House School & Inclusion College & Continuing Education Non-formal: Utilization of Extracurricular Promotion Offers.

Website: <https://www.uni-bielefeld.de/fakultaeten/psychologie/abteilung/arbeitsseinheiten/09/>
<https://www.uni-bielefeld.de/fakultaeten/psychologie/abteilung/arbeitsseinheiten/12/>

Chairs:

Prof. Dr. Elke Wild (elke.wild@uni-bielefeld.de – AE09) works on the explanation and overcoming of inequalities in educational trajectories and outcomes of students across primary, secondary and tertiary education and hereby in particular on the role of parenting, parental school involvement and teacher-parents-collaborations.

Prof. Dr. Stefan Fries (stefan.fries@uni-bielefeld.de – AE12) works on Motivation and learning with attractive action alternatives, Procrastination at university, Value orientations and school and vocational learning of young people, Intercultural differences in value orientations and motivational experience...

Prof. Dr. Kirsten Berthold (bildungspsychologie@uni-bielefeld.de – AE13) works on Integration of motivational aspects in instructional psychology approaches - Analysis and promotion of the processing of instructional explanations - Analysis and promotion of self-declarations - Training to promote transfer - Learning with multiple representations...

AE16 Educational psychology with special consideration of heterogeneity and inclusion

In several working groups, we deal with various topics of educational psychology, especially in the context of schools and with special consideration of heterogeneity and inclusion. In doing so, we take a broad understanding of inclusion that not only refers to people with disabilities, but also includes people who differ from one another in terms of aspects such as gender, migration background or talent. Our research focuses on the development of academic self-concepts and the digitalisation of teaching and learning environments.

Website: <https://www.uni-bielefeld.de/fakultaeten/psychologie/abteilung/arbeitsseinheiten/16/>

Chair: Prof. Dr. Fabian Wolff (fabian.wolff@uni-bielefeld.de) – **retired?**

AE10: Work and Organisational Psychology

The AE10 addresses questions about performance, success, and well-being in organisations. The emphasis of our research are topics in aptitude assessment, leadership, human resources development, organisational culture and climate as well as employees' experiences.

Website: <https://www.uni-bielefeld.de/fakultaeten/psychologie/abteilung/arbeitsseinheiten/10/>

Chair: Prof. Dr. Günter W. Maier (ao-psychologie@uni-bielefeld.de)

3.7. Prevention, Diagnosis and Treatment of Human Diseases, including environmental and public health

Health systems, health policy and health sociology

Working group 1 of the Faculty of Public Health

Fields of Activity: Health System and Health Policy in Germany - International Comparison of Health Systems - Europeanization of Health Policy - Health Promotion in the Working Environment

Website: <https://www.uni-bielefeld.de/fakultaeten/gesundheitswissenschaften/ag/ag1/arbeitsgebiete/>

Contact: thomas.gerlinger@uni-bielefeld.de

Population Medicine and Health Services Research

Working group 2 of the Faculty of Public Health

Fields of Activity: Global Health - Policy-related evidence - Health inequalities and determinants of health - Anti-microbial resistance and antibiotic stewardship - Migration, Escape and Health - Burden of disease - Infectious Disease Epidemiology

Website: <https://www.uni-bielefeld.de/fakultaeten/gesundheitswissenschaften/ag/ag2/index.xml>

Head of department: Dr. Kayvan Bozorgmehr (MD, MSc) (kayvan.bozorgmehr@uni-bielefeld.de)

Secretary: regine.myska@uni-bielefeld.de

Epidemiology and international Public Health

Working group 3 of the Faculty of Public Health

Maintaining and promoting the health of populations and population subgroups is one of the most important societal challenges today. Insights from public health research help to quantify health risks and to develop evidence-based interventions for health promotion and prevention.

Fields of Activity: Migration, Escape and Health - International Public Health - Social Epidemiology - Health Reporting - Methods of Epidemiology

Website: <https://www.uni-bielefeld.de/fakultaeten/gesundheitswissenschaften/ag/ag3/index.xml>

Head of department: Prof. Dr. Oliver Razum (olivier.razum@uni-bielefeld.de)

Secretary: sekretariat-ag3.gesundheit@uni-bielefeld.de

Prevention and Health Promotion

Working group 4 of the Faculty of Public Health

The AG 4 is made up of a multi-disciplinary research team, primarily from the fields of public health, psychology and sports sciences. In research, as in teaching, our focus is on how best to promote health and prevent illness. We consider the social and physical environment to be just as important as individual factors (such as personal motivation and attitude). Our research priorities lie in children and youth health, women-focused and gender-equitable health research, and the area of evaluation and quality development.

Fields of Activity: Young Persons' Health - Health communication - Gender Health - Evaluation und Quality Development in Prevention and Health Promotion

Website: <https://www.uni-bielefeld.de/fakultaeten/gesundheitswissenschaften/ag/ag4/index.xml>

Head of department: Prof. Dr. Petra Kolip (petra.kolip@uni-bielefeld.de)

Health Economics and Health Care Management

Working group 5 of the Faculty of Public Health

Our research focuses on health economics evaluations and modeling, quality of life measurements, eHealth , and issues surrounding the management of health facilities. Another of our research areas is the conception and evaluation of new forms of care, e.g. digital applications for the improvement of drug safety and drug supply . In the area of quality of life research, the Chair of Health Economics and Health Management is one of the leading institutes in Germany. Thus, Prof. Greiner is substantially involved in the development and improvement of methodologies, adaptation and validation, and the valuation-studies of multiple versions of the EQ-5D quality of life questionnaire (EuroQol).

Fields of Activity: Economic Evaluation of Health Care Interventions - Quality of Life Research and Preference Measurement - Health Services Research, with a Focus on the Use of Primary and Secondary Data - E-Health - Demography

Website: <https://www.uni-bielefeld.de/fakultaeten/gesundheitswissenschaften/ag/ag5/index.xml>

Head of department: Prof. Dr. Wolfgang Greiner (wolfgang.greiner@uni-bielefeld.de)

Health Service Research and Nursing Sciences

Working group 6 of the Faculty of Public Health

The main focus of research in AG 6 is the management of chronic illness and the need for long-term care as well as health problems in old age and the associated challenges for health care and the consequences for the further development of care. Part of the working group is also the Institute for Nursing Science (IPW).

Research areas: Aging and health, chronic diseases, care dependency - Health literacy, patient information and counseling – Primary and long-term care, Public Health Nursing

Website: <https://www.uni-bielefeld.de/fakultaeten/gesundheitswissenschaften/ag/ag6/index.xml>

Head of department: Prof. Dr. Kerstin Hämel (kerstin.haemel@uni-bielefeld.de)

Secretary: ina.horn@uni-bielefeld.de

Environment and Health

Working group 7 of the Faculty of Public Health

Research areas: Salutogenetic thematic fields of environment and health - CityLandscape & Health - Pathogenetic thematic fields Health effects of wind turbines - Climate change and health - Environmental burdens of disease/ environmental burdens of disease - Infection protection and prevention/ multidrug-resistant pathogens - Inclusion/ Participation Research - Gender and health - E-health and telemedicine

Website: <https://www.uni-bielefeld.de/fakultaeten/gesundheitswissenschaften/ag/ag7/index.xml>

Head of department: Prof. Annette Malsch (annette.malsch@uni-bielefeld.de)

Demography and Health

Working group 8 of the Faculty of Public Health

The AG8 research adopts lifecourse framework to study how early life conditions (e.g. parental long-distance commuting) and later life experiences (e.g. a health shock in a family) shape individuals' health and health behaviors. All research projects have the potential to uncover novel results with important policy implications. Analyzing the causal effects and pathways will help to identify policy interventions targeted to improve health and reduce health inequalities and to meet challenges of healthcare provision in times of population aging.

Research areas: Gender Gaps in Health and Survival (G-HEALTH) – Health of Ageing populations – Immigrant's Health – Diversity in e-health use – Adolescent Sexual and Reproductive Health

Website: <https://www.uni-bielefeld.de/fakultaeten/gesundheitswissenschaften/ag/ag8/index.xml>

Head of department: Prof. Dr. Anna Oksuzyan (anna.oksuzyan@uni-bielefeld.de)

Secretary: sekretariat.gesund-ag8@uni-bielefeld.de

General and Family Medicine – 11 researchers and research assistants

The working group focuses on people with chronic multiple illnesses and frequent multi-medication. These people often require intensive care and are particularly vulnerable to acute illnesses. The working group conducts research to improve their care and integrates relevant content into general medical education and training. Key issues include supporting physicians and patients in shared decision making and improving the interaction between different specialists and health care professionals. The use of digital technologies also plays an important role in our research and educational activities.

Website: <https://www.uni-bielefeld.de/fakultaeten/medizin/fakultaet/arbeitsgruppen/allgemeinmedizin/>

Contact: Prof. Dr. med. Christiane Muth, MPH, head of the working group (christiane.muth@uni-bielefeld.de)

Sex- and Gender-sensitive Medicine – 6 researchers and research assistants

Different genders can be affected differently by diseases. This can be due to biological causes as well as different behaviours or a different approval of medical care. WG 10 is dedicated to gender-sensitive medicine, which aims to support future doctors in person-centred communication, diagnosis and treatment of patients.

Website: <https://www.uni-bielefeld.de/fakultaeten/medizin/fakultaet/arbeitsgruppen/gender/>

Contact: Prof. Dr. med. Sabine Oertelt-Prigione (sabine.oertelt-prigione@uni-bielefeld.de)

Clinical Linguistics

CITEC - We focus on diagnostic methods and therapy for language and speech disorders of neurological origin (aphasia, dysarthria), language acquisition problems as well as voice and communication handicaps in demanding contexts.

Website : <https://www.uni-bielefeld.de/fakultaeten/linguistik-literaturwissenschaft/studium-lehre/faecher/klinische-linguistik/>

Head of unit: Prof. Dr. Martina Hielscher-Fastabend (martina.hielscher@uni-bielefeld.de)

Working Group "Sustainable Environmental Health Sciences" – 13 researchers.

The working group investigates the relationship between pathogenetic and salutogenetic environmental influences on human health. Since socially disadvantaged and vulnerable groups often bear an increased health risk, gender- and age-specific issues are considered in addition to socio-economic factors. WG has therefore set itself the research priority of highlighting the direct consequences of various environmental stresses and climate change for people's health and quality of life. On the other hand, the aim is to develop theoretical models and practical frameworks for action in order to contribute to the transformation process towards a healthy, ecologically sustainable and socially just society, including the necessary behavioral changes.

Website: <https://www.uni-bielefeld.de/fakultaeten/medizin/fakultaet/arbeitsgruppen/environment/#>

Contact: Claudia Hornberg, DM, head of the working group (claudia.hornberg@uni-bielefeld.de)

3.8. Nursing sciences

Institute for Nursing Science at the University of Bielefeld

The work at the Institute for Nursing Science concentrates primarily on issues that are grouped around the following main topics:

- I. Concept and instrument development
- II. Inpatient care in a context of change.

III. Outpatient Care and Neighbourhood-Oriented Care

IV. Use of digital technologies in care.

Website: <https://www.uni-bielefeld.de/fakultaeten/gesundheitswissenschaften/ag/ipw/index.xml>

Contact: ipw@uni-bielefeld.de

3.9. Pharmacology and synthethis of small molecules

Translational Pharmacology

Translational pharmacology is at the interface between non-clinical and clinical research. Our scientific focus is on research into individualised drug therapies for chronic diseases. We investigate mechanisms of variability in drug effects and side effects using laboratory experiments and carefully conducted proof-of-concept studies in volunteers and patients. We are particularly interested in lipid mediators in the eicosanoid biosynthetic-response pathway. Most cells in the organism have the capacity to form eicosanoids, which have important regulatory functions in many physiological and pathological processes. These include inflammation, inflammatory pain, blood pressure regulation, atherosclerosis, thrombosis, tumor growth and immunity. We conduct deep-phenotyping studies in model systems and in humans, which involve precise measurements of molecular network topologies and dynamics using the omics technologies.

Website: <https://www.uni-bielefeld.de/fakultaeten/medizin/fakultaet/arbeitsgruppen/translazionale-pharmakologie/#>

Contact: Prof. Dr. med. Tilo Grosser (tilo.grosser@uni-bielefeld.de)

3.10. Robotics, artificial Intelligence and systems and Health

Medical Assistance System – 13 researchers.

The working group focuses on the user-centred design, development and evaluation of intelligent medical assistance systems for diagnostics, therapy, rehabilitation, care support and decision support for doctors.

Lines of research: dialogues between agents and humans - examination of social, comprehensible artificial intelligence - system development related to stakeholder empowerment

Contact: Dr.-Ing. Britta Wrede (bwrede3@uni-bielefeld.de)

Digital Medecine – 8 researchers and research assistants from medicine, medicine informatics, public health, biomedical engineering, computer science, psychology and economics.

AG 4 Digital Medicine deals with the digital transformation as an ongoing process of change based on digital technologies that is changing the healthcare system, the clinics, universities and professions involved.

Keywords: Digital Medicine, Space health, Cardiobalistic, Smart Sensors, Data analysis

Website: <https://www.uni-bielefeld.de/fakultaeten/medizin/fakultaet/arbeitsgruppen/digitale-medizin/>

Contact: digitale-medizin@uni-bielefeld.de / Albrecht, Urs-Vito, Prof. Dr. med. Dr. PH,
(urs-vito.albrecht@uni-bielefeld.de)

Intelligent Systems - Assistance - Interprofessional Networking - research profile "Medicine for People with Disabilities and Chronic Diseases", the Medical School OWL – The line of research focuses on the increasingly important area of interaction with technical systems in medicine and care. Central to this is

research in the fields of design, development and testing of intelligent systems for diagnostics, therapy, rehabilitation, care support and decision support for physicians. The innovative combination of interaction research and clinical research is specific to this focus. **Contact?**

Interactive Robotics in Medicine and Care

CITEC - The focus of our working group is to enable robots to co-construct individual tasks with human users - people with support needs, relatives and healthcare professionals - and to translate them into ethically justifiable use cases desired by humans.

Website: <https://www.uni-bielefeld.de/fakultaeten/medizin/fakultaet/arbeitsgruppen/robotics/>

Contact: Prof. Dr.-Ing. Anna-Lisa Vollmer (anna-lisa.vollmer@uni-bielefeld.de)

3.11. Biostatistics and medical data sciences

Biostatistics and Medical Biometry

Biostatistics and medical biometrics deals with statistical methods for describing, analysing and interpreting data and questions from the life sciences and medical research. Our focus is on the development of statistical methods for meta-analyses and survival time analyses, as well as on the modelling of disease dynamics.

Website: <https://www.uni-bielefeld.de/fakultaeten/medizin/fakultaet/arbeitsgruppen/biostatistik/>

Contact: Prof. Dr. rer. nat. Annika Hoyer (annika.hoyer@uni-bielefeld.de)

Service Center for Medical Data Science

With specialized subject and methodological knowledge, the center advises and supports Researchers right from the planning stage of a research project. The center is also responsible for the establishment, operation and continuous development of the joint research data platform of the Medical School OWL and the University Medical Center OWL. The consulting services and data platform are closely oriented to the needs of research and teaching. Through supra-regional networking, we contribute to the visibility of medical research in Bielefeld and enable projects across several locations through suitable technical and semantic interfaces. The teams gather IT specialists, data analysts and medical data managers.

Website: <https://www.uni-bielefeld.de/fakultaeten/medizin/forschung/infrastruktur/medicaldatasience/>

Contact : data.medin@uni-bielefeld.de

Data Science for Medical Care

research profile "Medicine for People with Disabilities and Chronic Diseases", the Medical School OWL

- The aim of the perspective field is to gain new insights into the development of disease, prevention and individualized therapy from the integration and analysis of various research and care data and thus contribute to the improvement of medical care. In addition to clinical, epidemiological, imaging and molecular genetic data, care data, especially from the outpatient sector, will play a central role in this context. In cooperation with other German medical locations, the aim is to establish a data infrastructure for systematic, data-based support of medical researchers and players in the health care system.

Contact: Prof. Dr. med. Claudia Hornberg (claudia.hornberg@uni-bielefeld.de)

3.12. Medical Education

Medical Education

The group is active in the cross-sectional area of medical didactics, medical teaching development and educational research and plays a central role in the organisation and further development of teaching at the Faculty.

Website: <https://www.uni-bielefeld.de/fakultaeten/medizin/fakultaet/arbeitsgruppen/medical-education/>

Contact: Prof. Dr. med. Hendrik Friederichs (hendrik.friederichs@uni-bielefeld.de)

4. Ostravská Univerzita (OU)

4.1. The research in the university of Ostrava

The faculty of medicine

The faculty is the youngest medical faculty in the Czech Republic. Currently the Faculty has around 1700 students in 27 degree programmes, with over 400 students graduating every year. Graduates are well-equipped to pursue careers in a wide range of medical and health care professions. The Faculty works closely alongside the Ostrava University Hospital (which includes a number of highly specialized departments), the Ostrava City Hospital, the Vítkovice Hospital, and a range of other medical and health care institutions across the region, both in the public and private sectors. It has a strong presence in the medical research community. Its specialist teams include:

- the **Obesitology Centre** (developing treatments for obesity),
- the **Institute of Emergency Medicine** (developing responses to potential bioterrorist incidents and military conflicts, developing medical and surgical methods for man-made and natural disasters),
- the **Hematooncology Clinic** (conducting genomic research to identify genetic changes which occur in patients with hematooncological disorders and prevent effective treatment),
- and the **Centre for Epidemiological Research** (focusing on epidemiology in infectious and non-infectious diseases and the natural and working environment).

The Faculty's key research priorities reflect issues which are of primary importance to public health on both the national and regional levels. Students at the Faculty are closely involved in a range of research activities, regularly participating in student grant competitions and student conferences. Special scholarship funding is available to support student research.

The Centre for Health Research consists of:

- Department for Shared Laboratories
- Vivarium
- Centre for Epidemiological Research
- Centre for Nursing Research
- Centre for Clinical Neuroscience
- Centre for Nutritional Research and Obesity
- Centre for Research in Surgical, Traumatology and Emergency Medicine



- Centre for Information Technology, Artificial Intelligence and Virtual Reality in Medicine
- Centre for Research in Internal Medicine and Cardiovascular Diseases
- Centre of Occupational Hygiene and Safety
- Blood Cancer Research Group
- Working Group for Atherosclerosis Research
- Working Group for Research in the Field of Prevention, Early Diagnosis and Targeted Therapy of Solid Tumors

4.2. Biomedicine: Molecular, integrative and cell biology

Department of Histology and Embryology > See 4.3.

