

FACULTY OF MEDICINE

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Dean – Prof. Dr Habil. *Algirdas Utkus*

STAFF

567 teachers (345 holding research degree), 111 research fellows (74 holding research degree), 148 doctoral students.

DEPARTMENTS OF THE FACULTY

Institute of Biomedical Sciences:

Department of Anatomy, Histology and Anthropology
Department of Physiology, Biochemistry, Microbiology and Laboratory Medicine
Department of Pathology, Forensic Medicine and Pharmacology
Department of Radiology, Nuclear Medicine and Physics of Medicine
Department of Human and Medical Genetics
Lithuanian Population and Rare Diseases Biobank
Pharmacy Center

Institute of Clinical Medicine:

Clinic of Obstetrics and Gynecology
Clinic of Anaesthesiology and Reanimatology
Clinic of Ear, Nose, Throat and Eyes diseases
Clinic of Gastroenterology, Nephrourology and Surgery
Clinic of Infectious Diseases and Dermatovenereology
Clinic of Chest Diseases, Immunology and Allergology
Clinic of Neurology and Neurosurgery
Clinic of Psychiatry
Clinic of Rheumatology, Orthopaedic and Traumatology and Reconstructive Surgery
Clinic of Cardiovascular diseases
Clinic of Children's Diseases
Clinic of Internal Medicine, Family Practice and Oncology
Clinics of Emergency Medicine
Centre for Visceral Medicine and Translational Research

Institute of Dentistry

Institute of Health Sciences:

Department of Rehabilitation, Physical and Sports Medicine
Department of Nursing
Department of Public Health
Center for Health Ethics, Law and History

RESEARCH AREAS

Human Genome Diversity, Its Origin and Phenotypic Realization

Human and Public Health, Quality of Life and Environment

Etiopathogenesis, Diagnostics, Treatment of Diseases: Fundamental and Clinical Research, Innovative Technologies

RESEARCH INTERESTS

Development of the new diagnostic and prognostic molecular markers and tools for their quantification in the tissues

Diagnostic value of pathology tests and efficiency of cancer prevention programs

Development of the predictive, preventive, personalized and prognostic biomarkers of the diseases

Genesis and gnoseology of violence: searching for forensic medical criteria.

Side effect drug reactions – course and consequences of hospitalization

Changes in cardiovascular medicines utilization, morbidity, and mortality from cardiovascular disease in Lithuania

Research and investigation of etiopathogenetic mechanisms of atherosclerosis

Research and investigation of new methods in laboratory diagnostics of diseases

Investigation of nutrition and evaluation of new high quality food products with increased biological value to human health

Development of new antimicrobials for control of the medically important bacterial biofilms

Design of new molecular biology techniques for identification of the pathogenic and commensal microorganisms, genotyping, antimicrobial resistance and epidemiology

Health of mother and foetus: physiology and pathology

Etiopathogenesis, diagnostics, treatment of diseases: fundamental and clinical research, innovative technologies

Impact of perioperative and psychosocial risk factors on long term mortality, quality of life, stress reactions after cardiac surgery

Optimization of low back pain diagnosis and treatment

Organ dysfunction in critically ill oncohaematological patients

Early changes in cognitive functioning in patients undergoing general anaesthesia

Optimal cerebral perfusion pressure target treatment for traumatic brain injury patients

Intra-operative oxygen administration and adequate organ perfusion maintenance during different methods of anaesthesia

Spinal bupivacaine baricity and dose in day-case surgery

Development of new methods of opioid detoxification for illicit and prescription opioid dependent patients

Estimation of the influence of morphology and clinical peculiarities of otorhinolaryngological and ophthalmological diseases to results of application of novel diagnostic methods and treatment

Minimally invasive surgery of abdominal organs, development and improvement of new procedures and devices for the performance of minimally invasive procedures, especially of abdominal malignancies

Research of liver and pancreas transplantation techniques (listing and preparing of patients for liver, pancreas, kidney transplantation)

Research of liver and pancreas transplantation techniques

Study of dietary treatment of enteropathies

Minimal hepatic encephalopathy

Gut microbiota in health and disease

Extrahepatic complications of liver cirrhosis
Diagnostic/prognostic markers for prediction of HCC
Novel treatment for the GI bleeding
Contemporary diagnostic analysis of ascite liquid
Epidemiology and novel treatment of viral hepatitis
Patients with chronic hepatitis C quality of life study during DAA therapy
Urological cancer
Kidney stone disease
Urinary incontinence
Primary glomerular diseases
Resistant hypertension
Peritoneal dialysis
Medical kidney transplant management
Pathogenesis, diagnostics, treatment and prevention of infectious diseases: assessment of the current diagnostics, treatment and prevention methods; search of a new diagnostics, treatment and prevention methods; study of the mechanisms of infectious diseases pathogenesis; study of a safety and efficacy of a new vaccines and drugs for the treatment and prevention of infectious diseases
Effectiveness, feasibility and impact of latent tuberculosis treatment for the prevention of active tuberculosis among HIV-positive individuals
Incidence, etiology and pathogenesis of inflammatory chronic dermatosis (acne, hidradenitis suppurativa, rosacea, psoriasis, dermatitis, eczema, vitiligo): basic and clinical research, implementation of innovative technologies
Dermatooncology in Lithuania: epidemiology, pathogenesis, diagnostics, treatment
Evaluation of the efficacy of the diagnostic and treatment methods in obstructive, interstitial, neoplastic and allergic lung diseases: diagnosis and management of interstitial lung diseases
Diagnosis and management of COPD and bronchial asthma; sensitivity to various kinds of disinfectants among the medical staff
Development of new technologies, methods of early cancer detection and treatment interventions
Improvement of the quality of life of cancer patients
Pleural disease, diagnostic procedures, pleural biopsy; diagnosis, epidemiological and clinical research of drug hypersensitivity
Allergen immunotherapy: selection of patients, efficacy of different methods and long-term treatment results
Drug hypersensitivity diagnostic peculiarities
Contact allergy to cosmetics, textiles
Study of interactions between allergic rhinitis and bronchial asthma, application of new technologies in allergic and respiratory diseases
Strategy and approaches of the surgical management of patients with different thoracic pathology
Cognitive disorders in neurodegenerative, cerebrovascular, demyelinating diseases and epilepsy
Diagnostic evaluation and treatment of cerebrovascular disorders, headache, dizziness, traumatic brain injuries degenerative spinal diseases and cerebral neoplasms
Historical research on the prevalence, diagnosis and treatment of nervous diseases in the Grand Duchy of Lithuania, 19th century and interwar Lithuania
Evaluation of functioning and quality of life of patients with psychiatric disorders
Analysis of outcome variables of the treatment of developmental, neurotic, affective and psychotic in children and adults

Transition processes in young people, medical students
Different approaches on psychosocial rehabilitation and assertive outreach for comprehensive integrated community care for people with mental disorders in the community settings
Evaluation of services for people with mental illness and their families
Peculiarities of applying biological therapy to rheumatic patients in Lithuania
Immunogenicity in rheumatic patients with anti-TNF treatment
Outcomes of early-undifferentiated arthritis
Associations between genetic, epigenetic factors, rheumatoid arthritis etiopathogenesis and clinical course
Outcomes of systemic sclerosis
Musculoskeletal ultrasound
The role of nailfold videocapillaroscopy in diagnosing other systemic diseases
Reconstructive surgery: clinical applications of free and pedicled flaps, results
Autologous breast reconstruction – key methods, clinical results
Implant-based breast reconstruction – clinical analysis of complications
Breast reduction: methods, clinical results, factors contributing in choosing the best technique
Pelvic trauma, hip and knee arthroplasty, foot surgery, wrist surgery
Investigation of arterial wall functional and structural disorders in atherosclerosis and metabolic syndrome
Primary and secondary prevention of cardiovascular diseases
Development of high-risk strategy in prevention of cardiovascular diseases
Fundamental and clinical research in cardiac arrhythmias
Improvement of methods of complex treatment of atrial and ventricular tachyarrhythmia
Complex multi imaging assessment of left and right ventricular function in coronary artery disease, hypertension and heart failure
Myocardial regeneration therapy by cardiac pulse wave therapy in coronary heart disease
Congenital heart disease cardiac surgery in infants
New possibilities of hybrid (interventional and surgical) and minimally invasive technologies in cardiovascular medicine
Air pollution and child health
Allergic rhinitis and its impact on bronchial asthma in children
Health care of mother and child: physiological and social aspects and research of natural development of the child
Studies of functional development of organs and systems of newborns and children
Studies of neonatal pathology and perinatal mortality in Lithuania
Studies of peculiarities of chronic inflammation as diagnostic markers and targets for early therapeutical intervention in children with asthma and cystic fibrosis
Studies of electric impedance tomography as new diagnostic tool in neonatal pulmonology
Development of the methods of diagnostics, treatment and prophylaxis of acute, and chronic and new emerging infectious, immune, allergic, metabolic diseases
Progression and outcomes of pediatric renal disorders
Studies of immunoprophylaxis and vaccination
Diagnostics and treatment of inherited metabolic diseases
Diagnostics, treatment and prophylaxis of children's abuse and trauma
Gut microbiota and gut brain axis

Studies on childhood cancer etiology and predisposition, identification of new therapeutical targets and criteria for treatment risk-group stratification to further improve treatment individualization and reduce the treatment burden and long-term side effects

Studies on antimicrobial stewardship in paediatrics

Studies for improving the quality of care for children and young adolescents in health facilities

Etiology and long-term outcomes of pediatric inherited and acquired pediatric kidney diseases (cystic kidney diseases, glomerulopathies, chronic kidney disease, vesicoureteral reflux)

Air pollution and child health

Allergic rhinitis and its impact on bronchial asthma in children

Health, shared decision making and other modern technologies for the management of chronic noncommunicable disease (CNDs)

Healthy ageing through the early diagnostics and prevention of CNDs

Human ecology

Development of the methods of diagnostics, treatment and prophylaxis of acute and chronic paediatric neurological and developmental disorders, research on immune, genetic, metabolic and other factors as well as the application of digital technologies, research on the distance education of children during the COVID-19 pandemic

Studies on the long-term impact of exposure to screens on children's physical and mental health

Etiopathogenesis, diagnostics, treatment of diseases: fundamental and clinical research, innovative technologies

Early diagnostics and prevention of non-infection diseases in family practice and in gerontology

Biomarker research in haematology and oncology

Investigation of etiopathogenetic risk factors and quality of patients' life with internal diseases

Emergency medicine

Acute cardiac care

Resuscitation

Polytrauma

Triage

Acute coronary syndromes

Sudden death

Acute heart failure

ECMO

Single cell diagnostics

Intraoperative visualization

Non-invasive biomarkers

"Organ-On-A-Chip" models

Microbiome

Artificial intelligence

Genetics and proteomics

Individualized cancer treatment

Etiopathogenesis, diagnostics, treatment, rehabilitation and prevention of stomatognathic system disease: fundamental and clinical research

Biopsychosocial model

Effectiveness of rehabilitation, physical and sport medicine

Components of physical capacity

Prevention of disease and injury
Environmental and social factors and public health
Epidemiology of non-infectious and infectious diseases
Scientific basis of health care management
Assessment of health care activities and biostatistics
Health and quality of life
Medical ethics
Public mental health, social determinants of population health, health services research
History of medicine
History of public health
Medical ethics

DOCTORAL DISSERTATIONS MAINTAINED IN 2020

- E. Siavrienė. A molecular and functional evaluation of coding and non-coding genome sequence variants and copy number variants.
- A. Neverauskienė. Image quality and radiation optimization in children's nonsyndromic craniosynostosis computer tomography.
- V. Baltrūnienė. The role of adiponectin in patients with non-ischemic dilated cardiomyopathy and chronic heart failure.
- S. Mažeikienė. Ethical, legal, forensic medical justification of deontological examinations in the evaluation of physician malpractice and errors.
- I. Bikulčienė. Evaluation of fatty acids' composition based malondialdehyde as an oxidation indicator in healthy volunteers and uronolithiasis-diagnosed patients.
- A. Bakavičius. The value of clinical and molecular markers in preoperative diagnosis of prostate cancer.
- J. Tumas. Effects of pancreatic and periampullar tumours, immunomodulation and surgical treatments on metabolism, systemic inflammatory response and outcomes.
- D. Danys. Lithuanian clinical trial of treatment of hemorrhoids. Double-blind randomized controlled trial comparing laser hemorrhoidoplasty with sutured mucopexy and excisional hemorrhoidectomy.
- M. Kurminas. Study of ischemic stroke treatment results using mechanical thrombectomy and of factors affecting them.
- J. Kuzmickienė. The significance of cognitive and demographic indicators in predicting the response of Alzheimer's disease to treatment.
- G. Stundžaitė-Baršauskienė. Multivariate analysis of interrelations between facial anthropometric parameters, self-esteem, psychosocial wellbeing and body image after reconstruction of nasal soft tissue defects and aesthetic surgery.
- A. Drašutienė. Minimally invasive off-pump mitral valve repair procedure with NeoChord device to treat degenerative mitral regurgitation: patient selection and echocardiographic data assessment.
- A. Skrebūnas. Analysis of factors for abdominal aortic aneurysm growth after endovascular repair.
- V. Rudienė. Pulmonary arterial hypertension associated with congenital heart disease: prevalence, prognosis, and treatment evaluation.
- V. Dirsė. A population-based single nucleotide polymorphism array analysis of genomic aberrations in younger adult acute lymphoblastic leukaemia patients.

J. Mozūraitienė. E3 ubiquitin ligases: search of new biomarkers for aggressive melanoma target therapy.

I. Dumbrytė. Evaluation of enamel micro-cracking characteristics before and after removal of metal and ceramic braces in different age groups: *in vitro* study.

R. Trumpaitė-Vanagienė. Wear resistance and biocompatibility of dental luting cements.

MAIN CONFERENCES ORGANIZED IN 2020

Scientific-practical virtual conference *The Future of the Sports Science: evidence based sports practice and medicine*, 27 November 2020

International scientific-practical virtual seminar in commemoration of International Rare Diseases Day *Modern diagnostics, treatment, monitoring of hereditary metabolic diseases*, 17–20 March 2020

International scientific-practical virtual conference “We decide” to commemorate World Down Syndrome Day in Lithuania, 20 March 2020

Department of Human and Medical Genetics and School of Huntington's Disease Patients joint conference “Rare diseases in everyday doctor practice”, Panevėžys, Lithuania 28 February 2020

International school *The School of Multiparametric Liver Ultrasound Imaging*, 7–9 February 2020

National Ultrasound School: Summer School of Ultrasound Diagnostics 2020: How I Do It? 24–26 July 2020

National conferences:

Diseases of the appendix, 10 December 2020 (remote)

Topical issues in gynecology, 03 September 2020 (remote)

Laboratory medicine topics

Day of thrombosis

Review of Laboratory diagnostics 2020

Interdisciplinary approach to the patient in outpatient gynaecology, 02 June 2020

Clinical gynecology: knowledge and practical skills applied on a daily basis, 27 February 2020

Medications and pregnancy, 09 April 2020

Mens sana in corpore sano, 03 October 2020

Physician development seminars, 31 January 2020

Physician development seminars, 28 February 2020

Benefits of systemic medicine in surgery (hybrid conference), 18 September 2020

Seminars on Urology, 25 September 2020

Minimally invasive pancreas surgery and other novelties of MIS (hybrid conference), 01 October 2020

Controversies of Cardioneurology 2020, 30 December 2020

Resuscitation: 3 cycles, 7–9 January 2020

COVID-19 news, 3 cycles, 18 June 2020, 07 July 2020 (remote)

Up-to-date in infectious diseases epidemiology, prophylaxis and treatment in 2020, 07 October 2020 (remote)

Dermatovenereology afternoon V, 27 February 2020

Dermatovenereology update 2020, 11 September 2020

Psoriasis and inflammatory skin diseases, 23 October 2020

Allergology and clinical immunology in 2020: new challenges and treatment opportunities, 15 June 2020

News in allergology and clinical immunology, 26 November 2020

Winter of allergology and clinical immunology, 04 December 2020
News in pulmonology, 08 December 2020
5th National Congress of Lung Diseases, 13 November 2020
Peculiarities of diagnosis and treatment of psychiatric and nervous diseases, 22 April 2020 (remote)
Lithuanian Summer School of neurologists, 28 August 2020, Vilnius Region
National conference of Lithuanian Stroke Association 2020, 16 February 2020, Trakai region
Differential diagnostics of emergency in GP daily practice, 04 December 2020
Polytrauma and severe injuries, 28 February 2020
Cross-talk Between Pediatric Endocrinology and Nephrology, 27 November 2020 (remote)
Lessons for the healthcare sector from the COVID19 pandemic: how will we come back to normal pace?
18 June 2020 (remote)
Modern pediatrics 2020, 24 September 2020 (remote)
Pulmonology and allergology fall 2020, 26 November 2020 (remote)
Pulmonology and allergology winter 2020, 04 December 2020 (remote)
Allergology update 2020: peculiarities of diagnostics and therapy, 11 December 2020 (remote)
Alpha mannosidosis - challenges and new opportunities in disease management, 16 September 2020
Innovations in Cardiology – 2020, 17 January 2020
MasterKlaster2020: Critical conditions, 08 January 2020
Application of ergonomic principles in dentistry, 05 March 202, Vilnius
4th conference *Child Health Care 2020*, 10 January 2020

International conferences:

Infectology 2020, 03 September 2020 (remote)
Brain, Heart and Kidney (BHK) Congress, 22–24 October 2020
DDS consensus conference Accuracy in Digital Dentistry, 2–3 October 2020, Serralunga d’Alba, Piedmont, Italy
Treatment of urinary incontinence in men by implantation of the ATOMS hydraulic system, 10 November 2020
The challenges of kidney transplantation: 50 years later, 02 February 2020
Antithrombotic treatment strategy, 8 May 2020, Vilnius, <http://www.heart.lt/> (remote)
5th international meeting of Baltic Society of Cardiovascular Magnetic Resonance, Hybrid conference, <http://balticcmr.com/node/14>, 18 September 2020, Vilnius
9th Vilnius-Gdansk Universities Meeting on Hypertension, Kidney Disease and Cardiovascular Protection, October 2020, Vilnius, Lithuania (remote)
International Congress on Brain, Heart and Kidney, www.bhk2020.com; 22–24 October 2020, Vilnius, Lithuania (remote)
7th international conference on Prehypertension, Hypertension, Metabolic Disorders and Cardiovascular disease, 20–22 November 2020, Vilnius, Lithuania (remote)
Lithuanian Cardiology 2020, www.kardiologija2020.lt, 17 December 2020, Vilnius, Lithuania (remote)
Series of conferences on the topics in Cardiology. Virtual educational academy of Lithuanian Society of Cardiology, www.lsc.lt J. Čelutkienė, June – December, 2020, Vilnius
27th Vilnius International Paediatric Pulmonology and Allergology Conference, 24 December 2020, Kharkiv, Ukraine
28th Vilnius International Paediatric Pulmonology and Allergology Conference - School, 05 June 2020, Vinnitsya, Ukraine

3rd International Conference of Ukrainian Academy of Paediatrics (UAP-SMS) and Lithuanian Paediatric Society, 26 June 2020, Odessa, Ukraine

International Congress of UAP-SMS with official participation of paediatric societies of Lithuania, Poland and Georgia *Child Health Care and Wellbeing*, 02–03 October 2020, Lviv, Ukraine

Virtual Expert Meeting *Management of Short Bowel Syndrome with Intestinal Failure (SBS-IF)*, 20 October 2020

29th Vilnius International Paediatric Pulmonology and Allergology Conference, 23 December 2020, Vinnitsya, Ukraine

Ukrainian National Conference with International Participation Dedicated to the International Day of the Prematurely Born Child & 2nd Poltava Perinatal Readings Named After NM Maksymovych-Ambodk, 27 December 2020, Poltava, Ukraine

Virtual 2nd Baltics Fabry expert meeting, 30 October 2020

5th Baltic Endocrinology Conference for Young Specialists, 09–10 October 2020

Recipes in Dentistry 2020, annual meeting organized by Lithuanian Society of Prosthodontics, 05–07 February 2020

MAIN SCIENTIFIC ACHIEVEMENTS IN 2020

In 2020, a novel hexagonal grid-based methodology to automatically detect tumour-host interface zone and compute immune cell density profile across the zone was published. PCT and Lithuanian patent applications have been submitted <https://www.vu.lt/en/business/innovations-and-research/inventions-technologies#automated-tumour-stroma-interface-zone-detection-for-anti-tumour-response-assessment-by-immunogradient-indicators>.

2020 patent application (LT2020538) Usage of Automated Ultrasound and Contrast-Enhanced Ultrasound Images and Database System for Early Diagnosis of Pancreas Diseases.

November 20th, 2020 Eureka project Establishing Liver-On-A-Chip Platform for Improved Diagnosis of Liver Function was endorsed by the EU EUREKA high level group. The certificate is available.

Dr I. Bikulčienė (3rd place) report: Relationship between changes in fatty acid composition of platelet membrane phospholipids in healthy and myocardial infarcted men with oxidative stress. 13th Young Scientists Conference "Bioate: Perspectives on Natural and Life Sciences" December 4 (remotely).

Paškoniene, A., Baltagaviene, R., Lengvenis, G., Beleskiene, V., Ivaska, J., Markeviciute, V., Lesinskas, E. The importance of the temporal bone 3T MR imaging in the diagnosis of Meniere's disease. *Otology and Neurootology*. 2020 Feb, 41.

Byckova, J., Mikstiene, V., Kiveryte, S., Mickeviciene, V., Gromova, M., Cernyte, G., Mataityte-Dirziene, J., Stumbrys, D., Utkus, A., Lesinskas, E. Etiological profile of hearing loss amongst Lithuanian pediatric cochlear implant users. *Int J Pediatr Otorhinolaryngol*. 2020 Jul, 134: 110043.

pan H, Petro R, Henao-Restrepo AM, [...] Jancoriene L, et al. WHO Solidarity Trial Consortium, Repurposed Antiviral Drugs for COVID-19 – Interim WHO Solidarity Trial Results. *N Engl J Med*. 2020 Dec 2. doi: 10.1056/NEJMoa2023184. Online.

Abstract „A Pilot Observational Study of the Current Situation and Outcomes of COVID-19 Patients in Vilnius University Hospital Santaros Klinikos, Lithuania“ by Ieva Kubiliūtė, Birutė Zablockienė, Tadas Žvirblis, Laimonas Griškevičius, Ligita Jančorienė was accepted for poster and a short oral presentation in the first online conference, the “ESCMID Conference on Coronavirus Disease (ECCVID)”. <http://www.eccvid.org/> This is a pilot observational study of COVID-19 positive patients who met specific criteria of more severe disease and were hospitalized in VULSK until 20 July 2020. Descriptive statistics were used for demographical, clinical data and outcome analysis.

- Malinauskiene, L., Cerniauskas, K., Linauskiene, K., Griguola, L., Chomiciene, A., Blaziene, A. Skin testing with bendamustine: what concentration should be used? *Allergy Asthma Clin Immunol.* 2020,16: 70.
- Danila, E., Linkevičiūtė-Ulinskienė, D., Zablockis, R., Gruslys, V., Cicėnas, S., Smailytė, G. A cohort study of exposure to antihyperglycemic therapy and survival in patients with lung cancer. *Int J Environ Res Public Health.* 2020, 17: 1747.
- To, T., [..] Valiulis, A., [..] Yorgancioglu, A. A global respiratory perspective on the COVID-19 pandemic: commentary and action proposals. *Eur Respir J.* 2020 Jul 23, 56(1): 2001704.
- Azukaitis, K., Jankauskiene, A., Schaefer, F., Shroff, R. Pathophysiology and consequences of arterial stiffness in children with chronic kidney disease. *Pediatr Nephrol.* 2020 Sep 7.
- Servais, A., [..] Cerkauskienė, R., [..] Levtchenko, E. Metabolic Nephropathy Workgroup of the European Reference Network for Rare Kidney Diseases (ERKNet) and eUROGEN. Cystinuria: clinical practice recommendation. *Kidney Int.* 2020 Sep 9, S0085-2538(20)30829-2.
- Šerpytis, P., Balčiūnaitė, G., Skorniakov, V., Rimkus, A., Zaremba, T., Palionis, D., Valeviciene, N., Aidietis, A., Ručinskis, K., Sogaard, P., Glaveckaitė, S. Prevalence and prognostic value of late gadolinium enhancement on CMR in aortic stenosis: meta-analysis. *European Radiology.* 2020, 30(1): 640–651.
- Šerpytis, P., Wijntjens, G. W., Fengler, K., Fuernau, G., Jung, C., den Uil, C., Akin, S., van de Hoef, T. P., Šerpytis, R., Diletti, R., Henriques, J. P., Thiele, H., Piek, J. J. Prognostic implications of microcirculatory perfusion versus macrocirculatory perfusion in cardiogenic shock: a CULPRIT-SHOCK substudy. *European Heart Journal: Acute Cardiovascular Care.* 2020, 9(2): 108–119.
- Šerpytis, P., Claeys, M. J., Roubille, F., Casella, G., Zukermann, R., Nikolaou, N., De Luca, L., Gierlotkaa, M., Iakobishvili, Z., Thiele, H., Koutouzis, M., Sionis, A., Monteiro, S., Beauloye, C., Held, C., Tint, D., Zakke, I., Babic, Z., Belohlavev, J., Magdy, A., Rasalingam, M. S., Daly, K., Arroyo, D., Vavlukis, M., Radovanovic, N., Trendafilova, E., Marandi, T., Hassenger, C., Lettino, M., Price, S., Bonnefoy, E. Organization of intensive cardiac care units in Europe: Results of a multinational survey. *European Heart Journal: Acute Cardiovascular Care.* 2020 Jan, 24: 2048872619883997. DOI: 10.1177/2048872619883997.
- Šerpytis, P., Teerlink, J. R., Diaz, R., Felker, G. M., McMurray, J. J. V., Metra, M., Solomon, S. D., Adams, K. F., Anand, I., Arias-Mendoza, A., Biering-Sørensen, T., Böhm, M., Bonderman, D., Cleland, J. G. F., Corbalan, R., Crespo-Leiro, M. G., Dahlström, U., Diaz, R., Echeverria Correa, L. E., Fang, J. C., Filippatos, G., Fonseca, C., Goncalvesova, E., Goudev, A. R., Howlett, J. G., Lanfear, D. E., Lund, M., Macdonald, P., Mareev, V., Momomura, S. I., O'Meara, E., Parkhomenko, A., Ponikowski, P., Ramires, F. J. A. et al. Omecamtiv Mecarbil in chronic heart failure with reduced ejection fraction, GALACTIC-HF: baseline characteristics and comparison with contemporary clinical trials. *European Journal of Heart Failure.* 2020 Sep 27. doi: 10.1002/ejhf.2015.
- Šerpytis, P., Teerlink, J. R., Diaz, R., Felker, G. M., McMurray, J. J. V., Metra, M., Solomon, S. D., Adams, K. F., Anand, I., Arias-Mendoza, A., Biering-Sørensen, T., Böhm, M., Bonderman, D., Cleland, J. G. F., Corbalan, R., Crespo-Leiro, M. G., Dahlström, U., Diaz, R., Echeverria, L. E., Fang, J. C., Filippatos, G., Fonseca, C., Goncalvesova, E., Goudev, A. R., Howlett, J. G., Lanfear, D. E., Li, J., Lund, M., Macdonald, P., Mareev, V., Momomura, S. I., O'Meara, E., Parkhomenko, A., Ponikowski, P., Ramires, F. J. et al. Cardiac myosin activation with Omecamtiv Mecarbil in systolic heart failure. *N Engl J Med.* 2020 Nov 13. doi: 10.1056/NEJMoa2025797. Online.
- Assoc. Prof. Marija Jakubauskienė - President of the Public Mental Health Section of the European Public Health Association (EUPHA).

INSTITUTE OF BIOMEDICAL SCIENCES

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STAFF

Professors: Dr R. Jankauskas, Dr J. Tutkuvienė, Dr R. Šimkūnaitė-Rizgeliienė, Dr V. Žalgevičienė.

Associate professors: Dr A. Barkus, Dr R. Čepulienė, Dr E. M. Jakimavičienė, Dr Ž. Miliauskienė, Dr L. Nedzinskienė, Dr A. Suchomlinov, Dr V. Tutkus (part-time).

Assistant professor: Dr M. Leonavičiūtė-Klimantavičienė (part-time).

Teaching assistants: R. Mackevičienė, R. Morkūnienė.

Lecturers: dr. V. Bartuškienė (part-time), V. Gurskytė (part-time), R. Karneckė (part-time), J. Janavičius (part-time).

Senior researchers: Research Professor Dr D. Piombino-Mascali; Researcher Dr J. Kozakaitė; Research Assistant S. Gervickaitė.

Doctoral students: K. Kuolienė, G. Laurinavičiūtė, V. Lukošaitis, R. Mackevičienė R. Morkūnienė, A. Vaitiekus

Students' scientific group of Human Biology and Evolutionary Medicine: scientific supervisor – Prof. J. Tutkuvienė; coordinator – student S. Ekkert; in total – 47 members of students

RESEARCH INTERESTS

Phenotypic variety of Lithuanian and other populations in a changing environment

The variety of morphometric (skeletal and dental) health indicators of Lithuanian paleopopulations, paleopathology and its factors (ecological, demographic, social)

The peculiarities and factors of growth programming, prenatal and postnatal development, also health risk factors, using data from experimental animal models (chicken embryos, rats, other) studies

The diversity of physical status of Lithuanian and other populations, the biotic and abiotic factors of phenotypic expression, and the relationship between markers of physical and general health status from the viewpoint of evolutionary medicine

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Phenotypic Variety of Lithuanian Inhabitants, Its Prenatal and Postnatal Factors in a Changing Environment. Supervisors: Prof. J. Tutkuvienė, Prof. R. Jankauskas. 2019–2023.

Bioarcheological investigations. Results of biomolecular study of treponematosi and plague published. New regularities of growth disruption in historical populations elucidated. Results on nutrition (stable isotope data) in several past populations analysed and published. New data on research of historical

mummified bodies summarized and published. Data on health status of historical citizens of Vilnius were summarised and published.

Main publications:

Giffin, K., Lankapalli, A., Sabin, S., Spyrou, Posth, C., Kozakaitė, J., Friedrich, R., Miliauskienė, Ž., Jankauskas, R., Herbig, A., & Bos, K. A treponemal genome from an historic plague victim supports a recent emergence of yaws and its presence in 15th century Europe. *Scientific Reports (Nature Publisher Group)*. 2020, 10(1): 1–13. DOI: 10.1038/s41598-020-66012-x.

Holder, S., Miliauskienė, Ž., Jankauskas, R., & Dupras, T. An integrative approach to studying plasticity in growth disruption and outcomes: A bioarchaeological case study of Napoleonic soldiers. *American Journal of Human Biology*. 2020, 0(0): 1–15. DOI: 10.1002/ajhb.23457.

Oras, E., Anderson, J., Tõrv, M., Vahur, S., Rammo, R., Remmer, S., [...], Piombino Mascali, D. Multidisciplinary investigation of two Egyptian child mummies curated at the University of Tartu Art Museum, Estonia Late/Graeco-Roman periods). *PLoS ONE*. 2020, 15(1): e0227446, 1–27. DOI: 10.1371/journal.pone.0227446.

Experimental (growth programming) investigations. Further analysis of data from the experimental study of two generations of rat offspring, whose mothers were nutritional deprived, was continued with immunohistochemical examination of aged rat retinas. Immunofluorescence of photoreceptors, retinal microglia and ganglion cells was analysed manually and automatically using Halo software program, and results were prepared for the publication and presented at international conference. Investigation of viability of periodontal ligament cells in different media was continued, results analysed and prepared for the presentation at international conference (cancelled due to Covid situation). The experiment was completed with two generations of Long-Evans clone rats that drank fluorinated and / or boron-saturated water. Dental preparations were analysed and prepared for bone marrow analysis. The experiment was completed with Wistar clone rats that drank ionised (electrolysed) water, results were analysed, summarized and presented in the article.

Main publication:

Stankevič, J., Audickaitė, A., Šilovė, S., Šimčikas, V., Cesiulis, H., Skujienė, G., Bukelskienė, V., Žalgevičienė, V., Tutkuvienė, J. Effect of ionised (electrolysed) water on the rat embryo development. *Journal of Environmental Engineering and Landscape Management*. 2020, 28(1): 28–35. DOI: 10.3846/jeelm.

Investigations of physical status of contemporary inhabitants. The data on prevalence of stillbirths and prematurity in Lithuania during the 1995–2018 period in relation to global economic crises and maternal education were analysed and presented at the international conference. Materials on newborns head circumference were prepared for publication, also the data for longitudinal study of preterm newborns in Lithuania was collected and started to be analysed. Changes in the prevalence of thinness among children born in 1990 and 1996 in Vilnius were analysed and published. The study of growth of school children and youth according wide programme was started: 115 youngsters of 19–20 y.o. were investigated. The collection of data for the study on body image in young and elderly people was continued. Analysis of data on premenstrual syndrome was continued and materials for publication were prepared. The manuscript on female's breast morphology was prepared for publication. Studies about peculiarities of andropausal period in men and perimenopausal period in women were started. The study on consumption of psychoactive substance of different age and sex groups, also incarcerated persons was finished, and materials were analysed. Collecting data on adult eating habits and their impact on health and quality of life was started. The study of age dynamics of facial indices during puberty (longitudinal study) was finished. The study on the relationship between the joint's alignment in relation to the lower limb function and physical status of young adults was finished (in total, 176 persons were investigated), and results were analysed. The results of the study on meniscus tears were analysed and materials for publication were prepared. The study on variation of *sulcus nervi radialis* was continued. The study on anatomical variants of cerebral arteries in relation to cerebral vascular pathologies was

continued: 125 patients were included into the investigation (48 persons treated with reperfusion and 77 persons treated with basic stroke therapy).

Main publications:

Praxmarer, E.M., Tutkuvienė, J., Kirchengast, S. (2020). Metric and morphological analysis of pelvic scars in a historical sample from Lithuania: associations with sex, age, body size and pelvic dimensions. *International Journal of Osteoarchaeology*. 2020, first published online, p. 1–13. DOI: 10.1002/oa.2887.

Fergizas, J., & Suchomlinov, A. Changes in the prevalence of thinness among children in Vilnius, Lithuania: a comparison of two longitudinal data sets of children born in 1990 and 1996. *Anthropologischer Anzeiger; Bericht Uber die Biologisch-anthropologische Literatur*. 2020, 77(4): 281–288. DOI: 10.1127/anthranz/2020/1203.

Narkauskaite-Nedzinskiene, L., Samsoniene, L., Karanauskiene, D., Stankute, V. Psychomotor abilities of elderly people and their motivation to participate in organized physical activity. *Experimental Aging Research*. 2020, 46(3): 257–271. DOI:10.1080/0361073X.2020.174361.

National Research Projects

Research Council of Lithuania. **Osteological Material as the Source for Lithuanian Research: Knowledge, Systemization and Access**. (No. S-LIP-18-50 / LSS-150000-1175). Assoc. Prof. Ž. Miliauskienė (leading scientist), Dr J. Kozakaitė (researcher). 2018–2020.

Analysis of human osteological collection was completed. Digital osteological database was established, data were entered. An archaeological and historical data of the analyzed osteological collection was collected. Results of the project were presented at national and international conferences.

Genocide and Resistance Research Centre of Lithuania. **Anthropological Investigations of Orphans' Cemetery of the 19th c. in Vilnius**. Prof. R. Jankauskas (leading scientist), Dr J. Kozakaitė (researcher), Assoc. Prof. Ž. Miliauskienė (researcher). 2017–2019.

During historical, archaeological and anthropological investigations of orphan's cemetery of the 19th c. in Vilnius another 15 remains of victims of Soviet repressions (1956–1969) were uncovered. Remains of the participants of the Lithuanian partisans' movement Antanas Kraujalis-Siaubūnas and Juozapas Streikus-Stumbras were identified by complex anthropological and forensic analysis. Investigation is continued.

Genocide and Resistance Research Centre of Lithuania. **Anthropological Investigations of Remains of Participants of Anti-Soviet Resistance in 1944–1953** (Leipalingis, Alytus district). Prof. R. Jankauskas (leading scientist), Dr J. Kozakaitė (researcher), Assoc. Prof. Ž. Miliauskienė (researcher). 2019–2020.

During historical, archaeological and anthropological investigations in Leipalingis (Alytus district) 33 remains of participants of anti-Soviet resistance (1944–1953) were uncovered. At least 13 individuals were identified. Investigation is still ongoing.

International Research Projects

Horizon-2020 project **Alliance4Life's Recommendations for HORIZON Europe: Widening Participation and Strengthening the Era**. Prof. J. Tutkuvienė (member from Vilnius University, Faculty of Medicine). 2020–2022.

Preparation for the project which will be dedicated to WIDENING, Strengthening the ERA and COST instruments that address the networking gaps and deficiencies between research institutions in WIDENING countries and their internationally-leading counterparts.

Horizon 2020 project Research and Innovation Framework Programme, Activity: WIDESPREAD-05-2020 - Twinning **Developing a New Network of Researchers on Contemporary European Motherhood (MotherNet)** (between Vilnius University, Uppsala University and National University of Ireland Maynooth). 2020–2022. Teaching Assist. R. Morkūnienė – ESR’s representative member of the Consortium management Committee.

Preparation for the project was finalized.

Contractual Research

Anthropological Investigation of Remains of Victims of the 2nd World War, Buried at Zokniai (part of Šiauliai city).

Complete anthropological analysis of 718 remains of Soviet army prisoners-of-war who died in detention camp before reburial was performed. Report submitted, contract finished.

Anthropological Investigation of Remains of Victims of the 2nd World War, Buried at Armalėnai (Šilutė County). Complete anthropological analysis of 1016 remains of Soviet army prisoners-of-war who died in detention camp before reburial was performed. Report submitted, contract finished.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

Institute of Anthropology, University of Vienna (Austria)

Max-Planck-Institute, Starnberg-Seewiesen (Germany)

Institute of Evolutionary Medicine, University of Zürich (Switzerland)

Institute for Anthropological Research, Zagreb (Croatia)

The Institute for Mummy Studies, Bolzano (Italy)

Institute of Forensic Medicine, Heinrich-Heine University of Düsseldorf (Germany)

Department of Anatomy, University of Göttingen (Germany)

University of Central Florida, Orlando, Florida (USA)

Medical University of Lodz (Poland)

University of Torun (Poland)

Cranfield University (UK)

University of Tartu (Estonia)

McMaster University (Canada)

University of Catania (Italy)

State Forensic Medicine Service (Lithuania)

OTHER RESEARCH ACTIVITIES

Prof. J. Tutkuvienė –

- Council and Board member of the European Anthropological Association;
- member of the Commission for Human Ecology of International Union of Anthropological and Ethnological Sciences (IUAES);
- member of international scientific societies: International Association of Human Biologists, Society for Studies of Human Biology, International Auxological Society;
- member of national scientific societies: Lithuanian Morphological Society, Lithuanian Society of Obstetricians and Gynaecologists (Section of Gynaecology of Children and Adolescents);
- editor-in-Chief of the journal *Anthropologischer Anzeiger*;
- editorial board member of the journals: *Journal of Human Ecology*; *Acta Medica Lituanica*; *Visuomenės Sveikata (Public health)*.

Prof. R. Jankauskas –

- member of Lithuanian Academy of Sciences (<http://lma.lt/old/intranetas>);
- editor-in-Chief of the journal *Acta Medica Lituanica*;
- editorial boards member of the journals: *Papers on Anthropology* (Tartu University, Estonia), *Lietuvos archeologija*, *Archaeologia Baltica*;
- member of the Board of the European Anthropological Association;
- member of the Scientific Council of the Lithuanian Institute of History;
- member of the Scientific Council of the Nature Research Center;
- member of Paleopathology Association;
- member of the Lithuanian Society of Archaeology.