The Blood Cancer Research Group > See 4.3.

Institute of Molecular and Clinical Pathology and Medical Genetics > See 4.3.

4.3. Physiology in Health, Disease and Ageing

Institute of Physiology and Pathophysiology

The Institute of Physiology and Pathophysiology is a workplace with pedagogical, scientific, research, expert and medical activities.

Website: <https://lf.osu.eu/ufy/about/>

Head of Institute: doc. Mgr. Marek Bužga, Ph.D. (marek.buzga@osu.cz)

Centre for Nutritional Research and Obesity

No information.

Website: <https://lf.osu.cz/cnvo/>

Head of Centre: doc. Mgr. Marek Bužga, Ph.D. (marek.buzga@osu.cz)

Center for Research on Internal Medicine and Cardiovascular Diseases

The main research projects correspond to the names of the working groups: Electrophysiology - Interventional cardiology - Imaging methods - Endoscopic methods - Metabolic diseases and diabetology – Nephrology - The main goal will be applied clinical research, establishing cooperation with other national and international workplaces.

Website: <https://lf.osu.eu/cvik/>

Head of Centre: doc. MUDr. Jiří Plášek, Ph.D. (jjiri.plasek@osu.cz)

Department of Histology and Embryology

Research at the Department focuses on reactive cell elements in the fatty tissue of pathologically obese individuals and apoptotic regulatory mechanisms in healthy and pathologically altered human tissues, with an emphasis on antiapoptotic proteins (e.g. survivin) and mismatch proteins (e.g. MLH1, MSH2, MSH6, PMS2). Currently we are focusing on the relationship between surviving and repair proteins in colorectal lesions.

Website: <https://lf.osu.eu/uhe/>

Head of the Department: Ing. Peter Makovický, PhD. (peter.makovicky@osu.cz)

The Blood Cancer Research Group

The BCRG Biomedical Center was established in 2015 as a joint project of the Medical Faculty of the University of Ostrava and the Department of Hematooncology, University Hospital Ostrava. BCRG teams focus on basic and preclinical research with the main goal of developing new therapeutic approaches in the field of monoclonal gammopathy and other hematological disorders. The BCRG scientific core consists of three closely cooperating teams - the genomic team, the cell therapy team and the molecular cell biology team.

Website: <https://lf.osu.eu/bcrg/>

Head of research group: prof. MUDr. Roman Hájek, CSc. (roman.hajek@osu.cz)

Institute of Molecular and Clinical Pathology and Medical Genetics

Keys research areas: Modulation of IHC examination of tumour cells: diagnostic and prognostic implications especially in prostate cancer - collaboration with FN Olomouc - Fetopathology with a focus on cardiopathology - Pathology of the placenta - Prognostic and predictive markers of invasion of squamous cell carcinomas of the oral cavity and oropharynx - Prognostic and predictive factors of perineural invasion of squamous cell carcinoma of the head and neck - Histopathogenesis of ameloblastoma - Pneumopathology - Immunotherapy of tumours - Gastrointestinal tumours - Molecular pathology - Small biomedicine research in targeted immunotherapy of solid malignancies including PD1/ PDL1 analogues

Website: <https://lf.osu.eu/upa/>

Head of Institute: doc. MUDr. MVDr. Jozef Škarda, Ph.D., PhD. (jozef.skarda@osu.cz)

Prevention, Early Diagnosis and Targeted Therapy of Solid Tumors > See 4.6.

4.4. Neuroscience and Disorders of the Nervous System

The neurologic clinic of the Department of Clinical Neuroscience

Research areas: cerebrovascular issues - issues of neurosonology, primarily with relation to cerebrovascular diseases and neurodegenerative illnesses - neurodegenerative illnesses and cognitive impairment - demyelinating diseases - nervous-muscular diseases - epileptology and sleep medicine

Website: <https://lf.osu.eu/kkn/research/>

Head of Department : prof. MUDr. Michal Bar, Ph.D. (michal.bar@osu.cz)

Center for Clinical Neurosciences

No information.

Website: <https://lf.osu.eu/kkn/>

Head of Department : doc. MUDr. Ondřej Volný, Ph.D. (ondrej.volny@osu.cz)

Atherosclerosis Working Group

The Atherosclerosis Working Group is made up of a multidisciplinary team of neurologists, neurosurgeons, radiologists, and radiographers, who are mainly involved in the study of atherosclerosis in brain magistral arteries and the risk of stroke. Psychologists and cognitive-rehabilitation workers are also included in the working group, as the project examines the role of atherosclerosis risk factors in the development of cognitive deficits. - The group has long been dedicated to assessing the risk of cerebrovascular events in atherosclerotic plaques, especially in carotid arteries, using modern imaging modalities (sonography, computed tomography, magnetic resonance imaging) and histopathological methods as the gold standard. Atherosclerosis of the carotid arteries represents the leading risk of ischemic stroke, and an early and adequate risk assessment of a specific patient is essential for planning

Head of research group: MUDr. Martin Roubec, Ph.D. (martin.roubec@osu.cz)

The project addresses the effects of selected environmental and lifestyle risk factors on the health and aging of the population in an industrial region. It examines the impact of physical activity in polluted air on health, well-being and quality of life. The research set (cohort) of Program 4 consists of two groups of probands (individuals to be examined), physically active – referred to as “runners” and physically less active – referred to as “non-runners”. Both of these research groups will undergo the same examinations in the Center for Diagnostics of Human Movement of

Coordinator: Doc. Mgr. Daniel Jandačka, PhD (daniel.jandacka@osu.cz)

Head of centre: RNDr. Vítězslav Jiřík, Ph.D. (vitezslav.jirik@osu.cz)

Head of department: prof. prof. MUDr. Roman Hájek, CSc. (roman.hajek@osu.cz)

Head of department: prof. doc. MUDr. Ing. Jakub Cvek, Ph.D. (jakub.cvek@osu.cz)

Head of department: prof. doc. MUDr. Ondřej Šimetka, Ph.D., MBA (ondrej.simetka@osu.cz)

Head of department: prof. MUDr. Jan Václavík, Ph.D., FESC FEFIM, MHA (jan.vaclavik@osu.cz)

Teaching facilities for medical students and postgraduates - MR in relation to neurosciences and molecular imaging, cardio and pediatrics for MR 3T equipment - 3D centre – teleradiography and equipment for transplanting autologous bone marrow and fatty tissue stem cells - 3D evaluation of human tissue - Archive for teaching purposes

Open source radiation therapy: Thyroid carcinoma - Therapy for benign joint conditions in cooperation with the Orthopedics Department of the Ostrava City Hospital - Introduction of therapy for malignant conditions as part of plans to launch new radiopharmaceuticals in the Czech Republic

Website: <https://lf.osu.eu/uzm/>

Head of the Department: doc. MUDr. Martin Havel, Ph.D., MBA (martin.havel@osu.cz)

Department of Pediatrics

No information.

Website: <https://lf.osu.eu/kdln/>

Head of department: doc. MUDr. Jan Pavlíček, Ph.D., MHA (jan.pavlicek@osu.cz)

Institute of Laboratory Medicine

In accordance with the multidisciplinary profile of the Department, its staff conduct research in a range of fields, focusing particularly on these priority areas: Development of diagnostic methods in clinical hematology, transfusion medicine, biochemistry, and many subfields of medical microbiology. - Clinical pharmacology and pharmaceutical metabolism. - Genetic toxicology and the influence of genotoxic environmental factors on health. - Environmental epidemiology and preventive medicine. - Carcinogenic factors in the external and occupational environment. - Influence of environmental genotoxic factors on health, use of cytogenetic methods in the prevention of diseases of civilization. - Environmental epidemiology and preventive medicine. - Medical physics and biophysics. - Information and computer technology in hospital systems.

Website: <https://lf.osu.eu/kbo/>

Head of Institute: prof. MUDr. David Stejskal, Ph.D., MBA (david.stejskal@osu.cz)

Centre for Hyperbaric Medicine of Faculty

In the form of scientific projects, it implements scientific research activities in the field of hyperbaric medicine, diving medicine, medical microbiology and other fields at Faculty of Medicine, participates in the practical application of the results into clinical practice.

Website: <https://lf.osu.eu/hbm/about/>

Head of Centre: MUDr. Michal Hájek, PhD. (michal.hajek@osu.cz)

Centre officer: Šárka Břežná (sarka.brezna@osu.cz)

4.7. Pharmacology and synthesis of small molecules

Institute of Clinical Pharmacology

The key area of research at the Institute is personalized pharmacotherapy – especially therapeutic drug monitoring (TDM), phenotypization, genotypization, side effects, pharmaceutical interaction, hypertension, and pharmaceutical consumption. TDM of fingolimod and terifunomide in the therapy of multiple sclerosis - TDM of teriflunomide in the therapy of rheumatic arthritis - TDM of beta-blockers, losartan/sacubitril, spironolactone and glitazons in chronic heart failure - TDM in the therapy of hypertension.

Facilities: routine service in TDM of 100 drugs - out-patient care - cooperation with in-patient care in the Departments of Neurology and Cardiology - laboratory equipment: six LC-MS

Head of Institute: doc. MUDr. Ivana Kacířová, Ph.D. (ivana.kacirova@osu.cz)

Institute of Molecular and Clinical Pathology and Medical Genetics > See 4.3.

4.8. Robotics, artificial Intelligence and systems and Health

Institute for Research and Applications of Fuzzy Modeling (IRAFM)

The center focusses on theoretical research and practical development of various methods of fuzzy modeling, i.e. the formation of models that can include vaguely or imprecisely specified information.

Website: <https://ifm.osu.eu/>

Director: doc. RNDr. Michal Holčapek, Ph.D. (michal.holcapek@osu.cz) - Involved in health projects: Doc. Mgr. Martin Štěpnička (martin.stepnicka@osu.cz)

Centre for Information Technology, Artificial Intelligence and Virtual Reality in Medicine

The research will focus on the broad-spectrum use of activation of brain centers in neurology, neurosurgery, IT rehabilitation by using the method of signals caused by changes in electrical potential caused by targeted brain activity (Rehabilitation with Brain Computer Interface Systems) through artificial intelligence applications or visualization and simulation of the healthcare environment in virtual reality. The aim is to prevent the chronification of the disease by systematizing and increasing the effectiveness of medical care for patients with central and peripheral nervous system disorders. The result should be a significant reduction in the economic burden on the health, social and education systems.

Website: <https://lf.osu.eu/citu/>

Head of centre: doc. MUDr. Michal Filip, Ph.D., MBA (michal.filip@osu.cz)

4.9. Surgical medicine

Institute of Emergency Medicine

The Institute of Emergency Medicine at the Faculty of Medicine was established on 1 January 2014 to teach courses in military surgery and disaster medicine to students of the General Medicine degree programme. In addition to its teaching work, the Institute also conducts research focusing on crisis and disaster management – an area which has undergone rapid development during recent years in view of the growing threat of natural disasters, bioterrorism and military conflicts. Researchers at the Institute develop new treatment and operating techniques to deal with the consequences of such events and to reduce morbidity and lethality among those affected.

Key areas of research: New interdisciplinary methods in disaster medicine and safety in health care facilities - Innovative treatment methods for the locomotive apparatus in trauma surgery.

Website: <https://lf.osu.eu/umk/research/>

Head of Institute: doc. MUDr. Leopold Pleva, CSc. (leopold.pleva@osu.cz)

Secretary: Mgr. Pavla Segarová, PhD. (pavla.segarova@osu.cz)

Department of Surgical Studies

Research at the Department focuses on a range of areas including mini-invasive operating techniques, modern diagnostic and therapeutic methods, oncological surgery, oncogynecology, liver surgery, obesity treatment and metabolic surgery, transplantation surgery, and current issues in cell technologies and stem cells. The Department's research teams are involved in both national and international projects, and the Department organizes regular seminars and national conferences.

Website: <https://lf.osu.eu/kcg/>

Head of department: prof. MUDr. Čestmír Neoral, CSc. (cestmir.neoral@osu.cz)

Department of Anesthesiology, Resuscitation and Intensive Medicine

The clinic of anesthesiology, resuscitation and intensive medicine is a separate workplace with pedagogical, scientific research and medical activities. The scientific research activity of the institute results from the scientific focus of the individual staff of the clinic, it focuses on the evaluation of the quality of life after cardiopulmonary resuscitation, the prevention of sepsis in the workplaces of intensive and resuscitation care, the use of automatic external defibrillation, the development of alternative algotherapy techniques in the conditions of emergency medicine, the issue of IRS and forensic sciences.

Website: <https://lf.osu.eu/aum/>

Head of department: prof. MUDr. Pavel Ševčík, CSc. (pavel.sevcik@osu.cz)

Department of Anatomy

Research at the Department focuses primarily on lymphatic organs under physiological and pathological conditions. Other areas of research include chronic injuries to the locomotive apparatus (lower limbs) in athletes, and the study of the liver (neurovascular relations depending on physiological and pathological conditions), using dynamic cholescintigraphy for a comprehensive assessment.

Website: <https://lf.osu.eu/uan/>

Head of department: prof. MUDr. Václav Báča, Ph.D. (vaclav.baca@osu.cz)

Department of Craniofacial surgery

Research at the Department focuses on oncology, new diagnostic methods, extraesophageal reflux, and the effect of nanoparticles on human body pathology. Department staff are involved in a wide range of grant-funded research projects.

Website: <https://lf.osu.eu/kko/>

Head of department: prof. prof. MUDr. Pavel Komínek, Ph.D., MBA (pavel.kominek@osu.cz)

Department of Dentistry

No information

Website: <https://lf.osu.eu/kzl/>

Head of department: prof. doc. MUDr. Martin Starosta, Ph.D. (martin.starosta@osu.cz)

Department of Forensic Medicine

No information

Website: <https://lf.osu.eu/usl/>

Head of department: prof. MUDr. Petr Handlos, Ph.D. (petr.handlos@osu.cz)

Department of Rehabilitation and Sports Medicine

Research at the Department focuses on monitoring patients' progress following replantation, polytrauma, strokes, spinal lesions and amputations. Staff at the Department also contribute to the development of methodological standards applicable in physiotherapy.

Website: <https://lf.osu.eu/ure/>

Head of department: doc. MUDr. Dalibor Pastucha, Ph.D., MBA (dalibor.pastucha@osu.cz)

4.10. Nursing science and Healthcare

Centre for Nursing Research

1. Nursing and health care services - Clinical and community care (geriatric, pediatric, psychiatric, obstetric) - Quality of nursing and health care - Work environment and job satisfaction - Education and health education - Digital technology in nursing
2. Psychosocial aspects of health and disease - Health-related quality of life - Social support in health and disease - Psychosocial needs of patients and carers - Ethical aspects of nursing and health care - Palliative care and the issue of dying.

Website: <https://lf.osu.eu/cov/>

Head of department: prof. PhDr. Darja Jarošová, Ph.D (darja.jarosova@osu.cz)

Department of Nursing and Midwifery

The Department of Nursing and Midwifery focuses on the development of nursing and on issues of nursing practice both from a theoretical and practical perspective. Areas of research: Instruments for measurement and evaluation in nursing - Health-related quality of life - Ethical issues in nursing and health care - Palliative care and death issues in nursing - Quality of nursing and health care services (evidence-based practice, clinical guidelines, rationing nursing care) - Clinical nursing sciences (pediatric nursing, mental health nursing, clinical nursing) - Midwifery and childbirth research.

Doctoral (PhD) degree programme (4-years, in Czech): Nursing.

Website: <https://lf.osu.eu/uopa/>

Head of department: prof. PhDr. Darja Jarošová, Ph.D (darja.jarosova@osu.cz)

5. Universitatea „Ștefan cel Mare” din Suceava (USV)

5.1. The research at the university Ștefan cel Mare of Suceava

Ștefan cel Mare University of Suceava (USV) is one of the most dynamic universities in Eastern Europe, offering high-quality undergraduate and postgraduate education. USV is a comprehensive institution with 11 colleges, providing over 100 majors to more than 10,000 students. USV leads Romanian universities in the number of patents and inventions over the last decade and ranks among the top institutions for the number of papers published per researcher. The university offers significant resources for education and research, including state-of-the-art **laboratories in metagenomics, molecular biology, anatomy, biophysics, neuroaesthetics, virtual reality for education, food engineering, biochemistry, data analysis, and cloud computing**. Moreover, USV boasts a €1,000,000 cloud computing infrastructure, institutional electronic access to most publishing resources, and extensive sports facilities for students and staff.

The university partners with the local clinical university hospital to provide significant medical infrastructure and access to patients, and collaborates with local schools, child protective services, NGOs, and private medical institutions. These partnerships facilitate access to pediatric and young adult participants, while the student population of over 10,000 provides ample opportunities for enrolling young adults in research studies. The **College's infrastructure dedicated to studying child and young adult neuroscience and psychopathology** includes two purpose-built 30-square-meter labs equipped with neuropsychological and brain testing facilities. Furthermore, the university boasts two modern

metagenomic and molecular biology laboratories, where research into gut microbiota, data science, infectious diseases is conducted, including studies on long COVID and the spread of antimicrobial pathogen resistance in the environment.

5.2. Biomedecine: Molecular, integrative and cell biology

Researchers implicated in biomedicine (department of biomedical sciences)

Biomedecine: Dr. Marian-George MELINTE-POPESCU (melinte.marian@usm.ro), head of the department of biomedical medicine - Head of studies dr. Elena IORGU

Microbiology: Conf. univ. habil. dr. Roxana FILIP

- mechanisms of resistance of Enterobacteriaceae to beta lactam antibiotics
- Dynamics of the resistance of Mycobacterium tuberculosis strains in Eastern Romania
- microbiology of the 21st century and microbiological informatics

Cell and Molecular Biology, Microbiology: Conf. univ. dr. Andrei LOBIUC

Biochemistry: Head of research Dr. Elena-Raluca BULAI

Metagenomics Laboratory

Research areas: Analyzing the interrelationship between gut microbiota and host with applications in the prevention and control of type 2 diabetes - Sars-CoV-2 genome sequencing and phylogenetic analysis of circulating strains in Romania - 16S sequencing of DNA extracted from environmental samples (soil, water) - Identification of antibiotic resistant bacterial species from environmental samples (soil, water) - Determination of the presence of mutations present in thrombosis associated with Covid-19 disease

Website: <https://fmsb.usv.ro/cercetare/laborator-metagenomica/>

Molecular biology Laboratory

Research areas: Extraction of nucleic acids from different environmental or clinical samples - Purification and concentration of nucleic acids - Quantification of nucleic acids

Website: <https://fmsb.usv.ro/cercetare/laborator-de-biologie-moleculara/>

Biochemistry Laboratory

Research areas: Solid-phase synthesis of neuroprotective peptides: purification and characterization. Evaluation of conformational modifications of peptides under the action of metal ions and identification of binding sites. In vitro investigation of the impact that the synthesized peptides have on amyloid aggregates associated with various neurodegenerative diseases.