Prof. R. Šimkūnaitė-Rizgeliė –

- member of the European Anthropological Association;
- board member of the Lithuanian Morphological Society.

Prof. V. Žalgevičienė –

- vice-chairperson of the Commission of Appeal at the Faculty of Medicine;
- member of the Lithuanian Morphological Society;
- member of Baltic Laboratory Animal Association (Balt-LASA).

Research Professor D. Piombino-Mascali –

- board member of the Encyclopedia of Global Archaeology;
- member of British Association of Biological Anthropology and Osteoarchaeology;
- honorary inspector of the mummified bioanthropological heritage of Sicily;
- visiting professor of Institute of Legal Medicine, University of Catania, Italy;
- visiting professor of Department of Humanities, University of Catania, Italy;
- member of Paleopathology Association;
- honorary member of American Society of Embalmers;
- collaborator of the Department of Cultural Heritage and Sicilian Identity for the study of archaeological human remains.

Assoc. Prof. A. Barkus –

- member of the Lithuanian Morphological Society;
- member of the European Anthropological Association;
- member of the Lithuanian Society of Archaeology.

Assoc. Prof. R. Čepulienė –

- member of the Lithuanian Morphological Society;
- member of the European Anthropological Association;
- member of the World's Poultry Science Association.

Assoc. Prof. E. M. Jakimavičienė –

- member of the Lithuanian Morphological Society;
- member of the European Anthropological Association;
- member of the International Auxological Society.

Assoc. Prof. Ž. Miliauskienė –

- member of the Lithuanian Morphological Society;
- member of Paleopathology Association;
- member of the European Anthropological Association;
- member of the Lithuanian Society of Archaeology.

Assoc. Prof. L. Nedzinskienė –

- member of the Lithuanian Morphological Society.

Assoc. Prof. A. Suchomlinov –

- member of the European Anthropological Association;
- member of the International Auxological Society;
- member of the Lithuanian Morphological Society.

Assoc. Prof. V. Tutkus –

- member of European Society of Sports Traumatology, Knee Surgery and Arthroscopy (ESSKA);
- member of International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine (ISAKOS);
- member of Lithuanian Association of Arthroscopic Surgeons;
- member of Lithuanian Society of Orthopaedics and Traumatology;
- member of Lithuanian Society of Plastic and Reconstructive Surgery.

Dr M. Leonavičiūtė-Klimantavičienė –

- member of Lithuanian Society of Children's Pulmonology;
- member of Lithuanian Society of Allergy and Clinical Immunology;
- member of European Respiratory Society.

Teaching Assist. R. Mackevičienė –

- member of the Lithuanian Morphological Society;
- member of the Lithuanian Ornithological Society.

Teaching Assist., PhD student R. Morkūnienė –

- member of Lithuanian Morphological Society;
- member of European Anthropological Association;
- member of the International Auxological Society.

Researcher J. Kozakaitė –

- member of the Lithuanian Society of Archaeology

Lect. Dr V. Bartuškienė –

- member of the European Anthropological Association;
- member of the Lithuanian Morphological Society.

Lect. R. Jacevičiūtė –

- member of the Lithuanian Morphological Society.

Lect. J. Janavičius –

- president of Lithuanian Hand Surgery and Rehabilitation Society Manus Lithuanica;
- member of Lithuanian Foot Surgery Society;
- member of International Federation of Societies for Surgery of the Hand;
- member of European Foot and Ankle Society.

PhD student K. Kuolienė –

- member of the European Anthropological Association;
- member of Lithuanian Ophthalmological Society;
- member of the Association for Research in Vision and Ophthalmology.

PhD student G. Laurinavičiūtė –

- member of Lithuanian Ophthalmological Society;
- member of European Society of Cataract and Refractive Surgeons.

PhD student V. Lukošaitis –

- member of Lithuanian Association of Neurologists;
- member of Lithuanian Society for Epileptology;
- member of Lithuanian Stroke Association.

PhD student A. Vaitiekus –

- member of Lithuanian Society of Orthopaedics and Traumatology;
- member of Lithuanian Foot Surgery Society;
- member of European Foot and Ankle Association (EFAS);
- member of Lithuanian Association of Arthroscopic Surgeons.

BEST REPORTS DELIVERED AT CONFERENCES ABROAD

- Guoda Laurinavičiute, Violeta Bartuskiene, Symantas Ragauskas, Giedrius Kalesnykas, Violeta Zalgevičienė, Renata Simkunaite-Rizgeliene, Ramune Cepulienė, Egle Marija Jakimavičienė, Saulius Galgauskas, Donatas Petroska, Justinas Besusparis, Janina Tutkuvienė. Retinal microglia and ganglion cells in first and second generation offspring in maternal undernutrition model of rats. World Ophthalmology Congress, WOC2020 Virtual®. Cape Town (Republic of South Africa). 26–29 June 2020.
- Tutkuvienė J., Morkuniene R., Jakimavičienė E.M. Newborns of crisis: birth weight, preterm births and stillbirths in relation to global macroeconomic shocks and microeconomic deprivations. The 28th Aschauer Soiree of Auxological Society, 14 November 2020.
- Tutkuvienė J. (in collaboration with Jakimavičienė E.M., Morkuniene R., Silove S.). Adverse birth outcomes as a mirror of global economic crises and local social deprivations. On-line Seminar of Polish Anthropological Society (PTA), 16 December 2020 (invited lecture).

MOST IMPORTANT NATIONAL AND INTERNATIONAL AWARDS RECEIVED FOR R&D ACTIVITIES

- Prof. Dr R. Jankauskas, Dr J. Kozakaitė, Dr Ž. Miliauskienė. Vilnius University Award for the best applied scientific research.
- Prof. Dr R. Jankauskas, Dr J. Kozakaitė, Prof. Dr T. Bairašauskaitė, G. Grižas, V. Steponaitis, Dr G. Kisielius, J. Jankauskienė. St. Christopher Award for revealed secrets of the Revolution of 1863–1864 (the identification of remains of participant's in the 1863–1864 uprising).

MOST IMPORTANT PARTICIPATION CASES OF RESEARCHERS IN WORKING GROUPS OR COMMISSIONS SET UP BY STATE AUTHORITIES, STATE AND MUNICIPAL INSTITUTIONS AND ORGANISATIONS, AND BUSINESS ENTITIES

- Jankauskas R., Kozakaitė J. Working group on identification of remains of Soviet regime victims inhumed in Antakalnis cemetery.
- Jankauskas R., Kozakaitė J. Working group on identification of remains of high ranking officers of Home Army (Armia Krajowa) with Institute of National Remembrance.
- Jankauskas R. European Commission Research Executive Agency expert.
- Jankauskas R. The State Education Development Agency of Latvia expert.

CONSULTATIONS PROVIDED BY THE UNIT TO THE PUBLIC OR ECONOMIC ENTITIES

- Tutkuvienė J. Regular consultations provided to public and other institutions with regard to growth and development criterions of Lithuanian children.

MOST IMPORTANT RESEARCH DISSEMINATION ACTIVITIES

- Kozakaitė J. A public speech at the Lithuanian public broadcaster, Lithuanian Radio (LRT) about bioarcheological researches and identification of victims of Soviet regime: <https://www.lrt.lt/mediateka/irasas/2000128591/dziazuojanti-istorija-ziurios-istorijos-zymes-lietuvos-partizanu-kauluose>
- Jankauskas R. Interview for Lithuanian national broadcaster about history of epidemics: <https://www.lrt.lt/naujienos/kultura/12/1154456/vu-profesorius-virusai-keiciasi-o-zmoniu-mentalitetas-nelabai-panikuoja-ieskome-kaltu>
- Jankauskas R. Participation in film about investigations of Radvila family remains in Kėdainiai, LRT: <https://www.lrt.lt/mediateka/irasas/2000126296/kelias-ka-atskleis-radvilu-palaiku-tyrimai-ir-kaip-atrodo-atnaujinta-reformatu-paveldo-ekspozicija-kedainiuose>
- Jankauskas R. Information for LRT about identification of plague and treponematosis LT: <https://www.lrt.lt/naujienos/mokslas-ir-it/11/1190017/arheologus-nustebino-vilniuje-rastimoters-palaikai-sirgo-egzotine-i-sifili-panasia-liga> : ENG: <https://en.delfi.lt/culture/researchers-surprised-by-findings-in-burial-from-medieval-times.d?id=84579205>

LITHUANIAN POPULATION AND RARE DISEASES BIOBANK

21 M. K. Čiurlionio, LT-3101 Vilnius

Tel. 250 1791

E-mail: biobankas@mf.vu.lt

<http://www.biobankas.mf.vu.lt/>

Head – Dr *Violeta Mikštienė*

STAFF

Professors: Dr A. Utkus (part-time).

Researchers: Dr V. Mikštienė (part-time), Dr T. Rancėlis (part-time), Dr J. Songailienė, Dr Ž. Maldžienė (part-time),

Research Assistants: D. Balkelienė (part-time), Dr R. Dzindzalieta (part-time).

RESEARCH INTERESTS

Ethical legal and social issues of biobanking

Biobank quality management

Genetic variants associated with COVID-19 susceptibility and severity

Prevention, diagnosis and treatment of a wide range of serious illnesses

New scientific discoveries that benefit people's health

Personalized medicine

National and international scientific collaboration

National Research Projects

Human Biological Resources Center (HBRC) (CPVA-V-701-16-0001). 2019–2022.

The aim of the project is to join to the international research infrastructure - BBMRI-ERIC, by creating a modern national biobank infrastructure in Lithuania. The objective of the project is to establish a National Center for Human Biological Resources (HBRC) with a unified system for the collection, processing, storage and data management of biological samples and related health information. In 2020, the common IT system for data management was coordinated and documents for biobank licensing were prepared.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

National Cancer Institute (Lithuania)

Vilnius University Hospital Santaros Klinikos (Lithuania)

Lithuanian University of Health Sciences (Lithuania)

Hospital of Lithuanian University of Health Sciences Kauno klinikos (Lithuania)

State Research Institute Center for Innovative Medicine (Lithuania)

OTHER RESEARCH ACTIVITIES

Prof. Dr A. Utkus –

- member of the Executive Committee of The Association of Medical Schools in Europe (AMSE);
- member of the National Health Council;
- editorial board member of the journal *Laboratorinė medicina (Laboratory Medicine)*;

- member of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm>;
- President of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm>;
- editorial board member of the journal *Sveikatos mokslai (Lietuva)*;
- member of the European Society of Human Genetics, www.eshg.org;
- member of the American Society of Human Genetics, www.ashg.org;
- coordinator of ERN-RND (European Reference Network on Rare Neurological Diseases).

Dr V. Mikštienė –

- member of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm>;
- member of the Lithuanian Heart Association, <http://www.heart.lt/lithuanian-heart-association/>.

Dr Ž. Maldžienė, Dr T. Rančelis, D. Balkalienė –

- members of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm>.

Dr R. Dzindzalieta –

- Lietuvos kompiuterininkų sąjunga LIKS nuoroda: <https://www.liks.lt/>.

Dr J. Songailienė –

- member of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm> ;
- member of the International Society for Neonatal Screening, <https://www.isns-neoscreening.org/>;
- member of the Society for the Study of Inborn Errors of Metabolism (SSIEM), <http://www.ssiem.org/home/welcome.asp>;
- president of the Baltic Metabolic Group; <http://www.ssiem.org/nationalsocieties/membercountries.asp>;
- National representative of Lithuania in ERNDIM/EuroGenTest (ERNDIM- European Research Network for Evaluation and Improvement of Screening, Diagnosis and Treatment of Inherited Disorders of Metabolism; EuroGenTest - EU-funded Network of Excellence), <https://erndim.org/home/start.asp>.

MOST IMPORTANT RESEARCH DISSEMINATION ACTIVITIES

<https://www.lrt.lt/mediateka/irasas/2000091266/sveikata-vu-medicinos-fakultete-steigiamas-lietuvos-populiacijos-ir-retuju-ligu-biobankas>
<https://www.lrt.lt/naujienos/mokslas-ir-it/11/1136006/nenori-buti-atsilike-nuo-kitu-saliu-kuriamas-biobankas-mokslininkams-pades-tirti-reciausias-ligas>

Department of Human and Medical Genetics

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www <http://www.genetika.mf.vu.lt>

Head – Prof. Dr *Algirdas Utkus*

STAFF

Professors: Dr L. Cimbalistienė (part-time), Dr A. Jakaitienė (part-time), Dr Habil. V. Kučinskas (emeritus), Dr A. Utkus (part-time).

Associate professors: Dr L. Ambrozaitytė (part-time), Dr A. Matulevičienė (part-time), Dr A. Morkūnienė (part-time), Dr A. Molytė (part-time), Dr R. Janavičius (part-time).

Assistant professors: Dr A. Bankauskienė (part-time), Dr N. Bratčikovienė (part-time), Dr B. Burnytė (part-time), Dr B. Tumienė (part-time), Dr J. Songailienė (part-time).

Researchers: Dr I. Domarkienė (part-time), Dr V. Mikštienė (part-time), Dr T. Rančelis (part-time), Dr B. Aleksiūnienė (part-time), Dr A. Urnikytė (part-time), Dr V. Ginevičienė (part-time), Dr Ž. Maldžienė (part-time), Dr E. Pranckevičienė (part-time), Dr E. Preikšaitienė (part-time), I. Pilypienė (part-time).

Research professor: A. Sasnauskienė (part-time).

Lecturers: Dr V. Šliužas (part-time), K. Baronas, (part-time), N. Krasovskaja (part-time), D. Balkelienė (part-time).

Research assistants: J. Arasimavičius (part-time), L. Januška (part-time), R. Meškienė (part-time), L. Pranckėnienė (part-time).

PhD students: E. Siavrienė, R. Laukienė, E. Dagytė, G. Žukauskaitė, G. Petraitytė, K. Grigalionienė, D. Braždžiūnaitė, E. M. Vaitėnienė.

Genetic scientific student group: scientific leader – Dr E. Preikšaitienė, coordinator – student Eglė Griškevičiūtė; four students.

RESEARCH INTERESTS

Genetic variation inter- and intra- population of Lithuania

Genomics of intellectual disability and congenital anomalies

Genetic analysis of hereditary phenotypes – genetic characterization of human phenome, genome and regulome

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Genome and Transcriptome Analysis in the Studies of Rare Inherited Diseases Pathogenesis (No. MSF-JM-2/2020). PhD student G. Petraitytė. 15 June 2020–31 December 2020.

The aim of this study is to identify the genomic basis of rare inherited diseases and to evaluate DNA alterations' impact on transcriptome. The next generation sequencing technologies are applied to sequence whole genomes and transcriptomes of affected individuals. Bioinformatical analysis of whole genome sequencing data could result in describing new disease-causing DNA variants while

transcriptome data analysis could reveal gene expression changes that determine the pathogenesis mechanism of rare inherited disease.

Fundamental Research of Human Genome Architecture: Characterization of Phenome, Genome and Regulome Markers of the Lithuanian Population. Prof. Dr A. Utkus. 2019–2023.

The fundamental human population study on genomic variation and microevolutionary processes alongside with the clinical and medical genetic research on the genetic variation in rare diseases was performed. The results conclude on distinct population genetic structure, origin and evolution with the inferences on phenotype and genotype heterogeneity and their complex interaction.

Main publications:

Bianco, E., Laval, G., Font-Porterias, N., García-Fernandez, C., Dobon, B., Sabido-Vera, R., Stefanovska, E. S., Kučinskas, V., Makukh, H., Pamjav, H., Quintana-Murci, L., Netea, M. G., Bertranpetit, J., Calafell, F., Comas, D. Recent common origin, reduced population size, and marked admixture have shaped European Roma genomes. *Molecular Biology and Evolution*. 2020, first published online, p. 1–29.

Cuenca, M. V., Marchi, G., Barqué, A., Esteban-Jurado, C., Marchetto, A., Giorgetti, A., Chelban, V., Houlden, H., Wood, N. W., Piubelli, Ch., Borges, M. D., de Albuquerque, D. M., Yotsumoto Fertrin, K., Jové-Buxeda, E., Sanchez-Delgado, J., Baena-Díez, N., Burnytė, B., Utkus, A., Busti, F., Kaubrys, G. F., Suku, E., Kowalczyk, K., Karaszewski, B., Porter, J. B., Pollard, S., Eleftheriou, P., Bignell, P., Girelli, D., Sanchez, M. Genetic and clinical heterogeneity in thirteen new cases with aceruloplasminemia. Atypical anemia as a clue for an early diagnosis. *International Journal of Molecular Sciences*. 2020, 21(7), 2374: 1–14.

Hübner, C. T., Meyer, R., Kenawy, A., Ambrozaitytė, L., Matulevičienė, A., Kraft, F., Begemann, M., Elbracht, M., Eggermann, T. HMG2 variants in Silver-Russell syndrome: homozygous and heterozygous occurrence. *Journal of Clinical Endocrinology and Metabolism*. 2020, 105(7): dgaa273.

Urnikytė, A., Molytė, A., Prankevičienė, E., Kučinskienė, Z. A., Kučinskas, V. Inferring effective population size and divergence time in the Lithuanian population according to high-density genotyping data. *Genes*. 2020, 11(3): 293.

Analysis of Biomarkers for Suicidal Tendencies and Depression, and Validation of the Prognostic Model in Lithuania. Prof. Dr A. Utkus. 2020.

Three groups of suicidal, depressive and control individuals are collected for the analysis of methylation, transcriptome and biochemical markers (e.g. cortisol, IL6, TNFalpha and others). Extensive questionnaire is filled out for every participant. The project is the collaborative initiative among the Vilnius University, Faculty of Medicine, Institute of Biomedical Sciences, Department of Human and Medical Genetics and Korea Research Institute of Bioscience and Biotechnology, Republican Vilnius University Hospital, Public Institution Vilnius City Mental Health Center and Vilnius University Hospital *Santaros Klinikos*.

National Research Projects

Deciphering the Genetic Architecture of Intellectual Disability and Congenital Anomalies (INGENES). Dr E. Preikšaitienė. 2017–2020.

During the last year, CRISPR–Cas9 technology was employed to silence MED13L gene in human skin fibroblast culture. Clinical, molecular and/or functional characterization of previously not reported DNA sequence (POMK gene) and copy number variants (4q12 microdeletions, 13q31.3 microduplications) were performed.

Main publications:

Arasimavičius, J., Dilytė, E., Utkus, A., Preikšaitienė, E. A familial 4q12 deletion involving KIT gene causes piebaldism. *Acta Dermatovenerol Croat.* 2020 Aug, 28(2):105–108.

Sharapova, S. O., Skomska-Pawliszak, M., Rodina, Y. A., Wolska-Kuśnierz, B., Dabrowska-Leonik, N., Mikołuc, B., Pashchenko, O. E., Pasic, S., Freiburger, T., Milota, T., Formánková, R., Szaflarska, A., Siedlar, M., Avčin, T., Markelj, G., Ciznar, P., Kalwak, K., Kołtan, S., Jackowska, T., Drabko, K., Gagro, A., Pac, M., Naumova, E., Kandilarova, S., Babol-Pokora, K., Varabyou, D. S., Barendregt, B. H., Raykina, E. V., Varlamova, T. V., Pavlova, A. V., Grombirikova, H., Debeljak, M., Mersiyanova, I. V., Bondarenko, A. V., Chernyshova, L. I., Kostyuchenko, L. V., Guseva, M. N., Rascon, J., Muleviciene, A., Preiksaitiene, E., Geier, C. B., Leiss-Piller, A., Yamazaki, Y., Kawai, T., Walter, J. E., Kondratenko, I. V., Šedivá, A., van der Burg, M., Kuzmenko, N. B., Notarangelo, L. D., Bernatowska, E., Aleinikova, O. V. The clinical and genetic spectrum of 82 patients with RAG deficiency including a c.256_257delAA founder variant in Slavic countries. *Front Immunol.* 2020 Jun 10, 11: 900.

Siavrienė, E., Preikšaitienė, E., Maldžienė, Ž., Mikštienė, V., Rančelis, T., Ambrozaitytė, L., Gueneau, L., Reymond, A., Kučinskas, V. A de novo 13q31.3 microduplication encompassing the miR-17~92 cluster results in features mirroring those associated with Feingold syndrome 2. *Gene.* 2020 May 27, 144816.

Maldžienė, Ž., Vaitėnienė, E. M., Aleksūnienė, B., Utkus, A., Preikšaitienė, E. A case report of familial 4q13.3 microdeletion in three individuals with syndromic intellectual disability. *BMC Med Genomics.* 2020 Apr 16, 13(1): 63.

Preiksaitiene, E., Voisin, N., Gueneau, L., Benušienė, E., Krasovskaja, N., Blažytė, E. M., Ambrozaitytė, L., Rančelis, T., Reymond, A., Kučinskas, V. Pathogenic homozygous variant in POMK gene is the cause of prenatally detected severe ventriculomegaly in two Lithuanian families. *Am J Med Genet A.* 2020 Mar, 182(3): 536–542.

Ancient and New Alleles in Lithuanian's Genome: Mutations, Selection and Adaptation (ANELGEMIA), LMTLT No. S-MIP-20-34. Prof. Dr Habil. V. Kučinskas. 2020–2022.

The main objective of the study is to analyse microevolutionary forces: mutations and signatures of adaptive positive selection of the Lithuanian population from whole genome sequencing data. Main question to answer is how commonly mutations are under selection in modern human and how human evolve generation after generation? This research will contribute to the progress of scientific knowledge and is of special importance in clarifying the relationship between natural selection and disease and improving our understanding of the evolutionary mechanisms observed at individual and population level.

Main publication:

Molytė, A., Urnikytė, A., Kučinskas, V. A comparative analysis of mathematical methods for homogeneity estimation of the Lithuanian population. *Acta medica Lituanica.* 2019, 26(4): 211–216. DOI: 10.6001/actamedica.v26i4.4206.

Adaptive Genetic Mechanisms – a Comprehensive Study of Whole Genome Variation in the Group of the Lithuanian Chernobyl Catastrophe Liquidators (ADAPT) (LMTLT No. S-MIP-20-35). L. Ambrozaitytė, PhD. 2020–2022.

The aim of the study is to characterize genome variation of the Chernobyl catastrophe liquidators in the context of the general Lithuanian and other populations. The object of the study is the microevolutionary processes, which will be evaluated by investigating the adaptive mechanisms of genomes.

Obtained results will be important and have an impact on fundamental science of population and evolutionary genomics, personal and preventive medicine, application of genomic editing tools.

International Research Projects

Enhancing Psychiatric Genetic Counselling, Testing, and Training in Europe. European Cooperation in Science & Technology. (CA17130, COST). 2018–2021.

The Action *Enhancing Psychiatric Genetic Counselling, Testing, and Training in Europe* (EnGagE) aims to strengthen pan-European research into the newly emerging disciplines of Psychiatric Genetic Counselling (PsyGC) and Psychiatric Genetic Testing (PsyGT); and to develop a framework to facilitate the implementation of both disciplines into routine clinical care.

EnGagE is a knowledge-sharing and expertise-enhancing network combining preclinical and clinical researchers from the fields of neuroscience, psychiatric genetics, psychosocial research, and ethics; clinicians from the fields of psychiatry, psychology, and medical genetics; genetic counsellors, and scientists from diagnostic genetic testing laboratories from Europe and beyond. EnGagE will establish a framework for PsyGC and PsyGT; develop standardised guidelines, practice recommendations and research protocols; share scientific knowledge and data and provide standardized training in PsyGC and PsyGT.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

Thermo Fisher Scientific Baltics (Lithuania)

Lithuanian Olympic Sports Centre (Lithuania)

University of Lausanne (Swiss Confederation)

Department of Medical Research Kaohsiung Chang-Gung Memorial Hospital, Taiwan (China)

Division of Medical Genetics Department of Pediatrics, Keio University School of Medicine, Tokyo (Japan)

Korea Research Institute of Bioscience and Biotechnology (Korea)

Republican Vilnius University Hospital (Lithuania)

Public Institution Vilnius City Mental Health Center (Lithuania)

Vilnius University Hospital *Santaros Klinikos* (Lithuania)

OTHER RESEARCH ACTIVITIES

Prof. Dr A. Utkus –

- member of the Executive Committee of The Association of Medical Schools in Europe (AMSE);
- member of the National Health Council;
- editorial board member of the journal *Laboratorinė medicina (Laboratory Medicine)*;
- member of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm>;
- President of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm>;
- editorial board member of the journal *Sveikatos mokslai (Lietuva)*;
- editorial council member of the *Journal Acta Medica Lituanica*;
- member of the European Society of Human Genetics, www.eshg.org;
- member of the American Society of Human Genetics, www.ashg.org;
- coordinator of ERN-RND (European Reference Network on Rare Neurological Diseases).

Prof. Dr Habil. V. Kučinskas –

- council member of the Federation of European Academies of Medicine, <https://www.feam.eu/about-us/governance>;
- chairperson of the division of Biology, Medicine and Geosciences of the Lithuanian Academy of Sciences, <http://www.lma.lt/>;
- member of the Presidium of the Lithuanian Academy of Sciences, <http://www.lma.lt/>;

- member of the Lithuanian Academy of Sciences, <http://lma.lt/intranetas/index.php?m=profile&user=309>;
- editorial board member of the journal *Laboratorinė medicina (Laboratory Medicine)*, <http://www.llmd.ip.lt/lm>;
- editorial board member of the *Journal of Applied Genetics* (Poland), <http://www.jay.au.poznan.pl/JAG/>;
- editorial board member of the journal *Medicina (Medicine)*;
- editorial board member of the *Journal Medical Genetics* (Russia);
- editorial council member of the *Journal Acta Medica Lituanica*;
- editorial board member of the *Balkan Journal of Medical Genetisc* (Makedonija);
- consultant on medical genetics, Ministry of Health of the Republic of Lithuania;
- board member of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm>;
- member of the European Society of Human Genetics, www.eshg.org;
- member of the American Society of Human Genetics, www.ashg.org;
- member of Human Genome Organization (HUGO).

Prof. Dr L. Cimbalistienė –

- member of the Society for the Study of Inborn Errors of Metabolism (SSIEM), <http://www.ssiem.org>;
- member of the Lithuanian Society of Human Genetics (chairperson of Committee of Financial Supervisory Commission), <http://www.geneticahumana.lt/LZGD/organizacija.htm>;
- member of the Lithuanian Doctors' Union, <http://www.lgs.lt/>.

Prof. Dr A. Jakaitienė –

- member of Lithuanian Mathematical Society, <http://www.mif.vu.lt/lmd/index.html>;
- board member of Lithuanian Statistics Society, <http://www.statistikusajunga.lt/>;
- member of International Biometric Association, <https://www.biometricsociety.org>;
- country representative of International Biometric Association in Nord Baltic Region, <http://ibsnbr.org>;
- country representative at European Statistical Advisory Committee, <https://ec.europa.eu/eurostat/web/european-statistical-advisory-committee-esac>.

Dr E. Pranckevičienė –

- member of Canadian Society of Molecular Biosciences, <https://csmb-scbm.ca>;
- member of American Association of Advancement of Science, <https://www.aaas.org>;
- member of International Neural Network Society, <https://www.inns.org>;
- member of the Lithuanian Society of Human Genetics;
- member of the European Society of Human Genetics, www.eshg.org.

Dr L. Ambrozaitytė –

- managing editor of the journal *Acta Medica Lituanica* <https://www.lmaleidykla.lt/ojs/index.php/actamedicalituanica>,
- board member of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm>;
- member of the European Society of Human Genetics, www.eshg.org;
- member of the American Society of Human Genetics, www.ashg.org.

Dr I. Domarkienė, Dr Ž. Maldžienė, Dr A. Morkūnienė, Dr E. Preikšaitienė, Dr T. Rančelis, Dr E. Siavrienė, G. Žukauskaitė, K. Grigalionienė, D. Brazdžiūnaitė –

- members of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm>.

Dr V. Ginevičienė –

- member of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm>;
- member of the European College of Sport Science, <http://www.ecss.mobi/>;
- member of the Baltic Sport Science Society, www.leu.lt/download/6594/bsss_sutartis.pdf;
- member of the Lithuanian Federation of Sports Medicine, <http://www.lsmf.lt/>.

Dr A. Matulevičienė –

- member of the European Society of Human Genetics, www.eshg.org;
- member of the Committee for Orphan Medicinal Products (COMP);
- member of the Lithuanian Society of Human Genetics, (board member of the Committee of Financial Supervisory Commission), <http://www.geneticahumana.lt/LZGD/organizacija.htm>;
- member of the Lithuanian Society of Doctors;
- coordinator of ERN-ITHACA (Network of Intellectual Disability and Congenital Malformations).

Dr A. Molytė –

- member of the Lithuanian Computer Society.

Dr J. Songailienė –

- member of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm>;
- member of the International Society for Neonatal Screening, <https://www.isns-neoscreening.org/>;
- member of the Society for the Study of Inborn Errors of Metabolism (SSIEM), <http://www.ssiem.org/home/welcome.asp>;
- president of the Baltic Metabolic Group; <http://www.ssiem.org/nationalsocieties/membercountries.asp>;
- National representative of Lithuania in ERNDIM/EuroGenTest (ERNDIM- European Research Network for Evaluation and Improvement of Screening, Diagnosis and Treatment of Inherited Disorders of Metabolism; EuroGenTest - EU-funded Network of Excellence), <https://erndim.org/home/start.asp>.

Dr V. Šliužas –

- member of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm>;
- member of the European Society of Human Genetics, www.eshg.org.

Dr A. Bankauskienė –

- member of the Lithuanian Mathematical Society.

Dr V. Mikštienė –

- member of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm>;
- member of the European Society of Human Genetics, www.eshg.org

Dr B. Tumienė –

- board member of the European Society of Human Genetics, www.eshg.org;
- Lithuanian representative in the European Reference Network Board of Member States, https://ec.europa.eu/health/ern_en;
- member of the Panel of Experts, Rare2030: Foresight in rare disease policies, <https://www.rare2030.eu/>;
- member of the Interregional Committee, Regions4PerMed, <https://www.regions4permed.eu/>;

- member of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm>;
- member of the Society for Studies of Inborn Errors of Metabolism, SSIEM;
- board member of Baltic Metabolic Group;
- member of Lithuanian Child Neurology Association;
- member of Lithuanian Society of Epileptology;
- member of Lithuanian Society of Neurosciences;
- Orphanet Lithuania National Coordinator, Orphanet Operating Committee member, <https://www.orpha.net/consor/cgi-bin/index.php>.

Dr B. Aleksišiūnienė –

- member of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm>;
- member of the European Society of Human Genetics, www.eshg.org.

Dr B. Burnytė –

- member of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm>;
- member of the European Society of Human Genetics, www.eshg.org;
- member of the American Society of Human Genetics, www.ashg.org;
- member of the Society for Studies of Inborn Errors of Metabolism, SSIEM;
- Orphanet information scientist;
- member of the Lithuanian Society of Human Genetics, <http://www.geneticahumana.lt/LZGD/organizacija.htm>.

J. Arasimavičius –

- member of European Academy of Dermatology and Venereology, <https://eadv.org/>;
- member of Lithuanian Society of Dermatovenereologists, <http://www.ldvd.lt/>;
- member of European Association of Dermato Oncology, <http://www.eado.org/>;
- member of International Dermoscopy Society, <https://dermoscopy-ids.org/>;

MOST IMPORTANT NATIONAL AND INTERNATIONAL AWARDS RECEIVED FOR R&D ACTIVITIES

- G. Petraitytė, PhD student. 1st place for oral presentation “Molecular and functional analysis of the deletion leading to MED13L haploinsufficiency syndrome” in the Medicine and Health section of the Lithuanian Academy of Sciences Young Researcher 13th Conference *Biofuture: natural and life sciences perspectives*, 04 December 2020 (virtual).

MOST IMPORTANT PARTICIPATION CASES OF RESEARCHERS IN WORKING GROUPS OR COMMISSIONS SET UP BY STATE AUTHORITIES, STATE AND MUNICIPAL INSTITUTIONS AND ORGANISATIONS, AND BUSINESS ENTITIES

- Prof. Dr. A. Jakaitienė – expert at the Council of Health Experts under the Presidency of the Republic of Lithuania (convened by the President of the Republic of Lithuania regarding COVID-19 pandemics)
- Dr. L. Ambrozaitytė – nominated representative to the Working Group on the White Paper on good genomic practice towards access to at least 1 million sequenced genomes in the European Union by 2022.

CONSULTATIONS PROVIDED BY THE UNIT TO THE PUBLIC OR ECONOMIC ENTITIES

- Dr. V. Ginevičienė – consultation on the Applied Sports Genetics to Vytenis Trumpickas, Head of the Ambulatory Rehabilitation at AB “Ortopedijos Technika” (rehabilitation doctor; Lithuanian Basketball Federation Chief Doctor). Commissioned research study was performed.

MOST IMPORTANT RESEARCH DISSEMINATION ACTIVITIES

Events

- National DNA Day essay contest in commemoration of the International DNA Day followed by virtual event “DNA Day in Lithuania 2020”, 24 April 2020.
- Part of the Science Festival *Spaceship Earth*, 16 September 2020.
- International Fetal Alcohol Syndrome Day, 09 September 2020.

Media

- TV show about Clinical Genetics and Medical Genetics. Hippocrate of Lithuania. Prof. Algirdas Utkus <https://lnk.lt/video/lietuvos-hipokratas-6/113571>. 05 December 2020
- Interview article “Lietuviškojo geno tyrinėtojas Kučinskas: mūsų protėviai buvo juodaodžiai mėlynomis akimis ir lygiais plaukais”. Prof. Dr Habil. V. Kučinskas. Delfi. 16 November 2020.
- Interview article “Lietuvių genomą tyrinėjanti mokslininkė– apie imunitetą, atsparumą koronavirusui ir gamtinę atranką”. Dr A. Urnikytė. 15min. 12 September 2020
- Interview article “Ilgainiui išnyks visos tautos, bet tai natūralus procesas”. Dr. A. Urnikytė. Verslo žinios. 16 May 2020.
- Interview at the LRT „Lietuvos radijas“ radio show “10-12“ on the genetic and evolutionary studies of the Lithuanian population. Dr I. Domarkienė and Dr I. Pilypienė, 04 June 2020.

Pharmacy Center

29A Geležinio Vilko, LT-03101 Vilnius
Tel. 239 8771
E-mails: dale.marciulioniene@mf.vu.lt

Head –Prof. Dr *Jolanta Gulbinovič*

STAFF

Professors: Dr B. Wettermark (visiting professor).

Associate professors: Dr J. Grincevičius, Dr J. Pečeliūnienė.

Assistants: Dr K. Ložienė (part-time), Dr A. Liubavičiūtė (part-time), Dr N. Šlekienė.

Teaching assistant: I. Trečkienė.

Lecturers: Dr K. Ivanauskas, Dr V. Lapinskas (part-time), Dr M. Jodinskienė (part-time), Dr A. Vagoras (part-time), Dr V. Naumavičius (part-time), R. Matulaitienė (part-time), R. Losinskaja (part-time).

Researchers: I. Trečiokienė, Dr R. Kalėdaitė.

RESEARCH INTERESTS

Drug Utilization Research

Research on drug utilization patterns in Lithuania, adherence and persistence rates in different ATC classes. Various source data on drug utilization is used to link morbidity, outcome of treatment and quality of care with the ultimate goal of assessing whether drug therapy is rational or not. Research goal is to describe the extent, nature and determinants of drug exposure.

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Drug Utilization Research and Treatment Management in Hypertensive Patients. I. Trečiokienė. 2019–2021.

Patterns of antihypertensive medicine use trends in Lithuania, Latvia and Estonia studied, manuscript prepared, results presented in Eurodrug conference 2020, 36th International Conference on Pharmacoepidemiology & Therapeutic Risk Management and FIP Virtual 2020.

Data from national health insurance data base Sveidra received, antihypertensive drugs utilization patterns and persistence in hypertensive patients studied, manuscript prepared.

Main publications:

Trečiokienė, I., Gulbinovič, J., Wettermark, B., Taxis, K. Trend of antihypertensive medicine use in the Baltic States between 2014 and 2018. EuroDrug 2020: European Drug Utilisation Research Group Conference 2020: medicines: benefits and burdens, 4–7 March 2020, Szeged (Hungary). *EuroDrug*. 2020, p. 39. https://www.eurodrug2020.com/pdf/EuroDURG_abstract%20book_final_jav.pdf.

Trečiokienė, I., Bratčikovienė, N., Gulbinovič, J., Wettermark, B., Taxis, K. Antihypertensive medicine use in the Baltic states between 2008 and 2018. Pharmacoepidemiology and drug safety: Supplement: Special Issue: Abstracts of the 36th International Conference on Pharmacoepidemiology

& Therapeutic Risk Management, virtual, 16–17 September 2020. 2020, 29(4368): 251–252. DOI: 10.1002/pds.5114.

International Research Projects

ENABLE COST Action, 2020–2024. J.Gulbinovič, I. Trečiokienė, A. Vagoras.

Due to an ageing society, there is a steady increase in chronic diseases and multi-morbidity in the EU. Medication non-adherence affects however up to half of the chronic medication users, poses considerable challenges in managing chronic diseases. Technological advances have significant potential to support healthcare professionals and empower patients in detecting and managing non-adherence. The project aims to (1) raise awareness of adherence enhancing technological solutions, (2) foster and extend multidisciplinary knowledge on medication adherence at patient, treatment and system levels, (3) accelerate translation of this knowledge to useful clinical application and (4) work collaboratively towards economically viable implementation of adherence enhancing technology across European health care systems. In 2020, the team attended kick of meetings, created working groups WG1, WG2 and WG3.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

Groningen University (Netherlands)

Uppsala University (Sweden)

Tartu University (Estonia)

OTHER RESEARCH ACTIVITIES

I. Trečiokienė –

- executive committee member of The European Drug Utilisation Group (Euro DURG);
- member of organizational scientific committee of the International conference Achievements of Pharmaceutical Science And Practice, 2020, Kaunas. Conference: <https://www.lfsajunga.lt/lfs-suva%C5%BEiavimai> Abstract book and committee: https://6e76b0af-cc06-42fd-aea9-3ece846d7ef0.filesusr.com/ugd/1b47ce_de85bf8353384f34b0136658721931af.pdf.

J. Grincevičius –

- member of Lithuanian Pharmaceutical Association.

K. Ložienė –

- board member of *THAISZIA – Journal of Botany* (P. J. Šafárik University, Košice, Slovakia);
- member of joint doctoral committee of Nature Research Centre and Vilnius University (domain Biomedical Sciences, direction - Ecology and Environmental Science).

Dr V. Naumavičius –

- permanent member of WCMFS (World Federation of Chinese Medicine Societies) Committee of Education Instructions;
- member of LAGA (Lithuanian Association of Acupuncture Physicians).

Dr A. Liubavičiūtė –

- member of Lithuanian Society for Stem Cell Research Organization;
- Member of Lithuanian Society for Immunology, Baltic Laboratory Animal Science Association (Balt-LASA);

- guest editor for *Jove* (<https://www.jove.com/methods-collections/263>). A theme I created for the magazine: Models to assess the efficacy of pharmacological substances for various diseases studies.

R. Losinskaja –

- member of Lithuanian Pharmaceutical Association.

R. Matulaitienė –

- board member of Lithuanian Pharmaceutical Association.

BEST REPORTS DELIVERED AT CONFERENCES ABROAD

- Trečiokienė, Indrė; Gulbinovič, Jolanta; Wettermark, Bjorn; Taxis, Katja. Trend of antihypertensive medicine use in the Baltic States between 2014 and 2018. *EuroDrug 2020: European Drug Utilisation Research Group Conference 2020 : medicines: benefits and burdens, 4–7March 2020, Szeged. EuroDrug. 2020, p. 39.*

MOST IMPORTANT PARTICIPATION CASES OF RESEARCHERS IN WORKING GROUPS OR COMMISSIONS SET UP BY STATE AUTHORITIES, STATE AND MUNICIPAL INSTITUTIONS, ORGANISATIONS, BUSINESS ENTITIES

I. Trečiokienė:

- Task Force to implement immunization services in pharmacy, initiated by Health Ministry
- Task Force to create Medicine Wise List Lithuania, initiated by Health Ministry

Department of Pathology, Forensic Medicine and Pharmacology

21 M. K. Čiurlionio, LT-03101 Vilnius

Tel. 239 8727

E-mails: Arvydas.Laurinavicius@mf.vu.lt

Head – Prof. Dr *Arvydas Laurinavičius*

STAFF

Professors: Dr D. Characiejus, Dr V. Grabauskienė, Dr J. Gulbinovič, Dr V. Kvedarienė, Dr A. Laurinavičius.

Associate professors: Dr A. Barakauskienė, Dr J. Besusparis, Dr E. Kazėnaitė, Dr J. Stasiūnienė, Dr E. Žurauskas.

Assistant professors: Dr V. Baltrūnienė, Dr S. Chmieliauskas, Dr T. Janušonis, Dr S. Laima, Dr I. Lisauskienė.

Teaching assistants: T. Baltrūnas, D. Fomin, E. Jurevičienė, R. Šimakauskas, D. Žilėnaitė.

Lecturers: A. Barkus, A. Baušys, S. Budrikienė, A. Čerkauskaitė, L. Dambrauskas, J. Drachneris, R. Dzetaveckienė, A. Gintautas, R. B. Grinevičiūtė, R. Katkus, V. Maskoliūnaitė, U. Mickys, D. Petroška, I. Pilvelienė, D. Ramanauskaitė, D. Šėinin, Ž. Žukauskaitė.

Research professors: Dr Jen Kuang-Yu, Dr A. Laurinavičienė, Dr A. Laurinavičius, Dr R. M. Levenson, Dr B. Plancoulaine, Dr M. Shribak.

Senior researcher: Dr A. Rasmusson.

Research assistants: R. Augulis, I. Kažukauskienė.

Doctoral students: A. Čerkauskaitė, I. Drejerienė, A. Garnelytė, I. Kažukauskienė, D. Linkevičiūtė-Ulinskienė, S. Mažeikienė, R. Stulpinas, R. Šimakauskas, D. Žilėnaitė.

RESEARCH INTERESTS

Renal pathology, digital pathology image analysis, pathology informatics, health information systems, standards, testing of cancer biomarkers in tissue, multi-resolution analysis of biomarkers

Inflammatory cardiomyopathy: prognostic biomarkers of heart failure

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Development of the New Diagnostic and Prognostic Molecular Markers and Tools for Their Quantification in the Tissues. Diagnostic Value of Pathology Tests and Efficiency of Cancer Prevention Programs. Prof. Dr A. Laurinavičius, 2019–2020.

Main research was carried out under the project Deep-Context Tissue Analytics for Integrated Pathology Modeling in Tumours and Kidney Allografts (funded by European Social Fund (2014–2020)). In addition, the team participated in submission of two H2020 and four Lithuanian Research Council applications as well as continuation of previous research collaborations. Additionally research carried out by doctoral students, contributed to the implementation of this research activity:

- Assessment of immunohistochemistry biomarkers in the spatial context of microenvironment of hormone receptor-positive ductal breast carcinoma by digital image analysis (PhD student D. Žilėnaitė, Academic supervisor Prof. Dr A. Laurinavičius);

- Modeling of immune response and microenvironment in renal cancer tissue by digital pathology methods (PhD student: A. Garnelytė, Academic supervisor Prof. Dr A. Laurinavičius, consultant Prof. Dr F. Jankevičius);
- Prognostic Modeling of Liver Tumour Pathology by Artificial Intelligence Tools (PhD student R. Stulpinas, Academic supervisor Prof. Dr A. Laurinavičius);
- Collagen IV $\alpha 345$ nephropathy phenotype-genotype associations and prognostic factors (PhD student A. Čerkauskaitė, Academic supervisor Prof. Dr A. Laurinavičius).

Development of the Predictive, Preventive, Personalized and Prognostic Biomarkers of the Diseases. Prof. V. Grabauskienė, Prof. D. Characiejus. 2020.

Experiments were carried out to develop a model to study the involvement of the immune system in regulation of tumour cell kinetics.

Main publications:

Kažukauskienė, I., Baltrūnienė, V., Jakubauskas, A., Žurauskas, E., Maneikienė, V. V., Daunoravičius, D., Čelutkienė, J., Ručinskas, K., Grabauskienė, V. Prevalence and prognostic relevance of myocardial inflammation and cardiotropic viruses in non-ischemic dilated cardiomyopathy. *Cardiology Journal*. 2020, <https://doi.org/10.5603/cj.a2020.0088>.

Baltrūnienė, V., Rinkūnaitė, I., Bogomolovas, J., Bironaitė, D., Kažukauskienė, I., Šimoliūnas, E., Ručinskas, K., Puronaitė, R., Bukelskienė, V., Grabauskienė, V. The role of cardiac T-Cadherin in the indicating heart failure severity of patients with non-ischemic dilated cardiomyopathy. *Medicina*. 2020, 56(1): 27. <https://doi.org/10.3390/medicina56010027>.

Zaleskis, G., Garberytė, S., Pavliukevičienė, B., Valinčius, G., Characiejus, D., Mauricas, M., Krasko, J. A., Žilionytė, K., Žvirblė, M., Pašukonienė, V. Doxorubicin uptake in ascitic lymphoma model: Resistance or curability is governed by tumor cell density and prolonged drug retention. *Journal of Cancer*. 2020, 11(22): 6497–6506. DOI: 10.7150/jca.46066.

Genesis and Gnoseology of Violence. Assoc. Prof. Dr J. Stasiūnienė. 2020.

The aim of the project is to investigate peculiarities of the physical violence in Lithuania. To be able to follow the rates of violence, find the sociodemographic profile of victims and suspects, risk factors as well as to define the health impairment, the data from the Information Technology and Communications Department under the Ministry of the Interior of the Republic of Lithuania and The State Forensic Medicine Service are collected and analysed.

Main publication:

Mažeikienė, S., Stasiūnienė, J., Vasiljevaitė, D., Laima, S., Chmieliauskas, S., Fomin, D., Šimakauskas, R., Jasulaitis, A. Deontological examination as a criterion for the assessment of personal healthcare professional quality A Strobe compliant retrospective study. *Medicine*. 2020, 99(3): 1–7, e18770, DOI:10.1097/MD.00000000000018770.

Side Effect – Reason of Hospitalizations and Result of Hospitalization. Prof. Dr J. Gulbinovič. 2019–2023.

The objective is to evaluate the hospitalization for medicine side effect and frequency and nature of it. Research on side effect of drug reactions continued.

National Research Projects

Assessment of Glomerular Patterns of Injury by Using Artificial Intelligence Methods. ESF project No 09.3.3-LMT-K-712 under the measure „Educating the society and strengthening the

potential of human resources” activity „Development of Competences of Scientists, Other Researchers and Students Through Practical Research Activities“). Project leader Prof. A. Laurinavičius, other participants: J. Besusparis. 2020–2022.

The main objective of this project is to develop the methodologies for automated assessment of glomerular patterns of injury by using artificial intelligence technologies. The workflow includes training of image analysis software for glomerular segmentation and detection of different histological patterns, extraction of morphometric and quantitative parameters to describe the activity and chronicity of glomerular damage, validation procedures and co-operation with foreign researchers. The main task is to improve visual assessment of glomerular diseases and objectify the level of glomerular injury by using digital image analysis, which could be potentially applied for routine kidney pathology assessment. This work will explore novel approaches of artificial intelligence methods to pathology diagnosis. In practical terms, validated methods would allow further development of computer-assisted diagnosis and prognosis decision support tools to be integrated into laboratory information and digital pathology systems.

Investigation of the Possibilities for New Microscopic Imaging Methods in Pathology. ESF Project No 09.3.3-LMT-K-712-16-0246 under the measure No 09.3.3-LMT-K-712 „Educating the society and strengthening the potential of human resources” activity „Development of Competences of Scientists, Other Researchers and Students Through Practical Research Activities“). Project leader Prof. Dr A. Laurinavičius, other participants: student A. Vitkūnaitė. 2019–2020.

The study of the possibilities of new microscopic imaging methods in pathology is aimed to investigate new research methods for the cells and extracellular matrix by applying the latest microscopic imaging and digital analysis technologies. For the first time, two new types of microscopy have been combined: UV surface excitation and polychromatic polarization which capabilities will be combined with bright field, immunohistochemistry and immunofluorescence microscopy strategies. The applicability of the obtained results will cover a wide range of pathologies. Research on changes in the structure and biochemical composition of cells and extracellular matrix are relevant for the study of cancer, hereditary, inflammatory and degenerative diseases.

Prognostic Value of Digital Image Analysis of Brain Glial Tumour Microenvironment and Immune Response. ESF project No. 09.3.3-LMT-K-712-22-0058 under the measure No 09.3.3-LMT-K-712 „Educating the society and strengthening the potential of human resources” activity „Development of Competences of Scientists, Other Researchers and Students Through Practical Research Activities“). Project leader: Prof. A. Laurinavičius, other participants: student R. Juškys. 2020–2021.

The aim is to evaluate the microenvironment and immune response of brain glial tumour pathology samples and their prognostic value for the patient. The pathological material of glial tumours will be examined using innovative immunohistochemical and histological digital image analysis methods. The obtained quantitative indicators of the immune response, tumour microenvironment and fibre distribution will be used to develop prognostic model of the disease.

International Research Projects

Deep-Context Tissue Analytics for Integrated Pathology Modeling in Tumours and Kidney Allografts, ESF project under the measure No 09.3.3-LMT-K-712 „Strengthening the Skills and Capacities of Public Sector Researchers for Engaging in High Level R&D Activities“ activity „Strengthening of General Skills and Competences of Researchers Through Implementation of High Level R&D Projects“. Project leader Prof. Dr A. Laurinavičius, other participants: Dr. A. Laurinavičienė, Dr A. Rasmusson, Dr B. Plancoulaine, Dr R. Levenson, Dr M. Shribak, Dr KY. Jen. 2014–2020.

The aim of the study is to develop novel tissue-based analytical assays for integrated modelling of tumor and kidney allograft pathology. Objective 1 is to explore tissue processing/data extraction approaches to discover unique digital signatures of tissue components and integrated pathology indicators; objective 2 is to design and validate the “deep-context” tissue assays for selected analytical and clinical tasks to enable robust and affordable multidimensional modelling of tissue pathology.

Main publications:

Zilenaite, D., Rasmusson, A., Augulis, R., Besusparis, J., Laurinaviciene, A., Plancoulaine, B., Ostapenko, V., Laurinavicius, A. Independent prognostic value of intratumoral heterogeneity and immune response features by automated digital immunohistochemistry analysis in early hormone receptor-positive breast carcinoma. *Front. Oncol.* 2020. <https://doi.org/10.3389/fonc.2020.00950>.

Rasmusson, A., Zilenaite, D., Nestarenkaite, A., Augulis, R., Laurinaviciene, A., Ostapenko, V., Poskus, T., Laurinavicius, A. Immunogradient indicators for antitumor response assessment by automated tumor-stroma interface zone detection. *The American Journal of Pathology.* 2020, S0002-9440(20)30126-7, <https://doi.org/10.1016/j.ajpath.2020.01.018>.

Nestarenkaitė, A., Fadhil, W., Rasmusson, A., Susanti, S., Hadjimichael, E., Laurinavičienė, A., Ilyas, M., Laurinavičius, A. Immuno-interface score to predict outcome in colorectal cancer independent of microsatellite instability status. *Cancers.* 2020, 12(10): 1–17, eISSN 2072-6694. DOI:[10.3390/cancers12102902](https://doi.org/10.3390/cancers12102902).

Deep Context Tissue Digital Signature Collection. This document presents workflow to generate and collect tissue pathology signatures/indicators from digital microscopy images. In general, the procedures presented there are based on a set of laboratory and microscopy imaging techniques, digital data processing, machine learning methods, and statistical analyses to extract tissue pathology features to be tested for their pathobiological and clinical value. In particular, this collection is focused on the procedures to obtain digital signatures of tissue components at a pixel and/or tissue component level, firstly to improve segmentation of tissue components in digital images. Tissue classification is then used for appropriate image analysis and analytics methods for quantitative pathology feature extraction and computation of deep context pathology indicators.

Guidelines for Generating Pathology Indicators.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

Université de Caen Basse-Normandie (France)

Cancer Pathology Nottingham University (GB)

Brigham and Women’s Hospital, Harvard Medical School, Boston, MA (USA)

Ruprecht-Karls-universitat Heidelberg, EMBL (Germany)

University Hospital Gießen and Marburg (Germany)

Division of Clinical Pharmacology, Karolinska Institutet, Karolinska University (Sweden)

OTHER RESEARCH ACTIVITIES

Prof. Dr A. Laurinavičius –

- member, Lithuanian Association of Nephrology, Dialysis, and Transplantation;
- member, European Society of Pathology;
- member, Renal Pathology Society;
- board member of the Lithuanian Society of Pathology;
- editorial board member of the journal *Medicina (Medicine)*;
- editorial board member of the journal *Diagnostic Pathology*;
- editorial board member of the journal *Pathology Informatics*;

- chairman of the Management Board, Lithuanian Association of Health Informatics and Bioinformatics.

Prof. Dr V. Grabauskienė –

- fellow of the European Society of Cardiology (FESC);
- member of the European Association of Echocardiography (EAE) of the ESC;
- member of the Heart Failure Association (HFA) of the ESC;
- member of the American Society of Echocardiography;
- UEMS (European Union of Medical Specialist) Diploma of European Cardiologist Nr.52546;
- member of the European Association for Predictive, Preventive and Personalized Medicine (EPMA).

Prof. Dr Jolanta Gulbinovič –

- member of Executive Committee of the European Association of Clinical Pharmacology and Therapeutics (EACPT);
- member of Council of European Drug Utilisation Group (EuroDurg);
- board member of Lithuanian Association of Clinical Pharmacology;
- member of Pharmacovigilance Risk Assessment Committee of the European Medicines Agency.

Prof. Dr D. Characiejus –

- National Representative of the European Association for Predictive, Preventive and Personalized Medicine (EPMA) in Lithuania;
- editorial board member of *The EPMA Journal*;
- member of the Council of the Lithuanian Society of Immunology.

Assoc. Prof. Dr E. Žurauskas –

- member of the Lithuanian Society of Pathology.

Dr A. Laurinavičienė –

- president of Lithuanian Association of Pathology Technologists.

U. Mickys –

- board member of the Lithuanian Society of Pathology.

D. Petroška –

- member of the Lithuanian Society of Pathology.

Assoc. Prof. Dr J. Stasiūnienė –

- member of the Lithuanian Society of Forensic Medical Physicians.

Assist. Dr S. Laima –

- Vice-President of the Lithuanian Society of Forensic Medical Physicians.

Teaching Assist. R. Šimakauskas –

- member of the Lithuanian Society of Forensic Medical Physicians.

Teaching Assist. D. Fomin –

- member of the Lithuanian Society of Forensic Medical Physicians.

BEST REPORTS DELIVERED AT CONFERENCES ABROAD

- Laurinavičius, invited speaker. *Digital Intelligence for Tissue Pathology, Molecular Diagnostics & Image Analysis Training Schools (Virtual)*, Nottingham, GB, 1–2 October 2020.

- A. Laurinavičius, session moderator. 4th International Renal Pathology Virtual Conference, 19–21 November 2020.
- A. Laurinavičius, invited speaker. *Assessment of Intratumor Heterogeneity and Tumor/Host Interaction using Spatial Analytics*. Digital Pathology: Online, 29 July 2020.
- A. Laurinavičius, invited speaker. *Kidney Biopsy Diagnosis in Nephritic Syndrome*, meeting of the Latvian Association of Nephrologists, 30 January 2020.
- Poster presentation. Tulyte S, Tamulyte I, Diglys D, Characiejus D, Matuzeviciene R, Janiulioniene A, Zvirblis T, Sileikis A. Chemotherapy related changes of peripheral blood lymphocytes in advanced and metastatic PDAC. *Annals of Oncology*, Sep 19-Oct 18, 2020, 31(4):S952-S952, *Meeting Abstract*: 1559P, DOI: 10.1016/j.annonc.2020.08.2042, Conference: ESMO Virtual Congress, Location: Elektr Network.

MOST IMPORTANT RESEARCH DISSEMINATION ACTIVITIES

- [2020-09-17 Spatial statistics extract subvisual features, https://healthcare-in-europe.com/en/contact/](https://healthcare-in-europe.com/en/contact/)
- [VU mokslininkas D. Characiejus: kaip imuninė sistema kovoja su SARS-CoV-2 virusu? https://www.mf.vu.lt/apie-mf/naujienos/33-bendros-naujienos/1390-vu-mokslininkas-d-characiejus-kaip-imunine-sistema-kovoja-su-sars-cov-2-virusu?fbclid=IwAR0NPx652r2fSbBcBdJdpHAbVkp0ROvo3zagU_Ar8v7pAzgdSCD2eggZsOA](https://www.mf.vu.lt/apie-mf/naujienos/33-bendros-naujienos/1390-vu-mokslininkas-d-characiejus-kaip-imunine-sistema-kovoja-su-sars-cov-2-virusu?fbclid=IwAR0NPx652r2fSbBcBdJdpHAbVkp0ROvo3zagU_Ar8v7pAzgdSCD2eggZsOA)
- Jurgita Stasiūnienė. Interview for LRT Science and IT Department: “Doctor’s perception of death, who faces it everyday: what happens when we die and what do we feel?” (<https://www.lrt.lt/naujienos/mokslas-ir-it/11/1264898/mirtis-kasdien-su-tuo-susiduriancio-gydytojo-akimis-kas-nutinka-kai-mirstame-ir-ka-jaucia-zmogus>)
- Jurgita Stasiūnienė. Consultation in preparing a TV show on Delfi TV: “Radical curiosity. What if there was no death?”
- Sigitas Chmieliauskas. Interview for 15min: “What are forensic medicine experts afraid of? Dead newborns, bodies divided by the train and sounds from the mortuary refrigerators.” (<https://www.15min.lt/gyvenimas/naujiena/pokalbiai/ko-bijo-teismo-medicinos-ekspertai-negyvi-kudikiai-traukinio-padalinti-kunai-ir-saldytuvuose-girdimas-krebzdesys-1040-1403984>)

Department of Physiology, Biochemistry, Microbiology and Laboratory Medicine

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Head – Assoc. Prof. Dr *Dovilė Karčiauskaitė*

STAFF

Professors: Dr Z. A. Kučinskienė, Dr D. Karčiauskaitė, Dr A. Abaravičius, Dr A. Kaminskas, Dr V. Hendrixson.

Associate professors: Dr V. Jablonskienė, Dr T. Kačergius, Dr R. Matuzevičienė, Dr L. Bagdonaitė, Dr D. Vitkus, Dr S. Meidutė-Abaravičienė, Dr A. Mažeikienė, Dr A. Kirkliauskienė.

Assistant professors: Dr M. Baranauskas, Dr V. Banys, V. Žėkas, I. Bikulčienė, Ž. Chomanskis.

Teaching assistants: M. Radzevičius, E. Mazgelytė.

Lecturers: Dr D. Paškevičienė, L. Vasiliauskaitė, E. Ostonevičiūtė.

Researchers: Dr M. Bratčikov, Dr A. Linkevičiūtė.

Doctoral students: M. Radzevičius, E. Mazgelytė, R. Stonys.

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Investigation of the Mechanisms of Extracellular Microparticles (Exosomes) Involvement in the Cellular Response to Oxidative Stress. Assist. Prof. V. Žėkas. 2020–2021.

Work carried out in 2020: 1) Growing of Endothelial Culture (HUVEC); 2) The operation of huvec cell culture is exosable in different time periods. The tests of exosable concentrations shall be calculated based on nano particle analysis data and each sample shall be diluted in such a way that the concentration of exosom in each sample is equal; 3) A study of the emergent reactive oxygen forms in cell culture using a flush cytometry method using fluorescent antibodies (MitoSox, DCFDA H2DCFDA) that marks reactive oxygen forms.

National Research Projects

The Development of Algorithm of Stress Management in Virtual Reality and the Development of Algorithm of Stress Monitoring. Lithuanian Business Support Agency (LVPA) in cooperation with consulting enterprise Human Study Centre. Assoc. Prof. Dr D. Karčiauskaitė, Assoc. Prof. A. Mažeikienė, Dr A. Linkevičiūtė, PhD student E. Mazgelytė. 2019–2020.

The last project step was implemented in 2020. Specifically, using biochemical, physiological and psychological stress measures the long-term effectiveness of stress management algorithm was analyzed. Hair cortisol and cortisone concentrations were measured using liquid-chromatography-tandem mass spectrometry technique in the Department of Physiology, Biochemistry, Microbiology and Laboratory Medicine. Physiological (heart rate variability, galvanic skin response) and psychological (questionnaires) stress indicators were analyzed in the Human Study Center.

Main publication:

Mazgelytė, E., Chomentauskas, G., Dereškevičiūtė, E., Rekiėnė, V., Jakaitienė, A., Petrėnas, T., Songailienė, J., Utkus, A., Kučinskienė, Z. A., Karčiauskaitė, D. Association of salivary steroid hormones and their ratios with time domain heart rate variability indices in healthy individuals. *Journal of Medical Biochemistry*. Belgrade: Society of Medical Biochemists of Serbia, first published online, p. [1-8]. DOI: 10.5937/jomb0-26045.

Research Council of Lithuania. **Applying Innovative Non-Invasive Biomedical Research Methods to Managing Stress in Group Dynamics: Case of Military Conscript in Lithuania**. Assoc. Prof. A. Mažeikienė. 2020–2022.

Permission of Vilnius Regional Biomedical Research Ethics Committee No. 2020/10-1275-754 and permits for investigations to be carried out in army units serving conscripts were obtained. Theoretical analysis of the subject in the paradigm of biomedical sciences was performed. Research methodology for measuring long-term stress management in group dynamics was created and validated. Data collection and analysis of phase I was done: research using biomedical non-interventional stress biomarkers for assessing levels of stress hormones in human hair samples. Early study results were presented at the 15th Baltic Congress of Laboratory Medicine; Riga, Latvia (oral presentation).

International Research Projects

International Joint Project with Al-Qasemi Research Center, Israel: Activity of Lauryl Gallate on Streptococcus mutans Biofilm Formation, Acidogenicity and Gene Expression. Assoc. Prof. Dr T. Kačergius, Prof. Dr A. Rayan (Israel). 2019–2020.

During the year 2020, investigation was continued in order to determine whether gallic acid ester-lauryl gallate inhibits *Streptococcus mutans* biofilm formation, acidogenicity and expression of the biofilm-associated genes. Results revealed that lauryl gallate concentrations ranging from 90.12 to 98.98 μM significantly suppressed *S. mutans* biofilm formation and acidogenicity in comparison with the untreated bacteria ($p < 0.05$). The lauryl gallate concentration of 98.98 μM was able to reduce the biofilm formation by 100% and to prevent a decrease in pH level of the biofilm growth medium by 98%. It is noteworthy that the bioactivities of lauryl gallate occurred in a dose-dependent manner. Moreover, the gene encoding glucosyltransferase D was inhibited by 48% using lauryl gallate concentration of 77.1 μM . The findings are important for the development of new antimicrobial agents with antibiofilm activity.

Main publication:

Gabe, V., Zeidan, M., Kacergius, T., Bratchikov, M., Falah, M., Rayan, A. Lauryl gallate activity and *Streptococcus mutans*: Its effects on biofilm formation, acidogenicity and gene expression. *Molecules*. 2020, 25(16): 3685. DOI: 10.3390/molecules25163685.

ALLTogether1– A Treatment Study Protocol of the ALLTogether Consortium for Children and Young Adults (1–45 years of age) with Newly Diagnosed Acute Lymphoblastic Leukaemia (ALL). Assoc. Prof. R. Matuzevičienė, 2018–2020.

In 2020, the data analysis was performed and a manuscript prepared: Value of flow cytometry for MRD-based relapse prediction in B-cell 4 precursor ALL in a multicenter.

Main publication:

Modvig, S., Hallböök, H., Madsen, H. O., Siitonen, S., Rosthøj, S., Tierens, A., Juvonen, V., Osnes, L. T. N., Vålerhaugen, H., Hultdin, M., Matuzeviciene, R., Stoskus, M., Marincevic, M., Lilleorg, A., Ehinger, M., Norén-Nyström, U., Toft, N., Taskinen, M., Jónsson, O. G., Pruunsild, K., Vaitkeviciene, G., Vettenranta, K., Lund, B., Abrahamsson, J., Porwit, A., Schmiegelow, K., Marquart, H. V. Value of

flow cytometry for MRD-based relapse prediction in B-cell 4 precursor ALL in a multicenter. *Springer Nature*. 2020, 14 December.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

NOPHO (Nordic Pediatric Hemato-Oncology) group (<http://www.nopho.org/welcome/frame.htm>)
Malmö University, Malmö (Sweden)

Clinical Institute of Chemistry, Zagreb (Croatia)

AL-Qasemi Research Center (Israel)

Department of Human and Medical Genetics of Faculty of Medicine of Vilnius University (Lithuania)

Centre of Pediatrics, Faculty of Medicine, Vilnius University (Lithuania)

OTHER RESEARCH ACTIVITIES

Prof. Z. A. Kučinskienė –

- member of the Lithuanian Academy of Sciences;
- member of the European Atherosclerosis Society (EAS);
- member of the Board of the Lithuanian Society of Laboratory Medicine;
- member of the Lithuanian Society of Human Genetics;
- editor-in-chief of the journal *Laboratorinė medicina (Laboratory Medicine)*;
- editorial board member of the journals: *Acta Medica Lituanica, Medicina, Medicinos teorija ir praktika, Sveikatos mokslai, Seminars in Cardiology*.

Assoc. Prof. D. Karčiauskaitė –

- board member of Baltic Atherosclerosis Society;
- board member of Lithuanian Laboratory Medicine Society;
- member of European Atherosclerosis Society;
- National Representative at the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM).

Prof. A. J. Abaravičius –

- member of the National Committee of New Food Products;
- member of the Lithuanian Society of Laboratory Medicine;
- member of Lithuanian Physiological Society.

Prof. A. Kaminskas –

- member of the Lithuanian Society of Laboratory Medicine.

Prof. V. Hendrixson –

- member of the Lithuanian Society of Laboratory Medicine;
- member of open Medical Institute Lithuanian Association of Neuroscience;
- member of Federation of European Neuroscience Societies (FENS);
- Honorary Professor of the Karaganda State Medical University.

Assoc. Prof. L. Bagdonaitė –

- member of the Lithuanian Society of Laboratory Medicine;
- member of the Lithuanian Society of Allergology and Clinical Immunology.

Assoc. Prof. V. Jablonskienė –

- executive editor of the journal *Laboratorinė medicina (Laboratory Medicine)*;

- member of the Lithuanian Society of Laboratory Medicine.

Assoc. Prof. T. Kačergius –

- member of the Lithuanian Society of Medical Microbiologists.

Assoc. Prof. R. Matuzevičienė –

- editorial board member of the journal *Laboratorinė medicina (Laboratory Medicine)*,
- member of the Lithuanian Society of Laboratory Medicine;
- member of the Lithuanian Society of Haematology;
- member of the Lithuanian Society of Allergology and Clinical Immunology;
- member of the Lithuanian Medical Association;
- member of the European Society for Clinical Cell Analysis – ESCCA.

Assoc. Prof. D. Vitkus –

- president of the Lithuanian Society of Laboratory Medicine;
- National Representative at the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC);
- National Representative at the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM);
- National Representative at the Registration Commission of the European Society of Clinical Chemistry and Laboratory Medicine (EFLM);
- member at large of the Board of Baltic Association of Laboratory Medicine;
- member of the American Association for Clinical Chemistry;
- corresponding Member of the Committee of Nomenclature for Properties and Units of Scientific Division of the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC);
- corresponding Member of the Committee of Reference Systems of Enzymes of Scientific Division of the IFCC;
- corresponding Member of the Committee of Traceability in Laboratory Medicine of Scientific Division of the IFCC;
- member of the ISTH;
- corresponding member of the IFCC Task Force on Proficiency Testing;
- corresponding member of the IFCC EMD Clinical Laboratory Management; Committee, Analytical Quality Committee;
- corresponding member of the EFLM Working Group on Congresses and Postgraduate Education;
- editorial board member of the journal *Laboratory Medicine*.

Assist. Prof. A. Kirkliauskienė –

- member of the Lithuanian Society of Laboratory Medicine;
- member of the Lithuanian Society of Infectious Diseases.

Assist. Prof. S. Kiverytė –

- member of the European Society of Clinical Virology;
- member of the Lithuanian Society of Laboratory Medicine.

Assist. Prof. V. Banys –

- board member and treasurer of the Lithuanian Society of Laboratory Medicine;
- AACC (American Association for Clinical Chemistry);
- ISTH (International Society on Thrombosis and Haemostasis);
- CLSI (Clinical and Laboratory Standards Institute);

- IFCC (International Federation of Clinical Chemistry and Laboratory Medicine) corresponding member of):
- IFCC EMD Evidence-Based Laboratory Medicine Committee (C-EBLM)
- IFCC EMD Harmonization of Interpretive Comments EQA Working Group (WG-ICQA)
- IFCC EMD Laboratory Errors and Patient Safety Working Group (WG-LEPS)
- IFCC SD Reference Intervals and Decision Limits Committee (C-RIDL)
- IFCC Task Force on Ethics (TF-E)
- IFCC Task Force for Young Scientists (TF-YS).

Assist. Prof. A. Mažeikienė –

- member of European Atherosclerosis Society (EAS);
- member of the Lithuanian Society of Laboratory Medicine.

BEST REPORTS DELIVERED AT CONFERENCES ABROAD

- Zabulienė, Lina; Saukaitytė Butvilė, Edita; Hendrixon, Vaiva; Urbonas, Mykolas; Jatužis, Dalius. Headache in patients with polycystic ovary syndrome. Endocrine abstracts: 22nd European Congress of Endocrinology, Online, 05–09 Sep 2020. Bristol.
- Mazgelytė E. Analysis of steroid hormones in human hair samples. 15th Baltic Congress of Laboratory Medicine, Online 6–7 Nov 2020. Riga, Latvia.

MOST IMPORTANT NATIONAL AND INTERNATIONAL AWARDS RECEIVED FOR R&D ACTIVITIES

- Assist. Prof. Dr I. Bikulčienė. 3rd place. 13th Young Scientists Conference "Bioate: Perspectives on Natural and Life Sciences" December 4, remote conference. Report "Relationship between changes in fatty acid composition of platelet membrane phospholipids in healthy and myocardial infarcted men with oxidative stress."

Department of Radiology, Nuclear Medicine and Medical Physics

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Tel. 236 5177

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Head – Prof. Dr *Algirdas Edvardas Tamošiūnas*

STAFF

Professors: Dr A. E. Tamošiūnas, Dr N. R. Valevičienė.

Associate professors: Dr J. Dementavičienė, Dr S. Letautienė, Dr B. Gricienė.

Asisstants: Dr A. Samuilis, Dr A. Brazaitis, Dr D. Palionis, Dr J. Ušinskienė, Dr M. Matačiūnas, Dr R. Briedienė, D. Valančienė.

Doctoral students: R. Komiagienė, G. Lengvenis, A. Domarkiene, D. Jocius.

RESEARCH INTERESTS

Creation of new functional and anatomical imaging techniques and evaluation of effectiveness for diagnostics of cardiovascular, abdominal and oncological diseases

Estimation of iron overload in liver and heart

Physical properties *in vitro* of metabolites using high-resolution 9.4T NMR spectrometer

AI and deep learning applicaions in diagnostic imaging

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Possibilities of Low Dose Computed Tomography and Nuclear Medicine Applications in Medical Diagnostics. Dr A. E. Tamošiūnas, Dr J. Dementavičienė, Dr A. Samuilis, Dr B. Gricienė, D. Jocius Dr M. Matačiūnas. 2014–2021.

Objective for 2020 was to create background to reduce radiation exposure for patients and personel during PET/CT, SPECT/CT and CT imaging studies.

Main publications:

Skovorodko, K., Bareikė, M., Gudelis, A., Gricienė, B. Occupational exposure in a PET/CT facility using two different automatic infusion systems. *Physica medica*. 2020, 77: 169–175.

DOI: 10.1016/j.ejmp.2020.08.014.

Adliene, D., Griciene, B., Skovorodko, K., Laurikaitiene, J., Puiso, J. Occupational radiation exposure of health professionals and cancer risk assessment for Lithuanian nuclear medicine workers.

Environmental Research. 2020, 183, 109144: 1–10. DOI: 10.1016/j.envres.2020.109144.

New Non-Invasive Imaging Methods for the Diagnostics of Chronic Liver Diseases. Dr A. E. Tamošiūnas, Dr N. R. Valevičienė, Dr J. Dementavičienė, Dr A. Samuilis, D. Jocius, Dr B. Gricienė, G. Lengvenis, R. Komiagienė. 2014–2020.

In 2020, we extended collection of study data, and evaluated possibilities to implement AI applications to extend ultrasound elastography to replace conventional liver biopsy were studied.

Main publications:

Gulla, A., Samuilis, A., Raišutis, R., Strupas, K. TU2039 combining ceus and artificial intelligence to identify early parenchymal changes in acute severe pancreatitis. *Gastroenterology*. 2020, 158(6): S1596. DOI: 10.1016/S0016-5085(20)34681-3.

Jocius, D., Vajauskas, D., Tamosiunas, A. E. Usage of hepatobiliary scintigraphy imaging in stratification of patients with chronic viral hepatitis. *European Journal of Nuclear Medicine and Molecular Imaging*. 2020 Sep, 47.

International Research Projects

Joint Vilnius University and CERN cooperation project: **Optimization of Ionizing Radiation Exposure in Radiology and Nuclear Medicine**. Prof. A. E. Tamošiūnas. 2016–2021.

Based on research expertise, Assoc. Prof. Dr B. Gričienė contributed two publications in 2020. In 2020, two new dose registry accesses were created on CT and angiography machines.

OTHER RESEARCH ACTIVITIES

Prof. A. E. Tamošiūnas –

- board member of Lithuanian Radiologists' Association;
- board member of Lithuanian Ultrasound Association;
- member of European Society of Radiology.

Assoc. Prof. J. Dementavičienė –

- editorial board member of the journal *Theory and Practice in Medicine*;
- vicepresident of Lithuanian Radiologists' Association;
- member of European Society of Radiology;
- member of European Society of Neuroradiology;
- member of International Society of Magnetic Resonance in Medicine;
- member of Radiology Society of North America;
- social adviser to Health Care Minister of Lithuania;
- member of Research Committee at European Society of Radiology.

Assist. Prof. Dr R. Briedienė –

- managing editor of the journal *Acta Medica Lituanica*.

BEST REPORTS DELIVERED AT CONFERENCES ABROAD

- Samuilis, A. Ultrasound contrast agents: definition, classification, safety, future perspectives. International School: The School of Multiparametric Liver Ultrasound Imaging, Vilnius, 7–8 February 2020
- R. Luksaite, A. Samuilis. Multimodality imaging of early vascular complications after orthotopic liver transplantation: pictorial review (e-poster). European Congress of Radiology 2020 (Vienna).
- Poster presentation "Assessment of local diagnostic reference levels for pediatric ct procedures using a python-based tool for patient CT dose tracking". International conference on Radiation Safety: Improving radiation protection in practice. 9–20 November 2020. Vienna (remote).

INSTITUTE OF CLINICAL MEDICINE

Clinic of Obstetrics and Gynaecology

2 Santariškių, 08661 Vilnius
Tel. 250 1484; 250 1487
E-mail diana.ramasauskaite@mf.vu.lt

Head – Prof. Dr *Diana Ramašauskaitė*

STAFF

Professors: Dr D. Ramašauskaitė, Dr G. S. Drašutienė, Dr Ž. Bumbulienė, K. Mačiulienė (Prof. of partnership).

Associate professors: Dr A. Arlauskienė, Dr D. Bartkevičienė, Dr N. Drazdienė, Dr D. Laužikienė, Dr V. Rudaitis, Dr M. Šilkūnas, Dr R. Vansevičiūtė-Petkevičienė (Assoc. Prof. of partnership), Dr J. Zakarevičienė.

Assistant professors: Dr A. Amšiejienė, Dr D. Bužinskienė, Dr G. Domža, Dr V. Paliulytė.

Teaching assistants: K. Norvilaitė, G. Balčiūnienė, Ž. Sabonytė-Balšaitienė.

Lecturers: I. Daunoravičienė, R. Einikytė, E. Frolovas, A. Rimkevičienė, B. Žaliūnas.

Doctoral students: Ž. Sabonytė-Balšaitienė, G. Balčiūnienė, K. Norvilaitė, R. Gričius, V. Gulbinienė.

RESEARCH INTERESTS

Health of mother and foetus: physiology and pathology

RESEARCH PROJECTS CARRIED OUT IN 2020

Project Supported by University Budget

Peculiarities of Women's Health Care. Prof. Dr D. Ramašauskaitė. 2019–2023.

46XY complete gonadal dysgenesis (Swyer syndrome) is a rare disorder of sex development. It is characterized by typical female external genitalia, the uterus and fallopian tubes are normally formed, but the gonads (ovaries or testes) are not functional and are called streak gonads. Due to no gonadal potential, Swyer syndrome typically presents as primary amenorrhea and/or delayed puberty. The present report describes a 9-year old patient with Swyer syndrome diagnosed with dysgerminoma in the right ovary and left ovarian gonadoblastoma after prophylactic bilateral gonadectomy. Concerning the high risk of early gonadoblastoma and its malignant transformation, we recommend performing prophylactic bilateral gonadectomy at the time of diagnosis, even if the patient is prepubertal age.

Main publications:

Bumbulienė, Ž., Varytė, G., Geimanaitė, L. Dysgerminoma in a prepubertal girl with complete 46XY gonadal dysgenesis: case report and review of the literature. *Journal of Pediatric and Adolescent Gynecology*. 2020, 33(5): 599–601. DOI: 10.1016/j.jpag.2020.04.007.

Kacerauskiene, J., Minkauskiene, M., Mahmood, T., Bartuseviciene, E., Railaite, D. R., Bartusevicius, A., Kliucinskas, M., Maleckiene, L., Ulevicius, J., Liubiniene, L., Smigelskas, K., Maciulienė, K., Drasutiene, G., Ramasauskaite, D., Nadisauskiene, R. J. Lithuania's experience in reducing caesarean

sections among nulliparas: the impact of the quality improvement course. *BMC Pregnancy Childbirth*. 2020 Mar 12, 20(1):152. DOI: 10.1186/s12884-020-2806-5.

Černiauskaitė, M., Vaigauskaitė, B., Ramašauskaitė, D., Šilkūnas, M. Spontaneous heterotopic pregnancy: case report and literature review. *Medicina*. 2020, 56(8): 365. DOI: 10.3390/medicina56080365.

National Research Projects

Research Council of Lithuania. **Noninvasive Immunological Analysis of Amniotic fluid in Preterm Birth**, No P-MIP-19-66. Prof. D. Ramašauskaitė. 2019–2021.