Website: <https://fmsb.usv.ro/cercetare/laborator-de-biochimie/>

5.3. Physiology in Health, Disease and Ageing

Researchers implicated in...

Physiology and nutrition: Prof. univ. dr. Mihai COVAȘĂ, dean of the faculty of medicine (mcovasa@usm.ro)

- Study of the physiological, metabolic, neuronal and nutritional mechanisms involved in overeating and obesity
- Role of intestinal microflora in obesity and diabetes
- Genomic and phylogenetic analysis of SARS-CoV-2

Diabetes, nutrition and metabolic diseases: Conf. univ. dr. Mariana GRAUR - Head of research dr. Claudiu COBUZ

Cardiovascular diseases: Head of research Dr. Adela Constantinescu-Bercu

Nefrology: Conf. univ. dr. Dimitrie Cristian SIRIOPOL (dimitrie.siriopol@yahoo.com)

- Cardiovascular complications in chronic kidney disease
- Anemia and bone mineral disorders in chronic kidney disease
- Assessment of fluid status in chronic kidney disease and heart failure

Nutrition and Food Technology Laboratory

Research areas: Nutrition in disease prevention, control and treatment - Developing new strategies to promote population health - Identifying and using functional foods in the prevention and treatment of chronic diseases - Development of sensors and biosensors for the detection of potentially toxic compounds in food with influence on health - Innovative food processing techniques for nutrient preservation

Website: <https://fmsb.usv.ro/cercetare/laborator-de-nutritie-si-tehnologie-alimentara/>

5.4. Immunity, Infection and Immunotherapy

Researchers implicated in...

Infectious disease:

Conf. univ.dr. Andrei Lobiuc (alobiuc@usm.ro), vice dean for teaching and research at the faculty of medicine

- molecular mechanisms involved in infectious diseases.
- antimicrobial resistance in natural environments
- predicting epidemics based on environmental metagenomic data.

Head of Research Dr. Olga Adriana Caliman-Sturdza (olga.caliman-sturdza@usm.ro) - clinical and fundamental research on tuberculosis and Sars-CoV-2.

5.5. The Human Mind and Its Complexity

Researchers implicated in...

Psychology: Conf. univ. dr Florin Țibu (florin.tibu@usm.ro)

- children's mental health using quantitative methods
- prenatal maternal stress and early life stress and its effects on mental health, cognition, and neurophysiology
- how various interventions (e.g., foster care placement, brief psychotherapy) can buffer stress-exposed adolescents from developing severe mental health issues.

Department of psychopedagogy

Website: <https://fsed.usv.ro/dep-dspp/#>

Head of department: Conf. univ. dr. Nadia Laura SERDENCUC (nadia.serdencuc@usm.ro)

5.6. Prevention, Diagnosis and Treatment of Human Diseases

Researchers implicated in...

Toxicology: Head of works dr. eng. Liliana ANCHIDIN-NOROCEL - identification of the toxicity of some compounds in food products with an effect on the health of the population, mainly aiming at the development of biosensors for the determination of nickel, aluminum and copper ions

Otorhinolaryngology: Head of works dr. Nicolae Sorin AXINTE

Oncology: Head of studies dr. Doina Elena GANEA

Rheumatology: Head of Research Dr. Iulia Codruța Bran (codruta.bran@usm.ro)

Pediatrics: Head of research dr. Elena TĂTĂRANU

Obstetrics and gynecology: Head of works dr. Alina Sînziana MELINTE-POPESCU - Head of research dr. Petronela VICOVEANU

Family medicine and gastroenterology: Head of Projects Dr. Marian-George MELINTE-POPESCU (melinte.marian@usm.ro)

5.7. Pharmacology and synthesis of small molecules

Researches implicated in...

Biochemistry: Head of research dr. Irina BOZ - identification and valorization of the content of biologically active compounds in medicinal plant species from the spontaneous flora of Romania.

Plant Physiology Laboratory

Influence of plant growth conditions on the content of bioactive compounds - Preparation of plant extracts and quantification of bioactive compounds - Determination of antioxidant and enzymatic activity of different plant extracts

Website: <https://fmsb.usv.ro/cercetare/laborator-de-nutritie-si-tehnologie-alimentara/>

5.8. Surgical Sciences

Researchers implicated in...

General surgery: Head of research dr. Liviu DUBEI - Head of research dr. Valeriu GAVRILOVICI

Primary Oral and Maxillofacial Surgery: conf. univ. dr. Alexandru Nemtoi

Orthodontics and dento-facial orthopaedics: Head of Research Dr. Hariclea Moroșan

Recovery, Physical Medicine and Balneology, Rheumatology: conf. univ. dr. Sînziana Călina Silișteanu - Head of research dr. Andrei COSTEA

Neurosurgery: Head of Projects Dr. Andrei Cucu

Orthopaedics and Traumatology: Head of research dr. Răzvan Codrin BANDAC - Head of research dr. Florin FILIP

Forensic Medicine: Head of research dr. Lăcrămioara BĂLAN

Emergency medicine and cardiovascular intensive care: Head of research dr. Paul-Mihai BOARESCU

Physiokinetotherapy: Head of research dr. Alexandru Mihai BREHA (alexbreha@usm.ro)

6. Šiaulių valstybinė kolegija / Higher Education Institution (SKV)

To complete with the list of researchers in Health and Medicine.

5.1. Prevention, Diagnosis and Treatment of Human Diseases, including environmental and public health

Physiotherapy

Physiotherapy research is mainly dedicated to wellness services and their management in the context of personal and public health as well as evaluation of wellness procedures effect on the personal health.

Contact: reabil.kat@svako.lt

5.2. Applied research in nursing sciences and healthcare

The journal “Health Care and Social Work” is a registered periodical not reviewed scientific journal of Šiaulių valstybinė kolegija / Higher Education Institution, Faculty of Health Care, published since 2023, ISSN 2783-7696. Its uniqueness among other scientific journals is its orientation to the results of original applied scientific research of the students and their supervisors in the field of Medicine and Health, in the field of Social Sciences

Professional Bachelor of Health Sciences, General Practice Nurse

In relation to the Professional Bachelor of Health Sciences, General Practice Nurse. Chairman of the Study Programme Committee: Aleksandra Sakalauskienė, Head of Biomedical Sciences Department lecturer (a.sakalauskiene@svako.lt)

7. Örebro universitet (ORU)

7.1. The research in Health and Medicine in Örebro

The university of Örebro has 40 research groups in medicine, 19 research groups in biomedicine, 11 in surgical sciences, 7 in disability research, 6 in nursing sciences, 3 in occupational therapy, and 2 in public health science.

Cardiovascular Research Centre (CVRC) - translational cardiovascular research – The CVRC is a translational cardiovascular research group forming a network at Örebro University and Örebro University Hospital/Region Örebro County working with basic, translational and clinical research to identify new mechanisms, risk factors and new target principles for more effective diagnosis, treatment and prevention of cardiovascular and haematological diseases. The overall strategy for CVRC is to support internal and external academic and industrial research collaboration and to contribute to a successful and high-quality third cycle education in the field of cardiovascular research. A main task of this larger research group is to support younger employees active in the cardiovascular and inflammatory research fields through cross-group activities such as journal clubs, research discussions and research meetings. Individual projects and connected research groups are also considered to have a particularly great benefit

from these activities. Increased collaboration also promotes the emergence of completely new research projects with translational research design.

Website: <https://www.oru.se/english/research/groups/mv/translational-cardiovascular-research-group/>

The Research platform iRiSC - Inflammatory Response and Infection Susceptibility Centre – The center is a collaborative network of researchers at Örebro University and Örebro University Hospital (USÖ), together with a number of national and international research groups. The research at iRiSC is focused on understanding response to stimuli and stressors i.e. microbes and their pathogen-associated molecular patterns (PAMPs) as well as danger-associated molecular patterns (DAMPs), e.g. nano particles. By connecting different disciplines and research fields, iRiSC is a translational platform; bringing together knowledge and experience on particle-induced diseases, specific bacteria and their disease course, host response mechanisms and the role of genetics.

Website: <https://www.oru.se/english/research/groups/mv/inflammatory-response-and-infection-susceptibility-centre-irisc/>

X-Hide – Exploring Inflammation in Health and Disease - a transformative initiative to explore inflammatory phenotypes across diseases, using a systems-analytical approach, inflammation will be described as specific core inflammatory phenotypes, with the aim to identify common and distinct characteristics of the inflammatory response across multiple diseases. These inflammatory phenotype models are to be applied in precision medicine to improve diagnostics and treatment, and to facilitate drug development.

Website: <https://www.oru.se/english/our-profile/strategic-research-profiles/x-hide/>

7.2. Biomedicine: Molecular, integrative and cell biology

Adaptive immunity in microscopic colitis and colon cancer (Life Science Centre)

The goal is to enhance the understanding of the role of CD8+ T cells in protection against colon cancer in MC patients and in development of MC, through careful characterization of these cells.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g8>

Contact: Pr Elisabeth Hultgren-Hörnquist (elisabeth.hultgren-hornquist@oru.se)

Bioinformatics (Life Science Centre)

Functional Bioinformatics focusses on analysing interactions of molecular profiles, clinical data and microbiota distributions in healthy and diseased patients, both with respect to candidate biosignature mining as well as for investigating causal structures taking a systems biological approach. Our aim is to contribute to the identification of the defining patterns in inflammatory responses and/or gut-microbiome space (bridging composition and diverse functional levels), governing adaptability to disease challenges, ability for resilience, and eligibility for a certain treatment - taking a precision medicine perspective. Molecular and immune profiling of different tissues are studied from a systems bioinformatics point of view.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g206>

Contact: Pr Dirk Repsilber (dirk.repsilber@oru.se)

Antimicrobial therapy > See 7.4.

Cellular and molecular virology > See 7.4

Molecular cardiovascular research > See 7.3

Placenta research group > See 7.3

Molecular Systems Biology

We focus on the cellular signal transduction system, which governs how cells perceive and respond to their environment. By collecting molecular level knowledge on the function and interplay of network components, and assembling this knowledge into network models, we enable explanation and prediction of (changes in) network function based on (changes in) molecular function. This research combines two parts: First, collecting, evaluating, and formalising existing empirical knowledge and assembling it into network models. Second, developing the methods required to build and analyse such models of signal transduction at the genome scale.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g439>

Contact: Marcus Krantz, researcher (marcus.krantz@oru.se)

Systems medicine

Our main research areas include exposomics and metabolomics applications in biomedical research and systems medicine. We are particularly interested in how external (e.g., environmental chemicals) and internal (e.g., gut microbiome, metabolome, immune system status) exposures impact life-course health and mediate the risk of various diseases. The primary medical research areas have been non-alcoholic fatty liver disease, metabolic comorbidities in psychotic disorders, traumatic brain injury, and investigations of metabolic disturbances preceding immune mediated inflammatory disorders such as type 1 diabetes and celiac disease. We are also interested in the development of novel computational tools for the study of exposome and metabolome.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g326>

Contact: Pr Matej Oresic (matej.oresic@oru.se)

7.3. Physiology in Health, Disease and Ageing

Molecular cardiovascular research

Traditionally, atherosclerosis has been viewed as simple deposition of lipids within the vessel wall, however, it is now evident that atherosclerosis is a multifactorial disease that involves numerous genes activated during the initiation and progression of the disease. We study molecular mechanisms involved in development and progression of atherosclerosis, with a special emphasis on inflammatory factors.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g224>

Contact: Allan Sirsjö, post retirement professor (allan.sirsjo@oru.se)

Platelet function and coagulation in health and disease

Our research is focused on the function and physiology of blood platelets and their interactions with the coagulation system and with other cells. A special interest is the role and function for the platelet subpopulations with different properties that forms upon platelet activation. A main theme of our group is to develop and use new methods and protocols to study platelet function and coagulation in different clinical situations. Our goal is to create a better understanding of the changes in platelet function and coagulation in different disease states, and to find more efficient ways to measure and prevent these changes. This way, we may help to prevent the risk of bleeding and thrombosis in future patients.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g435>

Contact: Sofia Ramström, senior lecturer (sofia.ramstrom@oru.se)

The ageing gut (TAG)

The research group focus on the role of the gut barrier in age-related gut problems and late onset of the chronic inflammatory bowel diseases ulcerative colitis and Crohn's disease (IBD). In the group, we study the basic disease mechanisms related to the gastrointestinal barrier in individuals affected by IBD later in life or age-related stomach problems. We also study the effect of various medical treatments and dietary supplements, such as dietary fibre, on the intestinal mucosa. The goal is to increase the knowledge about why IBD now develops later in life and why the number of elderly people suffering from stomach problems is increasing.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g161>

Contact: Ida Schoultz, senior lecturer (ida.schoultz@oru.se)

Inflammatory bowel disease and translational gastroenterology

Our research aims to improve the quality of life of patients with inflammatory bowel disease (IBD, including microscopic colitis, and also of patients with other gastrointestinal diseases. Exploring the molecular profile of these diseases is an integral part of projects performed in our research group. The overarching aim of our research is to identify markers for improved clinical decision making and to uncover pathophysiological mechanisms behind these markers or signatures of markers. Epidemiological and mechanistic links between various disease elements and across different phases of the diseases are examined.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g159>

Contact: Jonas Halfvarson (jonas.halfvarson@oru.se)

Metabolomics and exposome research

We are developing novel analytical and computational tools for metabolomics and exposome research, and apply them in the investigations of human health and disease. We investigate the links between environmental factors and human health. Our aim is to utilize metabolomics and exposomics as tools for elucidating the roles of environmental exposures and host metabolism underlying the progression to disease. We are also interested in identifying new biomarkers for specific diseases and effect-based biomarkers associated with the exposures to environmental factors.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g392>

Contact: Pr Tuulia Hyötyläinen (tuulia.hyotylainen@oru.se)

Diabetes and Retinopathy

The most common microvascular complication to diabetes is damage to the small vessels of the retina, diabetic retinopathy. Because the population ages and diabetes is more common at higher age, it is important to know how the elderly are affected by diabetic retinopathy. In the research project "Retinal examinations in diabetes" we investigate how many of the elderly has and gets diabetic retinopathy and evaluate how it is possible to optimize the retinal examinations which is the foundation in diabetic eye care to timely detect those who need local eye treatment.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g394>

Contact: Karl-Johan Hellgren, associated researcher (karl-johan.hellgren@oru.se)

Diabetes, Endocrinology and Metabolism

A multidisciplinary research and innovation centre focusing on diabetes endocrinology and metabolism has been formed at the Örebro University in 2016. The research is primarily focused to study interactions between health-physical activity-obesity-diet-glucose control-metabolism-diabetes-endocrinology-epidemiology-prevention with a special focus on different types of diabetes where there is a current need to improve diagnosis, prevention and treatment.

Website: <https://www.oru.se/english/research/groups/mv/diabetes-endocrinology-and-metabolism/>

Contact: Pr Johan Jendle (johan.jendle@oru.se)

Obesity and metabolic health

We try to understand why people are inactive and/or eat unhealthy food. And we are researching how different interventions can improve metabolic health. Using various techniques, we study how important organs such as the brain, liver and intestine are affected by obesity, type 2 diabetes and cardiovascular diseases.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g411>

Contact: Michiel van Nieuwenhoven (michiel.van-nieuwenhoven@oru.se)

Physiotherapy, prevention and pulmonary function

Effects of physiotherapy, breathing exercises, mobilization and physical activity are studied in different patient groups with impaired lung function. Interventions for patient with obstructive or restrictive pulmonary impairments are evaluated and physiological effects of different breathing techniques are studied. The main goal of the research is to evaluate physiotherapeutic methods to optimize postoperative recovery after heart- and lung surgery and to investigate the effects of treatment interventions for different patient groups with decreased pulmonary function.

Website: <https://www.oru.se/english/research/groups/mv/physiotherapy-prevention-and-pulmonary-function/>

Contact: Elisabeth Westerdahl (elisabeth.westerdahl@oru.se)

Allergic, infectious and inflammatory diseases of the airway

The group's research generally deals with chronic rhinosinusitis and allergic diseases of the upper respiratory tract. The incidence of chronic sinusitis is about 10% in Europe and leads to a reduction in the quality of life for the patient. The cause of the disease is not clear and various factors seem to be important. About 70-80% of patients with pollen allergy are significantly improved after allergen immunotherapy (AIT), while for others it has marginal or no effect. The reason for this variation is unclear and it would be of great benefit to be able to predict patient's and allergen related treatment effect and risk factors more precisely.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g425>

Contact: amanj.saber@oru.se

Placenta research group

We study molecular biological changes in the placenta in relation to different disorders like maternal diseases or pregnancy complications like poor fetal growth.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g304>

Contact: Maria Lodefalk (maria.lodefalk@oru.se)

7.4. Immunity, Infection and Immunotherapy

Antimicrobial therapy

Our research during the past decade has been focused on the development and characterization of novel therapeutic strategies against bacterial pathogens by using a specific group of antimicrobial peptides, named bacteriocins. These peptides are cationic and amphipathic and kill target microbes by rapidly permeabilizing their negatively charged membranes. The antimicrobial and antiinflammatory properties of these novel peptides are further investigated to characterize their impact on host-microbe interaction, intracellular signaling events, and release of inflammatory mediators. Our research has recently been expanded to include viral pathogens, including SARS-CoV-2.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g432>

Contact: Hazem Khalaf (hazem.khalaf@oru.se)

Cellular and Molecular Virology

Infections by tick - and mosquito - borne Flavivirus is a gigantic global health problem causing serious diseases in humans including Dengue fever, West Nile encephalitis and Tick-borne encephalitis (TBE). In the cellular and molecular virology group we focus primarily on improving the understanding of the flavivirus life cycle. By mapping and identifying interactions between viral proteins and the host cell, we aim to find suitable targets for the future development of antiviral drugs and to develop live attenuated flavivirus vaccines. We also study viral replication using flavivirus replicon models which we can package in cell culture by co-expressing the structural proteins in our virus like particle system. To further study the molecular epidemiology of TBE we characterize the genomes of sampled viruses using deep sequencing technique and bioinformatics.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g225>

Contact: Pr Magnus Johansson (magnus.johansson@oru.se)

Immunoprofiling of Inflammation (iPi)

Our objective is to profile immune responses in cardiovascular and intestinal inflammation, using a combination of immunophenotypic, proteomic, transcriptomic, epigenomic and functional analyses. Our translational research is both experimental and clinically oriented. Our overall goals include: Better understanding of the underlying mechanisms of inflammation linked to cardiovascular and intestinal inflammatory diseases. - Identification of novel biomarkers of cardiovascular and intestinal inflammatory diseases. - Identification of novel pathways and targets to modulate the immune system in order to resolve inflammation.