The most common complications of preterm premature rupture of membranes is intrauterine infection, which is related to fetal inflammatory response syndrome (FIRS), and is characterized by severe foetal and newborn injury, and can be a cause of death. As diagnosis of intrauterine infection is made, it is recommended to discontinue the pregnancy. However, there is a risk of neonatal respiratory distress syndrome (NRDS). Most of the amniotic fluid analyses are performed invasively, using amniocentesis. In this project evaluation of immunological markers in amniotic fluid collecting them transvaginally is being done seeking to determine the cut-off values of immunological markers for FIRS and NRSD.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

Zurich University (Switzerland)

University of Gdansk (Poland)

Warsaw Medical University (Poland)

Jagiellonian University Krakow (Poland)

Pomeranian Medical University (PMU) Szczecin (Poland)

Lund University (Sweden)

Riga Stradins University (Latvia)

Niels-Stensen-Kliniken Marienhospital Osnabrück (Germany)

University Hospital Estaing Of Clermont-Ferrand(France)

OTHER RESEARCH ACTIVITIES

Prof. G. S. Drašutienė –

- editorial board member of the journal *Lietuvos chirurgija (Lithuanian Surgery)*.

Prof. N. Drazdienė –

- editorial board member of the journal *Lietuvos akušerija ir ginekologija (Lithuanian Obstetrics & Gynaecology)*;
- board member of Lithuanian Paediatric Society and Vilnius Paediatric Society;
- head of Lithuanian section of German-Baltic Physician Society.

Prof. D. Ramašauskaitė –

- president of Lithuanian Society of Obstetricians Gynaecologists, (<http://www.lagd.lt/apie-mus/valdybos-nariai/28>);
- editorial board member of the journal *Lietuvos akušerija ir ginekologija (Lithuanian Obstetrics & Gynaecology)*;
- elected member of Committee for Safe Motherhood and Newborn Health FIGO (FIGO - The International Federation of Gynaecology and Obstetrics), <https://www.figo.org/committee-safe-motherhood-and-newborn-health>;

- member of EBCOG Council (EBCOG European Board & College of Obstetrics and Gynaecology);
- Head of the training course “Topical issues of modern obstetrics, gynaecology and perinatology” in the East Kazakhstan region (2019–2020).

Prof. Ž. Bumbulienė –

- president-elect of EURAPAG (European Association of Paediatric and Adolescent Gynaecology), <http://www.eurapag.com/association/ec/>;
- board member of FIGIJ (International Federation Of Infant and Juvenile Gynaecology), <http://www.figij.org/>;
- secretary of Lithuanian Society of Obstetricians Gynaecologists, (<http://www.lagd.lt/apie-mus/valdybos-nariai/28>);
- head of section of Lithuanian Society of Obstetricians Gynaecologists;
- board member of Vilnius Medical Society;
- editorial advisory board member of the journal *Ginekologia Polska*, https://journals.viamedica.pl/ginekologia_polska/about/editorialTeam;
- international editorial board member of the journal *Wiadomości Lekarskie*, <https://wiadlek.pl/editorial-board-2/>;
- international advisory board member of the journal *Paediatric and Adolescent Reproductive Health*, <http://rzd.dp.geotar.ru/>;
- editorial board member of the journal *Lietuvos akušerija ir ginekologija (Lithuanian Obstetrics & Gynaecology)*;
- head of editorial board of the journal *Ginekologijos aktualijos*;
- organizing committee board member of the EURAPAG 2021 conference, Rotterdam, The Netherlands, 9–12 June 2021;
- organizing committee board member of the 2nd conference *Pan-European Trainees’ Congress in Paediatric and Adolescent Gynaecology*, Rotterdam, The Netherlands, 11 June 2021.

Assoc. Prof. A. Arlauskienė –

- board member and treasurer of Lithuanian Society of Obstetricians Gynaecologists;
- editorial board member of the journal *Lietuvos akušerija ir ginekologija (Lithuanian Obstetrics & Gynaecology)*;
- member of International Society of Ultrasound in Obstetrics and Gynaecology, www.isuog.com;
- director of Ian Donald School of Medical Ultrasound Branch for Lithuania, www.iandonaldschools.com.

Assoc. Prof. M. Šilkūnas –

- head of Vilnius region Society of Obstetrics and Gynaecology;
- board member of Lithuanian Society of Obstetricians Gynaecologists;

Assoc. Prof. D. Bartkevičienė –

- president of the Lithuanian Aesthetic Gynaecology Association, (<http://www.estetineginekologija.lt/daiva-bartkeviciene/>);
- editorial board member of the journal *Sveikatos mokslai (Health Sciences)*;
- board member of Vilnius region Society of Obstetricians Gynaecologists;
- member of Lithuanian Society of Obstetricians Gynaecologists;
- member of International Society of Ultrasound in Obstetrics and Gynaecology (ISUOG), www.isuog.com;
- member of European Society for Gynaecological Endoscopy (ESGE);
- member of the International Ovarian Tumour Analysis (IOTA) group;

- member of the European Society of Aesthetic Gynaecology (ESAG).

Assist. V. Paliulytė –

- member of working group of Vilnius University for integration of Medicine Faculty of Tashkent University into European Society Union, 23–27 February 2020, Uzbekistan;
- organizing committee board member of the national conference "Medications and pregnancy" 4 September 2020, Vilnius;
- member of International Society of Ultrasound in Obstetrics and Gynaecology, <http://www.isuog.com>;
- board member of Vilnius region Society of Obstetrician Gynaecologists;
- member of Lithuanian Society of Obstetrician Gynaecologists.

Assist. V. Rudaitis –

- president of Gynaecology Oncology Association;
- board member of EU initiative programme # ENI-LLB-1-029 on reduction of social exclusion in the quality of life cancer patients in Vilnius and Grodno regions;
- consultant for enhancement of minimal invasive total laparoscopic hysterectomy *On-Site Training* during regular scheduled interventions for physicians selected by Medtronic company.

Lect. I. Daunoravičienė –

- board member of the Medical Ethics Commission of Vilnius City Clinical Hospital.

BEST REPORTS DELIVERED AT CONFERENCES ABROAD

- Ž. Sabonytė-Balšaitienė. Preventing haemorrhoids and fissures of pregnancy: results of the randomized controlled trial. European Society of Coloproctology (ESCP) 15th annual Scientific Meeting.
- D. Ramašauskaitė. Easing lockdown. FIGO Global Webinar „COVID - 19 and pregnancy – UPDATES”. June 30, 2020; <https://vimeo.com/434393112>
- Ž. Bumbulienė. Achievements and innovations in the field of HPV vaccination. Contemporary Medicine of Warmia and Mazury - interdisciplinary workshop, Ryn, 07–09 February 2020.

MOST IMPORTANT PARTICIPATION CASES OF RESEARCHERS IN WORKING GROUPS OR COMMISSIONS SET UP BY STATE AUTHORITIES, STATE AND MUNICIPAL INSTITUTIONS AND ORGANISATIONS, AND BUSINESS ENTITIES

- Prof. D. Ramašauskaitė - member of Group of Experts of Biomedical Research of Lithuanian Bioethics Committee
- Prof. D. Ramašauskaitė – vice-President of Management Committee for Perinatology Integrated Health Care of Ministry of Health of the Republic of Lithuania
- Prof. D. Ramašauskaitė - member of Committee on the Evaluation of Personal Health Services of Ministry of Health of the Republic of Lithuania
- Prof. Ž. Bumbulienė - member of the Working Group to assess the need to compensate the drug levonorgestrel for sexually active girls aged 15-20 years.

CONSULTATIONS PROVIDED BY THE UNIT TO THE PUBLIC OR ECONOMIC ENTITIES

- R. Vansevičiūtė-Petkevičienė: Onkologinių ligų diagnostika ir gydymas COVID-19 pandemijos metu - parengtos ambulatorinių sveikatos priežiūros paslaugų teikimo

rekomendacijos NVI. April 2020,

https://sam.lrv.lt/uploads/sam/documents/files/KORONA/2020%2003%2031_vezio%20institutas.pdf

- Prof. Dr Ž. Bumbulienė - participant in the press conference of the Seimas of the Republic of Lithuania "Why do young girls in Lithuania need effective contraception?" 14 May 2020.

MOST IMPORTANT RESEARCH DISSEMINATION ACTIVITIES

- A. Arlauskienė. Lithuania Branch of Ian Donald Inter-University School of Medical Ultrasound. In: Ian Donald Inter-University School of Medical Ultrasound: Past, Present, Future. Dialog India Services LTD, 2020, 223-225. www.iandonaldschools.com
- Prof. Ž. Bumbulienė. TV3 "Be Healthy" - talk about the HPV virus, 10 March 2020.
- Prof. Ž. Bumbulienė. A conversation "Choosing Contraception for Teens. Hormonal spiral - for and against", <https://www.facebook.com/VULSK>, 18 June 2020.
- Ž. Bumbulienė. "Lietuvos rytas" about adolescent sex and contraceptive methods, 02 July 2020.
- Prof. Ž. Bumbulienė. Aa conversation "Eating Disorders And Sexual Health In Girls", 04 November 2020:

TV3.lt <https://www.tv3.lt/naujiena/gyvenimas/1066633/nenumokite-ranka-i-dingusias-menesines-gali-ispeti-apie-liga-nuo-kurios-merginos-net-mirsta>

Kaunodiena.lt <https://kauno.diena.lt/naujienos/sveikata/sveikata/valgymo-sutrikimu-padariniai-tenka-kreiptis-ir-i-ginekologa-995334>

Diena.lt <https://www.diena.lt/naujienos/sveikata/sveikata/valgymo-sutrikimu-padariniai-tenka-kreiptis-ir-i-ginekologa-995334>

Clinic of Anaesthesiology and Reanimatology

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Head – Prof. Dr *Jūratė Šipylaitė*

STAFF

Professor: Dr J. Šipylaitė.

Associate professors: Dr R. Badaras, Dr D. Činčikas, Dr A. Klimašauskas, Dr E. Kontrimavičiūtė, Dr I. Norkienė, Dr D. Ringaitienė, Dr M. Šerpytis, Dr S. Vosylius.

Assistant professor: Dr S. Švedienė.

Teaching assistants: Š. Judickas (part-time), D. Gražulytė (part-time), M. Svetikienė (part-time), A. Vaitkus (part-time).

Lecturers: L. Balčiūnas (part-time), E. Gaižauskas (part-time), V. Kuzminskaitė (part-time), T. Strainys (part-time), G. Šostakaitė (part-time).

Senior researcher: Dr A. Andrijauskas.

Doctoral students: Š. Judickas, D. Gražulytė, M. Svetikienė, G. Šostakaitė, A. Vaitkus.

Students' scientific group of Anaesthesiology and Reanimatology: scientific leader – Assoc. Prof. S. Vosylius, coordinator – student E. Januškevičiūtė, 81 members in the group.

RESEARCH INTERESTS

Etiopathogenesis, diagnostics, treatment of diseases: fundamental and clinical research, innovative technologies

Impact of perioperative and psychosocial risk factors on long term mortality, quality of life, stress reactions after cardiac surgery

Optimization of low back pain diagnosis and treatment

Organ dysfunction in critically ill oncohaematological patients

Early changes in cognitive functioning in patients undergoing general anesthesia

Optimal cerebral perfusion pressure target treatment for traumatic brain injury patients

Intra-operative oxygen administration and adequate organ perfusion maintenance during different methods of anaesthesia

Spinal bupivacaine baricity and dose in day-case surgery

Development of new methods of opioid detoxification for illicit and prescription opioid dependent patients

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Perioperative Patient Optimization and Management of Critical States. Prof. Dr J. Šipylaitė. 2019–2023.

A prospective randomised study The Efficacy of Early Postoperative Enteral Immunonutrition on Cellular and Systemic Immune Response in Low Operative Risk Cardiac Surgery Patients was finished and data was published.

Results of prospective observational study impact of enteral nutrition interruptions on underfeeding in intensive care unit were published.

Prospective study revealed that the severity of traumatic brain injury was associated with the patient-specific cerebral perfusion pressure management. Autoregulation guided treatment was important for individual traumatic brain injury management.

Main publications:

Svetikiene, M., Ringaitiene, D., Vezeliene, V., Isajevs, V., Trybe, D., Vicka, V., Malickaite, R., Jurgauskiene, L., Norkuniene, J., Serpytis, M., Sipylaite, J. The efficacy of early postoperative enteral immunonutrition on T-lymphocyte count: A randomised control study in low-risk cardiac surgery patients. *Clinical Nutrition*. 2020. DOI: 10.1016/j.clnu.2020.05.009.

Salciute-Simene, E., Stasiunaitis, R., Ambrasas, E., Tutkus, J., Milkevicius, I., Sostakaite, G., Klimasauskas, A., Kekstas, G. Impact of enteral nutrition interruptions on underfeeding in intensive care unit. *Clin Nutr*. 2020 Aug 27, S0261-5614(20)30429-5. DOI: 10.1016/j.clnu.2020.08.014.

Vicka, V., Vickiene, A., Tutkus, J., Stanaitis, J., Bandzeviciute, R., Ringaitiene, D., Vosylius, S., Sipylaite, J. Immediate aspiration of the drug infused via central venous catheter through the distally positioned central venous dialysis catheter: An experimental study. *JVA: The Journal of Vascular Access*. 2020, first published online: 1–7. DOI: 10.1177/1129729820924555.

Petkus, V., Preiksaitis, A., Chaleckas, E., Chomskis, R., Zubaviciute, E., Vosylius, S., Rocka, S., Rastenyte, D., Aries, M., Ragauskas, A., Neumann, J-O. Optimal cerebral perfusion pressure: targeted treatment for severe traumatic brain injury. *Journal of Neurotrauma*. 2020 Jan 15, 37(2): 389–396. DOI: 10.1089/neu.2019.6551.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

Research and Education, Department of Clinical Science and Education, Karolinska Institutet/Södersjukhuset Section of Anaesthesiology and Intensive Care (Sweden)

Institute of Physiology and Pharmacology, Faculty of Medicine, Medical Academy of the Lithuanian University of Health Sciences (Lithuania)

Veterinary Academy of the Lithuanian University of Health Sciences (Lithuania)

University of Limerick (Ireland)

Optical Fibre Sensors Research Centre www.OFSRC.ul.ie

Circuits and Systems Research Centre <http://www.csrc.ie>

OTHER RESEARCH ACTIVITIES

Prof. J. Šipylaitė –

- council member of Lithuanian Society of of Anaesthesiology and Intensive Care, <http://anest-rean.lt/>;
- member of the European Society of Anaesthesiology, <https://www.esahq.org/>;
- member of European Society of Intensive Care Medicine, <https://www.esicm.org/>;
- member of the Board of Anaesthesiology of Medical Specialists of the European Union, <http://www.eba-uems.eu/>;
- editorial board member of the journal *Acta medica Lituanica*, <https://www.lmaleidykla.lt/ojs/public/journals/1/Redkolegija.pdf>.

Senior Researcher A. Andrijauskas –

- member of the Lithuanian Society of Anaesthesiology and Intensive Care, <http://anest-rean.lt/>;
- member of the European Society of Anaesthesiology, <https://www.esahq.org/>;

- member of Western Anaesthesia Society of Ireland, <https://anaesthesiawest.wordpress.com/>.

Assoc. Prof. R. Badaras –

- council member of Lithuanian Society of of Anaesthesiology and Intensive Care, <http://anest-rean.lt/>;
- member of the Lithuanian Society for Parenteral and Enteral Nutrition, www.lpemd.org;
- member of the Lithuanian Society of Clinical Toxicology, <https://www.apsinuodijimai.lt/>;
- member of European Association of Poisons Centres and Clinical Toxicologists (EAPCCT), <https://www.eapcct.org/>;
- member of European Society for Clinical Nutrition and Metabolism (ESPEN), <https://www.espen.org/>;
- member of the pool of experts on *ad hoc* rapid risk assessment of chemical threats under the Scientific Committee on Health, Environmental and Emerging Risks (SCHEER) at European Commission, https://ec.europa.eu/health/scientific_committees/scheer_en.

Assoc. Prof. D. Činčikas, Assoc. Prof. E. Kontrimavičiūtė –

- members of the Lithuanian Society of Anaesthesiology and Intensive Care, <http://anest-rean.lt/>.

Assoc. Prof. I. Norkienė –

- member of the Lithuanian Society of Anaesthesiology and Intensive Care, <http://anest-rean.lt/>;
- member of the European Society of Anaesthesiology, <https://www.esahq.org/>;
- Representative Council member of European Association of Cardiothoracic Anaesthesiology, <http://www.eacta.org/about-eacta/organs/representative-council/>;
- member of European Association of Cardiothoracic Anaesthesiology (EACTA);
- National representative of Lithuania in EACTA. Member of EACTA Representative Council, <http://www.eacta.org>.

Assoc. Prof. A. Klimašauskas –

- vicepresident of the Lithuanian Society for Parenteral and Enteral Nutrition, www.lpemd.org;
- council member of the Lithuanian Society of Anaesthesiology and Intensive Care, <http://anest-rean.lt/>.

Assoc. Prof. D. Ringaitienė –

- member of Lithuanian Society of Anaesthesiology and Intensive Care, <http://anest-rean.lt/>;
- member of European Society of Intensive Care Medicine, <https://www.esicm.org/>;
- member of European Society for Clinical Nutrition and Metabolism, <http://www.espen.org/>.

Assoc. Prof. M. Šerpytis –

- council member of Lithuanian Society of Anaesthesiology and Intensive Care, <http://anest-rean.lt/>;
- treasurer of the Lithuanian Society of Anaesthesiology and Intensive Care, <http://anest-rean.lt/>.

Assoc. Prof. S. Vosylius –

- council member of Lithuanian Society of of Anaesthesiology and Intensive Care, <http://anest-rean.lt/>;
- member of the European Society of Intensive Care Medicine, <https://www.esicm.org/>;
- editorial board member of the journal *Lietuvos chirurgija*, <http://www.zurnalai.vu.lt/lietuvos-chirurgija/pages/view/editorial-board>;
- member of Vilnius Regional Biomedical Ethics Committee, <http://www.mf.vu.lt/lt/content/vrbtek/vrbtek-sudetis-ir-darbo-nuostatai>.

Assist. Prof. S. Švedienė –

- member of the Lithuanian Society of Anaesthesiology and Intensive Care, <http://anest-rean.lt/>;
- member of the European Society of Anaesthesiology, <https://www.esahq.org/>;
- member of the European Society of Regional Anesthesia, <https://esraeurope.org/>;
- council member of the Baltic Society of Regional Anesthesia, <https://www.facebook.com/balticregional/>;
- Board and Scientific committee member of the International congress, organized by Baltic Society of Regional Anesthesia, <https://www.facebook.com/balticregional/>;
- principal scientific coordinator of national conference and on-site training „Advanced monitoring of cerebral functioning: oximetry and bispectral index“ approved by Lithuanian Society of Anaesthesiology and Intensive Care, <http://anest-rean.lt/lard-renginiai/>.

Teaching Assist. Š. Judickas –

- member of the Lithuanian Society of Anaesthesiology and Intensive Care, <http://anest-rean.lt/>;
- member of European Society of Intensive Care Medicine, <https://www.esicm.org/>.

Teaching Assist. D. Gražulytė –

- member of the Lithuanian Society of Anaesthesiology and Intensive Care, <http://anest-rean.lt/>;
- member of European Association of Cardiothoracic Anaesthesiology (EACTA), <http://www.eacta.org>.

Teaching Assist. A. Vaitkus –

- council member of Lithuanian Society of Anaesthesiology and Intensive Care, <http://anest-rean.lt/>;
- member of Association of Pain Clinics, Lithuania, www.skausmoklinika.lt.

Lect. L. Balčiūnas –

- member of the Lithuanian Society of Anaesthesiology and Intensive Care, <http://anest-rean.lt/>;
- member of European Society of Intensive Care Medicine, <https://www.esicm.org/>.

Lect. E. Gaižauskas –

- member of European Airway Management Society, <https://www.eamshq.net/>;
- member of the Difficult Airway Society, <https://das.uk.com/>;
- member of the Lithuanian Society of Anaesthesiology and Intensive Care, <http://anest-rean.lt/>;
- member of European Society of Intensive Care Medicine, <https://www.esicm.org/>.

Lect. V. Kuzminskaitė –

- member of the Lithuanian Society of Anaesthesiology and Intensive Care, <http://anest-rean.lt/>;
- member of the European Society of Anaesthesiology, <https://www.esahq.org/>.

BEST REPORTS DELIVERED AT CONFERENCES ABROAD

- S. Judickas, R. Pelanis, J. Sipylaite. High dose vitamin C therapy for oncohaematological patients with septic shock. Poster presented at ESICM LIVES 2020, 6–9 December 2020.
- S. Judickas, R. Stasiūnaitis, J. Sipylaite. Acute kidney injury in critically ill oncohaematological patients: single centre experience. Poster presented at ESICM LIVES 2020, 6–9 December 2020.
- E. Kontrimavičiūtė, A. Jankuvienė, S. Kolevinskaitė, L. Baltruškevičiūtė, D. Bubulis. Health related quality of life (HRQoL) questionnaire implementation in enhanced recovery after elective laparoscopic colorectal surgery (ERAS) protocol. Interim results comparing two different types of anaesthesia. Euranaesthesia 2020, virtual congress, 28–30 November.

Clinic of Ear, Nose, Throat and Eye Diseases

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Head – Prof. Dr *Eugenijus Lesinskas*

STAFF

Professor: Dr E. Lesinskas.

Associate professors: Dr M. Petrulionis, Dr R. Ašoklis, Dr A. Cimbalas, Dr S. Galgauskas.

Assistant professors: Dr V. Beleškienė, Dr D. Rauba, Dr J. Ivaška, Dr R. Strupaitė-Šileikienė, A. Kadziauskienė, Dr A. Paškonienė.

Lecturers: A. Morozas, A. Matulevičius, K. Malyško, A. Misevičė, D. Pranytė, M. Polianskis, D. Vaitkūnaitė.

Students' scientific groups of:

Ophthalmology: scientific leader – Assoc. Prof. S. Galgauskas, coordinator – student E. Balsienė; 30 members of the group.

Otorhinolaryngology: scientific leader – Prof. E. Lesinskas, coordinator – student J. Jurušaitė; 25 members of the group.

RESEARCH INTERESTS

Estimation of the influence of morphology and clinical peculiarities of otorhinolaryngological and ophthalmological diseases to results of application of novel diagnostic methods and treatment

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Children and Adults Hearing Rehabilitation Surgery and Cochlear Implantation Distant Results Analysis. Prof. Eugenijus Lesinskas. 2014–2023.

Study of the patients with the Meniere's disease was completed. Results of 3T MRI evaluation and testing of peripheral vestibular system were studied for different form of the diseases. Doctoral theses for this study were completed.

OTHER RESEARCH ACTIVITIES

Prof. E. Lesinskas –

- senior otorhinolaryngologist of the Ministry of Health of the Republic of Lithuania;
- president of the Lithuanian Society of Otorhinolaryngologists;
- editorial board member of the journals *Medicinos teorija ir praktika (Theory and Practice in Medicine)*; *Journal of Hearing Science*.

Assoc. Prof. Dr R. Ašoklis –

- board member of Lithuanian Society of Ophthalmologists;
- board member of Vilnius County Ophthalmologists Association;
- member of European Board of Ophthalmology;

- national delegate in European Union of Medical Specialists.

Assoc. Prof. Dr A. Cimbalas –

- board member of Lithuanian Society of Ophthalmologists;
- board member of Vilnius County Ophthalmologists Association;
- member of Lithuanian Glaucoma Society;
- international member of American Academy of Ophthalmology.

Assoc. Prof. Dr S. Galgauskas –

- board member of Vilnius County Ophthalmologists Association;
- member of Lithuanian Society of Ophthalmologists;
- member of Lithuanian Glaucoma Society;
- member of European Association for Vision and Eye Research;
- member of Association for Research in Vision and Ophthalmology.

Assist. Dr D. Rauba –

- board member of Lithuanian Society of Otorhinolaryngologists.

Clinic of Gastroenterology, Nephrourology and Surgery

2 Santariškių, LT-08661 Vilnius

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Head – Prof. Dr Habil. *Kęstutis Strupas*

STAFF

Professors: Dr Habil. K. Strupas, Dr E. Poškus, Dr T. Poškus, Dr G. Simutis, Dr A. Šileikis, Dr G. Brimas, Dr F. Jankevičius, Dr M. Miglinas, Dr Habil. J. Valantinas, Dr P. Schemmer (Prof. of partnership).

Associate professors: A. Černiauskienė, Dr G. Sadauskaitė, Dr A. Gradauskas, Dr V. Jotautas, Dr S. Mikalauskas, Dr V. Sokolovas, Dr A. Stašinskas, Dr G. Verkauskas, Dr A. Želvys, Dr L. Rimševičius.

Assistant professors: Dr R. Adomaitis, Dr A. Bakavičius, Dr V. Bilius, Dr B. Buckus, Dr A. Čekauskas, Dr Ž. Juodeikis, D. Kubilius, Dr L. Mašalaitė, Dr M. Petrulionis, Dr I. Stundienė, Dr K. Trainavičius.

Teaching assistants: E. Mačionienė, B. Kurlinkus, R. Vaicekauskas.

Lecturers: Dr E. Gavelienė, P. Gradauskas, Dr I. Savlan. Dr G. Bernotavičius, Dr A. Strumila.

Researchers: Prof. Dr V. Liakina, Dr J. Tumas, Dr G. Denapienė, A. Kielaitė-Gulla, Dr G. Simutis.

Doctoral students: E. Mačionienė, M. Barisienė, A. Aleknaitė, J. Makevičius, G. Tauginienė-Valeikaitė, B. Vincel, A. Kielaitė-Gulla, D. Sukackienė, R. Lukšaitė, B. Kurlinkus, R. Vaicekauskas, P. Bosas, R. Račkauskas, M. Kryžauskas, V. Kazlauskas, M. Snicorius, A. Baušys, U. Žakauskienė, G. Platkevičius, T. Januškevičius, G. Varanauskas, E. Dieninytė-Misiūnė.

RESEARCH INTERESTS

Minimally invasive surgery of abdominal organs, development and improvement of new procedures and devices for the performance of minimally invasive procedures, especially of abdominal malignancies
Research of liver and pancreas transplantation techniques (listing and preparing of patients for liver, pancreas, kidney transplantation)

Research of liver and pancreas transplantation techniques

Study of dietary treatment of enteropathies

Minimal hepatic encephalopathy

Gut microbiota in health and disease

Extrahepatic complications of liver cirrhosis

Diagnostic/prognostic markers for prediction of HCC

Novel treatment for the GI bleeding

Contemporary diagnostic analysis of ascite liquid

Epidemiology and novel treatment of viral hepatitis

Patients with chronic hepatitis C quality of life study during DAA therapy

Urological cancer

Kidney stone disease

Urinary incontinence

Primary glomerular diseases

Resistant hypertension

Peritoneal dialysis

Medical kidney transplant management

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Investigation Efficiency of Traumatic – Restorative, Minimally Invasive Surgeries and Transplantation Methods in Visceral Surgery. Prof. K. Strupas, Prof. G. Brimas. 2019–2023.

The application of minimally invasive surgical techniques in patients with hepatobiliary, pancreatic, gastrointestinal, colorectal and endocrine pathology was evaluated and outcomes reported. Results of the research were presented in national, regional and international meetings and published in peer-reviewed journals. The successful organ-tissues transplantations-program in Vilnius University Hospital *Santaros Klinikos* is the best fact to take Vilnius University Hospital as the leading Transplantation Center in the Baltic States.

Main publications:

Horvath, A., Baušys, A., Sabaliauskaitė, R., Stratilatovas, E., Jarmalaitė, S., Schuetz, B., Stiegler, P., Baušys, R., Stadlbauer, V., Strupas, K. Distal gastrectomy with Billroth II reconstruction is associated with oralization of gut microbiome and intestinal inflammation: A proof-of-concept study. *Annals of Surgical Oncology*. 2020, p. 1–11. DOI: [10.1245/s10434-020-08678-1](https://doi.org/10.1245/s10434-020-08678-1).

Jakubauskiene, L., Jakubauskas, M., Leber, B., Strupas, K., Stiegler, P., Schemmer, P. Relaxin positively influences ischemia-reperfusion injury in solid organ transplantation: A comprehensive review. *International Journal Molecular Sciences*. 2020, 21(2): pii: E631. DOI: [10.3390/ijms21020631](https://doi.org/10.3390/ijms21020631).

Kvietkauskas, M., Leber, B., Strupas, K., Stiegler, P., Schemmer, P. Machine perfusion of extended criteria donor organs: immunological aspects. *Frontiers in Immunology*. 2020, 11(192). DOI: [10.3389/fimmu.2020.00192](https://doi.org/10.3389/fimmu.2020.00192).

Poskus, T., Danys, D., Makunaite, G., Mainelis, A., Mikalauskas, S., Poskus, E., Jotautas, V., Dulskas, A., Jasiunas, E., Strupas, K. Results of the double-blind randomized controlled trial comparing laser hemorrhoidoplasty with sutured mucopexy and excisional hemorrhoidectomy. *International Journal of Colorectal Disease*. 2020, 35(3): 481–490. <https://doi.org/10.1007/s00384-019-03460-6>.

Chronic Liver Diseases Genomic and Proteomic, These Diseases Pathogenetic Relationship with Other Abdominal Disease, Optimization of Therapeutic and Surgical Treatment. Prof. J.

Valantinas, Ass. Prof. G. Denapienė, Dr V. Liakina, Dr L. Mašalaitė, Dr I. Stundienė, Dr I. Savlan, Dr E. Gavėlienė, R. Vaicekauskas, A. Aleknaitė. 2019–2023.

This research is focused on interrelationships of liver diseases and other disorders of digestive tract. Recent year studies were mostly concentrated on endoscopic treatment of early gastric cancer and blood circulation disorders in patients with liver and pancreas diseases. After comparing of short-term and long-term outcomes of 260 eligible patients who underwent endoscopic submucosal dissection or surgical treatment of early gastric cancer was revealed that endoscopic submucosal dissection might be an excellent alternative for early gastric cancer if curative resection is achieved. Non-curative endoscopic submucosal dissection is associated with poor 5-year disease-free survival and high rate of recurrence. Based on described above retrospective case-control study we concluded that additional surgery should be recommended after non-curative endoscopic submucosal dissection whenever treatment-associated risk is acceptable. In prospective single centered follow-up study enrolled 40 patients with mild acute pancreatitis and 16 healthy group subjects we have found that portal blood flow velocities do not change during mild acute pancreatitis in the inflammatory and postinflammatory periods. This observation suggests that mild acute pancreatitis does not increase the risk of portal vein thrombosis.

Main publication:

Sands, B. E., Peyrin-Biroulet, L., Loftus, E. V. Jr., Danese, S., Colombel, J. F., Törüner, M., Jonaitis, L., Abhyankar, B., Chen, J., Rogers, R., Lirio, R. A., Bornstein, J. D., Schreiber, S., VARSITY Study

Group. Vedolizumab versus adalimumab for moderate-to-severe ulcerative colitis. *N Engl J Med.* 2019, 381(13): 1215–1226. DOI: 10.1056/NEJMoa1905725.

The Influence of Immune System Senescence to Kidney Transplant Survival and Choice of Immunosuppression. E. Macioniene, Prof. M. Miglinas. 2015–2022.

The Study started in 2016 and is performed in collaboration with the Life Sciences Center. The study focuses on identification of molecular biomarkers of kidney transplant rejection. Additional clinical data has also been collected. 70 patients were included into the Study and patient enrolment is continued. This Study is paused in 2020 due to maternity leave of PhD Student E. Macioniene and will be continued next year.

Diagnostic Investigation of Urinary Tract Cancerogenous Tissue by Infrared Spectroscopy. Prof. F. Jankevicius, Assoc. Prof. A. Zelvys, G. Platkevicius. 2019–2023.

The development of alternative approaches based on a new generation of fiber attenuated total reflection (ATR) probes could aid tumor identification even under intrasurgical conditions. The potential of the system is demonstrated in the cases of the studies of three types of tumorous tissues: kidney, bladder and brain. This new approach in the future allows making a quick clinical diagnosis on site and choosing the right treatment method for surgery.

Main publications:

Bandzeviciute, R., Ceponkus, J., Velicka, M., Urboniene, V., Jankevicius, F., Zelvys, A., Steiner, G., Sablinskas, V. Fiber based infrared spectroscopy of cancer tissues. *Journal of Molelar Structure.* 2020, 1220: 128724. DOI: 10.1016/j.molstruc.2020.128724.

Sablinskas, V., Bandzeviciute, R., Velicka, M., Ceponkus, J., Urboniene, V., Jankevicius, F., Laurinavicius, A., Dasevicius, D., Steiner, G. Fiber attenuated total reflection infrared spectroscopy of kidney tissue during live surgery. *Journal of Biophotonics.* 2020, 13(7): e202000018. DOI: 10.1002/jbio.202000018.

Prostate Cancer Detection and Treatment Choice Investigation. Prof. F. Jankevicius, A. Bakavicius, M. Barisiene. 2016–2022.

Accurate assessment of prostate cancer aggressiveness at diagnosis is one of the main goals for optimal disease management. Clinical ISUP grade group (cISUP) determined during prostate biopsy (PB), clinical TNM stage (cTNM) and prostate-specific antigen (PSA) are the main clinico-pathological characteristics determining the choice of PCa treatment tactics. Positive surgical margin (PSM), biochemical recurrence (BCR), metastasis-free survival (MFS), overall (OS) and cancer specific survival (CSS) were analysed according to upgrading and upstaging Epigenetic changes occur early in prostate cancerogenesis and are characterised by a greater stability; therefore, they have become a popular object of scientific research. The urinary DNA methylation assay in combination with serum PSA may predict tumour stage or grade migration post-RP aiding in improved individual risk assessment and appropriate treatment selection.

Main publications:

Barisiene, M., Bakavicius, A., Stanciute, D., Jurkeviciene, J., Zelvys, A., Ulys, A., Vitkus, D., Jankevicius, F. Prostate health index and prostate health index density as diagnostic tools for improved prostate cancer detection. *Biomed Research International.* 2020, 2020: 9872146. DOI: 10.1155/2020/9872146.

Bakavicius, A., Drevinskaite, M., Daniunaite, K., Barisiene, M., Jarmalaite, S., Jankevicius, F. The impact of prostate cancer upgrading and upstaging on biochemical recurrence and cancer-specific survival. *Medicina.* 2020, 56(2): 61. DOI: 10.3390/medicina56020061.

The Influence of Immune System Senescence to Kidney Transplant Survival and Choice of Immunosuppression. E. Macioniene, Prof. M. Miglinas. 2015–2022.

The Study started in 2016 and is performed in collaboration with the Life Sciences Center. The study focus on identification of molecular biomarkers of kidney transplant rejection. Additional clinical data has been also collected. 70 patients were included into the Study and patient enrolment is continued. This Study is paused in 2020 due to maternity leave of PhD Student E. Macioniene and will be continued in 2021.

Dynamics of Changing Nutritional Status and Related Factors in Patients after Kidney Transplantation. D. Sukackiene, L. Rimsevicius, Prof. M. Miglinas. 2017–2021.

The project aims to evaluate changes of nutritional status and body composition in patients after kidney transplantation and compare the results with control group. This study is approved by Vilnius Regional Bioethics Committee and State Data Protections Inspectorate. Patient inclusion and 1-year follow up were completed in December 2020.

Main publication:

Sukackiene, D., Laucyte-Cibulskiene, A., Vickiene, A., Rimsevicius, L., Miglinas, M. Risk stratification for patients awaiting kidney transplantation: Role of bioimpedance derived edema index and nutrition status. *Clin Nutr.* 2020, 39(9): 2759–2763.

National Research Projects

Artificial Urethra for the Treatment of Hypospadias and Urethral Strictures. R&D

Implementation scheme (SMART) (funded under Measure 01.2.2-LMT-K-718 „Targeted Research in SMART Specialisation Areas“ and managed by the Ministry of Education, Science and Sport of the Republic of Lithuania and the Research Council of Lithuania). G. Verkauskas, A. Zelvys. 2020–2023.

The project was started in September 2020 in collaboration with the Life Sciences Center of Vilnius University. During the project, it is expected to create urethral tissue by using 3D printing technology, the structural material and the stem cell source, and test it in vivo, in laboratory rabbit. At the same time, it is planned to analyze the causes of strictures at the molecular level in human operative material. Acquired knowledge of the development of the fibrosis process in the urethra and its control by anti-fibrotic agents, will be used to construct personalized, 3D printed issue.

Research Council of Lithuania. **Development of Novel Proteomics-Based Drug Selection Approach for Pancreatic Cancer Individualized Therapy.** Prof. Dr P. Schemmer, Prof. A. Šileikis, Assist. Prof. Dr M. Petrušionis. 2020–2021.

During this year, 24 participants were included in the analysis. From them 17 triplets of cancerous tissue samples, 23 triplets of blood serum samples and 19 triplets of urine samples were collected and stored using approved protocols. In total now 361 participants are included in the research project. From them triplets of 161 tissue samples, 245 blood serum samples and 155 urine samples are collected.

All newly collected tissue, urine samples and part of blood serum samples were further moved to Vilnius University Life Sciences Center for final storage. The remaining part of blood serum samples were left at Vilnius University Hospital Santaros Clinics Laboratory Medicine Center where further analysis were performed.

Ministry of Health of the Republic of Lithuania. **NATRIJOD (Assessment of the Sodium and Iodine Status of the Lithuanian Population and Development of Public Health Policy Guidelines).**

Project group: U. Žakauskienė, D. Sukackienė, M. Miglinas. 2018–2020.

Ongoing study of intake of sodium and iodine by 24-hour urine sample analysis in Lithuanian population. Study started in 2018. Patient inclusion is completed in December 2020.

International Research Projects

Correlation between Histology and Gene Expression in Cryptorchidism. PhD studies project of PhD student B.Vincel, project leader Assoc. Prof. G.Verkauskas, in collaboration with Prof. F. Hadziselimovic, Cryptorchidism Research Institute, Kindermedizinisches Zentrum Liestal (Switzerland). 2020.

Main publications:

Hadziselimovic, F., Verkauskas, G., Vincel, B., Stadler, M. B. Testicular expression of long non-coding RNAs is affected by curative GnRHa treatment of cryptorchidism. *Basic Clin Androl.* 2019, 29: 18. DOI: 10.1186/s12610-019-0097-3.

Hadziselimovic, F., Verkauskas, G., Vincel, B., Krey, G., Zachariou, Z. Abnormal histology in testis from prepubertal boys with monorchidism. *Basic Clin Androl.* 2020, 30: 11.

Contractual Research

II phase open-label study in subjects with suspected or confirmed **Aerobic Gram-negative Bacterial Infections to Assess the Safety, Tolerability, and Pharmacokinetics of Cefiderocol.** Principal investigator Assoc. Prof. Gilvydas Verkauskas.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

University of Heidelberg (Germany)
Renal Services at Westmead Hospital, Sydney (Australia)
Academy of Science of Ukraine (Ukraine)
Karolinska Institute (Sweden)
University of Warsaw (Poland)
University of Latvia (Latvia)
University of Tallinn (Estonia)
Radboud university medical center, Nijmegen, (Netherlands)

OTHER RESEARCH ACTIVITIES

Prof. Dr Habil. K. Strupas –

- board member of the European Academy of Surgical Sciences (EAeSS);
- member of International Hepato-Pancreato-Biliary Association;
- President of the Association of Lithuanian Surgeons;
- member of European Association for Endoscopic Surgery (EAES);
- editorial board member of the international journal *Viszeralmedizin*, <http://content.karger.com/Journal/EditorialBoard/223970>;
- editorial board member of the journal *Medicinos teorija ir praktika (Theory and Practice in Medicine)*, <http://www.mtp.lt/lt/redaktoriu-kolegija-8/>;
- editorial board member of the journal *Lietuvos chirurgija (Lithuanian Surgery)* <http://www.chirurgija.lt>;
- editorial board member of the journal *Medicina (Lithuania, ISI)*, <http://medicina.kmu.lt>.

Prof. G. Simutis –

- board member of the Lithuanian Minimally Invasive Surgery Society;
- member of Vilnius Association of Surgeons;

- member of Lithuanian Surgical Oncology Society;
- member of European hernia society (EHS).

Prof. E. Poškus –

- chairman of the Lithuanian Minimally Invasive Surgery Society;
- member of Lithuanian Surgical Oncology Society;
- member of the Lithuanian Society of Coloproctologists;
- member of the European Society of Coloproctology;
- member of the International Society of University Colon and Rectal Surgeons;
- member of European Association for Endoscopic Surgery (EAES).

Prof. A. Šileikis –

- chairman of Vilnius Association of Surgeons;
- member of Lithuanian Surgical Oncology Society;
- member of the International HepatoPancreato Biliary Association (IHPB);
- member of the American Society of Clinical Oncology (ASCO);
- member of the Lithuanian Minimally Invasive Surgery Society.

Prof. T. Poškus –

- Vice-president of the Lithuanian Society of Coloproctologists;
- member of Lithuanian Surgical Oncology Society;
- member of Vilnius Association of Surgeons.

Assoc. Prof. Dr V. Sokolovas –

- president Lithuanian Association of Transplantology;
- member of the Lithuanian Minimally Invasive Surgery Society;
- member of Vilnius Association of Surgeons;
- member of Lithuanian Surgical Oncology Society;
- member of the Lithuanian Enteral and Parenteral Nutrition Society;
- member of the Lithuanian Society of Gastroenterology.

Assoc. Prof. Dr V. Jotautas –

- member of the Lithuanian Minimally Invasive Surgery Society;
- member of Vilnius Association of Surgeons;
- member of the Lithuanian Society of Coloproctologists.

Assoc. Prof. S. Mikalauskas –

- board member of the Lithuanian Minimally Invasive Surgery Society;
- member of Vilnius Association of Surgeons;
- member of the Lithuanian Society of Coloproctologists;
- member of European Association for Endoscopic Surgery (EAES);
- member of Lithuanian Surgical Oncology Society.

Prof. Dr Habil. J. Valantinas –

- editor-in-Chief of the journal *Internistas* supplement *Gastroenterology*;
- editorial board member of the journal *World Journal of Gastroenterology*;
- editorial board member of the journal *Medicinos teorija ir praktika*;
- member of the international *Pancreas-2000* scientists group;
- member of the European Association for the Study of the Liver (EASL);
- member of the World Organization of Gastroenterology (OMGE);
- president of the Lithuanian Society of Gastroenterology.

Lecturer Dr E. Gavelienė –

- member of the Lithuanian Society of Gastroenterology;
- member of the European Association of Enteral and Parenteral Nutrition.

Assoc. Prof. G. Denapienė, Assistant Prof. I. Stundienė, Assistant Prof. L. Mašalaitė, Lect. I. Savlan, Lect. R. Vaicekauskas –

- members of the Lithuanian Society of Gastroenterology.

Research Prof. V. Liakina –

- member of the European Association for the Study of the Liver (EASL);
- member of the Lithuanian Society of Gastroenterology;
- member of the Lithuanian Society of Immunology.

Prof. Dr G. Brimas –

- deputy editor-in-Chief of the journal *Lietuvos chirurgija*;
- editorial board member of the journal *Videosurgery and Miniinvasive Techniques*.

Assoc. Prof. A. Stašinskas –

- editorial board member of the journal *Lietuvos chirurgija*;
- board member of the Association of Lithuanian Surgeons.

Assist. Prof. B. Buckus –

- member of Vilnius Society of Surgeons.

Assoc. Prof. G. Verkauskas –

- member of the European Paediatric Surgeons' Association (EUPSA);
- member of the European Society for Paediatric Urology (ESPU);
- member Lithuanian Society of Pediatric Nephrology;
- board member of the Lithuanian Society of Pediatric Surgery;
- member of Lithuanian Society of Urology (LUD);
- member of the Baltic Association of Pediatric Surgeons (BAOPS).

Lect. Assoc. Prof. K. Trainavičius –

- member of the Lithuanian Society of Pediatric Surgery;
- member of the Baltic Association of Pediatric Surgeons (BAOPS);
- editorial board member of the journal *Pediatrics (Paediatrics)*, www.idejugupe.lt;
- member of the European Paediatric Surgeons Association.

Lect. Dr G. Bernotavičius –

- member of the Baltic Association of Pediatric Surgeons (BAOPS);
- board member of the Lithuanian Society of Pediatric Orthopedics and Traumatology (LVOTD);
- member of the Lithuanian Society of Orthopedics and Traumatology (LTOD);
- member of Scoliosis Research Society (SRS).

Assist. Prof. Dr A. Strumila –

- member of the Lithuanian Society of Pediatric Surgery;
- member of the Baltic Association of Pediatric Surgeons (BAOPS);
- member of the European Paediatric Surgeons' Association (EUPSA).

Lect. Prof. V. Bilius –

- member of the Lithuanian Society of Pediatric Surgery;
- member of the Baltic Association of Pediatric Surgeons (BAOPS);

- member Lithuanian Society of Pediatric Nephrology;
- member of Lithuanian Society of Urology (LUD).

Prof. Dr F. Jankevičius –

- chairman of the Lithuanian Early Prostate Cancer Detection Programme;
- member of the European Association of Urology (EAU);
- corresponding Member of Deutschen Gesellschaft für Urologie;
- member of Lithuanian Urological Association;
- chairman of Lithuanian Society of Oncologists.

Assoc. Prof. A. Želvys –

- member of the European Board of Urology (EBU);
- member of the European Association of Urology (EAU);
- member of the Lithuanian Urology (LUD) Society;
- member of the Lithuanian Nephrology Dialysis Transplantation Association (LNDTA);
- member of the Lithuanian Society for Sexual Medicine (LSSM).

Assoc. Prof. A. Černiauskienė –

- member of the Lithuanian Urology (LUD) Society;
- member of the Lithuanian Society for Sexual Medicine (LSSM).

Assist. Prof. A. Čekauskas –

- member of the Lithuanian Urology (LUD) Society;
- member of the Lithuanian Nephrology Dialysis Transplantation Association (LNDTA);
- member of the European Association of Urology (EAU).

Assist. Prof. R. Adomaitis –

- member of the Lithuanian Urology (LUD) Society;
- member of the Lithuanian Society for Sexual Medicine (LSSM);
- member of the European Society for Sexual Medicine (LSSM).

Assist. Prof. A. Bakavičius –

- member of the Lithuanian Urology (LUD) Society;
- member of the European Association of Urology (EAU).

Prof. M. Miglinas –

- member of the European Dialysis Transplantation Association – European Renal Association (EDTA-ERA);
- member of the European Society of Hypertension (ESH);
- member of the International Society of Nephrology (ISN);
- member of the International Society of Hypertension (ISH);
- president of Lithuanian Kidney Foundation;
- president of the Lithuanian Hypertension Society.

Assoc. Prof. L. Rimševičius –

- member of the European Dialysis Transplantation Association – European Renal Association (EDTA-ERA);
- member of Lithuanian Nephrology, Dialysis and Transplantation Association (LNDTA);
- member of Lithuanian Kidney Foundation (LKF).

Teach. Assist. E. Mačionienė –

- member of the European Dialysis Transplantation Association – European Renal Association (EDTA-ERA);
- member of Lithuanian Nephrology, Dialysis and Transplantation Association (LNDTA);
- member of Lithuanian Kidney Foundation (LKF).

BEST REPORTS DELIVERED AT CONFERENCES ABROAD

- Prediction of renal functional outcome in boys with posterior urethral valves. International Congress Brain, Heart & Kidney (BHK 2020).
- Marius Miglinas. Chronic kidney disease of unknown etiology: when should we think genetics? Baltic Nephrology Meeting, 12 December 2020 (virtual).
- Laurynas Rimševičius. Acute/urgent start PD for treatment of AKI in COVID patients. Nordic PD Council meeting 5–6 October 2020 (virtual).

MOST IMPORTANT NATIONAL AND INTERNATIONAL AWARDS RECEIVED FOR R&D ACTIVITIES

- Arnas Bakavičius. Certificate of appreciation for outstanding achievements in science and 2020 publications. National Cancer Institute, Lithuania.

MOST IMPORTANT PARTICIPATION CASES OF RESEARCHERS IN WORKING GROUPS OR COMMISSIONS SET UP BY STATE AUTHORITIES, STATE AND MUNICIPAL INSTITUTIONS AND ORGANISATIONS, AND BUSINESS ENTITIES

- Working group for organ donation improvement – created by Lithuanian Ministry of Health with participation of Presidency of Lithuania. A. Zelvys.

MOST IMPORTANT RESEARCH DISSEMINATION ACTIVITIES

- During events of the following EU projects implemented by VU Hospital Santaros klinikos:
- ENI-LLB-1-029 „Reduction of social exclusion and increase in quality of life of cancer patients in Vilnius and Hrodno regions“ Cross border cooperation programme Latvia-Lithuania-Belorus 2014–2020.
- ENI-LLB-3-414 „Improving and enhancing accessibility of prostate cancer diagnostic services in cross-border region“. Cross border cooperation programme Latvia-Lithuania-Belorus 2014–2020.

Clinic of Infectious Diseases and Dermatovenereology

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Head – Prof. Dr *Ligita Jančorienė*

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Head – Prof. Dr *Ligita Jančorienė*

Centre of Dermatovenereology

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Tel. 272 0385
E-mail: jurate.grigaitiene@mf.vu.lt

Head – Dr *Jūratė Grigaitienė*

STAFF

Professors: Dr L. Jančorienė (part-time), Dr R. Matulionytė, Dr M. Bylaitė-Bučinskienė (part-time).

Associate professors: Dr R. Gancevičienė (part-time), Dr D. Radzišauskienė (part-time), Dr J. Grigaitienė (part-time).

Assistant professors: Dr B. Zablockienė (part-time), Dr R. Valinteliene (part-time).

Lecturers: I. Kisielienė (part-time), T. Raudonis (part-time), E. Matulytė (part-time), M. Macejevskā (part-time), M. Paulauskas (part-time), L. Svetikas (part-time), O. Aliancevič (part-time), D. Stundys (part-time), A. Marcinkutė (part-time).

Doctoral students: I. Kisielienė, T. Raudonis, E. Matulytė, D. Stundys.

Research assistant: S. Grubytė (doctoral student) (part-time).

Investigator: I. Kubiliūtė (part-time).

Students' scientific groups:

Infectious diseases: scientific leader – Assist. Prof. B. Zablockienė, coordinator – student T. Alčauskas; 44 members of the group.

Dermatovenereology: scientific leader – Assoc. Prof. R. Gancevičienė, coordinator – student I. Stražnickaitė, 102 members of the group.

RESEARCH INTERESTS

Pathogenesis, diagnostics, treatment and prevention of infectious diseases: assessment of the current diagnostics, treatment and prevention methods; search of a new diagnostics, treatment and prevention methods; study of the mechanisms of infectious diseases pathogenesis; study of a safety and efficacy of a new vaccines and drugs for the treatment and prevention of infectious diseases

Effectiveness, feasibility and impact of latent tuberculosis treatment for the prevention of active tuberculosis among HIV-positive individuals

Incidence, etiology and pathogenesis of inflammatory chronic dermatosis (acne, hidradenitis suppurativa, rosacea, psoriasis, dermatitis, eczema, vitiligo): basic and clinical research, implementation of innovative technologies

Dermatooncology in Lithuania: epidemiology, pathogenesis, diagnostics, treatment

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Prevalence of Viral Hepatitis A, B and C Serological Markers in Donor's Population in Lithuania. Prof. Dr Ligita Jančoriene, Research Assist. Samanta Grubytė. 2012–2020.

During this cross-sectional study the prevalence of viral hepatitis serologic and virologic markers (such as anti-HAV, HBsAg, HBV-DNR, anti-HBc, anti-HBs, anti-HCV, HCV-RNA), residual risk and main risk factors of viral hepatitis transmission among the blood donors in Lithuania has been estimated.

Effectiveness, Feasibility and Impact of Latent Tuberculosis Treatment for the Prevention of Active Tuberculosis among People Living with Human Immunodeficiency Virus. Prof. Raimonda Matulionyte, PhD Student Elzbieta Matulyte. 2018–2023.

Scientific activities in 2020: formation of the study groups in Vilnius University Hospital Infectious Diseases Centre; inclusion into the study of outpatient and inpatient HIV-infected people and inpatient HIV uninfected people (ongoing); evaluation of the dynamics of morbidity of active TB among people living with HIV (PLHIV) in Lithuania using the database of Sate Tuberculosis Information System: retrospective cohort study (over 10 years).

Analysis of the Etiology, Clinical Characteristics and Outcomes of Community-Acquired Bacterial Meningitis (CABM). Prof. Raimonda Matulionyte, Assist. Elzbieta Matulyte. 2015–2020.

The aim of the study was to identify the distribution of etiological agents and their relationship with clinical characteristics, treatment and outcomes in a cohort of university hospital patients with CABM. During the study period, 167 patients were diagnosed with CABM, 159 patients were included.

Main publication:

Matulyte, E., Kiveryte, S., Paulauskiene, R., Liukpetryte, E., Vaikutyte, R., Matulionyte, R. Retrospective analysis of the etiology, clinical characteristics and outcomes of community-acquired bacterial meningitis in the University Infectious Diseases Centre in Lithuania. *BMC Infect Dis.* 2020, 20(1): 733. doi: 10.1186/s12879-020-05462-0.

Mitigating Arrhythmia Risk in Hydroxychloroquine and Azithromycin Treated COVID-19 Patients Using Arrhythmia Risk Management Plan. Main researcher Prof. L. Jančorienė, research consultant Prof. L. Griškevičius. 2020 –ongoing.

The aim of the study was to assess cardiac safety in COVID-19 patients treated with the combination of Hydroxychloroquine and Azithromycin using arrhythmia risk management plan.

There was retrospectively examined arrhythmia safety of treatment with Hydroxychloroquine and Azithromycin in the setting of pre-defined arrhythmia risk management plan.

The study recorded a low incidence of QTc prolongation - 500 ms and no ventricular tachycardia events in COVID-19 patients treated with Hydroxychloroquine and Azithromycin using cardiac arrhythmia risk management plan.

Epidemiology of Lyme Disease in a Highly Endemic European Zone. Prof. A. Ambrozaitis. 2017–2021.

Background and objective: Lyme disease, also known as Lyme borreliosis (LB), is a tick-borne infectious disease caused by the spirochete bacteria *Borrelia*. The risk of infection depends on the geographical area, ecological factors, and human behavior. Clinical manifestations of Lyme borreliosis have a wide range, but the most frequent clinical symptom, which is also a diagnostic symptom, is a skin rash called erythema migrans (EM). The disease is very common worldwide. In Lithuania, the disease frequency is 99.9 cases per 100,000 population (Centre for Communicable Diseases and AIDS, Lithuania, 2017). The main aim of this study was to obtain the baseline characteristics of the disease regarding the infected Lithuanian population.

This study found a high incidence of Lyme disease in Lithuania. We elucidated the baseline characteristics regarding the infected Lithuanian population, which may ease medical clinicians' work on new Lyme diagnoses.

Main publication:

Petrulionienė, A., Radzišauskienė, D., Ambrozaitis, A., Čaplinskas, S., Paulauskas, A., Venalis, A. Epidemiology of Lyme disease in a highly endemic European zone. *Medicina*. 2020, 56(3): 115. doi: 10.3390/medicina56030115.

The Analysis of the Epidemiology, Clinical Presentations, and Predictors of Severe Tick-Borne Encephalitis in Lithuania. Radzišauskienė D, Matulytė E. 2014–2020.

The aim of this study was to analyze the epidemiology and clinical presentation of severe TBE, to identify the predictors for a severe disease course, and predictors for meningoencephalomyelitic and severe meningoencephalitic/encephalitic forms.

A retrospective study of 1040 patients was performed. The prognostic factors associated with a severe disease course and severe meningoencephalitic form are: older age, comorbidities, a monophasic course, a fever of 40°C and above, CRP more than 30 mg/l, CSF protein more than 1 g/l, delayed immune response of TBEV IgG, pathological findings in CT. Age above 60 years, presence of CNS disease, bulbar syndrome, pleocytosis 500x10⁶/l and above, and delayed immune response of TBEV IgG are predictors of the most severe myelitic form.

Main publication:

Radzišauskienė, D., Urbonienė, J., Kaubrys, G., Andriuškevičius, S., Jatužis, D., Matulytė, E., Žvirblytė-Skrebūtienė, K. The epidemiology, clinical presentations, and predictors of severe Tick-borne encephalitis in Lithuania, a highly endemic country: A retrospective study of 1040 patients. *PLoS ONE*. 2020, 15(11): e 0241587. <https://doi.org/10.1371/journal.pone.0241587>.

Biomarkers of Hidradenitis Suppurativa. Assoc. Prof. Ruta Ganceviciene, Assoc. Prof. Jurate Grigaitiene, PhD Student Tadas Raudonis. 2020–2023.

The objective of this study is to evaluate biomarkers of hidradenitis suppurativa, their associations with disease severity and comorbidities. Biomarkers are planned to be evaluated in skin samples from the affected and unaffected areas, as well as serum samples. In addition, saliva samples will be used for genotyping. Remaining biological samples are planned to be stored in a biobank for future studies. First publications are planned in 2021–2022.

National Research Projects

Patches for Better Psoriasis Treatment, funded under EIT Health RIS Innovation Scheme (Grant Agreement No RIS-1001-8278). Research Assist. Justas Arasimavičius, Assoc.Prof. Jūratė Grigaitienė, 2020.

Lead by the start-up MB Emplastrum project aimed at developing a device that is a flexible, silicon patch with a small screen on top with integrated UVB LED lights allowing shifting psoriasis treatment from hospital to home and making the treatment itself more comfortable compared to current, time-consuming methods patients are not satisfied with, based on survey responses and research. During the project lifetime (2020), the developed prototype has been evaluated by the specialists dermatologists, based on their feedback the clinical scientific analysis has been prepared.

International Research Projects

European AIDS Clinical Society (EACS). **EACS Career Development Fellowship Programme.**

Fellow – PhD student E. Matulyte, the mentor – Prof. Dominique Costagliola, Sorbonne Universite, Institut national de la santé et de la recherche médicale (INSERM), the supervisor of PhD work – Prof. R. Matulionyte. 2020–ongoing.

Activities in 2020: the formation of the study groups, evaluation of the dynamics of morbidity of active TB among PLHIV in Lithuania using databases of State Tuberculosis Information System, National Health Insurance Fund under the Ministry of Health, National Public Health Center under the Ministry of Health, National Public Health Surveillance Laboratory.

Main publications:

Laut, K., Kirk, O., Rockstroh, J., Phillips, A., Ledergerber, B., Gatell, J., Gazzard, B., Horban, A., Karpov, I., Losso, M., d'Arminio Monforte, A., Pedersen, C., Ristola, M., Reiss, P., Scherrer, A. U., de Wit, S., Aho, I., Rasmussen, L. D., Svedhem, V., Wandeler, G., Pradier, C., Chkhartishvili, N., Matulionyte, R., Oprea, C., Kowalska, J. D., Begovac, J., Miró, J. M., Guaraldi, G., Paredes, R., Raben, D., Podlekareva, D., Peters, L., Lundgren, J. D., Mocroft, A. The EuroSIDA study: 25 years of scientific achievements. *HIV Med.* 2020, 21(2): 71–83. DOI: 10.1111/hiv.12810.

Amele, S., Peters, L., Rodger, A., Lundgren, J., Rockstroh, J., Matulionyte, R., Leen, C., Jabłonowska, E., Østergaard, L., Bhagani, S., Sarcelletti, M., Clarke, A., Falconer, K., Wandeler, G., Domingo, P., Maltez, F., Zaccarelli, M., Chkhartishvili, N., Szlavik, J., Stephan, C., Fonquernie, L., Aho, I., Mocroft, A. Effectiveness and safety of IFN-free DAA HCV therapy in HIV/HCV co-infected persons: Results from a pan-European study. *J Acquir Immune Defic Syndr.* 2020 Oct 15. DOI: 10.1097/QAI.0000000000002541. Epub ahead of print. PMID: 33079903.

Euroguidelines in Central and Eastern Europe Countries (ECEE) Network Group. Prof. R. Matulionyte, PhD student E. Matulytė. 2018–ongoing.

The Euroguidelines in Central and Eastern Europe Countries (ECEE) Network Group was established in 2016 to review the standards of care for HIV infection and viral hepatitis in the region. The Network consists of key experts from the field who are actively involved in HIV care. In March 2020, the group decided to collect and analyze all known cases of COVID-19 in HIV-positive patients in the CEE. Data were collected through an anonymised on-line questionnaire.

Main publications:

Kowalska, J. D., Skrzat-Klapaczyńska, A., Bursa, D., Balayan, T., Begovac, J., Chkhartishvili, N., Gokengin, D., Harxhi, A., Jilich, D., Jevtovic, D., Kase, K., Lakatos, B., Matulionyte, R., Mulabdic, V., Nagit, A., Papadopoulos, A., Stefanovic, M., Vassilenko, A., Vasylyev, M., Yancheva, N., Yurin, O., Horban, A., ECEE Network Group. HIV care in times of the COVID-19 crisis - Where are we now in Central and Eastern Europe? *Int J Infect Dis.* 2020, 96: 311–314. DOI: 10.1016/j.ijid.2020.05.013.

Kowalska, J. D., Kase, K., Vassilenko, A., Harxhi, A., Lakatos, B., Lukić, G. D., Verhaz, A., Yancheva, N., Dumitrescu, F., Jilich, D., Machala, L., Skrzat-Klapaczyńska, A., Matulionyte, R. The characteristics of HIV-positive patients with mild/asymptomatic and moderate/severe course of COVID-19 disease - a report from Central and Eastern Europe. *Int J Infect Dis.* 2020, 13: S1201-9712(20)32548-0. DOI: 10.1016/j.ijid.2020.12.026.

Balayan, T., Begovac, J., Skrzat-Klapaczyńska, A., Aho, I., Alexiev, I., Bukovinova, P., Salemovic, D., Gokengin, D., Harxhi, A., Holban, T., Jevtovic, D., Kase, K., Lakatos, B., Latysheva, I., Matulionyte, R., Oprea, C., Papadopoulos, A., Rukhadze, N., Sedlacek, D., Tomazic, J., Vassilenko, A., Vasylyev, M., Verhaz, A., Yancheva, N., Yurin, O., Horban, A., Kowalska, J. D., ECEE Network Group. Where are we with pre-exposure prophylaxis use in Central and Eastern Europe? Data from the Euroguidelines in Central and Eastern Europe (ECEE) Network Group. *HIV Med.* 2021 Jan, 22(1): 67–72. doi: 10.1111/hiv.12960. Epub 2020 Oct 5. PMID: 33021049.

EU-co-financed Joint Action **On Integrating Prevention, Testing and Link to Care Strategies across HIV, Viral Hepatitis, TB and STIs in Europe (INTEGRATE)** in the partnership with Vilnius University Hospital Santaros Kliniko (EU project 761319). Prof. R. Matulionyte, PhD student E. Matulyte, PhD student T. Raudonis. 2016–ongoing.

Activities in 2020: implementation, coordination and consolidation of integrated HIV, HBV, HCV testing for patients with STIs and other ICs in Vilnius University Hospital Santaros Klinikos Dermatovenerology Centre; collection and analysis of expanded pilot testing data; manuscripts submission to BMC Infectious Diseases supplementary number.

Run-up to Programmatic Management of Latent Tuberculosis Infection in HIV-infected People in Lithuania. Granted by Western-Eastern European Partnership Initiative on HIV, viral hepatitis and TB (WEEPI), a foundation incorporated in Switzerland, having its secretariat in Denmark (CHIP, Blegdamsvej 9, DK-2100 Copenhagen Ø) and Switzerland (University Hospital Basel, Infectious Diseases & Hospital Epidemiology, Petersgraben 4, CH-4031 Basel), and the Grantee, Vilnius University. Prof. R. Matulionyte, PhD student E. Matulyte. 2020–ongoing.

<https://weepi.org/projects/stage-1/management-of-latent-tuberculosis-infection-in-hiv-infected-people-in-lithuania>

The study objective is to evaluate the background situation of active and latent TB infection in PLHIV in Lithuania (including prevalence and risk factors), describe selected country-specific circumstances (including current LTBI screening strategies) and to determine optimal diagnostic tools for successful implementation of programmatic management of LTBI in PLHIV in Lithuania.

Activities in 2020: obtaining of the Vilnius Regional Biomedical Research Ethics Committee consent for the study; formation of the study groups in (1) Vilnius University Hospital Infectious Diseases Centre, (2) outpatient clinic of Klaipeda University Hospital Infectious Diseases Department and Klaipeda AIDS centre, and (3) outpatient clinic of Republican Siauliai County Hospital Infectious Diseases Department; evaluation of the dynamics of morbidity of active TB among PLHIV in Lithuania using databases of State Tuberculosis Information System, National Health Insurance Fund under the Ministry of Health, National Public Health Center under the Ministry of Health, National Public Health Surveillance Laboratory.

Contractual Research

A Randomized, Double-Blind, Multicenter Study Assessing Short (16 Weeks) and Long-term Efficacy (up to 1 Year), Safety, and Tolerability of 2 Subcutaneous Secukinumab Dose Regimens in Adult Patients with Moderate to Severe Hidradenitis Suppurativa (SUNRISE).

Assoc. Prof. J. Grigaitienė, M. Krivickaitė, R. McGlone, T. Raudonis. 2019–2022.

This is a multicenter, randomized, double-blind, placebo-controlled, parallel group study with two secukinumab dose regimens in patients with moderate to severe HS. The study consists of: screening (up to 4 weeks) treatment period 1 (16 weeks, active drug or placebo) and treatment period 2 (up to 1 year all patients on active drug); there will be an optional extension study. Adult males and females with moderate to severe HS will be included, with a diagnosis of HS greater than 1 year prior to baseline. The primary objective is to demonstrate the efficacy of secukinumab compared to placebo with respect to HISCR after 16 weeks of treatment; primary secondary objectives are to assess difference in proportion

of patients with HS flares, and proportion of patients with clinical response in HS related skin pain after 16 weeks of treatment. Key safety data will be collected, along with Patient Reported Outcomes.

A Randomized, Double-Blind, Placebo-Controlled Trial to Evaluate the Efficacy and Safety of Lebrikizumab in Patients with Moderate-to-Severe Atopic Dermatitis. Assoc. Prof. J. Grigaitienė, R. McGlone, T. Raudonis, M. Macejevska, I. Gylienė. 2020–2022.

This is a randomized, double-blind, placebo-controlled, parallel-group study which is 52 weeks in duration. The study is designed to confirm the safety and efficacy of lebrikizumab as monotherapy for moderate-to-severe atopic dermatitis utilizing a 16-week induction treatment period and a 36-week long-term maintenance treatment period.

Eligible adult and adolescent patients with moderate-to-severe atopic dermatitis for at least one year, defined according to the American Academy of Dermatology Consensus Criteria, an Eczema Area and Severity Index Score (EASI) of ≥ 16 , an Investigator Global Assessment (IGA) score of ≥ 3 and a body surface area (BSA) of $\geq 10\%$ will be enrolled. Efficacy will be measured through the IGA, EASI, BSA, SCORAD, Pruritus and Sleep-loss scores

A Randomized, Double-Blind, Placebo-Controlled Study to Assess the Efficacy and Safety of Nemolizumab in Subjects with Moderate-to-Severe Atopic Dermatitis. Assoc. Prof. J. Grigaitienė, R. McGlone, M. Macejevska. 2020–2024.

This is a randomized, double-blind, placebo-controlled, multicenter, parallel-group study in adult and adolescent subjects with moderate-to-severe AD. The study is designed to confirm the safety and efficacy of nemolizumab in subjects with AD when the disease is not adequately controlled with topical medications. Eligible subjects must have a documented history of inadequate response to topical AD medication(s). The study consists of 4 periods over approximately 60 weeks: screening (including run-in), initial treatment, maintenance, and follow-up. Long-term extension up to 3 years in duration is foreseen. Eligible adult and adolescent patients with moderate-to-severe atopic dermatitis for at least two years, defined according to the American Academy of Dermatology Consensus Criteria, an Eczema Area and Severity Index Score (EASI) of ≥ 16 , an Investigator Global Assessment (IGA) score of ≥ 3 and a body surface area (BSA) of $\geq 10\%$ will be enrolled. Efficacy will be measured through the IGA, EASI, BSA, SCORAD, Pruritus and Sleep-loss scores.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

Lithuanian University of Health Sciences (Lithuania)

Warren Alpert Medical School at Brown University, Providence, RI (USA)

Ludwig – Maximilians University, Munich (Germany)

Brandenburg Medical School Theodor Fontane, Brandenburg (Germany)

Skåne university hospital, Lund University, Department of occupational and environmental dermatology (Sweden)

Malmö University (Sweden)

OTHER RESEARCH ACTIVITIES

Prof. L. Jančorienė –

- member of the European Association of the Study of the Liver, www.easl.ch;
- member of the International Society of Travel Medicine, www.istm.org;
- member of the European Society of Clinical Microbiology and Infectious Diseases, www.escmid.org;
- board member of the Lithuanian Society of Infectious Diseases, www.lid.lt;
- member of the Lithuanian Society of Gastroenterology, www.gastroenterologija.lt;

- member of the working group for preparation of Action Plan for Viral Hepatitis Prevention and Control 2019–2022, Lithuania;
- member of the Coordination group for the control of national HIV/AIDS and sexually transmitted infections action plan under Lithuanian Ministry of Health;
- member of Independent Experts (advisors, consultants) group for the National Immunoprophylaxis programme for 2019–2023;
- member of the working group for the concept of infectious diseases management and control, Ministry of Health of The Republic of Lithuania.

Prof. R. Matulionytė –

- chair of the Vilnius Society of Infectious Diseases, www.lid.lt;
- board member of the Lithuanian Society of Infectious Diseases, www.lid.lt;
- member of the European Society of Clinical Microbiology and Infectious Diseases (ESCMID), www.escmid.org;
- ESCMID Study Group for Antimicrobial Stewardship (ESGAP). A European consensus: ESCMID generic competencies in antimicrobial prescribing and stewardship. Panel member, country coordinator; www.esgap.escmid.org
- member of the European AIDS Clinical Society, www.eacs.ws;
- member of the HIV Euroguidelines in Central and Eastern Europe (ECEE) Network Group;
- steering committee member for 2017–2022 of the multi-centre prospective observational cohort study group EuroSIDA;
- coordinator in the partnership of Vilnius University Hospital *Santaros Klinikos* in the EU project 761319 – Joint Action on integrating prevention, testing and link to care strategies across HIV, viral hepatitis, TB and STIs in Europe (INTEGRATE);
- member of the Action plan for HIV/AIDS and STI Prevention and Control 2018–2020, Lithuania;
- member of Independent Experts (advisors, consultants) group for the National Immunoprophylaxis programme for 2019–2023;
- member of the working group for the concept of infectious diseases management and control, Ministry of Health of The Republic of Lithuania.

Prof. M. Bylaitė-Bučinskienė –

- president of the Lithuanian Society of Dermatovenereology, www.ldvd.lt;
- board member of the European Association of Dermato Oncology, www.eado.org;
- board member of the Baltic association of Dermatovenereologists, www.badv.org;
- member of the European Academy of Dermatology and Venereology (EADV), www.eadv.org;
- member of the European Dermatology Forum, www.euroderm.org;
- member of the European Society for Pediatric Dermatology (ESPD), www.espd.info;
- member of the International Society of Dermatology, www.intsocderm.org;
- editorial board member of the *Journal of Health Sciences*;
- editorial board member of the *Journal of Lithuania's Obstetrics and Gynecology*;
- editorial board member of the journal *Sveikatos mokslai (Health Sciences)*, www.sam.lt/lt/sam/moksliniai/straipsniai/.

Assoc. Prof. R. Gancevičienė –

- president of the Lithuanian Society of Dermatovenereology, www.ldvd.lt;
- member of the European Academy of Dermatology and Venereology, www.eadv.org;
- member and board member of the local Euromelanoma Committee;
- editorial board member of the *Journal of Dermato-Endocrinology, Landes Biosciences*;

- member of the Scientific Technical Committee *Cosmetics* of Lithuanian Department for Standardization.

Assoc. Prof. Dr J. Grigaitienė –

- member of the Lithuanian Society of Dermatovenereology, www.ldvd.lt;
- member of the European Academy of Dermatology and Venereology, www.eadv.org;
- member of Lithuanian Society of Allergology and Clinical Immunology, www.alergologudraugija.lt;
- member of the Lithuanian Society of Lasers;
- national representative and board member of the Dermato-Venerology Section of European Union of Medical Specialists (UEMS), www.uems.net.

Assist. Prof. B. Zablockienė –

- board member of the Lithuanian Society of Infectious Diseases, www.lid.lt;
- member of the European Society of Clinical Microbiology and Infectious Diseases, www.escmid.org;
- member of Lithuanian Society of Pulmonologists, <http://www.chest.lt/>;
- member of Lithuanian Ultrasound Association, <http://www.ultragarsas.lt>.

Teaching Assist. I. Kisielienė –

- member of the Lithuanian Society of Dermatovenereology, www.ldvd.lt.

Teaching Assist. T. Raudonis –

- member of the Lithuanian Society of Dermatovenereology, www.ldvd.lt;
- member of the European Academy of Dermatology and Venereology, www.eadv.org.
- specialist in the EU project 761319 (partner – Vilnius University Hospital *Santaros Klinikos*) – Joint Action on integrating prevention, testing and link to care strategies across HIV, viral hepatitis, TB and STIs in Europe (INTEGRATE)

Teaching Assist. E. Matulytė –

- member of the Lithuanian Society of Infectious Diseases, www.lid.lt;
- member of the European Society of Clinical Microbiology and Infectious Diseases, www.escmid.org;
- member of the European AIDS Clinical Society, www.eacs.org;
- specialist in the EU project 761319 (partner – Vilnius University Hospital *Santaros Klinikos*) – Joint Action on integrating prevention, testing and link to care strategies across HIV, viral hepatitis, TB and STIs in Europe (INTEGRATE);
- national representative Trainee Association the European Society of Clinical Microbiology and Infectious Diseases.

Lect. A. Marcinkutė –

- member of the Lithuanian Society of Infectious Diseases, www.lid.lt;
- member of the European Society of Clinical Microbiology and Infectious Diseases, www.escmid.org.

Lect. M. Paulauskas –

- member of the Lithuanian Society of Infectious Diseases, www.lid.lt;
- member of the European Society of Clinical Microbiology and Infectious Diseases, www.escmid.org.

Lect. M. Macejevska –

- member of the Lithuanian Society of Dermatovenereology, www.ldvd.lt;

- member of the European Academy of Dermatology and Venereology, www.eadv.org.

Lect. L. Svetikas –

- member of the Lithuanian Society of Infectious Diseases, www.lid.lt;
- member of the European Society of Clinical Microbiology and Infectious Diseases, www.escmid.org.

Lect. O. Aliancevič –

- member of the Lithuanian Society of Infectious Diseases, www.lid.lt;
- member of the European Society of Clinical Microbiology and Infectious Diseases, www.escmid.org.

Investigator I. Kubiliūtė –

- member of the Lithuanian Society of Infectious Diseases, www.lid.lt;
- member of the European Society of Clinical Microbiology and Infectious Diseases, www.escmid.org;
- member of the European AIDS Clinical Society, www.eacs.org.

Research Assist. S. Grubytė –

- member of the Lithuanian Society of Infectious Diseases, www.lid.lt.

BEST REPORTS DELIVERED AT CONFERENCES ABROAD

- Jancoriene L. Situation in Lithuania: experience in COVID-19 diagnostics and treatment from the University Hospital perspective. Baltic Congress in Laboratory Medicine, 6–7 November 2020 (remotely).

MOST IMPORTANT PARTICIPATION CASES OF RESEARCHERS IN WORKING GROUPS OR COMMISSIONS SET UP BY STATE AUTHORITIES, STATE AND MUNICIPAL INSTITUTIONS AND ORGANISATIONS, AND BUSINESS ENTITIES

- A. Ambrozaitis, L. Jančorienė, R. Matulionytė - members of Independent Experts (advisors, consultants) group for the National Immunoprophylaxis Programme for 2019–2023.
- L. Jančorienė - member of the working group for preparation of Action Plan for Viral Hepatitis Prevention and Control 2019–2022, Lithuania.
- R. Matulionytė, L. Jančorienė - members of the working group for the conception of Infectious diseases management and control, Ministry of Health of The Republic of Lithuania
- R. Matulionytė, L. Jančorienė during period 2018–2020 - members of Coordinating Board for National Action Plan (AP) on HIV/AIDS and STI Prevention and Control.
- R. Matulionytė - member of the national Monitoring Network for Drugs and Drug Addiction (NTAKD) under the Lithuanian Drug, Tobacco and Alcohol Control Department.
- R. Matulionytė - member of Experts group under Lithuanian Ministry of Health Expert group on addressing the issues related with the emergence and spread of antimicrobial resistant microorganisms.
- L. Jančorienė, R. Matulionytė - members of Expert group under Lithuanian Ministry of Health for the preparation of National guidelines for the rational use of antimicrobials and for the preparation of draft version of guidelines for the selection of the recommended first-line and reserve antimicrobials.

CONSULTATIONS PROVIDED BY THE UNIT TO THE PUBLIC OR ECONOMIC ENTITIES

- L. Jančorienė officially participated in the activities of the expert group related to the management of COVID infection under the 17th Government.
- L. Jančorienė, R. Valintėlienė participated in the Council of Health Experts initiated by the President of the Republic of Lithuania.
- L. Jančorienė was appointed by the Prime Minister's Decree on 18 December 2020 to the Advisory Council of Independent Experts to consider and submit proposals on the management of COVID-19 disease.

MOST IMPORTANT RESEARCH DISSEMINATION ACTIVITIES

- L. Jancoriene. Nature Correspondence piece: <https://www.nature.com/articles/d41586-020-03557-x>
- L. Jančorienė. Possibilities of laboratory diagnostics in the fight against SARS-CoV-2 virus. 2020. Interview. Internistas, 2020, 7(204)
- Lithuanian Academy of Sciences. Position paper on COVID (co-author - L. Jancoriene).
- L. Jančorienė. Lecture “The first experience in diagnosing and treating COVID infection in Lithuania” at the conference Science News for Lithuanian Teachers organized by the Lithuanian Academy of Sciences on 26 October 2020.
- Scientific popularization on TV, radio and Internet broadcasts (Prof. L. Jančorienė, Prof. R. Matulionytė, Prof. M. Bylaitė, Assoc. Prof. J. Grigaitienė, Assoc. Prof. D. Radzišauskienė, Assist. Prof. B. Zablockienė, Assit. Prof. R. Valintėlienė, L. Svetikas, A. Marcinkutė)

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Head – Prof. Dr *Edvardas Danila*

STAFF

Professors: Dr E. Danila (part-time), Dr L. Malinauskienė (part-time).

Associate professors: Dr Habil. R. Janilionis (part-time), Dr R. Zablockis (part-time), Dr V. Gruslys (part-time), Dr A. Chomičienė (part-time), Dr Kęstutis Miškinis (part-time).

Assistant professors: Dr V. Šileikienė (part-time), Dr Ž. Jagelavičius (part-time).

Lecturers: G. Cincilevičiūtė (part-time), R. Gauronskaitė (part-time), I. Pocienė (part-time), K. Kėvelaitienė (part-time), E. Bagurskienė (part-time), G. Šlekytė (part-time), V. Kumpauskaitė (part-time).

Researchers: Dr Habil. R. Dubakienė (full-time), Dr V. Kvedarienė (part-time), Dr L. Malinauskienė (part-time), J. Račkauskienė (part-time).

Doctoral students: R. Aleksonienė, E. Jurevičienė, R. Stankevičiūtė, K. Linauskienė, R. Gauronskaitė.