Website: <https://www.oru.se/english/research/groups/mv/immunoprofiling-of-inflammation-ipi/>

Contact: Associate professor Ashok Kumar Kumawat (ashok.kumawat@oru.se)

Infection & inflammation (i&i)

Most of the research conducted today in the field of host-pathogen interaction is focused on elucidating how pathogens, with their respective virulence factors, successfully modulate or evade the immune responses to cause infections. However, less is known about how host immune factors like cytokines and hormones are affecting the virulence of bacteria by cross-kingdom interactions. Understanding how the human host affects the virulence of bacteria may be a new frontier in the fight against bacterial infection.

Lines of research:

1. How does uropathogenic E. coli virulence factors contribute to the development of urosepsis?
2. How does renal fibroblast contribute to the host response during a urinary tract infection?
3. How does Indoleamine 2,3-dioxygenase (IDO) and inflammasomes contribute to bacterial infections?
4. What impact does proinflammatory cytokines and hormones have on the virulence of uropathogenic E. coli and Porphyromonas gingivalis?
5. How does Porphyromonas gingivalis and Aggregatibacter actinomycetemcomitans contribute to oral-and systemic disease?
6. How does the microbiota-generated metabolite TMAO contribute to the development of kidney disease?

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g372>

Contact: Isak Demirel, senior lecturer (isak.demirel@oru.se)

Inflammation, Genetics and Drug Discovery in Cardiovascular Systems

In collaboration with Swedish biotech companies, Swedish and International universities, we study genetic aspects and how new drug candidates can affect the inflammatory process in cardiovascular systems and cancer.

Line of research: Identification of biomarkers and regulatory pathways involved in the inflammation process, with focus on cardiovascular disease.

Role of new drug candidates that can be used in future treatment of diseases with an inflammatory background, with a focus on cardiovascular diseases, sepsis and cancer.

Identification of genetic variants that can affect the inflammatory process and the development of cardiovascular diseases.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g437>

Contact: Karin H Franzén, senior lecturer (karin.h.franzen@oru.se)

Inflammatory Response and Infection Susceptibility Centre (iRISC)

The Research platform iRISC - Inflammatory Response and Infection Susceptibility Centre is a collaborative network of researchers at Örebro University and Örebro University Hospital (USÖ), together with a number of national and international research groups. The research at iRISC is focused on understanding response to stimuli and stressors i.e. microbes and their pathogen-associated molecular patterns (PAMPs) as well as danger-associated molecular patterns (DAMPs), e.g. nano particles. By connecting different disciplines and research fields, iRISC is a translational platform; bringing together knowledge and experience on particle-induced diseases, specific bacteria and their disease course, host response mechanisms and the role of genetics.

Lines of research:

1. Virus and immunity - The tick- and mosquito-borne flaviviruses are serious factors of global morbidity and mortality, and include the Tick-borne encephalitis virus, West-Nile virus and Dengue virus. iRISC strive to reveal viral pathophysiological and molecular mechanisms utilized by the virus to inhibit host immunity. By characterizing virus-host associations we aim to identify putative targets for the design of novel therapeutics.
2. Bacteria-induced inflammation - iRISC holds a great interest in describing the host-microbe interplay that determines why some individuals develop a severe, sometimes fatal, inflammatory response in reaction to infection whereas others are only mildly affected by the same bacteria.
3. Inflammatory-mediated diseases - Research at iRISC focuses on understanding the mechanisms behind development of cardiovascular disease, type-2 diabetes, various types of skin diseases, and auto-inflammatory and autoimmune diseases caused by dys-regulated inflammation.
4. Sterile inflammation - We are e.g. interested in how the air that foundry workers breathe affects their lungs and how the inflammation caused is coupled to heart-disease.

Website: <https://www.oru.se/english/research/groups/mv/inflammatory-response-and-infection-susceptibility-centre-irisc/>

Contact: Pr Eva Särndahl (eva.sarndahl@oru.se)

Innate immunity in cardiovascular disease

The major focus of our research is to assess how endo- and exogenous factors regulate molecular and clinical changes in the proteins of innate immunity that contribute to atherosclerosis. In addition to understanding the molecular mechanism, we are developing novel strategies and approaches (using drugs, small molecule inhibitors) to reduce inflammation, thrombosis, and vascular fibrosis, thus governing cardiovascular outcome. Our research also focuses on identifying novel circulating biomarkers for assessing influenza patients with cardiac complications, and to develop state-of-the-art method for screening molecular mechanism underlying influenza-induced cardiac pathogenesis using in vitro models of human heart.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g438>

Contact: Geena Paramel, researcher (geena.paramel@oru.se)

Viral pathogenesis and vaccine development

Flaviviruses, a group of RNA viruses transmitted by arthropods, pose significant health challenges globally. These viruses, including Dengue, West Nile, Zika, Yellow Fever viruses and tick-borne encephalitis, cause a wide range of diseases from mild fever to severe neurological complications. The lack of effective antivirals adds to the urgency of understanding their pathogenesis. Flaviviruses, a group of RNA viruses transmitted by arthropods, pose significant health challenges globally. These viruses, including Dengue, West Nile, Zika, Yellow Fever viruses and tick-borne encephalitis, cause a wide range of diseases from mild fever to severe neurological complications. The lack of effective antivirals adds to the urgency of understanding their pathogenesis.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g460>

Contact: Wessam Melik, senior lecturer (wessam.melik@oru.se)

System Immunology and Microbiology (SIM)

The research team investigates the mechanisms behind the cellular responses to pharmaceutical contamination in the environment and the potential use of probiotic Lactobacillus species to modulate these responses. We use a systems biology approach to map these interactions to obtain a more complete understanding of how bacterial and human cells respond to each other and their environment.

Lines of research: The biological effects of persistent exposure to environmental contamination on bacteria, *C. elegans* (nematode) and human cells. Characterization of probiotic lactobacilli in modulating infection and inflammation.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g3>

Contact: Pr Jana Jass (jana.jass@oru.se)

Acute respiratory tract infections

The research group conduct translational research to identify host-pathogen mechanisms, treat and prevent respiratory tract infections, both bacterial and viral RTI. Study results are incorporated in Swedish management guidelines for treatment for RTI and benefits RTI patients and society.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g443>

Contact: Simon Athlin (simon.athlin@oru.se)

Allergic, infectious and inflammatory diseases of the airway > See 7.3.

Hepatitis B, D and C

The research group study chronic HBV-infection, co-infection HBV-HDV and chronic HCV-infection in different aspects. For example, we use national registers to study the risk and risk factors for cirrhosis, cancer and death. We also investigate the risk of serious complications, liver cancer and death in people with HBV infection by age and by country of origin, and in hepatitis C patients after treatment and cure. We will follow hepatitis epidemiology in Sweden and the progress towards the WHO elimination goal year 2030. The group also perform other studies of chronic hepatitis B, D and C, for example a study of risk factors and HCV prevalence in pregnant women and their partners, and a clinical study with long term follow-up of patients who had been treated and cured from HCV-infection.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g312>

Contact: Ann-Sofi Duberg (ann-sofi.duberg@oru.se)

7.5. Neuroscience and Disorders of the Nervous System

Psychiatric epidemiology

The overall objective of our research group is to understand how genes and environment influence neurodevelopmental conditions and mental health problems across the life span, to understand the interplay between mental and physical health, to map developmental trajectories and consequences of mental health across the lifespan, to develop and validate risk stratification/prediction tools and to identify the benefits and risks associated with pharmacological treatment interventions. We primarily use large cohorts identified from national health registers, the Swedish twin register and clinical cohorts. International collaboration is important to us and we are actively involved in several international consortia's. We have a broad international research and clinical network. Our research is supported by grants from the Swedish research council, FORTE, VINOVA and European Union's Horizon 2020 research and innovation programme.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g311>

Contact: Henrik Larsson (henrik.larsson@oru.se)

Experimental neuropsychiatry and ageing

Experimental neuropsychiatry started in 2004 to study the mechanisms of cellular membrane transport of the amino acids' tyrosine and tryptophan, precursors of dopamine and serotonin in schizophrenia and related neuropsychiatric disorders (bipolar disorder, autism, and ADHD), by the development and use of the fibroblast model, a cellular in vitro technique. Changes in the dopaminergic and serotonergic pathway systems may lead to impairment of cognition, behaviour, and well-being. A long-term collaborative project has started between Örebro University and Ikaria/Greece to investigate factors related to long and healthy ageing. The aim is to study genetic, environmental and lifestyle factors that are believed to affect the brain as well as well-being and are expected to explain the underlying mechanisms of longevity and healthy ageing.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g28>

Contact: Pr Nikolaos Venizelos (nikolaos.venizelos@oru.se)

Clinical and Experimental psychophysiology & Psychopharmacology

We study the physiological basis of control of cognitive and affective processes och how these can be modified pharmacological during treatment of disease. We use a multimodal approach to study functional (pharmaco-fMRI, fNIRS), structural (VBM, DTI), neurochemical (5-HT, dopamine), peripheral (EDA, HRV) and cellular mechanisms (fibroblast model from patients and healthy controls) of brain functions in health and disease.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g429>

Contact: Mussie Msghina, senior lecturer (mussie.msghina@oru.se)

Cognitive medicine and biomarkers

We conduct collaborative randomised controlled clinical trials across a broad spectrum of fields – ranging from neurogeriatric, psychiatric and biomarker research – both nationally and internationally.

By using digital neuropsychological assessment tools (Mindmore IPAD and GERAS); biochemical analysis of cerebrospinal fluid and blood; microbiota sampling; brain imaging (magnetic resonance imaging, MRI); and rating of psychological, psychiatric and cognitive symptoms, we work to bridge the knowledge gap that exists for a number of cognitive disorders.

Areas of research: Cognitive Medicine including psychiatric, neurological and, cognitive symptomatology and biomarker analyses in the blood and cerebrospinal fluid - Behavioural and psychiatric symptoms in dementia (BPSD) and biomarkers - Old Age Psychiatry and cognitive therapy - Physical activity and nutrition as treatment for



depression/anxiety (RCT) Covid 19 long-term effects in the geriatric population and in collaboration with the primary care (RCT) - Alzheimer's disease

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g405>

Contact: Yvonne Freund Levi, senior lecturer (yvonne.freund@oru.se)

Immunoneuropsychiatry (INP)

The research concerns neuropsychiatric conditions including psychosis, obsessive-compulsive disorder (OCD), Pediatric Acute-onset Neuropsychiatric Syndrome, (PANS and PANDAS), and autism spectrum disorder, as well as dementia. In recent years, we have researched immunological and microbiological aspects of these conditions and have been able to show that inflammation markers are generally elevated in several psychiatric disorders. We have also investigated the effect of the immunomodulating drug rituximab in an open pilot study on adult patients with OCD or psychosis, where mainly the group with psychosis improved markedly. We are also investigating the effect of CBT over the internet for people with autism spectrum disorder, as well as microbiological aspects of oral health in dementia.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g442>

Contact: Susanne Bejerot (susanne.bejerot@oru.se)

Neurodevelopmental disorders in children, adolescents and young adults

The overall aim of this group is to provide knowledge that support increased functioning and participation in people with neurodevelopmental disorders. We study coexisting mental illness, from insomnia to psychosis, in children, adolescents and adults with autism, intellectual disability and adhd. We also study societal and environmental factors, habilitation and treatment for better functioning.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g433>

Contact: Sverre Wikström (sverre.wikstrom@oru.se)

Nutrition Gut Brain Axis

The overall aim of our research is to improve gut, metabolic and mental health, based on the paradigm that nutrition, intestinal microbiome, intestinal mucosa, the metabolic system and the brain intensively interact. The group prioritises human models in its research which heavily depend on enrolling patients and healthy subjects in the studies.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g20>

Contact: Robert Jan Brummer (robert.brummer@oru.se)

Stroke and other CNS injuries

The research group Stroke and other CNS-injuries work with research on different aspects of stroke and other injuries in the central nervous system. The focus is on clinical research and registry based studies but we are also involved in clinical studies.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g383>

Contact: Mia von Euler (mia.von-euler@oru.se)

Cognitive Neuroscience of Ageing

The main challenge in the field of neurocognitive ageing is to understand the brain mechanisms that might underlie age differences in cognitive performance or why some functions are maintained into older age. The availability of neuroimaging technology has greatly advanced research in human cognition, including the study of cognitive ageing. Cognitive aging, by its very nature, is a neurobiological event, so it stands to reason that new findings about how the



brain functions might change views of how cognitive mechanisms function and differ with age. This particular research theme deals with the interaction between brain structure-function and higher cognitive functions in aging, with a particular focus on memory (episodic/working memory) and executive control functions. These questions are addressed by means of structural (brain anatomy) and functional (brain function) MRI and measures of cognitive performance.

Lines of research: 1. The transience and persistence of memory: Linking neurobehavioral mechanisms of adaptive forgetting to adult ageing and mood 2. The relation between dopamine-regulating genes, neurocognition, and ageing 3. Procedural and Declarative Memory Functions in Children with Dyslexia 4. The neurocognitive basis for executive control of memory functions in aging: Cross-sectional and longitudinal evidence from the Betula study.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g421>

Contact: Jonas Persson (jonas.persson@oru.se)

7.6. The Human mind and its complexity

Cognitive neuroscience of ageing > See 7.5.

Development of criminal behavior across the lifespan

Within our research group, we are interested in understanding the development of criminal behavior over time, as well as related outcomes such as early childhood problems, juvenile delinquency, antisocial and aggressive behavior, and its short-term and long-term consequences. Among other data sources, we use population-based Swedish longitudinal registers study the developmental aspects of criminal behavior.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g422>

Contact: Catherine Tuvblad (catherine.tuvblad@oru.se)

Emotion and behavior

Emotion and Behavior studies the fundamental psychological mechanisms underlying both mental and physical illness. Emotion regulation is a common denominator for most of our research. Our work covers a wide variety of issues, such as tinnitus, IBS, chronic pain, eating disorders and anger-related problems. We use knowledge on basic mechanisms generated in laboratory or naturalistic settings to further develop process-based psychological treatments, especially focusing on the advancement of behavioral and cognitive behavioral therapies (CBT). We are also interested in the development and application of new methodological and statistical methods to explore individual change over time, change processes and prediction of treatment outcomes, and subgrouping of individuals.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g378>

Contact: Hugo Hesser (hugo.hesser@oru.se)

EMBRACE Lab

The EMBRACE Lab (Exploring Mind-Body Relationships And Contextual-bEhavioural interventions in illness) develops multidisciplinary research on clinical/health psychology. We focus on contextual behavioural science (or third-wave Cognitive and Behavioral Therapy: Acceptance and Commitment Therapy, mindfulness, compassion-based interventions) and behavioral medicine topics, in particular psycho-gastroenterology and psycho-oncology. We are dedicated to research related to the determinants of psychological and physical health/illness, and to the development and evaluation of face-to-face and digital interventions aiming to improve quality of life, psychosocial functioning, intensity and interference of physical symptoms, among other health outcomes.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g456>

Contact: Ines Trindade (ines.trindade@oru.se)

Digital Psychological Treatment

We explore the possibilities of digital technology for psychological treatment. It includes research on how to provide digital treatment, and factors that are important for the treatment effect. Our ambition is applied research - generating results that can be implemented in a clinical setting. The goal is to increase access to evidence-based psychological treatment.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g431>

Contact: Fredrik Holländare, affiliated researcher (e-mail not communicated)

Family and parenting

This research group circles around questions about family processes and parenting in terms of explanations for variations in behaviors, attitudes, and perceptions, as well as links to children's behaviors and adjustment. The overall approach is to understand why some parents and families are better in offering children a positive context for development than others. Specific aspects in focus of the current research are parenting connected to the Internet, ethnicity and culture, parents' perceived competence, and violence and hostile family processes. Both longitudinal and cross-sectional data are analyzed using advanced statistical methods (both person-oriented and variable-oriented).

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g418>

Contact: Terese Glatz (terese.glatz@oru.se)

Migration, Integration, Discrimination (MIND)

The MIND (Migration, Integration, and Discrimination) research group aims to develop an understanding of why some immigrant youth adjust and socially integrate well whereas others experience difficulties. Using both developmental and ecological perspectives, we focus on the role of family setting, school context (e.g., peers, teachers, and school climate), and extracurricular activity setting in promoting or hindering the development of inter-ethnic relationships, identity development, socio-emotional and school adjustment of immigrant youth. We also conduct research on how to promote the adjustment and integration of newly arrived refugees and develop interventions that may help refugee youth and parents overcome the challenges during their resettlement process.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g419>

Contact: Metin Ozdemir (metin.ozdemir@oru.se)

Psychology and Pain

We explore the fundamental psychological mechanisms in pain, in order to utilize this information for enhancing clinical assessments as well as for developing preventive and treatment interventions. Our current research interests are psychological treatment (CBT) for vulvodynia, preventive interventions to decrease sick leave for pain and emotional ill-health, communication around pain in work and health care contexts, pain related vigilance and expectancy, pain in adolescents, pain at different stages of life, opioid use for chronic pain, and psychological treatment for pain patients with comorbid emotional ill-health. Because patients with chronic pain often suffer from multiple problems, we employ the so-called transdiagnostic approach, exploring underlying processes that may drive co-occurring problems, e.g. pain and depression or pain and sleep difficulties.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g380>

Contact: Katja Boersma (katja.boersma@oru.se)

POCSUS: Psychology of Climate change and Sustainability

POCSUS is a part of CESSS (Center for Environmental and Sustainability Social Science). The group contains of researchers in psychology who are interested in, and conduct research about, sustainability issues from a psychological perspective. We take our starting point in the UN sustainability goals in which different sustainability

challenges such as climate change, health issues, and education are seen as intertwined. Besides research we are also interested in including sustainability issues in the psychology education at Örebro University. We have competence both in using quantitative methods, in the form of cross-sectional and longitudinal survey studies and experiments, as well as qualitative methods in the form of interview studies and analyses of written material.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g416>

Contact: Maria Ojala (maria.ojala@oru.se)

ReShape - Research in Sport, Health and Physical Education

The research team ReShape (Research in sport, health and physical education) at Örebro University is an interdisciplinary group focusing on exploring sport and physical education within social sciences including research questions and methods from sport pedagogy, sport management, sport psychology, didactics of physical education, health promotion and sport history.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g49>

Contact: Susanna Geidne (susanna.geidne@oru.se)

Sleep Health

Sleep has an important function in promoting both mental and physical health. We study sleep habits of adolescents and adults, test psychological methods and commercial products to improve sleep, and investigate how well questionnaires capture people's sleep and related areas. As sleep is an interdisciplinary area, both in clinical reality as well as in research, we collaborate with different professions and researchers from other subjects than psychology.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g461>

Contact: Annika Norell (annika.norell@oru.se)

Time management skills in people with cognitive limitations (TOVA)

In the research group TOVA, time management is studied in people with cognitive impairment, for example due to mental or neurodevelopmental disorder (ADHD or autism), mild intellectual disability or dementia. The research of TOVA focuses on the development and validation of assessments and tests related to time perception and time management in everyday life, as well as the development and evaluation of interventions to enhance daily time management.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g323>

Contact: Marie Holmefur (marie.holmefur@oru.se)

Transformative Learning for Sustainable Development

Transformative Learning for Sustainable Development is a multidisciplinary group consisting of researchers in education, human geography, political science, psychology and sociology. The group conducts empirical studies with different actors such as experts/scientists, civil servants, teachers and young people, using different methods, both qualitative and quantitative. The group's purpose is to contribute to an improved theoretical understanding of the conditions for transformative learning in a sustainability context. A key question is: how can individual (experts, citizens, politicians and others) and collective actors develop reflexive capabilities to promote sustainable societal development and counteract structural and cultural obstacles to change?

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g328>

Contact: Maria Ojala (maria.ojala@oru.se)

7.7. Prevention, Diagnosis and Treatment of Human Diseases, including environmental and public health

BBC - Bowel and Bladder disorders in Children

We conduct a pragmatic randomized intervention study (BABITT) at Child Health Care Centers in Sweden to investigate whether potty training during the first year of life can affect the occurrence of functional bowel and bladder disorders up to 4 years of age. We also perform a cross-sectional study to investigate the prevalence of bowel and bladder disorder in Swedish 4-years old children (BABIS-4). Additionally, we intend to describe the potty training process regarding self-reported parental stress and attachment.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g393>

Contact: Barbro Hedin Skogman, senior lecturer (barbro.hedin-skogman@oru.se)

Cancer Epidemiology

We are interested in studying risk factors and prognostic indicators for cancer, primarily prostate cancer and other urologic malignancies. Our research questions include the role of inflammation, psychological stress, infections, the gut microbiome – and the potential interplay between these factors – in disease occurrence, pathogenesis, and outcomes. We use information from Swedish population registries as well as from longitudinal cohorts and a randomized intervention study.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g444>

Contact: Pr Katja Fall (katja.fall@oru.se)

Circulating biomarkers for detection and surveillance of cancer

Our research focuses on finding circulating biomarkers that can be used for diagnosis, treatment selection and to monitor the patient during treatment and we have two clinical studies ongoing in oropharyngeal cancer, cancer of unknown primary and patients with nonspecific symptoms of cancer.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g457>

Contact: Gisela Helenius (gisela.helenius@oru.se)

Clinical Epidemiology and Biostatistics

Our research is concerned with how inherited characteristics, environmental exposures and treatment influence the risk of specific diseases (such as cancer, immune-mediated and metabolic diseases), and disease outcomes. Often, we use a life-course approach which assumes that the consequences may differ by age at exposure, that some risks accumulate over time, and there may be a substantial delay between initial exposure and disease outcome. Epidemiology is a science of study/experimental design, while biostatistics involves analysis, often of large and complex data.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g22>

Contact: Pr Scott Montgomery (scott.montgomery@oru.se)

Geriatrics

The group is focused on preventing, diagnosing, treating, nursing and rehabilitating diseases in old age. A central concept is frailty which means reduced reserves in the organs of the body due to ageing, usually in combination with disease. We want our research to contribute to high-quality personalized care for elderly people with frailty, multiple diagnoses, polypharmacy and increasing care needs.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g387>

Contact: Brynjar Fure (brynjar.fure@oru.se)

Medical Imaging

Medical imaging research is mainly carried out at the Department of Radiology and Medical Physics at Örebro University Hospital. [The Center of Experimental and Biomedical Imaging in Örebro \(CEBIO\)](#) is integrated with department.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g310>

Contact: Per Thundberg (per.thundberg@oru.se)

Food and Health Programme

The general goal of the Örebro University Food & Health programme is to substantially contribute to a better health and well-being of targeted groups of subjects/consumers by producing beyond state-of-the-art, interdisciplinary research within the field of food, nutrition and lifestyle.

Website: <https://www.oru.se/english/our-profile/food-and-health/>

Contact: Doc. Robert Brummer (robert.brummer@oru.se)

Enforce

The Environmental Forensic (EnForce) Laboratory is a research effort for a non-toxic environment funded by the Knowledge Foundation research profile program in collaboration with twelve industrial partners. The main goal of the EnForce Laboratory is to track and identify environmental pollutants with a better understanding of their effects. The objectives are to develop and apply advanced analytical methods including metabolomics, bioassay technologies and speciation for effect-directed analysis and hazard assessment of toxicologically relevant anthropogenic chemicals, mixtures, transformation products and metals in the bio- and technosphere.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g314>

Contact: Pr Magnus Engwall (magnus.engwall@oru.se)

Environment and Health

The research aims at studying the interface between the environment and health. The goal is to qualitatively and quantitatively study chemical exposure to humans and the ecosystem, the route of exposure, and any effects on the environment and human health that may be associated with them. The research activity is directed to be of scientific excellence and to be of great public benefit. Research is conducted in analytical environmental chemistry, environmental toxicology, and occupational and environmental medicine and covers the subjects of chemistry, biology and medicine. One of the main cornerstones is the development of analytical methods to assess persistent organic pollutants (POPs) regulated by the Stockholm Convention and related compounds in a large variety of human and environmental samples. Epidemiology, exposure assessment and dose-response analysis is performed on all types of chemicals associated to different areas of illness such as respiratory, cardiovascular and cancer diseases. Toxicological effects on the ecosystem by POPs are addressed with research on avian developmental toxicity and soil remediation.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g203>

Contact: Pr Magnus Engwall (magnus.engwall@oru.se)

Swimming-induced pulmonary edema (SIPE)

Coughing, shortness of breath, and sudden fatigue during open water swimming can be signs of swimming-induced pulmonary edema (SIPE). We address a broad range of questions related to diagnosis, incidence, risk factors, pathogenesis, acute treatment, and long-term consequences of experiencing SIPE. Our goal with the research is to enhance safety in open water swimming, understand individual factors predisposing for SIPE and how patients with SIPE should be treated and followed.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g455>

Contact: Maria Hårdstedt (maria.hardstedt@oru.se)

Treatment in Upper and lower limb Malformation or Amputation (TUMA)

Our research investigates consequences of the health condition among individuals with limb deficiency or amputation. Our focus is on how treatments such as surgery, training of function and activity performance, treatment of phantom limb pain, prostheses and other assistive technology devices, and environmental adaptations, enable an active and independent life. The research also covers prevention of over-use and pain in upper limb amputees, and prevention of amputation in people with diabetes.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g325>

Contact: Lis Sjöberg (lis.sjoberg@oru.se)

Wellbeing promotion using care environments and technologies (WellCET)

The WellCET research group is a multidisciplinary group of researchers dedicated to increasing well-being, such as mobility and independence, among marginalised groups and people with physical or mental illness. Our overarching research goals are as follows: (i) understanding the process of improving physical, mental, and social well-being; (ii) establishing novel methods for promoting well-being through the creation of sustainable environments; and (iii) taking advantage of assistive technology to promote inclusion and accessibility.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g440>

Contact: Helen Lindner (helen.lindner@oru.se)

7.8. Surgical sciences

Chronic venous disease and venous ulcers

Our research focus on priorities, examination methods and treatment strategies, as well as long-term treatment results for patients with varicose veins and leg ulcers. In the ongoing project, we are studying patients with leg ulcers in community care, where a regional inventory has shown that many have an unclear diagnosis and are not referred for further investigation. We will try to identify obstacles in organization or practice so that patients are examined according to guidelines, as well as evaluate whether it is just as possible to perform ultrasound and simpler treatment in residential settings as in a polyclinic for the most fragile individuals.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g430>

Contact: Lena Blomgren (lana.blomgren@oru.se)

Contraception and menopausal hormone treatment

The projects within the research group are focused on different aspects of contraception and on menopausal hormone therapy (MHT) 1. The relation between use of different contraceptives and the risk of infection with human papilloma virus (HPV), cervical dysplasia and in the end the risk of developing cervical cancer. 2. Despite a high access to contraceptive services and high availability to highly effective contraceptive methods, many women and couples do not use high effective contraception and thus are at a risk of unintended pregnancies. The outcomes include choice and uptake of high effective contraceptive methods, patient satisfaction, and pregnancies within two years. Moreover, the experiences among midwives and participating women will be explored using qualitative methods. 3. 1-2% of all women reach menopause before 40 years of age – premature ovarian insufficiency (POI). Moreover, a substantial number of women will for different medical reasons have both ovaries extirpated during surgery before the age of 40 and thus reach a “surgical premature menopause”. We now aim to further explore the magnitude of this undertreatment. We also aim to explore physician’s reasons for not prescribing MHT as well as women’s reasons for not using the therapy. We also aim to validate undertake new register studies including

validation of registers. We will also use data from the big prospective SCAPIS-cohort in order to study objective cardiovascular outcomes in women with POI.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g441>

Contact: Jan Brynhildsen (jan.brynhildsen@oru.se)

Emergency Medicine

The research group in Emergency Medicine focuses on the chain of emergency care; i.e. from bystander at the scene of injury/ acute illness, emergency medical dispatching, ambulance service and to the emergency department. Symptoms, time-critical conditions and emergency care of individuals of all ages are studied, from both a patient and a systems perspective. The subject area includes both everyday operations and events when many people are affected, such as major accidents or disasters.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g402>

Contact: Lisa Kurland (lisa.kurland@oru.se)

Research group for the evaluation of health care practices including meta-research

We conduct clinical research focusing on colorectal cancer, and meta-research related to conflict of interest and questionable research practices. Currently this involves projects on the use of FIT (faecal immunochemical tests) in primary care, surveillance after radical resection of colorectal cancer, conflicts of interest in systematic reviews, and statistical methods associated with non-randomness in clinical trials.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g459>

Contact: Louise Olson (louise.olsson@oru.se)

Methods in acute life-threatening conditions

The research projects aim to develop and evaluate innovative treatment methods for life-threatening bleeding, e.g. after traumatic injuries, and other conditions of circulatory collapse such as cardiac arrest. Furthermore, the research projects aim to develop methods for early detection, prevention and treatment of impaired organ function and complications in critical illness and after gastrointestinal surgery and thoracic surgery. Research group for the evaluation of health care practices including meta-research.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g348>

Contact: Krisofer Nilsson (krisofer.nilsson@oru.se)

Orthopedics

Orthopaedics deals with disorders and injuries in the musculoskeletal system. Focus is on surgical treatment, and common surgical procedures are hip and knee replacements, fracture repairs, back surgery and various corrective procedures on children with bone misalignment, as well as soft tissue procedures in shoulders and knees. Research at the orthopaedics department also focuses on some of these areas and aims at evaluating surgical treatments and developing new surgical treatment methods.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g308>

Contact: Per Wretenberg (per.wretenberg@oru.se)

7.9. Disability research (7 research groups)

Deafblindness - from a multi-disciplinary research perspective

The research group consists of researchers with different professional and disciplinary backgrounds and has long-term goals to conduct research to improve the living conditions and quality of life for people with deafblindness. The group also focuses on increasing the knowledge in society about persons with deafblindness and their conditions,

and how interventions in, for example, rehabilitation and habilitation can be designed to meet the needs of the target group.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g252>

Contact: Moa Wahlqvist (moa.wahlqvist@oru.se)

Disability - Society

In the research group projects are being conducted that highlight the relationship between people with different types of disabilities and the surrounding society. It can, for example, be about disability in school or working life, but also leisure and living, and how accessibility in the environment and social support affect the individual's conditions for everyday functioning and participation. It can also be about how the environment, such as noise, affects the functionality and health of individuals.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g454>

Contact: Sarah Granberg (sarah.granberg@oru.se)

Interdisciplinary Research in Clinical Audiology (IRCA)

The IRCA research group is an interdisciplinary and multi-professional forum for the development and coordination of research with a focus on clinical audiology. Our main long-term goals are: 1) to improve the possibilities for children and adults with hearing loss to experience a high quality of life, a high degree of participation in society and a high level of everyday functioning, and 2) to extend the scientific knowledge in the area of clinical audiology.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g446>

Contact: Erik Witte (erik.witte@oru.se)

ReShape - Research in Sport, Health and Physical Education

The research team ReShape (Research in sport, health and physical education) at Örebro University is an interdisciplinary group focusing on exploring sport and physical education within social sciences including research questions and methods from sport pedagogy, sport management, sport psychology, didactics of physical education, health promotion and sport history.

Website: https://www.oru.se/english/employee/susanna_geidne

Contact: Susanna Geidne (susanna.geidne@oru.se)

SAFe - The Social Services' Work with People with Disability

SAFe focuses on studying and developing support for the social services' work with violence against people with intellectual and developmental disabilities (IDD). The research group is a collaboration between researchers from social work, occupational therapy, and disability research.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g403>

Contact: Åsa Källström (asa.kallstrom@oru.se)

Speak up

It brings together research interests in communication, spoken and signed language and hearing. Our research focuses on children's and students' language learning and the challenges that speech and developmental language disorders, reading and writing difficulties, hearing loss and intellectual disabilities can pose for the interaction with the surrounding environment.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g373>

Contact: Cecilia Nakeva Von Mentzer (cecilia.nakeva-vonmentzer@oru.se)

> See also TOVA group (7.4)

7.10. Nursing sciences and healthcare

Just in TIME

The research group Just in TIME studies interventions including physical activity and guided relaxation for children and adolescents with psychic and psychosomatic symptoms. The group has a broad scientific competence related to physical activity, public health paediatrics and health economy. TIME stands for Try, Identify, Move and Enjoy. The research project Just In TIME (JiT) evaluates effects and experiences of an intervention with regular combined dance and yoga in a group setting, for girls aged 9-13, with Functional Abdominal Pain Disorders (FAPDs).

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g250>

Contact: Anna Duberg (anna.duberg@oru.se)

Older people's health and living conditions in a person-centred care

The main focus is how a person-centered health care can be developed in elderly care based on the subjective experiences of the persons involved. The health and living conditions of older persons in elderly care have been studied and reported for a considerable period of time. The work continues now with a compilation of the ongoing research focused on how the older person can experience a sense of serenity and meaning in their everyday life within elderly care.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g160>

Contact: Annica Kihlgren (annica.kihlgren@oru.se)

Palliative Care in Emergency Medicine (Pacem)

Research shows that most patients, who are dying, wish to die at home. A wish that relatives often want to honour, but palliative care can take different forms and complex care situations can arise towards the end of life. It is, for example, common for acute and sometimes difficult-to-manage symptoms to occur in the final stages when the underlying disease suddenly worsens, and this creates worry and anxiety in loved ones. Many feel powerless and call the emergency centre for support and help to deal with the emergency situation. Even though emergency transports of dying patients are not always the best for patients or their relatives, there are cases where these are carried out near the end of life. Therefore, the research group Pacem investigates emergency transports of patients with palliative care – both broadly and deeply in order to create good knowledge in the field. The research can contribute to reduced suffering for patients and relatives at the end of life and to reduce costs for society. A good and dignified death is seen as the ideal and can ease the grief and processing for relatives and family.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g447>

Contact: Karin Blomberg (karin.blomberg@oru.se)

PEARL - Pain in Early Life

Newborn infants, especially sick or preterm infants, are exposed to a great amount of stress and pain, inflicting short- and long-term negative consequences. The research group studies pharmacological and supporting interventions to prevent and decrease this stress and pain and its effects. Main focuses are the role of parents in pain management, and on knowledge synthesis and transition to those who can and should use this knowledge. We are among the world-leading groups in this area and our results contribute to better pain management in many countries.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g158>

Contact: Mats Erikson (mats.h.eriksson@oru.se)

Perioperative care and Pedagogical Processes (PEPP)

Perioperative care involves care before, during, and after an operation. Projects investigate routines, methods and complications related to different types of surgeries. One project examines absence of care in postoperative care units. Pedagogical processes revolve around learning and teaching in the supervision of thesis work or during practical training in health care settings. One project explores how health literacy (the ability and knowledge needed to make informed decisions about health) impacts recovery following bariatric surgery.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g451>

Contact: Maria Jaensson (maria.jaensson@oru.se)

SCENTR: Swedish Centre for Skin and Wound Research

The Swedish Centre for Skin and Wound Research operates within Örebro University's School of Health Sciences. Collaborating internationally with the Skin Integrity Research Group (SKINT) at Ghent University, our interdisciplinary team is dedicated to establishing a robust foundation of evidence for skin and wound care. Our goal is to aid clinical decision-making by addressing crucial research questions. Our work spans various demographics, including the elderly, critically ill, and those needing personal care assistance. We conduct thorough research into skin integrity and wound epidemiology, evaluating treatment interventions' efficacy, effectiveness, and efficiency. Furthermore, we develop strategies for implementing evidence-based practices in skin integrity and wound care at local, national, and global levels, encompassing prevention, diagnostics, treatment, and quality enhancement programs.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g376>

Contact: Dimitri Beeckman (dimitri.beeckman@oru.se)

7.11. Biotechnology and Health

Development of novel chitosan-based scaffolds for cartilage repair

Articular cartilage injuries are difficult to heal, and therefore various surgical techniques have been developed that are used to support healing. However, these have different limitations, which means that there is room for innovation in the area. Central to this development are various degradable biopolymers, which can support the new formation of cartilage, so-called "scaffolds". In order to improve the possibilities of developing new effective tools for the healing of cartilage damage, our research group has gathered competences in biomaterials research, biomedicine and orthopaedic surgery. Knowledge exchange between these categories is essential to develop materials and methods that are effective for the surgeon who will ultimately use them. The research group also includes international collaboration, as well as representatives from business.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g453>

Contact: Mikael Ivarsson (mikael.ivarsson@oru.se)

7.12. Robotics, artificial Intelligence and systems and Health

AI & Robotics in healthcare applications

Research on autonomous systems, focused on perceptual and cognitive capabilities, is carried out at **Center for Applied Autonomous Sensor Systems (AASS)**, and is internationally renown for its expertise in AI & Robotics and their integration, including health care applications.