Students' scientific groups:

Pulmonology: scientific leader – Prof. E. Danila, coordinator – student Š. Raudonis; 18 members of the group.

Allergy and Clinic Immunology: scientific leader – Dr V. Kvedarienė, coordinator – student G. Rudzikaitė; 15 members of the group.

Thoracic Surgery: scientific leader – Assist. Prof. Ž. Jagelavičius, coordinator – student R. Vitkauskas; 12 members of the group.

RESEARCH INTERESTS

Evaluation of the efficacy of the diagnostic and treatment methods in obstructive, interstitial, neoplastic and allergic lung diseases: diagnosis and management of interstitial lung diseases

Diagnosis and management of COPD and bronchial asthma; sensitivity to various kinds of disinfectants among the medical staff

Development of new technologies, methods of early cancer detection and treatment interventions

Improvement of the quality of life of cancer patients

Pleural disease, diagnostic procedures, pleural biopsy; diagnosis, epidemiological and clinical research of drug hypersensitivity

Allergen immunotherapy: selection of patients, efficacy of different methods and long term treatment results

Drug hypersensitivity diagnostic peculiarities

Contact allergy to cosmetics, textiles

Study of interactions between allergic rhinitis and bronchial asthma, application of new technologies in allergic and respiratory diseases

Strategy and approaches of the surgical management of patients with different thoracic pathology

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Diagnosis and Treatment of Interstitial Lung Diseases. Prof. E.Danila. 2014–2020.

The aim of the study was to evaluate the significance of bronchoalveolar lavage fluid examination in sarcoid patients and patients with rare interstitial disorders (eosinophilic pneumonia, hypersensitivity pneumonitis). Clinical symptoms, cell differentials and distribution of lymphocyte subgroups in BALF, chest X-ray, spirometric indices, blood gases were evaluated.

Assessment of Pulmonary Function of Patients with Lung Diseases. Prof. E.Danila. 2014–2019.

Comparison of different methods for evaluation of bronchial obstruction. Evaluation of lung ventilation reserve with different methods of lung ventilation reserve evaluation.

Main publication:

Malinauskiene, L., Šlekyte, G., Mowitz, M., Isaksson, M., Zablockis, R. Allergic contact dermatitis caused by isobornyl acrylate in two patients treated for idiopathic pulmonary arterial hypertension. *Contact Dermatitis*. 2020, 83: 170–171.

D–dimer Levels in Pleural Fluid. E.Danila. 2014–2020.

Significance of pleural fluid D-dimer concentration is evaluated in patients with pleural effusion. Pleural D-dimer levels are measured and Prof.compared with D-dimer concentrations in plasma. Pleural fluid LDH, protein, pH, and glucose levels are assessed as well. The study is in process.

Evaluation of Pulmonary Embolism Risk in Lung Cancer Patients. Prof. E.Danila. 2014–2020.

The aim of the study was to assess the prevalence and risk factors of pulmonary embolism in advanced lung cancer patients. The Khorana score may help physicians to identify patients at high risk of pulmonary embolism (PE) and decide who is eligible for thromboprophylaxis, however, its role in lung cancer patients remains unclear. The aim of this study was to evaluate association between the Khorana score and risk of PE development among advanced stage lung cancer inpatients treated with chemotherapy. A retrospective cohort study included 2008-2017 year data of 217 lung cancer inpatients with IIIB and IV clinical stages receiving chemotherapy. The Khorana score was evaluated and patients were divided in two groups: a group of patients with 1 point and a group of patients with 2 or more points of the Khorana score. Study included 137 patients with 1 point and 80 patients with 2 or more points of the Khorana score. The study is in process.

Main publications:

Dapkevičiūtė, A., Daškevičiūtė, A., Zablockis, R., Kuzaitė, A., Jonušienė, G., Dikšanas, S., Danila, E. Association between the Khorana score and pulmonary embolism risk in patients with advanced stage lung cancer. *Clin Respir J*. 2020, 14: 3–8.

Gedvilaitė, V., Danila, E., Cicėnas, S., Smailytė, G. Lung cancer in Lithuania. *J Thorac Oncol*. 2020, 15: 1401–1405.

Evaluation of Hypersensitivity Reactions to Cytostatic Drugs in Patients with Lung Cancer. Prof. E. Danila. 2014–2020.

The aim of the study was to evaluate type of adverse reactions to different type of cytostatic drugs in patients with lung cancer.

Main publications:

Malinauskiene, L., Cerniauskas, K., Linauskiene, K., Griguola, L., Chomiciene, A., Blaziene, A. Skin testing with bendamustine: what concentration should be used? *Allergy Asthma Clin Immunol*. 2020, 16: 70.

Danila, E., Linkevičiūtė-Ulinskienė, D., Zablockis, R., Gruslys, V., Cicėnas, S., Smailytė, G. A cohort study of exposure to antihyperglycemic therapy and survival in patients with lung cancer. *Int J Environ Res Public Health*. 2020, 17: 1747.

Differences between Self-Reported Drug Hypersensitivity Reactions in Lithuanian Adults and Children. Prof. E.Danila. 2014–2020.

The aim of study was to assess the prevalence of self-reported DHRs in adults and in children and to analyze the risk factors in both groups. Cross-sectional survey of a population was made.

Main publication:

Barbaud, A., Weinborn, M., Garvey, L. H., Testi, S., Kvedarienė, V., et al. Intradermal tests with drugs: an approach to standardization. *Front Med*. 2020, 7: 1–8.

Allergen Immunotherapy: Patients' Selection, Efficacy of Different Methods and Treatment Results. Prof. E.Danila. 2014–2020.

The aim of the study was to evaluate the clinical efficacy and adverse reactions in adults with allergic rhinoconjunctivitis with or without asthma. We conclude that treatment with ASIT (allergen-specific immunotherapy) is effective and safe.

Metal Contact Allergy. Prof. E.Danila. 2014–2020.

The aim of the study was to detect the most common contact allergens in the metal workers, to detect the depth of the penetration of the metals' (nickel, cobalt and chrome) ions in the skin using pig skin as a human skin model and to evaluate pathophysiological reactions occurring during acute contact reaction to these metals by investigating various inflammatory cytokines. Data was obtained and analyzed from questionnaires of 185 metal workers. Results were presented as a poster in the annual Congress of the European society of Contact dermatitis in Manchester, UK and Milan, Italy.

Main publications:

Linauskiene, K., Isaksson, M., Malinauskiene, L. Heavy metals and the skin: sensitization patterns in Lithuanian metalworkers. *Contact Dermatitis*. 2020, 83(6): 450–457.

Linauskiene, K., Dahlin, J., Ezerinskas, Z., Isaksson, M., Sapolaite, J., Malinauskiene, L. Occupational exposure to nickel, cobalt and chromium in the Lithuanian hard metal industry. *Contact Dermatitis*. 2020. DOI:10.1111/cod.13756.

Strategy and Tactics of the Surgical Management of Patients with Different Thoracic Pathology. Prof. E.Danila. 2014–2020.

New surgical methods using ultrasound intraoperatively and VATS were elaborated for the surgical management of the patients with pleuropulmonary suppurations. The value of videomediastinoscopy and videoassisted thoracoscopic surgery in diagnostics and management of the patients was assessed.

National Research Projects

Improvement of Tuberculosis Prevention, Diagnostics, Treatment and Improvement of Practical Skills (J02-CPVA-V-04-0002). Prof. E. Danila, Assoc. Prof. R. Zablockis, Assoc. Prof. V. Gruslys. 2018–2021.

Scientific publication prepared. Results were published as an article in WOC journal.

Main publication:

Miltinienė, D., Deresevičienė, G., Nakčerienė, B., Davidavičienė, V. E., Danila, E., Butrimienė, I., Dadonienė, J. Incidence of tuberculosis in inflammatory rheumatic diseases: results from a Lithuanian retrospective cohort study. *Medicina*. 2020, 56: 392.

Seasonal Peculiarities of Indoor Air Pollution and Its Impact on Respiratory Morbidity and Allergy of Primary School Children (LMT, P-MIP-20-404). V. Kvedarienė, N.Prokopčuk, I. Juškienė, A. Valiulis. 2020–2021.

Project aims to quantify the impact of air pollution on children morbidity of respiratory and allergic respiratory diseases and to assess the main sources of indoor air pollution. This idea will be implemented through complex measurements of air quality, statistical data analysis of children's health status and cases of respiratory tract inflammations and allergic testing. Results of the project will allow proposing recommendations related to improve school indoor air quality for national health organizations making better environment for children.

During the first phase, the air pollution levels of aerosol particles in school environment were assessed and the main pollution sources were determined.

International Research Projects

Patch Testing with Propolis of Different Origin in Different Countries in collaboration with Gothenburg University, Sahlgrenska University Hospital, Department of Dermatology, Gothenburg, Sweden. Assoc. Prof. Dr. L. Malinauskienė. 2017–2020.

The aim is to compare the frequencies of contact allergy to propolis in the participating countries, and to investigate if there is a difference in frequencies of contact allergy to propolis of different origins. Propolis from China, Lithuania, North America, Sweden, and the baseline series were patch-tested in 1470 consecutive dermatitis patients in Denmark, Lithuania, and Spain. Patch test reactions to any type of propolis ranged from 1.3–5.8%, and to the most frequent type 1.1–2.4%. There were no statistically significant differences in frequency of positive reactions between the four types of propolis in the respective countries. Concomitant positive patch test reactions to plant and fragrance substances in the baseline series, *Myroxylon pereirae* resin, colophonium and Fragrance mix I ranged between 12.5% and 50.0%.

Presence of Unlabeled Formaldehyde in Cosmetic and Medications in collaboration with Lund University, Skåne university hospital, Department of occupational and environmental dermatology (Sweden), Assoc. prof. Dr L. Malinauskienė. 2016–2022.

The aim of the study to analyse various topical medicines and cosmetic products for the presence of free formaldehyde especially if it is not labelled. The main criteria for selection of products were as follows: they had to be in a plastic package (e.g., bottle or tube) and available to purchase in every pharmacy in Lithuania. Samples were analysed for formaldehyde release with the chromotropic acid (CA) and high-performance liquid chromatography (HPLC) methods. Formaldehyde could not be detected with the HPLC method in any of the investigated products, although, with the CA method, we detected formaldehyde in four products. Cosmetic (or medical) skin products containing 2000 ppm formaldehyde (declared to contain formaldehyde) or 500 ppm (not declared) will probably not cause any adverse reactions in non-sensitized individuals. However, in formaldehyde-sensitized individuals, both concentrations can lead to unwanted reactions, such as the development of eczema or worsening of eczema when existing eczema is treated in highly sensitive individuals, especially after repeated applications.

Textile Dye Allergy and Allergic Contact Dermatitis in collaboration with Lund University, Skåne university hospital, Department of occupational and environmental dermatology (Sweden), Assoc. Prof. Dr L. Malinauskienė. 2012–2026.

The aim of the study is to detect which dyes used today for textile dyeing can be inducers of the contact allergy and contact allergic dermatitis.

More than 300 consecutive dermatitis patients were tested with the extracts of the textiles obtained from the usual marketplaces. In the multicentre study more than 150 consecutive dermatitis patients were tested with the textile dye mix with and without Disperse Orange 3.

Allergic Rhinitis and Its Impact on Asthma (ARIA) in collaboration with the leading French scientists: Prof. Pascal Demoly (Montpellier University, France) and Prof. J. Bousquet (INSERM 1168, France) and cooperation with 70 science centers worldwide. Prof. R. Dubakienė, Dr V. Kvedarienė, 2002–2025.

The aim to provide an active and healthy life to rhinitis sufferers and to those with asthma multimorbidity across the life cycle, whatever their gender or socio-economic status, in order to reduce health and social inequities incurred by the disease and to improve the digital transformation of health and care.

During the year 2020, experience of digital health in 23 countries was summarized. The panel of experts EAACI-ARIA adapted diagnostic and treatment roles on COVID-19 situation.

Main publications:

Bousquet, J., Anto, J. M., Bachert, C., [...] Kvedarienė, V., [...] Dubakiene, R. et al. ARIA digital anamorphosis: Digital transformation of health and care in airway diseases from research to practice. *Allergy*. 2020. DOI: 10.1111/all.

Bousquet, J., Jutel, M., Akdis, C., [...] Kvedarienė, V., [...] Agache, I. ARIA-EAACI statement on asthma and COVID-19 (June 2, 2020). *Allergy*. first on line, p. 1–9. DOI: 10.1111/all.14471.

Integrated Care Pathways for Airway Diseases (AIRWAYS-ICPs). Dr V. Kvedarienė. 2014–2025.

AIRWAYS ICPs was initiated 2014, in collaboration with the leading French scientists: Prof. Pascal Demoly (Montpellier University, France) and Prof. Jean Bousquet (INSERM 1168, France) and 23 collaborating centres.

The practical consideration on organization allergy department on COVID-19 was created by panel of international experts.

Main publication:

Pfaar, O., Klimek, L., Jutel, M., Kvedarienė, V., Agache, I. COVID-19 pandemic: Practical considerations on the organization of an allergy clinic - an EAACI/ARIA position paper. *Allergy*. 2020; first on line, p. 1–81. DOI: 10.1111/all.14453.

European Innovation Partnership on Active and Healthy Ageing (EIP on AHA) in collaboration with the leading French scientists: Prof. P. Demoly (Montpellier University, France) and Prof. J. Bousquet (INSERM 1168, France) and 74 collaborating centers. Dr V. Kvedarienė. 2014–2025.

The overarching goals of the European Innovation Partnership on Active and Healthy Ageing (EIP on AHA) are to enable European citizens to lead healthy, active and independent lives whilst ageing. As an example for chronic diseases, ICPs, MASK and POLLAR, in collaboration with professional and patient organizations in the field of allergy and airway diseases, are proposing real-world ICPs centered on the patient with rhinitis and asthma multimorbidity. These next-generation ICPs represent a cornerstone for the digital transformation of health. An innovative patient-centered approach for ICPs has been proposed by the ARIA expert group for rhinitis and asthma multimorbidity to be scaled up to chronic diseases.

Main publication:

Bousquet, J., Farrell, J., Kvedarienė, V., Zuberbier, T. Aligning the good practice mask with the objectives of the European innovation partnership on active and healthy ageing. *Allergy, Asthma and Immunology Research*. 2020, 12: 238–258.

Study of Interactions between Allergic Rhinitis and Bronchial Asthma, Application of New Technologies in the Program (MASK-air/MASK: MACVIA-ARIA Sentinel Network) in collaboration with the leading French scientists: Prof. P. Demoly (Montpellier University, France) and Prof. J. Bousquet (INSERM 1168, France) and cooperation – 23 science centers worldwide. Dr V. Kvedarienė. 2014–2025.

The aim of the projects is to improve the diagnosis of allergic diseases, to increase life expectancy in the case of quality healthy aging.

The performance of the work VAS work was assessed by comparing VAS work with other VAS measurements and symptom-medication scores obtained concurrently in Lithuanian MASK-air Apps users. The data summarize with the data of patients of 23 countries.

Main publication:

Bédard, A., Antó, J. M., Fonseca, J. A., Kvedarienė, V., Basagaña, X. Correlation between work impairment, scores of rhinitis severity and asthma using the MASK-air® App. *Allergy*. 2020, 75: 1672–1688.

TWINNING (Transfer of Innovation) Research Project. Since 2014 in collaboration with the leading French Prof. J. Bousquet (INSERM 1168, France) and cooperation – 23 science centers worldwide. Dr V. Kvedarienė. 2014–2025.

The aim of this study was to transfer innovation from an app developed by the MACVIA-France EIP on AHA reference site (Allergy Diary) to other reference sites. The research data of few years was summarized and the article was written.

Main publication:

Bousquet, J., Schünemann, H. J., Togias, A., Kvedarienė, V., Zuberbier, T. Next-generation allergic rhinitis and its impact on asthma (ARIA) guidelines for allergic rhinitis based on Grading of Recommendations Assessment, Development and Evaluation (GRADE) and real-world evidence. *J Allergy Clin Immunol*. 2020, 145: 70–80.e3.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

Department of Occupational and Environmental Dermatology, Skåne University Hospital, Lund University (Sweden)

Department of Dermatology, Gothenburg University Sahlgrenska University Hospital, Gothenburg (Sweden)

Prof. Pascal Demoly (Montpellier University, France) and Prof. Jean Bousquet (INSERM 1168, France), Prof. Annick Barbaud (Hopital universitaire Est Parisien site Tenon) Paris (France)

OTHER RESEARCH ACTIVITIES

Prof. E. Danila –

- member of European Respiratory Society (ERS), <http://www.ersnet.org/>;
- member of Lithuanian Society of Pulmonologists, <http://www.chest.lt/>;
- editorial board member of the journal *Vaikų pulmonologija ir alergologija (Children's Pulmonology and Allergology)*.

Prof. R. Dubakienė –

- member of the Lithuanian Academy of Sciences;
- chairman of Allergology Commission of Lithuanian Academy of Sciences;
- expert of the Research Council of Lithuania;
- expert of MITA;
- editor-in-Chief of the journal *Alergologija ir klinikinė imunologija (Allergology and Clinical Immunology)*;
- editor-in-Chief of the on-line journal *Alergologija ir klinikinė imunologija (Allergology and Clinical Immunology)*;

- editorial board member of the journals: *Acta Medica Lithuania*, <http://www.lmaleidykla.lt/ojs/index.php/actamedicalituanica>; *Revue of Allergology and Clinical Immunology*; *Medicinos teorija ir praktika (Theory and Practice in Medicine)*;
- member of the Lithuanian Immunology Society;
- member of the European Academy of Allergy and Clinical Immunology;
- head of online websites: www.alergo.lt, www.rutadubakiene.com.

Prof. L. Malinauskienė –

- member of the European Academy of Allergy and Clinical Immunology;
- board member of the Lithuanian society of Allergology and Clinical Immunology;
- president of the Vilnius Regional Society of Allergologists and Clinical Immunologists;
- national representative of the International Hereditary Angioedema Organization;
- editorial board member of the journal *Alergija, astma, imunologija (Allergy Asthma Immunology)* and *Pulmonologija ir alergologija (Pulmonology and Allergology)*.

Assoc. Prof. R. Zablockis –

- chairman of Lithuanian Society of Pulmonologists, <http://www.chest.lt/>;
- member of European Respiratory Society (ERS), <http://www.ersnet.org/>;
- editor-in-chief of the journal *Pulmonology News*, <http://www.chest.lt/>;
- editorial board member of the journal *Pulmonology and Allergology*, <http://www.pulmoalerg.lt/>.

Assoc. Prof. Dr Habil. R. Janilionis –

- board member of the Lithuanian Society of Cardiothoracic Surgery, www.lkscd.lt;
- board member of Vilnius Surgical Society;
- member of European Respiratory Society (ERS), www.ersnet.org;
- member of the European Association for Cardio-Thoracic Surgery, www.eacts.org;
- editorial board member of the journal *Medicina*, www.medicina.kmu.lt;
- editorial board member of the journal *Lithuanian Surgery*, <http://www.chirurgija.lt>.

Assoc. Prof. V. Gruslys –

- member of Lithuanian Society of Thoracic and Cardiac Surgeons, www.lkscd.lt;
- member of European Respiratory Society (ERS), www.ersnet.org;
- board member of Lithuanian Society of Minimal Invasive Surgery, <http://www.mic.lt>;
- member of Lithuanian Respiratory Society, <http://www.chest.lt>.

Assoc. Prof. A. Chomičienė –

- member of the European Academy of Allergy and Clinical Immunology, <http://www.eaaci.org/>;
- member of Lithuanian society of Allergology and Clinical Immunology, <http://www.aai.mf.vu.lt/alerimun/draugija.htm>;
- editorial board member of the journal *Alergija, astma, imunologija (Allergy Asthma Immunology)*;
- member of Vilnius Regional Society of Allergists and Clinical Immunologists <http://vaki.lt>.

Senior Researcher V. Kvedarienė –

- editorial board member of the journal *Pulmonologija, imunologija ir alergologija (Pulmonology, Immunology and Allergology)*;
- vice-chairman of reviewer board of the journal *Vaikų pulmonologija ir alergologija (Children's Pulmonology and Allergology)*;
- chairman of Lithuanian Allergy and Asthma Association;

- member of Allergology Commission of Lithuanian Academy of Sciences;
- member of the European Academy of Allergy and Clinical Immunology;
- member of UCB Institute of Allergy, <http://www.theucbinstituteofallergy.com/Home>;
- member of Lithuanian Society of Allergology and Clinical Immunology;
- member of Allergic Rhinitis and its Impact on Asthma (ARIA);
- member of European Network on Drug Allergy (ENDA);
- member of Integrated Care Pathways for Airways Diseases (AIRWAYS-ICPs);
- medical advisor of Lithuanian Asthma Patients Association.

Assist. Prof. V. Šileikienė, Assist. Prof. Kęstutis Miškinis, Researcher J. Račkauskienė, Lect. I. Pocienė, Lect. G. Cincilevičiūtė, Lect. R. Aleksonienė, Lect. E. Jurevičienė, Lect. V. Kumpauskaitė, G. Šlekytė, E. Bagurskienė –

- members of European Respiratory Society (ERS), <http://www.ersnet.org/>;
- members of Lithuanian Society of Pulmonologists, <http://www.chest.lt/>.

Assist. Prof. Ž. Jagelavičius –

- member of Lithuanian Society of Thoracic and Cardiac Surgeons, www.lkscd.lt;
- member of European Society of Thoracic Surgeons (ESTS), www.ests.org;
- member of European Respiratory Society (ERS), www.ersnet.org.

Lect. K. Kėvelaitienė –

- member of European Respiratory Society (ERS);
- member of Lithuanian Society of Pulmonologists.

Lect. R. Gauronskaitė –

- member of European Respiratory Society (ERS), <http://www.ersnet.org/>;
- member of Lithuanian Society of Pulmonologists, <http://www.chest.lt/>;
- member of World Sleep Society, <http://worldsleepsociety.org/>.

Lect. K. Linauskienė –

- member of Lithuanian society of Allergology and Clinical Immunology (LAKID);
- member of the European Academy of Allergy and Clinical Immunology (EAACI);
- member of European Society for Immunodeficiencies (ESID);
- ESID junior country representative.

PhD stud. R. Stankevičiūtė –

- member of the European Academy of Allergy and Clinical Immunology;
- member of Lithuanian Society of Allergology and Clinical Immunology.

BEST REPORTS DELIVERED AT CONFERENCES ABROAD

Linauskienė K. Contact allergy to the European baseline series in Lithuania: tendency in 10 years. 8–9 November 2019, Zurich, Switzerland. Best presentation award.

- Kvedarienė V. Two oral poster presentations: „Significance of house dust mite components in the selection of specific immunotherapy “ and “ Profile of house dust and storage mite sensitization in the Lithuanian population“. WAO 2020 congress Kyoto, Japan.

MOST IMPORTANT PARTICIPATION CASES OF RESEARCHERS IN WORKING GROUPS OR COMMISSIONS SET UP BY STATE AUTHORITIES, STATE AND MUNICIPAL INSTITUTIONS AND ORGANISATIONS, AND BUSINESS ENTITIES

- R. Dubakienė prepared *Lithuanian names of food allergens* for the Bank of Terms of the Lithuanian State Commission.
- E. Danila participated in the Tuberculosis Task Force of the Ministry of Health of the Republic of Lithuania.
- E. Danila is member of the Lithuanian Group of Independent Experts (Advisers, Consultants) at National Immunoprophylaxis Programme.
- L. Malinauskienė participated in the working group for revising allergology and clinical immunology speciality medical standart, Bronchial asthma diagnosis and treatment national task force of the Ministry of Health of the Republic of Lithuania.

CONSULTATIONS PROVIDED BY THE UNIT TO THE PUBLIC OR ECONOMIC ENTITIES

- E. Danila – regular consultations for Lithuanian State Ministry of Health.
- E. Danila, R. Zablockis, L. Malinauskiene, V. Šileikienė, V.Kvedarienė – advisory board for several pharmaceutical companies.
- R. Zablockis - regular consultations for Lithuanian State Ministry of Health.

MOST IMPORTANT RESEARCH DISSEMINATION ACTIVITIES

- Edvardas Danila – Participation in radio and TV interviews about lung diseases for the public. Press publications on lung diseases for the general public.
- Laura Malinauskienė – Interviews on national TV, Facebook about allergic diseases.
- Rolandas Zablockis – Press publications on lung diseases for the general public (www.delfi.lt/sveikata).
- Violeta Kvedarienė - Participation in radio and TV interviews about allergic diseases for the public. Press publications on allergy for the general public. Allergy school medical advisor and lector for allergic patients.

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Head – Prof. Dr *Saulius Ročka*

STAFF

Professors: Dr G. Kaubrys, Dr R. Mameniškienė, Dr S. Ročka.

Associate professors: Dr R. Kizlaitienė, Dr J. Valaikienė, Dr K. Ryliškienė, Dr A. Vilionskis.

Assistant professors: E. Audronytė, Dr N. Giedraitienė, A. Jasionis, Dr R. Kaladytė Lokominienė, Dr A. Klimašauskienė, R. Masiliūnas, Dr A. Vaitkevičius, Dr R. Kvaščevičius, A. Ekkert.

Lecturers: Dr G. Terbetas, Dr I. Slautaitė.

Research assistants: Ž. Chomanskis, A. Preikšaitis, E. Sakalauskaitė-Juodeikienė.

Doctoral students: E. Audronytė, A. Jasionis, M. Kurminas, J. Kuzmickienė, R. Masiliūnas, A. Ekkert, Ž. Chomanskis, V. Sutnikienė, J. Guk, V. Taluntienė.

Students' scientific groups of:

Neurology: scientific leader – Dr K. Ryliškienė, coordinator – student M. Jokubaitis; 60 members of the group.

Neurosurgery: scientific leader – Dr G. Terbetas, coordinator – L. Šalaševičius; 32 members of the group.

RESEARCH INTERESTS

Cognitive disorders in neurodegenerative, cerebrovascular, demyelinating diseases and epilepsy

Diagnostic evaluation and treatment of cerebrovascular disorders, headache, dizziness, traumatic brain injuries degenerative spinal diseases and cerebral neoplasms

Historical research on the prevalence, diagnosis and treatment of nervous diseases in the Grand Duchy of Lithuania, 19th century and interwar Lithuania

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Cognitive Disorders in Neurodegenerative, Cerebrovascular, Demyelinating Diseases and Epilepsy. Prof. G.Kaubrys. 2014–2020.

Research in the field of Alzheimer's disease has been continued to evaluate the potential of computerized cognitive tests to predict early response to treatment, the search for new markers of very early Alzheimer's disease was continued in the study of cognitive, olfactory and visuo-perceptive functions. In the field of multiple sclerosis, the cognitive features of relapse and their dynamics were investigated; neurofilament light chain and optical coherence tomography have been studied as differential markers for various clinical forms of multiple sclerosis. Investigation of cognitive, clinical and ultrasound features in carotid and vertebrobasilar circulation stroke has been started.

Main publications:

Giedraitienė, N., Kizlaitienė, R., Peceliunas, V., Griskevicius, L., Kaubrys, G. Selective cognitive dysfunction and physical disability improvement after autologous hematopoietic stem cell transplantation in highly active multiple sclerosis. *Sci Rep.* 2020, 10(1): 21286. DOI: 10.1038/s41598-020-78160-1.

Mameniškienė, R., Puteikis, K., Jasionis, A., Jatužis, D. A review of accelerated long-term forgetting in Epilepsy. *Brain Sci.* 2020, 10(12): 945. DOI: 10.3390/brainsci10120945.

Wolf, P., Lin, K., Mameniškienė, R., Walz, R. Does epilepsy have an impact on locus of control? *Front Psychol.* 2020, 11: 2251. DOI: 10.3389/fpsyg.2020.02251.

Diagnostic Evaluation and Treatment of Cerebrovascular Disorders, Neurodegenerative and Metabolic Brain Disorders, Epilepsy, Headache, Dizziness, Traumatic Brain Injuries Degenerative Spinal Diseases and Cerebral Neoplasms. Prof. D. Jatužis. 2014–2020.

Clinical research focussed on epidemiological findings, clinical characteristics, diagnostics, treatment and prognostic factors of different neurological and neurosurgical disorders (stroke, migraine, dizziness and vertigo, multiple sclerosis, Parkinson's disease, epilepsy, traumatic brain injury, cerebral neoplasms) has been continued. New methods of endovascular treatment of cerebrovascular disorders, innovative monitoring devices for traumatic brain injury, new modalities in minimally invasive degenerative spinal diseases management were investigated. Invasive neurostimulatory therapies methods for certain neurological diseases have been started.

Main publications:

Diener, H. C., Antonaci, F., Braschinsky, M., Evers, S., Jensen, R., Lainez, M., Kristoffersen, E. S., Tassorelli, C., Ryliskiene, K., Petersen, J. A. European Academy of Neurology guideline on the management of medication-overuse headache. *Eur J Neurol.* 2020, 27(7): 1102–1116. DOI: 10.1111/ene.14268.

Radzišauskienė, D., Urbonienė, J., Kaubrys, G., Andruškevičius, S., Jatužis, D., Matulytė, E., Žvirblytė-Skrebutienė, K. The epidemiology, clinical presentation, and predictors of severe tick-borne encephalitis in Lithuania, a highly endemic country: a retrospective study of 1040 patients. *PLoS One.* 2020, 15(11): e0241587. DOI: 10.1371/journal.pone.0241587.

Petkus, V., Preiksaitis, A., Chaleckas, E., Chomskis, R., Zubaviciute, E., Vosylius, S., Rocka, S., Rastenyte, D., Aries, M. J., Ragauskas, A., Neumann, J. O. Optimal cerebral perfusion pressure: targeted treatment for severe traumatic brain injury. *J Neurotrauma.* 2020, 37(2): 389–396. DOI: 10.1089/neu.2019.6551.

Nervous System Diseases in the First Half of the 19th Century Vilnius. Prof. D. Jatužis and E. Sakalauskaitė-Juodeikienė. 2020–2023.

The study aims to reveal the origins of neurology in the first half of the 19th century in Vilnius: to show how the basic medical systems influenced the perception of nervous system diseases and treatment options, to evaluate the perception of aetiology, pathogenesis, symptoms, prophylaxis and treatment

methods of nervous system diseases, to discover the origins of neurosurgery, to reveal the principles of the human cognition research.

Main publications:

Sakalaukaitė-Juodeikienė, E., Eling, P., Finger, S. Stephanus Bisius (1724–1790) on mania and melancholy, and the disorder called *plica polonica*. *J Hist Neurosci*. 2020, 16: 1–17. DOI: 10.1080/0964704X.2020.1770957.

Sakalaukaitė-Juodeikienė, E., Eling, P., Finger, S. Ludwig Heinrich Bojanus (1776–1827) on Gall's craniognomic system, zoology, and comparative anatomy. *J Hist Neurosci*. 2020, 29(1): 29–47. DOI: 10.1080/0964704X.2019.1684752.

National Research Projects

Clinical research **Ataxia and Gait Impairment in Multiple Sclerosis Patients** in collaboration with Vilnius Gediminas Technical University. Assoc. Prof. R. Kizlaitienė. 2015-ongoing.

In 2020, data was further collected and analysed. Objective quantitative parameters for more accurate evaluation of body symmetry of upper and lower limbs and coordination in patients with multiple sclerosis were searched by inertial sensors and quantitative motion analysis.

Main publications:

Daunoravičienė, K., Ziziene, J., Ovcinikova, A., Kizlaitienė, R., Griskevicius, J. Quantitative body symmetry assessment during neurological examination. *Technol Health Care*. 2020, 28(5): 573–584. DOI: 10.3233/THC-208003.

Daunoravičienė, K., Žižienė, J., Griškevičius, J., Ovčínikova, A., Kizlaitienė, R. Biomechanical markers of impaired motor coordination. 15th International Conference Mechatronic Systems and Materials (MSM 2020), 1–3 July 2020, Białystok, Poland: book of abstracts. Białystok : Białystok University of Technology. 2020, p. 33.
<https://www.msm2020.pb.edu.pl/app/uploads/2020/06/MSM2020-BOOK-OF-ABSTRACTS.pdf>.

International Research Projects

Implementation Research Network in Stroke Care Quality – IRENE COST ACTION. Participants: Assoc. Prof. A. Vilionskis, R. Masiliūnas, Prof. D. Jatužis. 2018–2023.

Collaborative project with other stroke centres from Eastern, North and Central Europe: prospective international database of all acute stroke patients.

Main publication:

Kurminas, M., Berūkštis, A., Misonis, N., Blank, K., Tamošiūnas, A. E., Jatužis, D. Intravenous r-tPA dose influence on outcome after middle cerebral artery ischemic stroke treatment by mechanical thrombectomy. *Medicina*. 2020, 56(7): 357. DOI: 10.3390/medicina56070357.

Safe Implementation of Treatment of Stroke (SITS) - EAST Project. Participants: Assoc. Prof. A. Vilionskis, Prof. D. Jatužis, R. Masiliūnas. 2009-ongoing.

Collaborative project with other stroke centers from Eastern and Central Europe: prospective international database of all acute stroke patients treated with reperfusion treatment.

The aim of project to collect demographic, clinical, radiological, treatment details of all acute ischemic stroke patients, treated with reperfusion treatment as 3 months follow up as well.

Main publications:

Keselman, B., Gdovinová, Z., Jatužis D, Melo TPE, Vilionskis A, Cavallo R, et al. Safety and outcomes of intravenous thrombolysis in posterior versus anterior circulation stroke: results from the

Safe Implementation of Treatments in Stroke Registry and meta-analysis. *Stroke*. 2020, 51(3): 876–882. DOI: 10.1161/STROKEAHA.119.027071.

Escudero-Martinez, I., Mazya, M., Teutsch, C., Lesko, N., Gdovinova, Z., Barbarini, L., Fryze, W., Karlinski, M., Kobayashi, A., Krastev, G., Paiva Nunes, A., Pasztoova, K., Peeters, A., Sobolewski, P., Vilionskis, A., Toni, D., Ahmed, N. SITS Investigators. Dabigatran initiation in patients with non-valvular AF and first acute ischaemic stroke: a retrospective observational study from the SITS registry. *BMJ Open*. 2020, 10(5): e037234. DOI: 10.1136/bmjopen-2020-037234.

Thorén, M., Dixit, A., Escudero-Martínez, I., Gdovinová, Z., Klecka, L., Rand, V. M., Toni, D., Vilionskis, A., Wahlgren, N., Ahmed, N. Effect of recanalization on cerebral edema in ischemic stroke treated with thrombolysis and/or endovascular therapy. *Stroke*. 2020, 51(1): 216–223. DOI: 10.1161/STROKEAHA.119.026692.

Collaborative European NeuroTrauma Effectiveness research in TBI: a prospective longitudinal observational study (CENTER-TBI), funded by 7BP; www.center-tbi.eu. Participants: Prof. S. Ročka, A. Preikšaitis. 2015-ongoing.

The aim of the project is to collect high quality clinical, epidemiological, radiological and genetic database of traumatic brain injured patients. CENTER-TBI aims to advance the care for apatients with traumatic brain injury by better characterization trauma as a disease and indentifying the most effective clinical interventions for managing TBI.

Main publications:

Andelic, N., Røe, C., Brunborg, C., Zeldovich, M., Løvstad, M., Løke, D., Borgen, I. M., Voormolen, D. C., Howe, E. I., Forslund, M. V., Dahl, H. M., von Steinbuechel, N., the CENTER-TBI participants and investigators [Rocka S.]. Frequency of fatigue and its changes in the first 6 months after traumatic brain injury: results from the CENTER-TBI study. *Journal of Neurology*. 2020, 00: 1–13. DOI: 10.1007/s00415-020-10022-2.

Zeiler, F. A., Ercole, A., Cabeleira, M., Stocchetti, N., Hutchinson, P. J., Smielewski, P., Czosnyka, M. and the CENTER-TBI high resolution ICU (HR ICU) sub-study participants and investigators [Rocka S.]. Descriptive analysis of low versus elevated intracranial pressure on cerebral physiology in adult traumatic brain injury: a CENTER-TBI exploratory study. *Acta Neurochirurgica*. 2020, 162(11): 2695–2706. DOI: 10.1007/s00701-020-04485-5.

Huijben, J. A., Wiegers, E. J. A., Lingsma, H. F., Citerio, G., Maas, A. I. R., Menon, D. K., Ercole, A., Nelson, D., van der Jagt, M., Steyerberg, E. W., Helbok, R., Lecky, F., Peul, W., Birg, T., Zoerle, T., Carbonara, M., Stocchetti, N., the CENTER-TBI participants and investigators [Rocka S.]. Changing care pathways and between-center practice variations in intensive care for traumatic brain injury across Europe: a CENTER-TBI analysis. *Intensive Care Medicine*. 2020, 46(5): 995–1004. DOI: 10.1007/s00134-020-05965-z.

Current Status of Epilepsy Health Care for Adult Patients from Central and Eastern European Union Countries. Leader (Coordinator) - Prof. R. Mameniskiene. 2015-ongoing.

The aim of this survey was to review and compare the current approaches to epilepsy management in central and eastern EU countries. Experts from Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia participated in the project, focused on the epilepsy treatment of adults. We concluded that the lack of unified procedures pertaining to the evaluation and therapy of epilepsy is reflected by marked differences in access to treatment modalities for patients from CEEU countries.

International Multicenter Register: European Register of Antiepileptic Drugs and Pregnancy (EURAP) - a prospective observational study of pregnancies with antiepileptic drugs. Lithuanian involved in the project. Leader – Prof. R. Mameniskiene. 2005-ongoing.

The aim was to collect data on the risk of antiepileptic drugs during pregnancy and share it in an international registry. At present, physicians from 42 countries in Europe, Oceania, Asia, Latin America and Africa are actively collaborating, and more than 23,000 pregnancies were registered. The primary goal is to compare the risk of major congenital malformations following maternal intake of different antiepileptic drugs (AEDs) and their combinations. Secondary objectives include the evaluation of any specific pattern of foetal abnormalities, dose-effect relationships, and other risk factors.

European Stroke Organisation: Enhancing and Accelerating Stroke. National representative – Assoc. Prof. A. Vilionskis. 2015–2022.

ESO-EAST (European Stroke Organisation: Enhancing and Accelerating Stroke Treatment) is the first comprehensive programme of improving stroke care in Europe. ESO-EAST Programme is initiated by the European Stroke Organisation and implemented in Eastern European countries through participation of stroke professionals, professional organisations and local authorities.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

Kaunas University of Technology (Lithuania)

National Cancer Institute (Lithuania)

Vilnius Gediminas Technical University (Lithuania)

OTHER RESEARCH ACTIVITIES

Prof. D. Jatužis –

- president of Lithuanian Stroke Association and Lithuanian Neurological Association;
- executive editor of the journal *Neurologijos seminarai (Seminars in Neurology)*;
- fellow member of European Stroke Organization (FESO);
- national representative and member of Subspecialty Scientific Panel *Stroke* of the European Academy of Neurology (EAN);
- National educational co-ordinator and member of the World Federation of Neurology;
- national co-ordinator of international investigator-driven clinical trials (TWIST, CONVINCENCE).

Prof. S. Ročka –

- president of Lithuanian Neurosurgical Society;
- member of Lithuanian Society for Epileptology;
- member of European Association of Neurosurgical Societies;
- member of World Federation of Neurosurgical Societies;
- member of Lithuanian Neuroscience Association.

Prof. G. Kaubrys –

- member of the Council of the Lithuanian Neurological Association;
- member of Subspecialty Scientific Panel *Dementia and Cognitive Disorders* of the European Academy of Neurology (EAN);
- voting member of the Association for the Scientific Study of Consciousness (ASSC);
- editorial board member of the journal *Neurologijos seminarai (Seminars in neurology)*;
- member of the World Federation of Neurology.