Website: <https://www.oru.se/english/research/research-environments/ent/aass/>

Coordinator: Doc. Amy Loutfi (amy.loutfi@oru.se)

7.14. Medical education

Research based education in the health professions

The group conducts research related to health professions education. The overarching research question is how educational knowledge can be strengthened and used in the health professions education. Current projects relate to clinical reasoning, interprofessional learning, simulation-based learning and workplace-based learning. The research approach is characterized by relevance to teaching practice and methods vary according to specific research questions.

Website: <https://www.oru.se/english/research/research-groups/rg/?rdb=g450>

Contact: Samuel Edelbring (samuel.edelbring@oru.se)

8. Università degli Studi di Salerno (UNISA)

Contacts are needed for each of the research groups of the School of Medicine of Salerno and the department of Pharmacy.

8.1. The research in the university of Salerno

Department of medicine, surgery and odontology “Scuola Medica Salernitana” (DIPMED)

The Department's scientific project involves both basic research and applied pre-clinical and clinical research. It envisages the development of technical-scientific skills geared to research activity, also through collaboration with other national and international research structures, including public and private bodies with similar or converging objectives with those of the department, and companies interested in the industrial transfer of research products. It also promotes the dissemination of research results and the promotion of exchanges of information and know-how through the organisation of scientific seminars and conferences and the support of exchange visits between its own researchers and trainees and researchers from research institutions in Italy and abroad. The research topics reflect the different disciplinary orientations of the afferent teachers and researchers and in most cases are characterised by multidisciplinary in order to foster vertical scientific interactions between disciplines.

The Department of Pharmacy (DIFARMA) at the University of Salerno was established in 2012 in accordance with Law 240/2010, commonly known as the "Gelmini law." It inherits the legacy of two pre-reform structures, the Faculty of Pharmacy (deactivated) and the Department of Pharmaceutical and Biomedical Sciences (deactivated), positioning itself as a scientific and educational reference on "Pharmaceuticals" within the University of Salerno. DIFARMA is divided in two sections: the Arturo Leone' Biomedical Section (coord.: prof.ssa Alessandra Tosco) and the Chemical-Technological Section 'Luigi Gomez Paloma' (coord. prof. Agostino Casapullo).

Laboratory of Psychology in the department of Human sciences, philosophy and education (DISUFF)

DISUFF boasts 23 research laboratories, 2 centres, 1 internship laboratory and a clear vitality in research activities in the humanities. DISUFF's research activities cover pedagogical, philosophical, sociological, historical, psychological, anthropological-cultural, linguistic-literary, geographical, motor and sports disciplines.

8.2. Biomedicine: Molecular, integrative and cell biology

Molecular medicine > see the other sections

Biochemistry, proteomics and metabolomics research for laboratory medicine

Chemical-biological characterisation of extracellular vesicles (EVs) aimed at understanding their role in disease processes and identifying new potential diagnostic or prognostic biomarkers.

Development of approaches for obtaining and engineering bacterial-derived vesicles (OMVs) for use in innovative therapeutic approaches

Identification of molecular targets of drugs and/or bioactive natural substances to elucidate their mechanism of action, in order to ensure their more effective and safer use and possible repurposing.

Development, optimisation and validation of protocols for the analysis of endogenous and exogenous biomarkers in human samples, for use in clinical or research settings, using chromatographic techniques coupled to liquid chromatography

Study of the structural, chemical and functional characteristics of proteins involved in cellular processes that play a relevant role in pathological processes or therapeutic actions.

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

Epigenetic Med Chem Lab

EMCL is a multi-disciplinary research team whose mission is the study of protein targets responsible (directly or indirectly) of epigenetic modifications (KATs, KMTs, DNMTs, PRMTs, KDMs, bromodomain, MBT, Tudor) or of proteins regulated by epigenetic processes (e.g. LINE-1 RT).

Website: <https://docenti.unisa.it/005059/en/curriculum>

Head of the Lab: Pr Gianluca SBARDELLA (gsbardella@unisa.it)

Laboratory of Molecular Medicine and Genomics (LMMGe)

Website: <https://www.dipmed.unisa.it/en/departament/structures?id=82> and <https://www.labmedmolge.unisa.it/>

Head of the Lab: Alexander WEISZ (aweisz@unisa.it)

8.3. Physiology in Health, Disease and Ageing

molecular medicine for the study of musculoskeletal problems

Establishment of a regional database for the study of the hereditary component in musculoskeletal disorders

Advanced imaging for the study of tendon implant integration in the musculoskeletal system

Tissue engineering of musculoskeletal tissues and applications in clinical practice

Role of soft tissue trauma in degenerative neurological diseases

Gene expression studies in upper and lower limb tendinopathies

Prospective randomised studies in the musculoskeletal system

Development of minimally invasive methodologies for the management of musculoskeletal disorders

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

molecular medicine for the study of cardiological problems

Nuclear cardiology: MIBG radiopharmaceutical eval. of catecholaminergic activity in subjects with heart failure.

Effects of BNP gene polymorphism in patients with heart failure

Effect of different GPIIb/IIIa inhibitors on platelet function in patients with PIA2 polymorphism undergoing percutaneous coronary interventions.

Pathophysiology of arterial hypertension. Vascular reactivity techniques.
Molecular mechanisms underlying adrenergic control of cardiac, endothelial and vascular function.
Microsurgery techniques and study of in vivo physiology in animal models
Molecular medicine applied to cardio and cerebrovascular diseases
Gene expression modifications in carotid atherosclerotic plaques
New biomarkers and therapy targets in chronic heart failure
Prevention of cardiovascular and renal diseases
Potential role of sFRP-5 in coronary atherosclerotic disease in patients with metabolic syndrome or diabetes mellitus.
Study of morphofunctional aspects of the right ventricle using CardioRM in secondary cardiomyopathies.
Evaluation of clinical outcomes, echocardiographic and microcirculatory indices in Tako-tsubo syndrome
Evaluation of blood levels of BAG3 protein as an index of myocardial cell damage for diagnostic and prognostic purposes in patients with acute coronary syndrome, congestive heart failure and Tako-tsubo syndrome.
Assessment of coronary reserve by SPET method in subjects with metabolic syndrome or diabetes or nephropathy.
Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca?dettaglio=267>

U.O.C. Cardiology Clinic

The aim of the Lab is to illustrate the activities of the Chair of Cardiovascular Diseases of the University of Salerno at the 'San Giovanni di Dio e Ruggi D'Aragona' University Hospital, aimed at the prevention and treatment of cardiovascular pathologies in a university context dedicated to teaching and training specialist doctors, research and scientific and technological innovation, without forgetting the needs of the patient and the citizen.

Website: <https://www.dipmed.unisa.it/en/departement/structures?id=139>

Scientific coordinator: Pr Carmine Vecchione (cvecchione@unisa.it)

molecular medicine in pathology and vascular surgery

Alterations in the expression of inflammation-related genes in carotid and peripheral artery atherosclerotic plaques and in the wall of arterial aneurysms
Aortic aneurysms and concomitant neoplasms: genetic alterations and common risk factors
Aortic aneurysms and concomitant neoplasms: timing and choice of surgical or endovascular treatment
Autologous stem cells in the treatment of chronic obstructive arteriopathy of non-revascularisable limbs
Controlled drug release devices in the endovascular treatment of critical lower limb ischaemia and diabetic foot: medium and long-term evaluations
Evaluation of the danger of carotid and peripheral atherosclerotic plaques, and the risk of rupture of aortic aneurysms, based on levels of inflammation detected by imaging methods

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

molecular medicine for the study of pharmacogenomics, nutrition and ageing

Aging: in vivo and in vitro studies.
Nutrigenomic analysis of the anti-inflammatory, antioxidant and anti-tumour activity of polyphenols found in the Mediterranean diet.
Exercise as therapy: in vivo and in vitro studies
Exercise and oxidative stress: in vivo and in vitro studies
Pharmacogenetics: in vivo studies.
Identification of new molecular targets involved in the age-related alteration of the vascular component
Identification of genetic variants influencing ageing and longevity in humans
Role of diet and exercise in slowing down the ageing process.

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

clinical and molecular medicine research for the study of endocrine and metabolic disorders

Application of stem cells, autotransplantation and heterologous transplantation of pancreatic cells and islets in blood glucose control in the diabetic patient

Identification of new biomarkers and therapy targets in endocrine tumours

Molecular mechanisms of neoplastic transformation of endocrine cells and in particular of the thyroid cell and neuroendocrine system

Molecular and cellular mechanisms and clinical research of diabetes and its complications

Molecular and clinical research for the prevention of diabetes complications

Development of new drugs and automation-based methods for blood glucose control in diabetic patients

Development of new diagnostic methods for the early detection and prognostic methods of thyroid tumours and neuroendocrine tumours

Development and clinical testing of new therapeutic strategies for thyroid and neuroendocrine tumours

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

Clinical and molecular medicine research for the study of gastrointestinal diseases

With the Gastroenterology clinic - Celiac Disease and Food Intolerances Clinic - Laboratory of Gastrointestinal Pathophysiology - IGI Centre for Gastro-Intestinal Immunology - Clinic of Hepatology - Endoscopy service

Pathophysiological mechanisms of digestive tract motility in eating disorders.

Pathogenetic mechanisms of immunologically based gastrointestinal diseases. In vitro and in vivo models for immunological research into the pathogenesis of food-related diseases and chronic inflammatory bowel disease

Metabolic effects of immunosuppressive therapy and complications of liver transplantation.

Clinical research on coeliac disease and food intolerances with a focus on metabolic, oncological and psychological complications and the molecular mechanisms underlying the immunological response

Clinical research on chronic inflammatory bowel diseases

Controlled clinical studies for the use of new drugs in gastrointestinal and liver diseases

Clinical and immunological study of eosinophilic oesophagitis

Physiology of the digestive system, in particular the study of the complex mechanisms that regulate the motor and sensory function of the digestive system and the motor and sensory disorders found in organic and functional diseases. Clinical studies on the associations between irritable bowel disease and extraintestinal syndromes (e.g. fibromyalgia and temporomandibular disorders) with particular reference to the mechanisms of transmission of perceptions according to the underlying disorder.

Study of oesophageal pathophysiology in obese patients before and after new bariatric surgery treatments

Study and testing of new endoscopic devices to be applied in the diagnosis and treatment of digestive tract disorders

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

Scientific Director: Pr Carolina Ciacchi (cciacchi@unisa.it) and Pr Paola Iovino (piovino@unisa.it)

Clinical and molecular medicine research for the study of pulmonological problems

Action of bronchodilator drugs in obstructive airway diseases

Pulmonary hypertension in patients with chronic respiratory diseases

Mechanisms of glucocorticoid resistance in severe asthma

Pathophysiological mechanisms of pulmonary hyperdistension

Non-invasive study methods in the evaluation of airway inflammatory phenomena

Respiratory diseases and polysomnographic studies

Relationship between chronic inflammatory respiratory diseases and lung cancer.

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

Urology research

In-depth molecular investigations on prostate tissue : PCA3 score (ratio between PCA3 and PSA mRNA levels), PSA, freePSA, -2proPSA, PHI and methylation status of the GSTP1 gene promoter

Microsurgery on small animals of andrological relevance: reconstruction of the seminal excretory tract, experimentation of new prosthetic materials

Experimental evaluation of ischaemic damage from nephrectomy in small and medium-sized animals

Experimental evaluation of the outcomes of ablative energies on renal parenchyma on medium-sized animals

Experimental evaluation of techniques - endocavitary administration of cytotoxic and/or cytostatic drugs.

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

8.4. Immunity, Infection and Immunotherapy

Clinical and molecular medicine research for the study of inflammatory and immunological processes

Association of HPV and syndromic and isolated polyposis development

Molecular characterisation of syndromic polyposis for the identification of biomarkers for the selection of therapeutic strategies

Correlations between the immune system, metabolism and immune-mediated inflammatory diseases

Vascular and tissue damage caused by respiratory distress syndrome: prevention and therapy

Identification of micro-RNAs involved in the pathophysiology of chronic obstructive pulmonary disease (COPD)

Implementation of new methods in the clinical-laboratory diagnosis and therapy of severe sepsis and septic shock

Implementation of new methods in the clinical-laboratory diagnosis and therapy of metabolic encephalopathies

Inflammatory molecules and modulation of vascular tone: new therapeutic perspectives

Modulation of proinflammatory epithelial allergic responses by topical glucocorticoids. Posttranscriptional mechanisms of glucocorticoid gene regulation.

Regulation of T-cell expression and effector function by salicylates: mechanisms and clinical significance.

Regulation of chemotactic cytokine (chemokine) expression by allergic-type inflammatory stimuli.

Epigenetic and transcriptional regulation of cytokine genes.

Post-transcriptional gene regulation of epithelial proinflammatory responses.

Mechanisms of immunological tolerance in the autoimmune, transplantological and metabolic fields.

Study of the immune basis of obesity and overweight

Study of the correlations between the nervous system and immunity in the neurobiology of energy metabolism

Development and characterisation of immunoglobulin preparations with neutralising activity against the Hepatitis C virus (HCV) and in the development of new bioactive molecules (including monoclonal antibodies)

Use of Hyaluronan in repair mechanisms and inflammation of the nasal and laryngeal regions

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

Clinical and molecular medicine research for the study and prevention of Infectious Diseases

Application of molecular biology techniques in the microbiological quality control of food products.

Appropriateness of anti-infective therapy

Control of hospital infections

Aetiopathogenesis and epidemiology of infections

Pharmacokinetics and pharmacodynamics of antibiotics

Molecular mechanisms of HCV cell damage and antiviral therapy in HCV-related chronic hepatitis

Anti-infective therapy with special reference to bacterial and fungal infections and bacterial resistance

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

8.5. Neurosciences and disorders of the nervous system

Clinical and molecular medicine research in neurological, psychiatric and cognitive-behavioural sciences

Morphofunctional aspects of neurodegenerative diseases

Clinical, neuropsychological and biological features of schizophrenia linked to the use of drugs of abuse

Epidemiology, clinical and genetics of rare neurological diseases of the adult and developmental age, with particular regard to those present in the area in which the department's lecturers work

Epidemiology, clinical and genetic of neuropsychiatric diseases, with particular regard to those with a high social impact such as movement disorders, epilepsy, epileptogenic encephalopathies, stroke, dementia, schizophrenia and eating disorders

Pathophysiology of brain stroke, biomarkers and new therapeutic perspectives

Molecular mechanisms of vesicular secretion and trafficking in cellular models of neurodegenerative diseases

Advanced nuclear magnetic resonance methods and development of biochemical tissue characterisation and implementation of tissue analysis methods Correlation studies between cognitive-behavioural dysfunctions and brain network activations in functional magnetic resonance imaging

Italian network for psychosis research: study of factors affecting the social functioning in real life of people diagnosed with schizophrenia

Neuropharmacology of neurotransmitter systems, experimental models of neurodegenerative diseases

Epilepsy and autism spectrum disorders: clinical evaluation and functional neuroimaging

Forensic psychopathology with special reference to the subject of simulation of mental illness. Ethics and deontology

Role of the endoplasmic reticulum in the control of cell survival in neurodegenerative diseases

Studies of the biomolecular mechanisms underlying hearing function disorders

Genetic studies of hearing and vestibular function deficits

Study of eating disorders: clinical evaluation and with functional neuroimaging; evaluation of the hypothalamic-pituitary-adrenal axis; pathophysiological mechanisms of taste in eating disorders

Study of CSF dynamics and spinal biomechanics - Study of biomolecular mechanisms underlying neurodegenerative diseases and brain tumour biology

Development of diagnostic techniques for neurological and psychiatric diseases with a focus on the identification of biomarkers

Development of functional neurosurgical techniques for the treatment of neurological and psychiatric diseases with emphasis on deep brain stimulation and stem cell implantation techniques

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

8.6. The human mind and its complexity

Cultural Psychology of Sustainable Human Development - Laboratory of Psychology

The lab is based at the Department of Human, Philosophic and Education Sciences at the University of Salerno. It is the first laboratory in Italy and among the few all over the World, that approaches education and human development from a Cultural Psychology perspective. It aims at promoting new qualitative methodologies for educational and development psychology and interdisciplinary enrichment in ideas and practices. The Lab "Cultural Psychology of Sustainable Human Development" has a clearly defined international and interdisciplinary focus hosting research activity on the interconnection between Cultural Psychology and other Developmental Sciences.

Website: <https://www.disuff.unisa.it/dipartimento/strutture?id=691>

Head of unit: Pr Giuseppina Marsico (gmarsico@unisa.it) and Monica Mollo (mmollo@unisa.it)

Digital Method of Psychological intervention for resilience and sustainability in E-Health

Website: <https://www.disuff.unisa.it/dipartimento/strutture?id=702>

Head of unit: Ruggero Andrisano Ruggieri (rruggieri@unisa.it) works on the concept of consciousness/unconsciousness based on the mnemonic function. He conducts research projects on cultural models with which the parental function is organised in post-modernity to identify which models can substantiate integrative or substitutive parental processes due to the use of new technologies ("digital baby sitting").

Psychosocial Genomics, Integrated Mind-Body Psychotherapy and Hypnosis, 'Ernest Rossi'

The laboratory carries out research, training and intervention in the field of Neuroscience, Integrated Mind-Body Psychotherapy, particularly in its dimension of the relationship between psychological experiences and gene expression, and Hypnosis. Psychosocial Genomics aims at integrating the latest knowledge from Neuroscience, Psychology, Functional Genetics, Neuro-physiology, Chronobiology, Bio-informatics, Therapeutic Hypnosis and Mind-Body Therapies in order to better understand the complexity of our functioning in order to put more effective evidence-based and more integrated models of care at the service of people and patients. The aim is to utilise different disciplinary knowledge to understand how positive and/or negative psychosocial experiences can modulate gene expression and brain plasticity by promoting change at multiple levels from behavioural to genomic.

Website: <https://www.disuff.unisa.it/dipartimento/strutture?id=236>

Head of unit: Mauro Cozzolino (mcozzolino@unisa.it)

Laboratory of life cycle health psychology

Website: <https://www.dipmed.unisa.it/dipartimento/strutture?id=696>

Head of unit: Giulia Savarese (gsavarese@unisa.it)

International lab for innovative social research

The ILIS, established within the Department of Human, Philosophical and Educational Sciences, aims to be a laboratory for interdisciplinary study and research on topics of social interest. Its main objective is to stimulate theoretical and methodological reflection as well as empirical study on new scenarios in social research: from theoretical challenges in the face of new problems and dilemmas to new methodological horizons for understanding them. The field of action of the ILIS focuses on social processes ranging from the analysis of educational, migration, identity and cultural processes to gender and generational perspectives and health with a focus on methodology and techniques for social research. The ILIS also acts as a methodological service tool for scientific research for the entire University and supports the design of research, the preparation of information gathering instruments and related pre-testing, sampling, information collection, dataset creation and data analysis.

Website : <https://docenti.unisa.it/004227/ricerca/laboratori?id=233>

Head of unit: Giuseppe Masullo (gmasullo@unisa.it)

Contact : labilis@unisa.it

8.7. Prevention, Diagnosis and Treatment of Human Diseases

Clinical and molecular medicine research in oncology

Analysis of genetic and epigenetic alterations in brain malignancies and their prognostic significance.

Analysis of the clonal and mutational evolution of neoplastic disease during anticancer treatment.

Ultrastructural morphofunctional aspects of the premetastatic niche and bone micrometastases

Definitions of prognostic and predictive gene expression profiles of response to endocrine therapy in breast cancer

Diagnosis and therapy of kidney cancer and prostate cancer
 Diagnosis and innovative therapies of leukaemias, lymphomas and myelomas
 New biomarkers and therapy targets in pancreatic ductal adenocarcinoma
 HPV oncogenesis of oral carcinoma vs. the cervix model. Epigenetic and immunohistochemical studies.
 Role of oestrogen receptors and oestrogen-regulated genes in hormone-responsive breast cancer.
 Role of endoplasmic reticulum stress in resistance to chemotherapeutic drugs in neoplastic cells
 Apoptotic signals as a target for the development of selective inhibitors and innovative therapeutic strategies.
 New predictive parameters of response to cancer treatments with specific molecularly targeted drugs, radiotherapy and chemotherapy.
 Radionuclide therapy: evaluation of combination therapies in patients with metastatic breast cancer.
 Brain and spinal tumours and malformative and non-deformative vascular diseases.
 Thyroid tumours, oncogenes in thyroid tumours, signal transduction in the MAPK and calcium-calmodulin dependent kinase pathway, integrins
 Use of biomarkers for the development of diagnostic and therapeutic devices for lung cancer.
 Evaluation of response to cytotoxic and cytostatic therapies (targeted therapy) in solid tumours by means of molecular imaging

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

Clinical and molecular medicine research for the use of stem cells in clinical, haematological and oncological settings

Monoclonal antibodies against complement fraction C5 and anti-CD52 in the treatment of paroxysmal nocturnal haemoglobinuria and bone marrow aplasia.
 Long-term endocrinological, bone and respiratory complications after haemopoietic stem cell transplantation
 Efficacy and tolerability of: new reduced intensity and myeloablative conditioning regimens in patients undergoing allogeneic and autologous bone marrow transplantation
 Bio-molecular mechanisms of haematopoietic stem cell mobilisation (role of the urokinase receptor and laminin).
 New treatment schedules for graft versus host disease after allogeneic stem cell transplantation
 New immunomodulatory drugs in neoplastic and non-neoplastic haemopathies
 new tyrosinkinase inhibitors in the treatment of acute and chronic myeloid syndromes
 New drug targets in neoplastic and non-neoplastic haemopathies.
 Reconstitution of mesenchymal and osteoblastic stem cells after bone marrow transplantation and peripheral blood haemopoietic stem cells
 Role of apoptosis in neoplastic and non-neoplastic haemopathies
 Molecular toxicology of dental monomers. Engineered scaffolds and bioactivation of mesenchymal stem cells
 Use of haemopoietic stem cells in cardiology, neurology, orthopaedics and degenerative diseases.

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

Clinical and molecular medicine research for the study of paediatric problems

Multidisciplinary approach to the improvement of nutritional status and quality of life in children with severe neuromotor disabilities.
 Multidisciplinary approach to the analysis and containment of extra-regional paediatric healthcare mobility.
 Implementation of new methods in the clinical-laboratory diagnosis and treatment of rare causes of chronic hepatopathy and cholestasis in childhood with and without systemic involvement.
 Prevention, diagnosis and therapy of paediatric non-alcoholic hepatic steatosis (NAFLD).

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

Clinical research and 'evidence-based medicine' in nephrology

Risk factors for the occurrence and recurrence of urinary stones.
 Risk factors for renal failure and mortality in kidney transplantation.
 Risk factors for development and progression of chronic kidney disease.
 Pathophysiology of alterations in the functional kidney-parathyroid-bone axis in renal disease.
 Pathophysiology of alterations in the functional kidney-parathyroid-bone axis in weightlessness (aerospace medicine).
 Identification, definition, and implementation of standardised laboratory methods for the diagnosis and staging of chronic kidney disease.
 Efficacy and tolerability evaluation of immunosuppressive drugs in kidney transplantation.
 Efficacy and tolerability evaluation of non-immunosuppressive drugs in kidney transplantation.
 Efficacy and tolerability evaluation of antihypertensive drugs in patients with or at risk of renal disease.
 Efficacy and tolerability evaluation of drugs active on the functional vitamin D-parathormone axis in renal disease.
 Evaluation of efficacy and tolerability of drugs blocking or inhibiting the renin-angiotensin system in controlling the progression of renal disease.
 Efficacy and tolerability assessment of drugs for the control of anaemia in renal disease.

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

Clinical research in ophthalmology

Application of new methodologies for early diagnosis and cancer therapy in the eye.
 Molecular biology of ocular motility abnormalities (congenital fibrosis of extraocular muscles).
 Genetic framing of the main congenital errors of metabolism.
 Genetic, metabolic and molecular framing of the main malformations of the eye.
 Biometric modifications and functional results in patients with congenital cataracts undergoing surgery.
 Metabolic modifications and ultrastructural study of congenital and acquired ptosis.
 Remote results of botulinum toxin treatment in infantile essential exotropia.
 Study of the problems involved in calculating intraocular lens power in complex cases.
 Evaluation of the effectiveness of corneal cross linking in patients with keratoconus, including paediatric patients.
 Evaluation of the changes induced at ocular level by different refractive surgery techniques.
 Evaluation of innovative surgical and parachirurgical techniques in the treatment of different types of glaucoma..

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

Clinical Research in Obstetrics-Gynaecology

Endoscopy as a minimally invasive diagnosis and treatment technique in benign and malignant pathology of the female genital sphere.
 New ways of controlling female fertility.
 Relationships between environmental pollution and reproductive pathology.
 Development of new parameters for instrumental monitoring of spontaneous childbirth.

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

Public health

Adolescence, self-image and eating disorders - Adolescent distress and maladaptive and pathological outcomes
 Analysis of relations between health professionals, between health professionals and organisations or bodies, or with individual citizens.
 Application and function of the quali-quantitative methodology in improving therapeutic compliance
 Hospital and territorial appropriateness: identification and application of indicators.

Filial attachment and pathological attachments in the life cycle
Healthcare climate and environment: communication and conflict management
General, clinical and juvenile criminology, judicial psychology and forensic psychopathology.
Disability
Social epidemiology and inequalities between and within countries.
Didactic function of the body and corporeity.
Management of complex service systems
Health policy: planning, design and programming
Technological innovation with particular focus on technologies of medical interest (e-health).
Socio-health integration: identification and application of socio-epidemiological indicators
Child maltreatment and sexual abuse: consequences and developmental outcomes
Governance models of the health care enterprise.
New procedures for the evaluation and reduction of incidents in the clinical care pathway
New perspectives and new frontiers of medicine: from the ethics of care to the ethics of life
Prediction and management of risk conditions in health care in inpatient and outpatient residential facilities
Relationship between movement and learning mechanisms in the presence of certain forms of disability
Sustainable healthcare management systems and models
Assessment of the social impact of scientific advances and technological innovations in medicine
Ethical assessment of individual and collective health behaviour and events, with particular reference to issues of the beginning and end of life and personality issues, as well as the ethical problems of collective interventions
Ethical evaluation of experimental protocols, clinical and epidemiological studies, from a bioethical and public ethics point of view, with particular regard to conflicts of interest and relations with third parties

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

8.8. Surgical sciences

molecular medicine for the study of surgical problems

Bioinformatics of the genetics of osteosynthesis and bone remodelling
Clinical, in vitro and in vivo healing kinetics in immediate osteodental implants
Osseointegrating titanium dental implants: microbiota associated with success and periimplantitis, long-term analysis and targeted antibiotic therapy
Increase in skeletal dimensions of the jaws and bone regeneration using innovative methods: mandibular lengthening, palatal expansion, reconstruction of localised defects in pre-prosthetic surgery, mandibular reconstruction, alveolar bone augmentation using autologous bone grafts (Khouri F. technique) and addition of autologous stem cells
In vitro' interactions between different titanium surfaces for osseointegrating.
Tuberculous saccate peritonitis. Elements of early diagnosis and therapy for a misrecognised epidemic return.
Surgical methods of advanced bone reconstruction for implant purposes and implant success.
Endoscopic papillosphinterotomy vs. ideal laparotomy choledochotomy in the remediation of VBP calcinosis
Role of prolonged dicoumarolic prophylaxis in cardiac patients in the genesis of hematomas (parietal and visceral)
Longitudinal evaluation of surgical methods of advanced bone reconstruction for implant purposes

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

8.9. Pharmacology and synthesis of small molecules

Department of Pharmacy (DIFARMA)

It inherits the legacy of two pre-reform structures, the Faculty of Pharmacy (deactivated) and the Department of Pharmaceutical and Biomedical Sciences (deactivated), positioning itself as a scientific and educational reference on "Pharmaceuticals" within the University of Salerno. DIFARMA is divided in two sections: the Arturo Leone' Biomedical Section (coord.: prof.ssa Alessandra Tosco) and the Chemical-Technological Section 'Luigi Gomez Paloma' (coord. prof. Agostino Casapullo).

Head of Department:

Pr Pietro Campiglia (pcampiglia@unisa.it) - synthesis of peptides, synthesis of heterocyclic compounds with pharmacological properties, analysis of nutraceutical products - Green processes for the recovery of active compounds

Antonello PETRELLA (apetrella@unisa.it) - Molecular mechanisms involved in neoplastic progression and cell regeneration as targets for the development of new drug treatments.

Other coordinators of DIFARMA:

Pr.ssa Alessandra Tosco (tosco@unisa.it) – Biomedical Section Coordinator - Main line of research: relationship between *Helicobacter pylori* and the gastrointestinal peptide Trefoil Factor 1 (TFF1), which plays a protective role for the stomach mucosa and is considered a gastro-specific tumour suppressor

Pr. Agostino Casapullo (casapullo@unisa.it) - Coordinator Chemical-Technological Section - Main line of research: chemistry of natural products (isolation and structural characterization of marine metabolites), and on the target discovery of small bioactive molecules through chemical proteomics, and the analysis of their interactions with the receptor targets through combination of mass spectrometry with biophysical and in silico technique

Pr Gianluca Sbardella (gsbardella@unisa.it) - Main line of research: epigenetic Drug Discovery, spanning synthetic strategies, medicinal chemistry, chemical biology, biophysical techniques

8.10. Biotechnology and Health

Applied Physics Research

Methodologies and analysis techniques for quantifying NMR spectra of cellular samples

Sensors and systems for environmental applications

Sensors and systems for pharmaceutical and biomedical applications

Sensors and systems for SAR measurement in magnetic resonance imaging.

Website: <https://www.dipmed.unisa.it/ricerca/aree-di-ricerca>

9. Université de Tours (UT)

9.1. The research in Health and Medecine in Tours

To complete

9.2. Physiology in Health, Disease and Ageing

Niche, Nutrition, Cancer and Oxidative metabolism - N2Cox - Inserm U 1069

Our research project multidisciplinary single team project focused on lipids acting in/on tumor niches, more particularly on energy/oxidative metabolism and calcium signaling, able to influence dysplasia, tumor progression

and sensitivity of tumors to anti-cancer drugs. The objective of our bench to bedside research is to facilitate the transfer of fundamental knowledge to patients developing chemo-or hormone-resistant cancers, and/or metastases and/or cancer-induced cachexia.

Main lines of research:

Oncology/Hematological malignancies: lipids in tumor microenvironment and prevention

Impact of lipids on redox/energy metabolism of cancer cells in their niches

Chemo/hormone sensitization of tumors to anticancer treatments

Signal transduction, biology of cancer cells

Role, mechanism of action of ion channels and transporters, calcium homeostasis

Clinical nutrition: energy / nitrogen metabolism, cachexia, mitochondrial bioenergetics.

Website: <https://n2c.univ-tours.fr>

Head of research unit: Christophe Vandier (christophe.vandier@univ-tours.fr)

Secretary: Catherine Leroy (catherine.leroy@univ-tours.fr)

Membrane Signalling and Inflammation in reperfusion injuries - ISCHEMIA Inserm UMR1327

The research unit studies the interactions between cells of the stressed tissue/organ (cardiac cells, normal and cancer epithelial cancer cells) and immune cells, with the objective of modulating immuno-inflammatory responses in hypoxia/ischemia, by developing new strategies using pharmacological drugs and antibodies targeting ion channels and purinoreceptors.

Research topic: Role of purinergic signaling in inflammation and tissue remodeling in ischemia-reperfusion physiopathological conditions (Cardiac infarction, Organ transplantation, Cardio-kidney syndrome).

Website: <https://ea4245.univ-tours.fr>

Head of research unit: Sébastien Roger (sebastien.roger@univ-tours.fr)

Contact: ischemia@univ-tours.fr

Energy sensors and reproductive signaling – SENSOR Team (PRC unit)

Research unit PRC - Physiology of Reproduction and Behaviour - UMR CNRS 7247 - INRAE 0085

The SENSOR team is interested in the role of energy metabolism and its disturbances on the activity of the ovary and the testicle. Our objective is to be able to provide information to preserve a certain fertility of agronomic animals but also information applicable to the human species. Our "SENSOR" team will focus its research on:

1- the link that exists between the energetic reservoir that is adipose tissue, and the activity of the gonad, in particular through the influence of various environmental factors (nutrition, endocrine disruptors, molecules stimulating obesity ...)

2- the role that can have energy detectors (AMPK, mTOR, PPAR) that are, like the needle of the gas gauge in the cell. These proteins belong to the signaling networks of adipocytokines within the gonad.

3- the development of innovative approaches combining molecules of plant origin that can regulate both the adipose tissue and the gonadotropic axis.

The work of our team combines both basic research and applied research. Indeed, several research programs have been co-built with the field actors, whose objective is to provide practical solutions in breeding.

Website: <https://eng-prc-sensor.val-de-loire.hub.inrae.fr/>

Team leader: Pascal Froment (pascal.froment@inrae.fr)

9.3. Neuroscience and Disorders of the Nervous System

Imaging, Brain and Neuropsychiatry - IBrain - Inserm U 1253

Our Unit develops diagnostic tools and innovative therapies for psychiatric diseases. Our unit brings together researchers, research professors, clinicians, engineers and technicians with complementary expertise in clinical research: psychiatry, neuroscience, genetics and medical imaging; as well as in basic and clinical research: physics, chemistry, radiochemistry, acoustics, mathematics, psychiatry, neurosciences, genetics and medical imaging.

Research topics: Neurophysiology and cognition and cognition of autism spectrum disorder - Neurobiological basis of antidepressant resistance - Post-traumatic stress disorder - Genomics and neuronal physiopathology of intellectual disabilities and amyotrophic lateral disorder - Development of molecular imaging methods and of new biomarkers - In-vitro and in-vivo metabolomics - Ultrasound imaging and therapy – Neuromodulation - Data analysis - Post-traumatic stress disorder - Ground truth and Brain atlas.

Website: <https://ibrain.univ-tours.fr>

Head of research unit: Catherine Belzung (catherine.belzung@univ-tours.fr)

Contact: u1253@univ-tours.fr

Autism and neurodevelopment - AutisM – Ibrain Team

Website: <https://ibrain.univ-tours.fr>

Head of research team: Marie Gomot (marie.gomot@univ-tours.fr)

Contact: u1253@univ-tours.fr

Genomics and physiopathology of neurodevelopmental and motor neuron disorders iDeALS – Ibrain Team

Website: <https://ibrain.univ-tours.fr>

Head of research team: Frédéric Laumonier (frederic.laumonier@univ-tours.fr)

Contact: u1253@univ-tours.fr

ExTraPsy IBrain Team - Experimental and translational psychiatry > See 9.5.