Prof. R. Mameniškienė –

- president of Lithuanian Society for Epileptology;

- member of Subspecialty Scientific Panels *Epilepsy* and *Neurooncology* of the European Academy of Neurology (EAN);
- member of the Council of the Lithuanian Neurological Association;
- cover art editor of the journal *Seizure - European Journal of Epilepsy*;
- editor-in-chief of the journals *Neurologijos seminarai (Seminars in neurology)* and *Nervų ir psichikos ligos*;
- national coordinator in European Register of Antiepileptic Drugs and Pregnancy (EURAP) and in the international registry of the treatment of refractory status epilepticus;
- member of the Lithuanian Stroke Association;
- member of the World Federation of Neurology.

Assoc. Prof. J. Valaikienė –

- editorial board member of the journal *Neurologijos seminarai (Seminars in Neurology)*;
- member of the Council of the Lithuanian Society of Clinical Neurophysiology and Neurosonology;
- member of Subspecialty Scientific Panels *Neurosonology* and *Infectious Diseases* of the European Academy of Neurology (EAN);
- member of the Lithuanian Neurological Association and Lithuanian Stroke Association;
- member of the World Federation of Neurology.

Assoc. Prof. R. Kizlaitienė –

- member of the Council of the Lithuanian Neurological Association;
- member of Subspecialty Scientific Panel *Multiple Sclerosis and Demyelinated Diseases* of the European Academy of Neurology (EAN);
- member of the Lithuanian Stroke Association;
- head of the Medical Advisory Board of Lithuanian Multiple Sclerosis Association;
- editorial board member of the journal *Neurologijos seminarai (Seminars in Neurology)*;
- member of the World Federation of Neurology.

Assoc. Prof. K. Ryliškienė –

- member of Subspecialty Scientific Panels *Headache* and *Neuro-ophthalmology and Neuro-otology* of the European Academy of Neurology (EAN);
- member of European Board of Neurology in European Union of Medical Specialists;
- Head of Neurology Panel of Students' Research Network of Vilnius University Faculty of Medicine;
- member of World Stroke Organization;
- member of Lithuanian Association of Headache Specialists, Lithuanian Stroke Association, Lithuanian Neurological Association.

Assoc. Prof. A. Vilionskis –

- member of Council of Lithuanian Stroke Association;
- fellow member of European Stroke Organization;
- member of management committee IRENE COST ACTION;
- representative of Lithuania in ESO-EAST project;
- national coordinator of SITS project;
- member of Lithuanian Neurological Association;
- member of World Stroke Organization;
- member of World Federation of Neurology.

Assist. R. Kvaščevičius –

- member of Lithuanian Neurosurgical Society;

- member of Baltic Neurosurgical Association;
- member of European Association of Neurosurgical Societies;
- member of World Federation of Neurosurgical Societies;
- member of Lithuanian Society of Vertebratology.

Lect. G. Terbetas –

- member of Lithuanian Neurosurgical Society;
- member of Lithuanian Society of Vertebratology;
- AOSpine member.

Assist. N. Giedraitienė –

- member of Subspecialty Scientific Panel *Neuroimmunology* of the European Academy of Neurology (EAN);
- member of Lithuanian Neurological Association.

Assist. R. Kaladytė-Lokominienė –

- member of the Council of Lithuanian Neurological Association;
- member of Subspecialty Scientific Panel *Movement Disorders* of the European Academy of Neurology (EAN);
- member of International Parkinson's Disease and Movement Disorders Society;
- member of Cochrane Collaboration Neurological Network;
- coordinator of Huntington's Disease Coordination Centre.

Assist. R. Masiliūnas –

- executive board member of the Nordic Stroke Society;
- member of Subspecialty Scientific Panel *Stroke* of the European Academy of Neurology (EAN).

Dr Eglė Sakalauskaitė-Juodeikienė –

- member of International Society for the History of the Neurosciences (ISHN);
- member of Subspecialty Scientific Panel *Sleep-wake disorders* of the European Academy of Neurology (EAN);
- member of the *Journal of the History of the Neurosciences* (JHN) Editorial Board.

BEST REPORTS DELIVERED AT CONFERENCES ABROAD

- Vilionskis A, Masiliūnas R, Jatužis D, Rastenytė, D. The impact of a comprehensive national policy on improving acute stroke patient care. *International Journal of Stroke: The Joint European Stroke Organisation and World Stroke Organization Conference (ESO-WSO 2020)*, 7 November 2020 : abstracts. 2020, 15(1): 99–99, no. 00362 / #2791p. 99. DOI: 10.1177/1747493020963387.
- R. Kaladytė Lokominienė. Fabry disease: neurologist's part in multidisciplinary orchestra. *International Brain, Heart and Kidney (BHK) Congress*. 22–24 October 2020, Vilnius, Lithuania.
- J. Valaikienė. High prevalence of intracranial stenosis in patients with advanced coronary artery disease.
- G. Kaubrys. Metabolomics and cognition in Alzheimer's disease.
- R. Mameniškienė. Ketogenic diet in the treatment of brain, heart and kidney diseases.
- K. Ryliškienė. Migraine and stroke.
- D. Jatužis. Modern reperfusion stroke therapies in Lithuania: current situation. *Stroke Master Class lectures*, 21 January 2020, Nur-Sultan, Kazakhstan.
- K. Ryliškienė. Arterial ischemic stroke in the young.

MOST IMPORTANT PARTICIPATION CASES OF RESEARCHERS IN WORKING GROUPS OR COMMISSIONS SET UP BY STATE AUTHORITIES, STATE AND MUNICIPAL INSTITUTIONS AND ORGANISATIONS, AND BUSINESS ENTITIES

Participation in working groups and committees established by the Ministry of Health of the Republic of Lithuania:

- Prof. D. Jatužis, Assoc. Prof. A. Vilionskis. Stroke Integrated Healthcare Management Committee;
- Prof. D. Jatužis, Prof. R. Mameniškienė, Dr A. Klimašauskienė. Working Group on Neurology Medicine Norm Update;
- Prof. R. Mameniškienė. Working Group on Epilepsy Treatment;
- Assoc. Prof. R. Kizlaitienė. Working Group on Multiple Sclerosis Treatment.

CONSULTATIONS PROVIDED BY THE UNIT TO THE PUBLIC OR ECONOMIC ENTITIES

- D. Jatužis. Expertise for State Health Care Accreditation Agency under the Ministry of Health of the Republic of Lithuania.

MOST IMPORTANT RESEARCH DISSEMINATION ACTIVITIES

- Scientific popularization of TV, radio and Internet broadcasts (Prof. Dalius Jatužis; Prof. Rūta Mameniškienė, Assoc. Prof. Kristina Ryliškienė, Assoc. Prof. Aleksandras Vilionskis, Assist. Rytis Masiliūnas, Dr Eglė Sakalauskaitė-Juodeikienė).
- Epilepsy, Parkinson's disease, Multiple Sclerosis, Stroke, Migraine, Alzheimer's Day Informative Events for the Public.
- Promotion event of neurosciences and medical studies at Vilnius University "Student for one day".

Clinic of Psychiatry

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Head – Prof. Dr *Sigita Lesinskiene*

STAFF

Professors: Dr S. Lesinskiene, Dr A. Navickas, Dr D. Pūras, Dr A. Germanavičius (part-time).

Associate professors: Dr A. Šiurkutė, Dr R. Viliūnienė, Dr B. Diomšina (part-time).

Assistant professors: Dr G. Bulotienė, Dr E. Długauskas (part-time).

Lecturers (part-time): Dr A. Dervinytė-Bongarzoni, V. Rutkauskas, R. Balčiūnas, V. Andrejauskienė, M. Misevičė, L. Bukelskis, I. Treigienė, A. Šapranauskienė, A. Zalubienė, M. Karnickas, G. Narmontas.

Doctoral students: M. Misevičė, V. Andrejauskienė, A. Lengvenytė.

Students' scientific groups of:

Child and adolescent psychiatry: scientific leader – Prof. S. Lesinskiene, coordinator – student G. Stonkutė; 9 members of the group.

Psychiatry: scientific leader – Prof. A. Navickas, coordinator – student A. Valentukevičiūtė; 79 members of the group.

Psychotherapy: scientific leader – Assoc. Prof. R. Viliūnienė, coordinator – student J. Songailaitė; 70 members of the group.

RESEARCH INTERESTS

Evaluation of functioning and quality of life of patients with psychiatric disorders

Analysis of outcome variables of the treatment of developmental, neurotic, affective and psychotic in children and adults

Transition processes in young people, medical students

Different approaches on psychosocial rehabilitation and assertive outreach for comprehensive integrated community care for people with mental disorders in the community settings

Evaluation of services for people with mental illness and their families

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Mental, Behavioural, Developmental and Dependency Disorders: Clinical Features, Possibilities of Prevention and Treatment during the Life Span. Assist. Dr E. Długauskas. 2019–2023.

The importance of patient pharmacogenetics in the choice of individualized treatment has been investigated and scientific articles published. The influence of mental illness on cognitive functions and the association of somatic diseases with mental disorders were investigated.

Main publications:

Lesinskiene, S., Rojaka, D., Praninskienė, R., Morkūnienė, A., Matulevičienė, A., Utkus, A. Juvenile Huntington's disease: two case reports and a review of the literature. *Journal of Medical Case Reports*. 2020, 14 (173): 1–5. DOI: 10.1186/s13256-020-02494-7.

Pūras, D., de Mesquita, J. B., Cabal, L., Maleche, A., Meier, B. M. The right to health must guide responses to COVID-19. *Lancet*. 2020, 395(10241): 1888–1890.

DOI:10.1016/S0140-6736(20)31255-1.

Analysis of Self Harmful and Suicidal Behaviour and of Effective Current Treatments. Assoc. Prof. A. Navickas. 2019–2023.

The main research work was focused on participation in the WPA international project "Impact of COVID19 on Emotional Health in the Population". 1 120 respondents were surveyed, as well as participation in the WPA international project "Impact of COVID19 on students' emotional health". 330 respondents were surveyed.

Main publications:

Lukavičiūtė, L., Gancevičienė, R., Navickas, P., Navickas, A., Grigaitienė, J., Zouboulis, Ch. C. Anxiety, depression, and suicidal ideation amongst patients with facial dermatoses (acne, rosacea, perioral dermatitis, and folliculitis) in Lithuania. *Dermatology*. 2020, 236(4): 314–322. DOI: 10.1159/000506627. (WoS)

Harro, J., Aadamsoo, K., Rootslane, L., Laius, O., O’Leary, A., Adomaitiene, V., Kupca, B., Lehtmetts, A., Navickas, A., Rancāns, E., Taube, M., Terauds, E., Pops, K. Comparison of psychotropic medication use in the Baltic countries. *Nordic Journal of Psychiatry*. Supplement. 2020, 74(4): 301–306. DOI: 10.1080/08039488.2019.1707283.

Kazlauskienė, J., Bulotienė, G. Prevalence of post-traumatic stress disorder among Lithuanian breast cancer patients and its risk factors. *Journal of Psychosomatic Research*. 2020, 131: 109939. <https://doi.org/10.1016/j.jpsychores.2020.109939>.

Bulotiene, G. Archetypal images emerging in the therapy of Lithuanian cancer patients. *Journal of Analytical Psychology*. 2020, 65(2): 408–422. <https://doi.org/10.1111/1468-5922.12584>.

Krotova, J., Lesinskienė, S. Is a sad child always depressed: what do pediatricians need to know about children’s mourning reactions? *Pediatrics*. 2020, 4(92): 52–57.

Survey of Burning out Syndrome and Mental Health of Medical Specialists. Project leader: Prof. S. Lesinskienė. 2019–2023.

Active involvement of lecturers and medical students in the research and actuality of the topic. Main aim was to prepare methodological concept and instruments to investigate mental health of medical specialists and risk of burning out syndrome. Preparation and implementation of the Transitions projects in cooperation with prof. Andre Sourandr and his team in Turku University (Finland). Survey and Transitions program was successfully implemented to the 1st year medical and odontology students.

Main publications:

Lesinskienė, S., Klimukienė, V., Rutkauskas, V. Transitional age to young adults: actual aspects of students’ mental health. *Pediatrics*. 2020, 4(92): 47–51.

Rutkauskas, V., Akavickas, J, Matuzaitė, A., Lesinskienė, S. Transitional age youth. What is important to know for physicians? *Pediatrics*. 2020, 2(90): 70–73.

Attachment, Emotional and Behavioural Disorders in Children: Investigation of the Impact of the Therapeutical Interventions. Prof. S. Lesinskienė. 2019–2023.

Background and methodology investigating attachment and behavioural, emotional aspects have been elaborated. Divorce, family situation and mental health of children were analyzed and published. Breastfeeding and psychotropic medication aspects were reviewed and published.

Various aspects of academic achievements, bullying, birth rank, gender etc. were analyzed and published continuing cooperation from the participating in the large international epidemiological study of primary school children (CAMHEE).

Main publications:

Kovess-Masfety, V. E., Wietske, A., Wild, K., Bitfoi, A., Goelitz, D., Lesinskienė, S., Mihova, Z., Otten, R., Husky, M. M. Mental health problems, low birthweight and academic achievement in mathematics and reading. *Current Psychology*. 2020, first published online, 1–11. <https://doi.org/10.1007/s12144-020-00674-8>.

Husky, M. M., Delbasty, E., Bitfoi, A., Carta, M. G., Goelitz, D., Koç, C., Lesinskienė, S., Mihova, Z., Otten, R., Kovess-Masfety, V. Bullying involvement and self-reported mental health in elementary school children across Europe. *Child Abuse & Neglect*. 2020, 107: 1–11. DOI: 10.1016/j.chiabu.2020.104601.

Kovess-Masfety, V., Woodward, M. J., Keyes, K., Bitfoi, A., Carta, M. G., Koç, C., Lesinskienė, S., Mihova, Z., Otten, R., Husky, M. Gender, the gender gap, and their interaction; analysis of relationships with children's mental health problems. *Social Psychiatry and Psychiatric Epidemiology*. 2020, first on line, 1–11. DOI: 10.1007/s00127-020-01950-5.

Arshad, H., Husky, M. M., Goelitz, D., Bitfoi, A., Carta, M. G., Koç, C., Lesinskienė, S., Mihova, Z., Otten, R., Fermanian, Ch., Kovess-Masfety, V. Birth rank as a determinant of academic achievement: results from a European survey of primary school children. *European Journal of Developmental Psychology*. 2020; first published online, <https://doi.org/10.1080/17405629.2019.1700108>; 1-20. DOI: 10.1080/17405629.2019.1700108.

International Research Project

The Observation of Children in Lithuanian Care Homes in Preparation for their Trip and Stay in Italian Carers' Families, Cultural Mediation and Psychological Support for Children and Carers. A. Dervinytė-Bongarzoni. 2018–2020.

The project of the visits is delivered by the not-for-profit organization “Nuovo Cielo” (president Sara Bianci), and is carried out in collaboration with Paolo Sesti (University of Calabria, Italy).

In 2020, observation of the direct communication between children and their carer (foster) families was stopped due to the pandemic. Project partners kept in touch using distant communication tools. The research object is the analysis of the relationships, based on attachment, and their development between children in the temporary state care and their biological family, institutional carers and Italian Carers' Families. Gathered data is being generalized.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

Institute of Psychiatry Kings College, London (UK)

Viena S. Freud Private University (Austria)

Department of Child and Adolescent Psychiatry of Heidelberg University (Germany)

Vilnius University, Faculty of Philosophy (Lithuania)

Lithuanian Academy of Music and Theatre, Faculty of Music (Lithuania)

Turku University (Finland)

OTHER RESEARCH ACTIVITIES

Prof. S. Lesinskienė –

- President of Lithuanian Society for Child and Adolescent Psychiatrists;
- editorial board member of the journal *Pediatrija (Paediatrics)*, www.medpraktika.lt/leidiniai/leidinys/2/Pediatrija.

Prof. D. Pūras –

- UN Special rapporteur on the right to physical and mental health, <https://www.ohchr.org/en/issues/health/pages/srrihealthindex.aspx>;
- Chair of the Coordination committee of the Special procedures of the United nations;
- visiting professor of the University of Essex (UK);
- distinguished visitor of Georgetown University (USA);
- editorial board member of the journal *Visuomenės sveikata (Public Health)*, http://www.hi.lt/content/D2_redkolegija.html;
- editorial board member of the journal *Medicina*;
- member of International Advisory Board of the *Archives of Psychiatry and Psychotherapy*, <http://www.archivespp.pl/International-Advisory-Board.html>.

Prof. A. Germanavičius –

- editorial board member of the journals: *Nordic Journal of Psychiatry*, *Medicina (Medicine)*, *Visuomenės sveikata (Public Health)*, *Biologinė psichiatrija ir psichofarmakologija (Biological Psychiatry and Psychopharmacology)*;
- scientific board member of the Neuroscience Institute at Lithuanian University of Health Sciences (Kaunas);
- Executive Board member of ENMESH (European Network for Mental Health Service Evaluation: www.enmesh.eu);
- member of European network on Training, Evaluation and Research (ENTER: www.entermentalhealth.net);
- Representative for Lithuanian Association of Psychiatrist for Nordic Board of World Psychiatric association (WPA).

Prof. A. Navickas –

- WPA Honorary Membership for excellence in service to the World Psychiatric Association;
- President of the Lithuanian Association of Suicidology;
- member of International Association of Suicide Prevention;
- editorial board member of the journal *Biologinė psichiatrija ir psichofarmakologija (Biological Psychiatry and Psychopharmacology)*, <http://www.pri.kmu.lt/biological-psychiatry.ht>;
- editorial board member of the journal *Sveikatos mokslai (Health Science)*, <http://sm-hs.eu/lt/>;
- editorial board member of the journal *Visuomenės sveikata (Public Health)*, <https://www.hi.lt/redkolegija.html>.

Assoc. Prof. A. Šiurkutė –

- member of Lithuanian Psychiatric Association.

Assoc. Prof. R. Viliūnienė –

- president of Lithuanian Society of Psychoanalysis (LPaD), <http://psichoterapija.org>;
- member of Lithuanian Psychiatric Association (LPA).

Assist. Dr G. Bulotienė –

- member of Lithuanian Psychiatric Association (LPA);
- member of the International Psycho-Oncology Society (IPOS) Federation Task Force;
- board member of Lithuanian Society of Oncologists (LOD);
- individual member of the International Association for Analytical Psychology (IAAP);
- member of Lithuanian Society of Psychoanalysis (LPaD).

Assist. Dr E. Dlugauskas –

- member of the Lithuanian Psychiatric Association (LPA);
- member of Lithuanian Society of Psychoanalysis (LPaD).

Lect. Dr A. Dervinyte-Bongarzoni –

- member of Lithuanian Psychiatry Association;
- member of Children and Adolescents Psychiatry Association.

CONSULTATIONS PROVIDED BY THE UNIT TO THE PUBLIC OR ECONOMIC ENTITIES

- Clinic staff often participates in debates or opinion formation regarding mental health and psychiatry initiated by broad variety public media sources.

Clinic of Rheumatology, Orthopedic Trauma and Reconstructive Surgery

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Head - Prof. Dr *Irena Butrimienė*

STAFF

Professors: Prof. Dr I. Butrimienė, Prof. Dr Habil. N. Porvaneckas, Professor of Partnership Dr K. Vitkus, Prof. V. Uvarovas.

Associate professors: Dr I. Šatkauskas, Dr R. Rugienė, Dr S. Stropuvienė, Dr L. Zabulienė. Dr S. Ryliškis, Dr G. Kvederas.

Assistant professors: Dr D. Miltinienė, Dr I. Arštikytė, Dr N. Jakutis, Dr T. Sveikata.

Lecturer: Dr J. Kurtinaitis.

Researchers: Dr R. Rugienė, Dr D. Miltinienė, G. Stundžaitė–Baršauskienė, I. Sakalauskaitė, G. Šeškutė.

Doctoral students: R. Šakalytė, E. Pucevičienė, E. Tertelienė, A. Makulavičius, G. Stundžaitė–Baršauskienė, A. Petrulionienė, G. Petryla, G. Šeškutė.

Students' scientific groups:

Rheumatology: scientific leader- Researcher G. Šeškutė, coordinator – student D. Kaušaitė, 22 members of the group.

Orthopaedics and traumatology: scientific leader –Assoc. Prof. Dr S. Ryliškis, coordinator – student A. Šležas, 52 members of the group.

RESEARCH INTERESTS

Peculiarities of applying biological therapy to rheumatic patients in Lithuania

Immunogenicity in rheumatic patients with anti-TNF treatment

Outcomes of early undifferentiated arthritis

Associations between genetic, epigenetic factors, rheumatoid arthritis etiopathogenesis and clinical course

Outcomes of systemic sclerosis

Musculoskeletal ultrasound

The role of nailfold videocapillaroscopy in diagnosing other systemic diseases

Reconstructive surgery: clinical applications of free and pedicled flaps, results

Autologous breast reconstruction – key methods, clinical results

Implant-based breast reconstruction – clinical analysis of complications

Breast reduction: methods, clinical results, factors contributing in choosing the best technique

Pelvic trauma, hip and knee arthroplasty, foot surgery, wrist surgery

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Associations between Genetic, Epigenetic Factors and Rheumatoid Arthritis Etiopathogenesis and Clinical Course. Prof. I. Butrimienė, PhD Student E. Pucevičienė. 2015–2020.

Aim of the study is to investigate the association between genetic, epigenetic factors in pathogenesis of rheumatoid arthritis, disease activity and clinical course. According to the study results a publication on VDR gene polymorphisms and vitamin D association with rheumatoid arthritis was prepared and submitted to scientific journal. Another publication on vitamin D metabolism genes DNA methylation is being prepared. Poster presentation “Methylation analysis of Vitamin D signalling pathway genes in Rheumatoid Arthritis patients” was presented at EULAR e-congress 2020 June.

Diagnostics of Rheumatological Diseases and Morphological Evaluation of the Effectiveness of the Treatment Using High-Performance Ultrasound Research. Prof. I. Butrimienė, PhD Student G. Šeškutė. 2019–2023.

The aim is to check the benefits of superb microvascular imaging in diagnosing arthritis, to evaluate effect of the treatment. Another point is to understand the scoring system and its applicability in daily practice. These years of the study are dedicated for collecting data.

The Long-Term Prognosis of Rheumatoid Arthritis Patients after Knee Arthroplasty in Lithuania. Prof. A. Venalis, PhD student E. Tertelienė. 2015–2020.

Aim of the study is to identify factors that influence the patients’ functional outcome and quality of life after total knee arthroplasty in Lithuania. During the study period data were collected, analysed, the results were presented in international conferences by poster presentations and oral presentations, publications. The doctoral dissertation „Evaluation of early outcome after total knee arthroplasty in Lithuania and periprosthetic infection management solutions” was prepared and defended on 6th of March 2020.

Main publications:

Tertelienė, E., Grigaitis, K., Robertsson, O., Porvaneckas, N., Dadonienė, J., Venalis, A. Validation of Lithuanian Arthroplasty Register telephone survey of 2,769 patients operated for total knee replacement. *Medicina*. 2019, 55(6): 1–6.

Tertelienė, E., Grigaitis, K., Robertsson, O., Stucinskas, J., Tarasevicius, S., Porvaneckas, N., Venalis, A. Inadequate evaluation and management of suspected -infections after TKA surgery in Lithuania: a retrospective study of 2,769 patients with 2-year follow-up. *Acta Orthopaedica*. 2019, 90(4): 373–376.

Lyme’s Disease Clinical Syndrome’s Epidemiological and Clinical Interface with a Transmitter of the Disease and Biological Characteristics of the Pathogen. Prof. A. Venalis, PhD student A. Petrulionienė. 2016–2020.

The aim of this study is to elucidate Lyme’s disease clinical syndromes and their frequency in Lithuania, to find out the correlations between clinical disease appearance and biological characteristics of the pathogen in infected ticks, continuously working on main research data analysis, literature overview and new publications writing.

The study research results were presented in 22nd Pan-American Congress of Rheumatology, Miami, 2020 as an abstract - "Lyme Arthritis in America’s Only? Eastern Europe’s Findings". A. Petrulionienė, D. Radzišauskienė, A. Ambrozaitis, S. Čaplinskas, A. Venalis.

Main publication:

Petrulionienė, A., Radzišauskienė, D., Ambrozaitis, A., Čaplinskas, S., Paulauskas, A., Venalis, A. Epidemiology of Lyme disease in a highly endemic European zone. *Medicina*. 2020, 56(3): 115.

Research on Early Arthritis and its Outcomes. PhD student R. Sakalyte, Assoc. Prof. S. Stropuviene, Prof. A. Venalis. 2019–2021.

The aim of this study is to analyse certain gene expression dynamics in pathogenesis of chronic inflammatory arthritis. In 2020, researchers have finished analysing SNP's of early arthritis patients and publication has been prepared. After final corrections, it will be submitted to scientific journal.

TRAM and DIEP Flap Based Autologous Breast Reconstruction after Mastectomy: Analysis of the Clinical Experience in the Vilnius University Hospital *Santaros klinikos*. Dr. N. Jakutis, K. Baužys. 2019–2023.

Perineal Reconstruction: Clinical Evaluation of Methods. Dr N. Jakutis, K. Baužys. 2020–2024.

Common Methods of Breast Reduction: Evaluation of Patient Self-esteem and Objective Postoperative Results. Dr G. Stundžaitė-Baršauskienė, Dr N. Jakutis, I. Kastytė. 2019–2023.

Validation of Breast-Q questionnaire (by the University of British Columbia) done, papers for the Bioethics have been prepared.

Analysis of Implant Associated Infection after Mastectomy and Implant-Based Reconstruction. Dr N. Jakutis, K. Baužys. 2019–2023.

Main publication:

Markevičius, D., Jakutis, N. New protocol for treating breast implant infection: Case report. *Medicinos mokslai (Journal of Medical Sciences)*. 2020, 8(17): 205–210.

A Protocol for Treating Implant Associated Infection Using VAC System. A Case Report. K. Baužys, N. Jakutis.

Main publications:

Makulavicius, A., Mazarevicius, G., Klinga, M., Urmanavicius, M., Masionis, P., Uvarovas, V., Porvaneckas, N., Oliva, X. M. Outcomes of open "crown" type v. percutaneous Bunnell type repair of acute Achilles tendon ruptures. Randomized control study. *Foot Ankle Surg.* 2020, 26(8): 947. DOI: 10.1016/j.fas.2020.09.002.

Petryla, G., Uvarovas, V., Bobina, R., Kurtinaitis, J., Khan, S. A., Versocki, A., Porvaneckas, N., Šatkauskas, I. The one-year mortality rate in elderly patients with osteoporotic fractures of the pelvis. *Arch Osteoporos.* 2020 Feb 20, 15(1): 15. DOI: 10.1007/s11657-020-0689-8.

National Research Projects

Research Council of Lithuania. **Analysis of Immunological, Genetic and Epigenetic Factors in Pathogenesis of Autoimmune Arthritis** (No. S-MIP-17-12.) Prof. I. Butrimienė, Assoc. Prof. S. Stropuviene, PhD student R. Sakalyte, PhD student E. Punceviciene, 2017–2020.

Due to COVID-19 pandemia, deadline of project has been extended till April of 2021.

Durring 2020, measuring expression of TLR2, TLR4, NLRP1, NLRP3 and VDR in human synovial fibroblast (four patients' groups: rheumatoid arthritis, osteoarthritis, early arthritis, and healthy controls) has been finished. Now the statistical analysis is being finalized and publication is under preparation.

International Research Projects

The EULAR Scleroderma Trials and Research group (EUSTAR) initiated multicentral online study **Minimum Essential Data Set**. Prof. I. Butrimienė, Assoc. Prof. Dr R. Rugienė. 2011–ongoing.

The European Scleroderma Trials and Research (EUSTAR) collection of a Minimal Essential Data Set (MEDS) of all patients seen in participating centres has been created to define more clearly disease subgroups, establishing reliable factors predictive of outcome and providing a platform on which further

in depth studies will be performed. As of July 2006 (after about 3 years), 4,405 patients from 104 centres in 35 countries (including the US, Asia and South Africa) were registered and by 2015, the numbers have reached 13 000 patients included by 200 centres.

Main publications:

Bütikofer, L., Varisco, P. A., Distler, O., Kowal-Bielecka, O., Allanore, Y., Riemekasten, G., Villiger, P. M., Adler, S., EUSTAR collaborators. ACE inhibitors in SSc patients display a risk factor for scleroderma renal crisis-a EUSTAR analysis. *Arthritis Res Ther.* 2020 Mar 24, 22(1): 59.

Hoffmann-Vold, A. M., Allanore, Y., Alves, M., Brunborg, C., Airó, P., Ananieva, L. P., Czirják, L., Guiducci, S., Hachulla, E., Li, M., Mihai, C., Riemekasten, G., Sfikakis, P. P., Kowal-Bielecka, O., Riccardi, A., Distler, O., EUSTAR collaborators. Progressive interstitial lung disease in patients with systemic sclerosis-associated interstitial lung disease in the EUSTAR database. *Ann Rheum Dis.* 2020 Sep 28: annrheumdis-2020-217455.

Hughes, M., Heal, C., Siegert, E., Hachulla, E., Airó, P., Riccardi, A., Distler, O., Matucci-Cerinic, M., EUSTAR Collaborators. Significant weight loss in systemic sclerosis: a study from the EULAR Scleroderma Trials and Research (EUSTAR) database. *Ann Rheum Dis.* 2020, 79(8): 1123–1125.

Mauliūtė, M., Rugienė, R., Žėkas, V., Bagdonaitė, L., Association of endothelin-1 and cell surface adhesion molecules levels in patients with systemic sclerosis. *J Lab Med.* 2020, 44(6): 343–347.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

Department of Clinical Science and Education, Karolinska Institutet Södersjukhuset Section of Anaesthesiology and Intensive Care, Stockholm (Sweden)

Department of Quantum Electronics of the Faculty of Physics of Vilnius University (Lithuania)

State Research Institute Centre for Innovative Medicine (Lithuania)

The EULAR Scleroderma Trials and Research group (Italy)

The European League against Rheumatism (Switzerland)

Children's Hospital Okland Research Institute, San Francisco (USA)

Hospital Carlo Urbani, Rheumatology department (Italy)

OTHER RESEARCH ACTIVITIES

Prof. I. Butrimienė –

- board member of Opinion Leaders for Biological Therapy, Europe;
- member of executive committee for clinical trials in European League against Rheumatism;
- president of Lithuanian Arthritis Foundation;
- member of the Lithuanian Rheumatology Association;
- editorial board member of the journals *Reumatologijos seminarai (Seminars in Rheumatology)* and *Skausmo medicina (Pain Medicine)*;
- co-president of the organizing committee of annual conference Vilnius Rheumatology Seminars.

Prof. N. Porvaneckas –

- editorial board member of the journal *Medicina*;
- editorial board member of the journal *Medicinos teorija ir praktika (Theory and Practice in Medicine)*;
- board member of the Lithuanian Orthopaedic and Trauma Society;
- member of EFFORT, European Hip Society and AO.

Prof. V.Uvarovas –

- board member of the Lithuanian Orthopaedic and Trauma Society;

- board member of AO
- member of EFFORT

Assoc. Prof. S. Stropuvienė

- board member of the Lithuanian Rheumatology Association;
- acting secretary of the Lithuanian Rheumatology Association;
- organizing committee member of the annual conference *Vilnius Rheumatology Seminars*;
- editorial board member of the journal *Reumatologijos seminarai (Seminars in Rheumatology)*.

Assoc. Prof. R. Rugienė –

- editorial board member of the journal *Reumatologijos seminarai (Seminars in Rheumatology)*;
- organizing committee member of the annual conference *Vilnius Rheumatology Seminars*;
- member of The EULAR Scleroderma Trials and Research Group (EUSTAR);
- member of the Lithuanian Rheumatology Association.

Assist. Prof. I. Arštikytė –

- member of Emerging Eular Network (EMEUNET) - The European League Against Rheumatism (EULAR) working group of young clinicians and researchers in rheumatology;
- organizing committee member of the annual conference *Vilnius Rheumatology Seminars*;
- member of the Lithuanian Rheumatology Association.

Assist. Prof. N. Jakutis –

- board member of Lithuanian Society of Plastic and Reconstructive Surgery.

Assist. Prof. T. Sveikata –

- member of AO;
- member of EFFORT.

Lecturer Dr J. Kurtinaitis –

- member of AO –
- member of EFFORT.

MOST IMPORTANT NATIONAL AND INTERNATIONAL AWARDS RECEIVED FOR R&D ACTIVITIES

- Vilnius University scholarship for the publication:
Stundžaitė Baršauskienė, G., Tutkuvienė, J., Barkus, A., Jakimavičienė, E. M., Gibavičienė, J., Jakutis, N., Tutkus, V., Venciūtė, R., Dadonienė, J. Facial perception, self-esteem and psychosocial well-being in patients after nasal surgery due to trauma, cancer and aesthetic needs (cluster analysis of multiple interrelations). *Annals of Human Biology*. 2019, 46(7–8): 537–552. DOI: [10.1080/03014460.2019.1690678](https://doi.org/10.1080/03014460.2019.1690678).

Clinic of Cardiovascular Diseases

2 Santariškių, LT-08661 Vilnius

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Head – Prof. Dr Habil. *Aleksandras Laucevičius*

STAFF

Professors: Dr A. Aidietis, Dr S. Aidietienė, Dr J. Čelutkienė, Dr G. Davidavičius, Dr G. Marinskis, Dr Ž. Petrulionienė, Dr L. Ryliškytė (part-time), Dr K. Ručinskas, Dr P. Šerpytis, Dr V. Tarutis, Dr D. Zakarkaitė (part-time).

Associate professors: Dr J. Barysienė, Dr J. Badarienė, Dr S. Glaveckaitė, Dr G. Kalinauskas, Dr B. Petrauskienė.

Lecturers: V. Abraitis (part-time), Dr I. Ašakienė (part-time), N. Bileišienė (part-time), Dr T. Janušauskas (part-time), A. Karužas (part-time), Dr R. Kūgienė (part-time), Dr J. Misiūra, G. Navickas (part-time), R. Palšauskaitė (part-time), Dr R. Sipavičius (part-time), Dr D. Sudavičienė (part-time), R. Šerpytis (part-time), G. Vaitėnas (part-time), Dr R. Vaitkevičius (part-time), Dr B. Vaišnytė (part-time), Dr G. L. Vilkevičius (part-time).

Assistants: Dr A. Baranauskas (part-time), Dr A. Berūkštis, Dr G. Burneikaitė (part-time), Dr A. Drašutienė (part-time), Dr L. Gumbienė (part-time), Dr V. Janušauskas, V. Juknevičius (part-time), Dr R. Karalius, Dr V. Maneikienė (part-time), Dr N. Misonis, Dr R. Navickas (part-time), G. Radauskaitė (part-time), Dr G. Račkauskas, Dr E. Sadauskienė (part-time), Dr R. Sudikienė (part-time), Dr A. Skrebūnas (part-time), Dr A. Zorinas (part-time), Dr G. Zuožienė (part-time).

Researchers: J. Balsytė-Zupkauskienė (part-time), Dr A. Baranauskas (part-time), Dr A. Berūkštis, Dr L. Bezuška, M. Budra (part-time), Dr G. Burneikaitė (part-time), Dr I. Butkuvienė, Dr A. Čypienė, Dr R. Čypienė, Dr A. Drašutienė (part-time), Dr V. Grabauskienė, E. Gaižauskas (part-time), Dr L. Gumbienė, Dr V. Janušauskas, Dr L. Jurgauskienė, Dr A. Laučytė-Cibulskienė (part-time), Dr V. Lebetkevičius, Dr D. Liekienė, Dr A. Lipnevičius (part-time), E. Lycholip (part-time), Dr R. Malickaitė, Dr V. V. Maneikienė, Dr R. Navickas (part-time), E. Palevičiūtė (part-time), R. Puronaitė (part-time), A. Podkopajev (part-time), Dr G. Račkauskas, Dr E. Rinkūnienė, Dr L. Ryliškytė, V. Rudienė (part-time), Dr P. Semėnienė, Dr R. Sudikienė, (part-time), Dr A. Valaika, A. Zorinas, Dr G. Zuožienė.

Doctoral students: J. Bacevičius, G. Balčiūnaitė, T. Baltrūnas, G. Bieliauskienė, M. Budra, P. Budrys, S. Česna, U. Gargalskaitė - Aliošaitienė, E. Čiburienė, D. Fomin, E. Gaižauskas, K. Jonas, A. Jucevičienė, V. Juknevičius, R. Ruseckaitė-Juknevičienė, R. Šerpytis, V. Šileikienė, J. Balsytė-Zupkauskienė, E. Palevičiūtė, A. Podkopajev, G. Radauskaitė.

Scientific groups of students:

Cardiology: scientific leader – Prof. P. Šerpytis, coordinator – student M. Gudauskas, 70 members of students.

Vascular surgery: scientific leader – A. Skrebūnas, coordinator – K. Jauniškis; 35 members of students.

RESEARCH INTERESTS

Investigation of arterial wall functional and structural disorders in atherosclerosis and metabolic syndrome

Primary and secondary prevention of cardiovascular diseases

Development of high risk strategy in prevention of cardiovascular diseases

Fundamental and clinical research in cardiac arrhythmias
Improvement of methods of complex treatment of atrial and ventricular tachyarrhythmia
Complex multi imaging assessment of left and right ventricular function in coronary artery disease, hypertension and heart failure
Myocardial regeneration therapy by cardiac pulse wave therapy in coronary heart disease
Congenital heart disease cardiac surgery in infants
New possibilities of hybrid (interventional and surgical) and minimally invasive technologies in cardiovascular medicine

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Prevention of Atherosclerosis, Diagnosis and Treatment of Induced Diseases. Prof. A.Laucevičius. 2019–2023.

In 2020, the initial enrollment of the subjects with metabolic syndrome was completed. Currently, 124 subjects are in the main group and 84 subjects are in the control group. Data processing and database management are being done continually. An overview analysis of the collected data has been started. In collaboration with IT specialists, the first version of the telemonitoring system has been created, including a mobile application for home-based training, an interactive cardio exercise website with a workout diary and a cardiometabolic risk calculator. During 2020, researchers continued to screen and investigate patients with familial hypercholesterolemia (FH). Establishment of a national screening programme for FH patients was initiated in Lithuania. Researchers started to include not only adults but also children from 0 years of age, so FH registry has been extended. Genetic testing has been started for FH families, so today a cascade screening of affected families is being established. Collaboration with ophthalmologists, radiologists, geneticists has been started. Evaluation of cardiovascular risk profile among Lithuanian middle-aged adults between 2009 and 2018 has been initiated.

Main publications:

Laucevičius, A., Rinkūnienė, E., Petrulionienė, Ž., Ryliškytė, L., Jucevičienė, A., Purnaitė, R., Badarienė, J., Navickas, R., Mikolaitytė, J., Gargalskaitė, U., Dženkevičiūtė, V., Kutkienė, S., Gimžauskaitė, S., Mainelis, A., Šlapikas, R., Gurevičius, R., Jatužis, D., Kasiulevičius, V. Trends in cardiovascular risk factor prevalence among Lithuanian middle-aged adults between 2009 and 2018. *Atherosclerosis*. 2020, 299: 9–14.

Badarienė, J., Rinkūnienė, E., Kasiulevičius, V., Smaliukaitė, G., Selskaitė, V., Barysienė, J., Dženkevičiūtė, V. Management of patients with coronary artery disease in Lithuania: a comparison with other Central Eastern European countries based on data from the International CLARIFY Registry. *Advance Therapy*. 2020, 37(6): 3010–3018.

Saulė, I. M., Mikolaitytė, J., Badarienė, J., Zupkauskienė, J., Purnaitė, R., Čypienė, A. and Laucevičius, A. Association of high sensitivity C-reactive protein and metabolic syndrome components in middle-aged subjects without overt cardiovascular disease in LitHiR primary prevention programme. *Seminars in Cardiovascular Medicine*. 2020, 26: 14–19.