Morpho-functional imaging and ultrasound therapies - METU - IBrain Team

Website: <https://ibrain.univ-tours.fr>

Head of research team: Ayache Bouakaz (ayache.bouakaz@univ-tours.fr)

Contact: u1253@univ-tours.fr

9.4. The human mind and its complexity

Quality of life and psychological health - QualiPsy RU 1901

The studies conducted by QualiPsy come within the domain of occupational psychology, clinical psychology and psychopathology. They concern the analysis of the factors (individual, group, organisational and environmental) of the impairment vs. optimisation of the quality of life and mental health of the general adult population and in specific life situations (e.g., work, illness, situations of vulnerability).

Research topics: 1. Health and quality of life at work 2. Quality of life, health, violence and addictions 3. Quality of life and health in the field of care

Website: <https://qualipsy.univ-tours.fr/>

Head of research unit: Evelyne Fouquereau (evelyne.fouquereau@univ-tours.fr) and Robert Courtois (robert.courtois@univ-tours.fr)

Contact: qualipsy@univ-tours.fr

Psychology of the Various Stages of Life and Adaptation – PAVeA RU 2114

The research conducted at PAVéA concerns the study of human development at all stages of life, and is organized around prevention and intervention to maintain or promote health, well-being and adaptation in children, adolescents, adults and older adults. The laboratory's work focuses on 3 main themes: **Transgressions, Vulnerabilities and Resources, addressed at different stages of life.**

A significant proportion of our research is focused on applications, with a particular emphasis on risk prevention to avoid maladjustment of the individual (whatever his or her age), which could lead to a situation of vulnerability. The resources that promote healthy aging (diet, adapted physical activity, spirituality, etc.) are studied in particular, and include intergenerational links as a social support that promotes intergenerational family cohesion. The team is characterized by a plurality of theoretical and methodological approaches (quantitative and qualitative) and by an applicative aim to innovate or improve prevention and intervention systems (developmental, social or clinical).

Website: <https://pav.univ-tours.fr/>

Head of research unit: Célia Maintenant (celia.maintenant@univ-tours.fr)

Contact: pav@univ-tours.fr

Aging and Psychopathology of Memory – VIPsyM CERCA Team

The 5 teams of the **Research Centre on Cognition and Learning (CeRCA)** are based on Poitiers and Tours. Their main objective is to conduct fundamental research allowing a better understanding of the cognitive and social aspects that characterize individuals. These mechanisms are studied in particular according to the characteristics of the individual (age, sex, abilities) and the characteristics of the environment (social aspects, characteristics of the task). In addition, the research carried out at CeRCA aims to respond to several societal challenges relating in particular to education (educational inequalities, role of digital in learning), health (assistance in the diagnosis and rehabilitation of motor, cognitive or psychiatric disorders, preservation of autonomy) and work (gender inequalities, interface between human and artificial systems).

The aim of the **Aging and Psychopathology of Memory team (VIPsyM)** mostly based on the site of Tours is to study cognitive functioning, with a particular interest in memory, in normal and pathological aging and psychiatric pathologies.

Website: <https://cerca.labo.univ-poitiers.fr/le-cerca/>

Head of research team and co-director of the unit: Badiâa Bouazzaoui (bouazzaoui@univ-tours.fr)

Experimental and translational psychiatry – ExTraPsy - Ibrain Team

Website: <https://ibrain.univ-tours.fr>

Head of research team: Alexandre Surget (alexandre.surget@univ-tours.fr)

Contact: u1253@univ-tours.fr

9.5. Immunity, Infection and Immunotherapy

Morphogenesis and Antigenicity of HIV, Hepatitis and Emerging Viruses - MAVIVHe - Inserm U 1259

The research Unit studies the replication and the morphogenesis of HIV, the different hepatitis viruses (HBV, HCV, HDV, HEV) and some emerging viruses (SARS-CoV-2, DENV, ZIKV, CHIKV). We also explore the impact of the genomic variability of these viruses on infection outcomes such as pathogenesis, escape from immune response, and antiviral treatment resistance. Finally, the unit develops new original vaccine strategies and broad-spectrum antivirals.

Main lines of research:

Human immunodeficiency virus: innate immunity and restriction factors, viral diversity and immune escape, transmission dynamics

Hepatitis viruses: infectious cycle, morphogenesis, pathogenesis, vaccines, sera neutralization

Emerging viruses: development of broad-spectrum antivirals, humoral and cellular immunity.

Website: <https://mavivhe.univ-tours.fr>

Head of research unit: Fabrizio Mammano (fabrizio.mammano@univ-tours.fr)

Contact: mavivh@univ-tours.fr

Infectious Diseases and Public Health – ISP - UMR INRAE 1282

Situated in INRAE Val de Loire Research Center in the Loire valley, the unit « Infectious Diseases and Public Health » (ISP) is a joined research unit between INRAE and the University of Tours. ISP hosts 160 staff members, including 80 researchers, in **10 research teams** and core facilities such as the International Center for Bacterial Pathogens (CIRM-BP) and the team "Imaging and infectiology".

According to the «One Health» concept, the research unit conducts its research from three complementary and interconnected angles:

Understanding the host response(s) to infections

Understanding how the pathogens respond to their environments

Developing innovative prevention and control strategies

Website: <https://eng-infectiologie-santepublique.val-de-loire.hub.inrae.fr/>

Head of research unit: Nathalie Winter (ispdirection@inrae.fr)

Bacteria and maternal/foetal risk – ISP Bacteria Research Team

Our research work address *Streptococcus agalactiae*, a commensal bacterium from genital and gut. Our work extends from epidemiological analyses of neonatal *S. agalactiae* infections to decipher some molecular mechanisms involved in the virulence and adaptation of this bacterium: role of phages in evolution of *S. agalactiae*, role and the specificity of CRISPR/cas system - significance of sugar metabolism and metal acquisition systems in the bacterium's adaptation to its environment - role of small RNAs in bacterial physiology and virulence - alternatives to conventional antibiotics to manage infections - relationships between *S. agalactiae* and vaginal microbiota and mechanisms of adaptation.

Website: <https://eng-infectiologie-santepublique.val-de-loire.hub.inrae.fr/>

Team leader: Philippe Lanotte (philippe.lanotte@univ-tours.fr)

Bacterial Infections and Immunity in Ruminants – ISP Bacteria Research Team

The research activity of the team is dedicated to the study of two main bacterial infections of ruminants, bovine tuberculosis and mastitis, that have a significant impact on animal and human health worldwide: Phenotypic and functional characterization of inflammatory cells and their interactions with lymphocytes - Characterization of bacterial cell wall components involved in virulence and immune modulation, in particular the LPS of *Escherichia coli*, one of the major mastitis pathogens - Understanding of bacterial diversity of major mastitis pathogens, especially *Streptococcus uberis*, *Staphylococcus aureus* and *Escherichia coli*, and identification of key molecular determinants for fitness, transmission, virulence and persistence in the environment.

Website: <https://eng-infectiologie-santepublique.val-de-loire.hub.inrae.fr/>

Team leader: Pierre Germon (pierre.germon@univ-tours.fr)



Genomic Plasticity, Biodiversity, and Antimicrobial Resistance - ISP Bacteria Research Team

Our research group investigates the biodiversity and bacterial genomic evolution contributing to the epidemiological success of bacterial pathogens. We study also the dissemination of pathogenic bacteria across various ecosystems. We use a combination of genetics and comparative genomics approaches with a particular interest for mobile genetic elements. We investigate 3 model systems:

- acquired antimicrobial resistance in Gram-negative bacteria,
- evolutionary history of genera and pathogenic species belonging to the family Brucellaceae,
- genomics of mycobacteria *Mycobacterium avium* ssp. *Paratuberculosis* (Map) and *Mycobacterium bovis* related to their evolutions and reservoirs.

We are interested in major multidrug resistance mobile genetic elements, i.e. plasmids and integrative conjugative elements, spreading critically-important resistance genes in the One Health context (horizontal gene transfer, persistence, dissemination routes).

We also investigate the evolutionary history and the emergence of pathogenic species within the family Brucellaceae (e.g. zoonotic Brucellae and opportunistic *Ochrobactrum*): cell wall components, genetic diversity, transmission dynamics.

Website: <https://eng-infectiologie-santepublique.val-de-loire.hub.inrae.fr/>

Team leader: Benoit Doublet (benoit.doublet@univ-tours.fr)

Microbiota, Monogastric and Salmonella - ISP Bacteria Research Team

Depending of the hosts and the serotypes, Salmonella induce a wide spectrum of diseases among which gastro-enteritis, typhoid fever and asymptomatic infections. We focus our research on the:

- mechanisms of Salmonella carrier state in chicken by comparison to Salmonella virulence in susceptible mice
- impact of intestinal microbiota on transmission and host infection
- role of the different cell invasion pathways in the pathogenesis of Salmonella

Website: <https://eng-infectiologie-santepublique.val-de-loire.hub.inrae.fr/>

Team leader: Isabelle Virlogeux-Payant (isabelle.virlogeux-payant@inrae.fr)

Apicomplexa and Mucosal Immunity – ISP Parasitology Team

Our main scientific objective is to decipher host-pathogen interactions between the parasites *Eimeria* and *Cryptosporidium* in order to deliver new preventive methods. These parasites develop in the intestinal epithelium of their hosts. Our strength is to perform concomitantly activities ranging from basic researches on the parasites and on mucosal immunity of young animals in target or model species to targeted research on immunostimulation of young animals and antiparasitics.

Website: <https://eng-infectiologie-santepublique.val-de-loire.hub.inrae.fr/>

Team leader: Sonia Lacroix-Lamandé (sonia.lamande@inrae.fr)

BioPharmaceuticals and Microorganisms Against Pathologies – ISP Parasitology Team

Our major goal is the design and the rational development of innovative therapeutic and prophylactic approaches against Apicomplexan protozoa parasites. In particular, we focus on the parasites responsible for major diseases in animal and human health. Our model is *Toxoplasma gondii* parasite, the causative agent of toxoplasmosis, valuable model for the acquisition of new understanding of the biology of Apicomplexa. In order to design and develop innovative prophylactic approaches, we are interested to:

- define cellular and molecular players of the immune response during vaccination and infection
- pilot and/or amplify the desired immune response *Via* selective targeting and efficient delivery of antigens to key cells of immune response.

Website: <https://eng-infectiologie-santepublique.val-de-loire.hub.inrae.fr/>



Team leader: Isabelle Dimier-Poisson (isabelle.poisson@univ-tours.fr)

Control and Resistance of Macro-parasites – ISP Parasitology Team

Parasitic gastrointestinal nematodes (GIN) present one of the greatest threats to the productivity and sustainability of ruminant production systems worldwide. In the absence of an efficient alternative strategy, the control GIN population remains largely based on anthelmintics treatments. However, reports of resistance emerged for all anthelmintic classes. Anthelmintic resistance has now become a major concern in veterinary and human medicine since it has spread globally in field populations. In this context, our main objective is to develop novel strategies for the sustainable control of the GIN impacting livestock welfare and production. Our investigations ranged from the fine characterization of parasite fitness to the functional validation of novel pharmacological targets. For this purpose, we are taking advantage of one of the largest collection of livestock parasitic nematode isolates in the world, including anthelmintic-resistant isolates.

Website: <https://eng-infectiologie-santepublique.val-de-loire.hub.inrae.fr/>

Team leader: Cédric Neveu (cedric.neveu@inrae.fr)

Biology of Polyomavirus Infections – ISP Virology Team

The BIP team is devoted to the study of polyomavirus infections in humans. Our main focus is on the Merkel cell carcinoma polyomavirus (MCPyV), the causative agent of the vast majority of Merkel cell carcinomas (MCC), and the BK polyomavirus involved in kidney transplant rejection. Our activities cover the epidemiology of polyomavirus infections in the general population, the histogenesis of MCC, the development of innovative therapeutic solutions for the treatment of MCC.

Website: <https://eng-infectiologie-santepublique.val-de-loire.hub.inrae.fr/>

Team leader: Antoine Touzé (antoine.touze@univ-tours.fr)

Biology of Avian Viruses – ISP Virology Team

Marek's disease virus (MDV) is a highly contagious virus of chicken that causes a world widespread and economically important production disease. MDV induces transient immunosuppression and fatal T-cell lymphoma. Current vaccines protect well against tumor formation but not against infection and viral shedding. This explains the persistence of the virus and its possible evolution towards increased virulence. We focus our research on the relationships between MDV and its host. Our main research themes aim to:

- identify cellular and viral determinants involved in the persistence of MDV in feathers, in virus excretion into environment and transmission between birds
- characterize the role of hypoxia in the life cycle of MDV and MDV-induced lymphomagenesis
- improve the prevention of Marek's disease and vaccine platforms derived from Marek's disease virus to better fight against avian pathogens and preserve the environment
- screen anti-MDV chemical molecules in vitro
- develop new in vitro avian skin models to study virus/skin interactions, in order to reduce animal experiments.

Website: <https://eng-infectiologie-santepublique.val-de-loire.hub.inrae.fr/>

Team leader: Caroline Denesvre (caroline.denesvre@univ-tours.fr)

Infection and Innate Immunity in Monogastric livestock – ISP Virology Team

Avian-origin influenza viruses pose a permanent threat to animal and public health and to poultry industries worldwide. Research in our laboratory addresses various aspects of the interplay of avian influenza viruses with the chicken host:

- significance of certain host-specific viral adaptations and the functional roles of virus-encoded virulence factors, with a particular focus on the activities of the non-structural protein NS1.



- innate immune response pattern in distinct target cells (i.e. chicken lung epithelial cells and endothelial cells) and roles of these cells in the pathobiology of avian influenza virus infections in galliform birds.
- impact of low pathogenic avian influenza viruses on the outcome of avian pathogenic *Escherichia coli* (APEC) co-infections in the chicken host.

Website: <https://eng-infectiologie-santepublique.val-de-loire.hub.inrae.fr/>

Team leader: Sascha Trapp (sascha.trapp@univ-tours.fr)

Research Centre for Respiratory Diseases - CEPR - Inserm U 1100

The CEPR develops a continuum of research from the understanding of the mechanisms of respiratory infection and inflammation up to the development of drug delivery for their treatment. This includes molecular and technological studies and, preclinical and clinical investigations. The CEPR collaborates with academic and private partners (from startup to big pharmaccompanies). Research topics of its 5 research teams:

Pathophysiology of lung infections

Proteolytic enzymes and their pharmacological targeting in lung diseases

Pharmacology of inhaled pharmaceuticals

Biology of innate T cells & Lung immunity (Infection and autoimmunity)

Website: <https://cepr.inserm.univ-tours.fr>

Head of unit: Mustapha Si-Tahar (si-tahar@univ-tours.fr)

Secretary: secretariat.cepr@univ-tours.fr

9.6. Prevention, Diagnosis and Treatment of Human Diseases

methodS in Patient-centered outcomes and Health ResEarch – SPHERE Inserm U 1246

SPHERE is a multidisciplinary unit that seeks to develop and validate methods that can be used in clinical or epidemiological studies. The philosophy that drives the SPHERE unit is that the patient must be considered as a whole, i.e. taking into account his/her environment, and integrating his/her perceptions, experience, and wishes. The research unit is a two-site inter-regional research unit jointly accredited by the University of Nantes, the University of Tours and the INSERM.

Research topics: Cluster Randomized Trials and Complex Interventions - Definition, selection, validation, and assessment of outcomes - Methods for the measurement and interpretation of Self-Reported Outcomes - Prediction and Causality

Website: <https://www.sphere-nantes.fr/>

Head of research unit (codirection, university of Tours): Bruno Giraudeau (bruno.giraudeau@univ-tours.fr)

Education Ethics Health - EES RU 7505

EES is a resolutely multidisciplinary team, which brings together researchers in Education and Training Sciences, Health (Public health, medicine, epidemiology, dentistry) and Philosophy. The team research is studying the conditions for «acting together», «taking care» and «ethical decision-making». It studies health and training pathways, and care practices for collectives and individuals. The research group is involved in a methodological and theoretical field questioning the characterisation of experiential knowledge acquired by patients through the experience of illness, which opens up questions about the patient's place in care pathways. The team studies its application on a social scale, with teaching teams and patient association federations.

Website: <https://education-ethique-sante.univ-tours.fr/>

Head of research unit: Hervé Breton (hervé.breton@univ-tours.fr)

9.7. Pharmacology and synthesis of small molecules

Synthesis and Isolation of Bio-Active Molecules – SIMBA RU 7502

The themes of SIMBA focus on the discovery and synthesis of small molecules for therapeutic purposes in oncology and infectiology, derived from synthetic chemistry or plant/microalgae extracts. Two main axes guide our research: the first axis explores the synthesis or isolation of natural bioactive compounds, promoting the development of new synthetic pathways and ecological extraction processes. The second axis evaluates the biological properties of selected molecules, in collaboration with specialized teams in infectiology, oncology, and cosmetology.

Website: <https://simba.univ-tours.fr/>

Head of research unit: Jérôme Thibonnet (Jerome.thibonnet@univ-tours.fr)

Plant Biocompounds and Biotechnology - BBV - RU 2106

The laboratory is developing several research projects on the characterization of specialized plant metabolisms by developing biotechnological and metabolic engineering processes aimed at producing metabolites of interest for pharmaceutical, cosmetic or agronomic applications. These projects are based on molecular biology, cell biology, biochemistry and genomics and metabolomics approaches.

BBV lab is developing four research themes:

1. Study of plant specialized metabolisms and metabolic engineering for the bioproduction of molecules of pharmaceutical interest.
2. Development of plant cell cultures for the production of cosmetic bioactives.
3. Metabolomic screening of bioactive polyphenols in grapevine.
4. Study of the impact of climate change on the specialized metabolism of plants of pharmaceutical interest.

Website: <https://bbv.univ-tours.fr>

Head of research unit: Nathalie Guivarc'h (nathalie.guivarch@univ-tours.fr)

Contact: bbv@univ-tours.fr

9.8. Biotechnology and Health

Nanomedecines and Nanoprobes - CBM-NMNS - UPR 6295

Our research activities revolve around two axes: (i) the Nanomedicine axis concerns the development and study of nanosystems for the vectorization of anticancer or cosmetic active ingredients (nanomedicine) and for imaging / diagnostics (nanoprobes); (ii) the bio-analytical / diagnostic technology axis concerns the development of methodologies based on optical spectroscopies (IR, Raman, surface-enhanced Raman, fluorescence) and separation methods (HPLC, CE).

Website: <https://nmns.univ-tours.fr>

Head of research unit: Igor Chourpa (igor.chourpa@univ-tours.fr)

Contact: nmns@univ-tours.fr