New Technologies for Management of Structural Heart Diseases. Leaders: Prof. Dr A. Aidietis, Prof. Dr K. Ručinskas. 2019–2023.

Between 2011 and 2020, 115 patients underwent minimally invasive mitral valve (MV) repair at Vilnius University Hospital *Santaros Klinikos* to treat severe mitral regurgitation (MR) using the NeoChord

DS1000 Artificial Chordae Delivery System (NeoChord, Inc., St. Louis Park, MN, USA). To date, transventricular off-pump MV repair has been performed in 5 high-risk patients in a setting of acute MR due to post-infarction papillary muscle rupture. The study has demonstrated excellent initial technical success of the procedure, but the three-year repair durability was poor. The study report has been accepted for publication in a highly ranked peer-reviewed Journal of Thoracic and Cardiovascular Surgery. From November 2007 up to now, 69 patients with end-stage heart failure were treated with a continuous-flow left ventricular assist device implantation in Vilnius University Heart and Thoracic Surgery Centre (HeartMate II and HeartMate III, Abbott Cardiovascular, Plymouth, MN). Operations were performed through median sternotomy, surgically inserting inflow cannula (pump) to the heart apex and outflow cannula to ascending aorta, thus supporting left ventricle. Operation is performed with heart-lung machine support on a still heart, or, more recently, is usually done on the beating heart, with no need for cardioplegia). Based on the collected data a doctoral dissertation is being prepared. Some data is used in an international multicenter (12 European countries) registry (PCHF-VAD registry) and continuously added.

Main publications:

Reddy, V.Y., Anter, E., Račkauskas, G., Peichl, P., Koruth, J. S., Petru, J., Funasako, M., Minami, K., Natale, A., Jais, P., Nakagawa, H., Marinskis, G., Aidietis, A., Kautzner, J., Neuzil, P. A lattice-tip focal ablation catheter that toggles between radiofrequency and pulsed field energy to treat atrial fibrillation: a first-in-human trial. *Circulation. Arrhythmia Electrophysiology*. 2020, 13(6): e008718.

Weber, A., Ručinskas, K., Janušauskas, V., Zakarkaitė, D., Zuber, M., Vogel, R., Carrel, T. Automated implantation of artificial mitral chords: preliminary results from the feasibility trial. *The Annals of Thoracic Surgery*. 2020, 109(2): 597–602.

Onorato, E. M., Muratori, M., Smolka, G., Zorinas, A., Zakarkaitė, D., Mussayev, A., Christos, C. P., Bauer, F., Gandet, T., Martinelli, G. L., Costante, A. M., Bartorelli, A. L. Mid-term procedural and clinical outcomes of percutaneous paravalvular leak closure with the Occlutech Paravalvular Leak Device. *EuroIntervention*. 2020, 15(14): 1251–1259.

Improvement and Evaluation of Congenital Heart Disease Surgery. Prof. Dr V. Tarutis. 2019–2023. Pulmonary arterial hypertension is often diagnosed in patients with congenital heart disease. Researchers evaluated the prevalence, prognosis, and treatment of pulmonary arterial hypertension associated with congenital heart disease. The research aims were to identify factors determining the occurrence of residual pulmonary arterial hypertension following surgery of anatomical congenital heart disease, and to evaluate disease rates and survival in the study population; to evaluate survival rates in inoperable patients diagnosed with Eisenmenger's syndrome, to identify the causes of death, to determine predictors of adverse prognosis, and to evaluate effects of advanced therapies for pulmonary arterial hypertension on survival of such patients.

Main publications:

Jančauskaitė, D., Rudienė, V., Jakutis, G., Geenen, L. W., Roos-Hesselink, J. W., Gumbienė, L. Residual pulmonary hypertension more than 20 years after repair of shunt lesions. *Medicina*. 2020 Jun 16, 56(6): 297.

Jancauskaite, D., Rudiene, V., Mataciunas, M., Zakarkaite, D., Petrulioniene, Z., Gumbiene, L. Cardiac imaging in a patient with differential clubbing. *L.Kardiol Pol*. 2020 May 25, 8(5): 465–466.

Gumbiene, L., Kapleriene, L., Jancauskaite, D., Laukyte-Sleniene, M., Jureviciene, E., Rudiene, V., Paleviciute, E., Mataciunas, M., Sileikiene, V. Insights to correlations and discrepancies between impaired lung function and heart failure in Eisenmenger patients. *V. Pulm Circ*. 2020 Feb 28, 10(1): 1350650120909729.

Cardio-Oncology Services: Organization and Implementation. Prof. S. Aidietienė. 2019–2023.

Cardio-oncology is a new field of cardiology, which was evolved due to a growing number of patients presenting to cardiology services during or after cancer treatment. Cardio-oncology focuses on the detection, monitoring, and treatment of cardiovascular disease occurring as a side effect of cancer treatment, which can cause cardiac dysfunction, hypertension, ischemia, valvular and pericardial disease, thromboembolism and arrhythmias and are the primary cause of morbidity and mortality in the oncologic population. The main goal is to determine the cardiovascular risk of cancer patients, to diagnose the early cardiovascular dysfunction during cancer treatment and provide appropriate prevention and treatment of cardiotoxicity. During 2020, 265 patients were consulted (167 initial and 98 re-consultations). For the research purposes, data of 418 consulted cancer patients' was collected; twelve patients were enrolled in the prospective randomized, open-label trial "Ivabradine to Prevent Anthracycline-induced Cardiotoxicity" (Eudra CT No 2019-000661-20).

Main publications:

Čelutkienė, J., Pudil, R., López-Fernández, T., Grapsa, J., Nihoyannopoulos, P., Bergler-Klein, J., Cohen-Solal, A., Farmakis, D., Tocchetti, C. G., von Haehling, S., Barberis, V., Flachskampf, F. A., Čeponienė, I., Haegler-Laube, E., Suter, T., Lapinskas, T., Prasad, S., de Boer, R. A., Wechalekar, K., Anker, M. S., Iakobishvili, Z., Buccarelli-Ducci, C., Schulz-Menger, J., Cosyns, B., Gaemperli, O., Belenkov Y, Hulot JS, Galderisi M, Lancellotti P, Bax J, Marwick TH, Chioncel O, Jaarsma T, Mullens, W., Piepoli, M., Thum, T., Heymans, S., Mueller, C., Moura, B., Ruschitzka, F., Zamorano, J. L., Rosano, G., Coats, A. J. S., Asteggiano, R., Seferovic, P., Edvardsen, T., Lyon, A. R. The role of cardiovascular imaging in cancer patients receiving cardiotoxic therapies: a Position statement on behalf of the Heart Failure Association (HFA), the European Association of Cardiovascular Imaging (EACVI) and the Cardio-Oncology Council of the European Society of Cardiology (ESC). *European Journal of Heart Failure*. 2020 Jul 4. DOI: 10.1002/ejhf.1957.

Pudil, R., Mueller, C., Čelutkienė, J., Henriksen, P. A., Lenihan, D., Dent, S., Barac, A., Stanway, S., Moslehi, J., Suter, T. M., Ky, B., Štěrba, M., Cardinale, D., Cohen-Solal, A., Tocchetti, C. G., Farmakis, D., Bergler-Klein, J., Anker, M. S., Von Haehling, S., Belenkov, Y., Iakobishvili, Z., Maack, C., Ciardiello, F., Ruschitzka, F., Coats, A. J. S., Seferovic, P., Lainscak, M., Piepoli, M. F., Chioncel, O., Bax, J., Hulot, J. S., Skouri, H., Hägler-Laube, E. S., Asteggiano, R., Fernandez, T. L., de Boer, R. A., Lyon, A. R. The role of serum biomarkers in cancer patients receiving cardiotoxic cancer therapies: a position statement from the Cardio-Oncology Study Group of the Heart Failure Association and Cardio-Oncology Council of the European Society of Cardiology. *European Journal of Heart Failure*. 2020 Oct 2. DOI: 10.1002/ejhf.2017.

Čiburienė, E., Čelutkienė, J., Aidietienė, S., Ščerbickaitė, G., Lyon A. R. The prevalence of iron deficiency and anaemia and their impact on survival in patients at a cardio-oncology clinic. *Cardio-Oncology Journal*. 2020, 29.

National Research Projects

EU Structural Funds. **Assessment of Myocardial Structural Changes and Their Prognostic Significance in Patients with Severe Degenerative Aortic Stenosis** (No 09.3.3-LMT-K-712). Assoc. Prof. S. Glaveckaite. 2018–2021.

The ongoing scientific project is a prospective, open, case-driven, multicentre study (Lithuania, Denmark). The main goal of the project is to improve qualification of researchers by mastering new imaging technologies for assessing myocardial structural changes. In 2020, additional 36 patients were enrolled at Lithuanian site (72 in total) and a total of 35 patients were enrolled at the Denmark site. 29 patients have completed their one year post-operative follow-up visit with repeated CMR scanning.

Main publications:

Balčiūnaitė, G., Palionis, D., Žurauskas, E., Skorniakov, V., Janušauskas, V., Zorinas, A., Zaremba, T., Valevičienė, N., Aidietis, A., Šerpytis, P., Ručinskas, K., Sogaard, P., Glaveckaitė, S. Prognostic value of myocardial fibrosis in severe aortic stenosis: study protocol for a prospective observational multi-center study (FIB-AS). *BMC Cardiovasc Disord.* 2020 Jun 8, 20(1): 275. DOI: 10.1186/s12872-020-01552-8.

Balčiūnaitė, G., Skorniakov, V., Rimkus, A., Zaremba, T., Palionis, D., Valevičienė, N., Aidietis, A., Šerpytis, P., Ručinskas, K., Sogaard, P., Glaveckaitė, S. Prevalence and prognostic value of late gadolinium enhancement on CMR in aortic stenosis: meta-analysis. *European Radiology.* 2020, 30(1): 640–651.

Balčiūnaitė, G., Rimkus, A., Žurauskas, E., Zaremba, T., Palionis, D., Valevičienė, N., Aidietis, A., Šerpytis, P., Ručinskas, K., Sogaard, P., Glaveckaitė, S. Transthyretin cardiac amyloidosis in aortic stenosis: prevalence, diagnostic challenges and clinical implications. *Hellenic Journal of Cardiology.* 2020, 61(2): 92–98.

EU Structural Funds. **Optimization of Diagnosis and the Creation of Treatment Strategy for Type 2 Myocardial Infarction** (No 09.3.3-LMT-K-712-01-0148). Prof. P. Šerpytis. 2018–2021.

The aim of this study is to improve the diagnosis of type 2 MI, to evaluate the benefits of new laboratory and instrumental investigations and to evaluate different patient treatment strategies. Based on our data, this randomized study will be analyzing a wide range of diagnostic tests and treatment strategies. It is the first randomized study of its kind in Lithuania and in the world.

Systemic analysis of Myocardial Infarction with Nonobstructive Coronary Arteries (MINOCA) was performed. Additional data is added when available. Type 2 myocardial infarction diagnosis and treatment guidelines were prepared. Diagnosis and treatment algorithm was created. Patient screening and randomization to the study is continued. Clinical trial was registered at www.clinicaltrials.gov. Study No. NCT04538924. Oral presentation „Microcirculation and MINOCA. Searching for the final diagnosis” was presented at international conference “5th meeting of Baltic Society of Cardiovascular Magnetic Resonance”, 18 September 2020.

Main publications:

Zeitouni, M., Akin, I., Desch, S., Barthélémy, O., Brugier, D., Collet, J. P., de Waha-Thiele, S., Greenwood, J. P., Guedeney, P., Hage, G., Hauguel-Moreau, M., Huber, K., Kerneis, M., Noc, M., Oldroyd, K. G., Piek, J. J., Rouanet, S., Savonitto, S., Šerpytis, P., Silvain, J., Stepinska, J., Vicaut, E., Vrints, C. J., Windecker, S., Zeymer, U., Thiele, H., Montalescot, G., CULPRIT-SHOCK trial investigators. Clinical outcomes according to ECG presentations in infarct-related cardiogenic shock in CULPRIT-SHOCK. *Chest.* 2020 Nov 25, S0012-3692(20)35300-9. DOI: 10.1016/j.chest.2020.10.089.

Wijntjens, G.W., Fengler, K., Fuernau, G., Jung, C., den Uil, C., Akin, S., van de Hoef, T. P., Šerpytis, R., Diletti, R., Henriques, J. P., Šerpytis, P., Thiele, H., Piek, J. J. Prognostic implications of microcirculatory perfusion versus macrocirculatory perfusion in cardiogenic shock: a CULPRIT-SHOCK substudy. *European Heart Journal: Acute Cardiovascular Care.* 2020, 9(2): 108–119.

Claeys, M. J., Roubille, F., Casella, G., Zukermann, R., Nikolaou, N., De Luca, L., Gierlotkaa, M., Iakobishvili, Z., Thiele, H., Koutouzis, M., Sionis, A., Monteiro, S., Beauloye, C., Held, C., Tint, D., Zakke, I., Šerpytis, P., Babic, Z., Belohlavev, J., Magdy, A., Rasalingam, M. S., Daly, K., Arroyo, D., Vavlukis M., Radovanovic N., Trendafilova E., Marandi T., Hassenger C., Lettino M., Price S., Bonnefoy, E. Organization of intensive cardiac care units in Europe: Results of a multinational survey. *European Heart Journal: Acute Cardiovascular Care.* 2020 Jan 24: 2048872619883997. DOI: 10.1177/2048872619883997.

Personalized Identification and Management of Paroxysmal Atrial Fibrillation Triggers Using Wearable Technology – TriggersAF (01.2.2-LMT-K-718 -03-0027). Leader Prof. V. Marozas (KTU), main investigator from VU: Prof. A. Aidietis. 2020–2023.

Triggers AF aim to identify individual triggers of atrial fibrillation (AF). Some preliminary objective and subjective triggers which provoke AF episodes have been identified. As there is a lack of appropriate technologies allowing to register AF profiles and both objective and subjective AF triggers synchronously, therefore project aims to investigate reliability while recording the profiles of paroxysmal AF by using wrist-worn device; to create prototype of AF triggers recognition and management system; to find the relation between AF profiles and both subjective and objective AF triggers. In 2020, the team has already successfully acquired the bioethics approval. Currently a deep analysis of the most suitable control ECG devices for the project is taking place.

Multiscale Mathematical and Computer Modelling for Flows in Networks: Application to Treatment of Cardiovascular Diseases (No 09.3.3-LMT-K-712-17-0003). Principal research members from VU: Prof. Audrius Aidietis, Prof. Sigita Aidietienė. 2020–2023.

It is an interdisciplinary project between applied mathematics and medicine. The idea of the research project is to provide new fast and effective mathematically justified numerical strategy for multiscale modelling of the bloodstream in the network of vessels and for cardiac valves. The motivation of the project is related to the applications in hemodynamics, in particular, it should be useful for a choice of an optimal strategy of the cardiac valve surgery, of fast thrombolysis, especially in the case of pulmonary emboli, and other manipulations related to cardiovascular diseases. The multi-disciplinary team is composed of worldwide known leaders in mathematics with biological applications, computer science and cardiology surgery.

During 2020, the following tasks were performed: derivation and analysis of nonlinear for macroscopic pressure on the graph of a network of vessels in the case of non - Newtonian rheology. Numerical modelling of the problem on the graph. Development of numerical strategy of partial asymptotic dimension reduction for Newtonian and non-Newtonian flows in a network of vessels. Analysis of weak formulations for the hybrid dimension models of flows in networks: without pressure and with reconstruction of the pressure.

International Research Project

COST Action No. CA18216. **Network for Research in Vascular Ageing**. Leader: Prof. A. Laucevičius. 2019–2023.

The tasks performed of Lithuanian scientists participating in this project:

- 1) active participation in educational online meetings and workinggroups;
- 2) participation in CARTESIAN - COVID-19 effects on ARTERial Stiffness and vascular AgiNg project, Lithuanian group, aiming to analyse COVID19 influence on vascular ageing;
- 3) educational video “Why do some people display early vascular ageing?”, Agne Laucyte-Cibulskiene, MD, PhD,
<https://www.youtube.com/watch?v=hN09SedgOIM&feature=youtu.be>;
- 4) participating in writing guidelines for vascular ageing determining and paper on vascular ageing, planned publication 2021 Journal of Hypertension (ISI) in January.

Covid-19 Effects on ARTERial Stiffness and Vascular AgiNg (CARTESIAN) Study, COST Action 18216. Network for Research in Vascular Ageing. Coordinator of Lithuanian research group: researcher Dr A. Laucyte-Cibulskiene. 2020–2022.

The purpose of the study is to evaluate the presence of early vascular aging 6 months and 12 months after COVID-19 infection. The tasks foreseen: to evaluate whether an accelerated vascular ageing is associated with COVID-19 and whether vascular ageing is further accelerated as a function of COVID-19 severity and of pre-existing cardiometabolic disease and background treatments; whether psychosocial factors play a role in COVID-19-induced accelerated vascular ageing process. In 2020, the team participated in the workshops to discuss the feasibility of joining the project; as well it participated in creating the local protocols for the study procedure.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

Ghent University Hospital, Ghent (Belgium)

Cardiovascular Research Institute Maastricht (CARIM), Maastricht University Medical Centre, Maastricht (the Netherlands)

Southampton University Hospital, Wessex Cardiothoracic Centre (England)

Department of Cardiothoracic Surgery, University of Pittsburgh Physicians, Pittsburgh (USA)

OTHER RESEARCH ACTIVITIES

Prof. Dr Habil. A. Laucevičius –

- member of American College of Cardiology (FACC);
- fellow of the European Society of Cardiology (FESC);
- member and fellow of North American Society of Pacing and Electrophysiology (NASPE);
- member of the Lithuanian Academy of Sciences;
- member of the Lithuanian Society of Cardiology;
- editorial board member of the journals *Medicina; Internistas (Internist); Mediterranean Journal of Pacing and Electrophysiology (MESPE); Journal of Human Hypertension; Blood Pressure; Cardiology Management; Cardiology Journal (Folia Cardiologica);*
- managing editor of the journal *Seminars in Cardiovascular Medicine;*
- international editorial board member of the journal *Europace (ESC).*

Prof. Dr A. Aidietis –

- member of Lithuanian Society of Thoracic and Cardiac Surgeons;
- member of Scandinavian Association for Thoracic Surgery;
- editorial board member of the journal *Seminars in Cardiovascular Medicine;*
- editorial board member of the journal *Acta Medica Lituanica;*
- FESC, European Society of Cardiology.

Prof. Dr J. Čelutkienė –

- President of Lithuanian Society of Cardiology;
- member of Lithuanian Heart Association;
- member of European Society of Cardiology;
- member of Heart Failure Association of the ESC;
- member of European Association of Echocardiography;
- Head of Heart Failure working group of Lithuanian Society of Cardiology;
- Fellow of the European Society of Cardiology;
- board member of the Heart Failure Association of the ESC;
- member of American College of Cardiology (FACC).

Prof. Dr G. Davidavičius –

- member of Lithuanian Association for Interventional Cardiology;
- European Society of Cardiology TransCatheter Valve treatment (TCVT) Registry Steering Committee member.

Prof. Dr V. Grabauskienė –

- National coordinator of Euro Heart Survey Programme (ESC);
- fellow of the European Society of Cardiology (FESC);
- member of the European Association of Echocardiography (EAE) of the ESC;
- member of the Heart Failure Association (HFA) of the ESC;
- member of the American Society of Echocardiography;
- UEMS (European Union of Medical Specialist) Diploma of European Cardiologist Nr.52546;

- member of the European Association for Predictive, Preventive and Personalized Medicine (EPMA);
- member of Lithuanian Society of Thoracic and Cardiac Surgeons.

Prof. Dr G. Marinskis –

- editor-in-Chief of the journal *Seminars in Cardiovascular Medicine*;
- member of the Credentials Committee;
- European Society of Cardiology - Member of Fellowship Committee;
- European Heart Rhythm Association - Member of Nomination Committee;
- board member of Lithuanian Heart Association;
- Chairman of Heart Rhythm workgroup at Lithuanian Society of Cardiology.

Prof. Dr Ž. Petrulionienė –

- Nucleus member of the Primary Care and Risk Factor Management Section of the European Association of Preventive Cardiology (EAPC) for the 2020-2022 Mandate;
- board member of International Atherosclerosis Society (IAS);
- President Elect of Baltic Society of Atherosclerosis (BAS); board member of BAS;
- fellow of European Society of Cardiology (FESC);
- member of International Lipid expert Panel (ILEP);
- member of European Society of Atherosclerosis (EAS);
- member of International Atherosclerosis Society (IAS);
- Ivory member of European Association of Preventive Cardiology (EAPC);
- Professional Associate of American Heart Association and American Stroke Association;
- editorial board member of the journal *Seminars in Cardiovascular Medicine*;
- editor of chapter *Cardiologic Seminars* of the journal *Internistas (Internist)*.

Prof. Dr K. Ručinskis –

- member of European Association for Cardio-Thoracic Surgery;
- member of Scandinavian Association for Thoracic Surgery;
- board member of Lithuanian Society of Thoracic and Cardiac Surgeons;
- editorial board member of the journal *Lietuvos chirurgija (Lithuanian Surgery)*.

Prof. Dr P. Šerpytis –

- fellow of the European Society of Cardiology;
- chairman of Intensive Cardiac Care workgroup at Lithuanian Society of Cardiology;
- member of Lithuanian Heart Association;
- member of Lithuanian Society of Cardiology;
- expert of Lithuanian Research Council;
- editorial board member of the journal *Sveikatos mokslai*;
- scientific board member of the journal *Emergency Medicine Service*;
- editorial board member of the journal *International Heart and Vascular Disease Journal*.

Prof. Dr V. Tarutis –

- member of Scandinavian Association for Thoracic Surgery;
- board member of Lithuanian Society of Thoracic and Cardiac Surgeons;
- editorial board member of the journal *Lietuvos chirurgija (Lithuanian Surgery)*.

Prof. Dr A. Aidietienė –

- member of the European Society of Cardiology;
- board member of Lithuanian Heart Association;
- member of Lithuanian Society of Cardiology.

Associate Prof. Dr S. Glaveckaitė –

- member of European Society of Cardiology for Valvular Heart Diseases and Cardiovascular Magnetic Resonance working groups;
- Chairman of imaging workgroup at Lithuanian Society of Cardiology;
- member of Lithuanian Heart Association.

Associate Prof. Dr G. Kalinauskas –

- member of European Association for Cardio-Thoracic Surgery;
- member of Scandinavian Association for Thoracic Surgery;
- President of Lithuanian Society of Thoracic and Cardiac Surgeons;
- Chairman of Cardiac Surgery workgroup at Lithuanian Society of Cardiology.

Associate Prof. Dr R. Karalius –

- member of the European Society for Cardiovascular Surgery;
- member of Scandinavian Association for Thoracic Surgery;
- member of Lithuanian Society of Thoracic and Cardiac Surgeons;
- member of the Society of Lithuanian Surgeons;
- member of the Society of Cardiology of Lithuania.

Dr L. Gumbienė –

- board member of the Lithuanian Society of Paediatric Cardiology;
- chairman of Pulmonary Artery Hypertension and Congenital Heart Disease for Adults workgroup at Lithuanian Society of Cardiology;
- member of European Society of Cardiology;
- member of Lithuanian Heart Association.

Dr L. Jurgauskienė –

- member of European Respiratory Society;
- member of European Federation for Immunogenetics;
- member of Baltic Sea Society for Immunology;
- member of Lithuanian Society for Immunology;
- member of Lithuanian Society of Laboratory Medicine;
- member of Lithuanian Respiratory Society;
- member of Lithuanian Rheumatology Association.

Dr D. Liekienė –

- member of the Lithuanian Society of Paediatric Cardiology.

Dr R. Malickaitė –

- member of European Federation for Immunogenetics;
- member of International Society for Heart and Lung Transplantation;
- board member of Lithuanian Society for Immunology;
- board member of Lithuanian Society for Alergology and Clinical Immunology;
- members of Lithuanian Society of Thoracic and Cardiac Surgeons;
- member of the Lithuanian Society of Laboratory Medicine;
- member of Lithuanian Association of Transplantology.

Dr J. Misiūra –

- member of Lithuanian Society of Thoracic and Cardiac Surgeons;
- member of the ESC Working Group of Heart Failure.

Dr B. Vaišnytė –

- member of Lithuanian Society for Vascular Surgery;
- member of German-Baltic Medical Association;
- member of Lithuanian Society of Surgeons.

Dr A. Valaika –

- board member of Lithuanian Society of Thoracic and Cardiac Surgeons.

Dr R. Vaitkevičius –

- member of Lithuanian Society for Vascular Surgery;
- member of Baltic Society of Phlebology.

Dr G. Vilkevičius –

- editorial board member of the journal *Flebologija*;
- member of European Federation of Societies for Ultrasound in Medicine and Biology;
- member of Lithuanian Society for Vascular Surgery;
- vice-president of Lithuanian Society for Phlebology;
- member of Lithuanian Association of Ultrasound Diagnostics.

Dr G. Račkauskas –

- member of American College of Cardiology (FACC);
- fellow of the European Society of Cardiology (FESC);
- member of Lithuanian Heart Association;
- member of Lithuanian Society of Cardiology.

Dr A. Skrebūnas, G. Vaitėnas –

- members of Lithuanian Society for Vascular Surgery.

Prof. Dr A. Aidietis, Prof. Dr V. Grabauskienė, Prof. Dr G. Marinskis, Prof. Dr G. Davidavičius, Associate Prof. Dr B. Petrauskienė, Dr J. Badarienė, Associate Prof. Dr J. Barysienė, Dr G. Burneikaitė, Dr I. Butkuvienė, Dr A. Čypienė, Dr R. Čypienė, Dr R. Kūgienė, Dr D. Liekienė, Dr V. Maneikienė, Dr J. Misiūra, Dr L. Ryliškytė, Dr E. Rinkūnienė, Dr P. Semėnienė, Dr R. Navickas

- members of European Society of Cardiology;
- members of Lithuanian Heart Association;
- members of Lithuanian Society of Cardiology.

Dr R. Čypienė, M. Budra, Dr I. Butkuvienė, E. Gaižauskas, Dr L. Gumbienė, Dr V. Lebetkevičius, A. Lipnevičius, Dr D. Liekienė, Dr V. Maneikienė, Dr P. Semėnienė, Dr R. Sipavičius, A. Zorinas

- members of Lithuanian Society of Thoracic and Cardiac Surgeons.

MOST IMPORTANT PARTICIPATION CASES OF RESEARCHERS IN WORKING GROUPS OR COMMISSIONS SET UP BY STATE AUTHORITIES, STATE AND MUNICIPAL INSTITUTIONS AND ORGANISATIONS, AND BUSINESS ENTITIES

Prof. Dr J. Čelutkienė –

- board member of Heart Failure Association of the ESC (HFA of the ESC)];
- member of ESC Congress Program Committee;
- member of ESC Membership Committee.

Prof. Dr P. Šerpytis –

- member of working group of Lithuanian Health Ministry of law number V-208 (dated April 8th, 2004) “For ratification of the emergency medicine care and emergency medicine service provision order and extent”;
- member of working group of Emergency medicine service for traumas and other external conditioned injuries (Trauma cluster);

- member of working group of “Formation health supervision administrative comity for integrated pathologies in health supervision control council for cardiology, oncology, stroke and perinathology” (Cardiology cluster);
- member of working group for use of ECMO system in emergency medicine service.

Prof. Dr Ž. Petrulionienė –

- National Leader of world-wide International Familial Hypercholesterolemia Project EAS FHSC (Global EAS FH Studies Collaboration, Project leader Prof. Kausik Ray);
- National Leader of International Familial Hypercholesterolemia Project ScreenPro FH (Screening Project for Familial Hypercholesterolemia in Central, Southern and Eastern Europe, Project leader Prof. Richard Ceska);
- Independent External Expert appointed by European Commission for the project evaluations.

MOST IMPORTANT RESEARCH DISSEMINATION ACTIVITIES

- Heart Failure Awareness Days – May 2020
- The world Heart Day (World Heart federation) – 29 September 2020; Vilnius, Kaunas, Šiauliai, Panevėžys, Klaipėda
- World Hypertension Day, 17 May 2020
- Campaign on Hypertension information (17 May 2020–27 September 2020)

Clinic of Children's Diseases

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Head – Prof. Dr *Augustina Jankauskienė*

STAFF

Professors: Dr R. Čerkauskienė, Dr R. Ėmužytė, Dr A. Jankauskienė, Dr O. Rudzevičienė, Dr V. Urbonas, Dr Habil. V. Usonis, Dr Habil. A. Valiulis.

Associate professors: Dr S. Burokienė, Dr N. Drazdienė, Dr J. Grikinienė, Dr A. Liubšys, Dr G. Kleintienė, Dr V. V. Panavienė, Dr S. Petraitienė, Dr J. Rascon, Dr G. E. Vaitkevičienė.

Assistant professors: Dr S. Dumčius, Dr I. Ivaškevičienė, Dr R. Ivaškevičius, Dr M. Leonavičiūtė Klimantavičienė, Dr O. Kinčinienė, Dr I. Pilypienė, Dr R. Praninskienė, Dr S. Rusonienė, Dr R. Samaitienė, Dr I. Stacevičienė, Dr S. Šaulytė Trakymienė, Dr R. Vankevičienė, Dr V. Žilinskaitė.

Teaching assistants: I. Adomaitė, D. Kalibatienė, I. J. Paulavičienė, S. Sendžikaitė.

Research assistants: K. Ažukaitis, D. Ruzgienė, N. Propokčiuk.

Lecturers: R. Adomaitienė, S. Dauengauer Kirlienė, V. Gulbinienė, Dr R. Kemežys, L. Kilaitė, Ž. Makselienė, B. Paškevič, J. Parnarauskienė, H. Prunskienė, V. Radžiūnienė, D. Vaičiūnienė.

Doctoral students: I. Adomaitė, K. Ažukaitis, A. Janulionis, I. Juškienė, I. Kairienė, P. Kalibatas, D. Kalibatienė, R. Kunigėlienė, J. Navikienė, I. J. Paulavičienė, A. Pliauckienė, E. Poluziorovienė, S. Sendžikaitė, N. Stirbienė, E. Viršilas.

Students' scientific group of Pediatrics: scientific leader – Dr S. Burokienė, coordinator – student J. Jankauskaitė, 47 members.

RESEARCH INTERESTS

Air pollution and child health

Allergic rhinitis and its impact on bronchial asthma in children

Health care of mother and child: physiological and social aspects and research of natural development of the child

Studies of functional development of organs and systems of newborns and children

Studies of neonatal pathology and perinatal mortality in Lithuania

Studies of peculiarities of chronic inflammation as diagnostic markers and targets for early therapeutical intervention in children with asthma and cystic fibrosis

Studies of electric impedance tomography as new diagnostic tool in neonatal pulmonology

Development of the methods of diagnostics, treatment and prophylaxis of acute, and chronic and new emerging infectious, immune, allergic, metabolic diseases

Progression and outcomes of pediatric renal disorders

Studies of immunoprophylaxis and vaccination

Diagnostics and treatment of inherited metabolic diseases

Diagnostics, treatment and prophylaxis of children's abuse and trauma

Gut microbiota and gut brain axis

Studies on childhood cancer etiology and predisposition, identification of new therapeutical targets and criteria for treatment risk-group stratification to further improve treatment individualization and reduce the treatment burden and long-term side effects

Studies on antimicrobial stewardship in paediatrics
Studies for improving the quality of care for children and young adolescents in health facilities
Etiology and long-term outcomes of pediatric inherited and acquired pediatric kidney diseases (cystic kidney diseases, glomerulopathies, chronic kidney disease, vesicoureteral reflux)
Air pollution and child health
Allergic rhinitis and its impact on bronchial asthma in children
Health, shared decision making and other modern technologies for the management of chronic noncommunicable disease (CNDs)
Healthy ageing through the early diagnostics and prevention of CNDs
Human ecology
Development of the methods of diagnostics, treatment and prophylaxis of acute and chronic pediatric neurological and developmental disorders, research on immune, genetic, metabolic and other factors as well as the application of digital technologies, research on the distance education of children during the COVID-19 pandemic
Studies on the long-term impact of exposure to screens on children's physical and mental health

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Central Hemodynamics and Arterial Stiffness in Children with CKD. Prof. A. Jankauskiene, K. Azukaitis (PhD student). 2017–2020.

The analysis of the baseline and longitudinal follow-up data on arterial stiffness in children with chronic kidney disease has been completed, identifying modifiable and non-modifiable factors associated with higher arterial stiffness. In addition, the analysis investigating the effect of pulse wave velocity on chronic kidney disease progression and left ventricular geometry has been completed. A literature review on arterial stiffness in children with chronic kidney disease has been completed and published.

Main publication:

Azukaitis, K., Jankauskiene, A., Schaefer, F., Shroff, R. Pathophysiology and consequences of arterial stiffness in children with chronic kidney disease. *Pediatr Nephrol.* 2020 Sep 7. DOI: 10.1007/s00467-020-04732-y.

Peculiarities of Drug Hypersensitivity in Children. Prof. O. Rudzeviciene, N. Stirbiene, 2015–2025.

Results of allergy work-up in children when drug allergy is suspected and peculiarities of drug hypersensitivity reactions in children were analyzed. Parents' satisfaction with diagnostic drug provocation tests and perception of its usefulness were assessed.

Main publication:

Stirbienė, N., Rudzevičienė, O. Repeated anaphylaxis to cefuroxime in teenager and cross-reactivity to cephalosporins due to R2 side chain. *Ann Allergy Asthma Immunol.* 2020, 125(1): 101–102.

Changes in Human Milk Macronutrient Content of Non-Breastfeeding Mothers after Delivery and Factors or Procedures Affecting its Composition. Prof. V. Usonis, Assoc. Prof. A. Liubsys, PhD student I. J. Paulaviciene. 2017–2020.

The study was completed in April 2020. A total of 174 participants were included. The obtained results will be presented as a doctoral dissertation. Basic research data were published in three scientific articles.

Main publications:

Paulaviciene, I. J., Liubsys, A., Molyte, A., Eidukaite, A., Usonis V. Circadian changes in the composition of human milk macronutrients depending on pregnancy duration: a cross-sectional study. *Int Breastfeed J.* 2020, 15(1): 49.

Paulaviciene, I. J., Liubsys, A., Eidukaite, A., Molyte, A., Tamuliene, L., Usonis, V. The effect of prolonged freezing and holder pasteurisation on the macronutrient and bioactive protein compositions of human milk. *Breastfeed Med.* 2020, 15(9): 583–88.

Paulavičienė, I. J., Liubšys, A., Tamulienė, L., Vaitkevičienė, R., Molytė, A., Usonis, V. Laktacijos laikotarpis ir kiti veiksniai, turintys įtakos motinos pieno maistingųjų medžiagų sudėčiai. *Lietuvos akušerija ir ginekologija.* 2020, 23(3): 232–39.

Real Time Evaluation of Dynamic Changes of the Lungs during Respiratory Support of VLBW Neonates Using EIT. Prof. A. Valiulis, PhD student E. Viršilas. 2019–2020.

Patient recruitment to the study has been started.

Main publications:

Viršilas, E., Janulionis, A., Liubšys, A., Valiulis, A. Plaučių funkcijos vaizdavimas elektrinio impedanso tomografija: klinikinis taikymas. *Sveikatos mokslai (Health Sciences in Eastern Europe).* 2020, 30 (1): 190–96. <https://doi.org/10.35988/sm-hs.2020.032>.

Šutova, V., Janulionis, A., Drejerienė, V., Langienė, V., Viršilas, E., Valiulis, A., Leišys, R., Valiulis, A. Elektrinio impedanso tomografijos pritaikymas vertinant spontaniškai kvėpuojančių išnešiotų ir neišnešiotų naujagimių plaučių ventiliacijos ypatumus. *Sveikatos mokslai (Health Sciences in Eastern Europe).* 2020, 30(3): 5–10. <https://doi.org/10.35988/sm-hs.2020.035>.

Non-Invasive Measurement of Neonatal Central and Peripheral Hemodynamics. Prof. V. Usonis, Assoc. Prof. A. Liubsys, PhD student A. Pliauckiene. 2017–2020.

The study already enrolled 162 both preterm and full-term newborns of any gestational age. Cardiac output was measured using ultrasonic cardiac output monitor (USCOM) and echocardiography in healthy newborns and having suspected sepsis. The comparison of two methods and reference values for USCOM was made. Hemodynamics during suspected sepsis was analysed. Articles “Haemodynamic parameters study produces preterm and term-born neonatal weight-related reference values using the USCOM 1A” and “Ultrasonic cardiac output monitor provides effective non-invasive bedside measurements of neonatal cardiac output” are suggested for peer review.

The Role of Lung Ultrasound in Diagnosing Infectious Lung Diseases in Children. Prof. V. Usonis, PhD student P. Kalibatas. 2019–2023.

Literature review was performed, found articles were analysed. PhD student finished specialised lung ultrasound courses. Preliminary lung tests were performed for 12 patients.

Arterial Hypertension and Early Vascular Aging in Children after Aortic Coarctation Repair.

Prof. A. Jankauskiene (PI), PhD student S. Sendzikaite. Partners: Children’s Memorial Health Institute (Warsaw, Poland), Riga Children’s Hospital (Latvia). 2017–2021.

Data collection was finalized and the analysis and publication of the findings was started. Interim results were presented in international congresses. A publication on arterial hypertension phenotypes was published in 2020 and publication on vascular remodeling is under preparation.

Main publication:

Sendzikaite, S., [...] Jankauskiene, A., Litwin, M. Prevalence of arterial hypertension, hemodynamic phenotypes, and left ventricular hypertrophy in children after coarctation repair: a multicenter cross-sectional study. *Pediatr Nephrol*. 11 June 2020.

Timely Diagnosis of Food Allergies and Optimal Monitoring of Allergic Child Nutrition Status. Prof. Dr O. Rudzevičienė, PhD student I. Adomaite. 2017–2028.

The analysis of retrospective data on oral food challenge outcomes and diagnostic value of in vivo and in vitro allergy tests is finalizing.

The prospective analysis of nutrition, quality of life in food allergic – children, parental self-efficacy and patient enrollment is continuing.

Analysis of food allergens in skin care products marketed for children has been made and the findings were published in an international journal.

Main publication:

Adomaite, I., Vitkuvienė, A., Petraitiene, S., Rudzevičienė, O. Food allergens in skincare products marketed for children. *Contact Dermatitis*. 2020 Oct, 83(4): 271–276. DOI: 10.1111/cod.13645.

Evaluation of the Brain and Kidney Regional Blood Flow Using Near Infrared Spectroscopy (NIRS) Method in Very Low Birth Weight (<1500 g) Infants with PDA. Prof. A. Jankauskienė, Assoc. Prof. A. Liubsys, PhD student J. Navikiene. 2017–2021.

Data collection completed. Statistical analysis of the obtained data is underway. The manuscript is being prepared that will summarize the most important results of the research project. The study was retrospectively registered at clinicaltrials.com.

Main publication:

Daraskevicius, J., Azukaitis, K., Dziugeviciute-Tupko, J., Peciulyte, M., Planciunaite, R., Vaitkeviciene, G., Rascon, J. and Jankauskiene, A. Phenotypes and baseline risk factors of acute kidney injury in children after allogeneic hematopoietic stem cell transplantation. *Front. Pediatr*. 27 August 2020. <https://doi.org/10.3389/fped.2020.00499>.

Analysis and Associations of Clinical, Laboratory, Neurophysiological, Imaging and Neuropsychologic Data in Children with Neurologic Diseases. Assoc. Prof. J. Grikinienė, Dr R. Samaitienė, Dr R. Praninskiene. 2015–2025.

The multicenter study (EpExMo cooperation, an open international research initiative for the study of epilepsies with external modulation (EpExMo)) of cognitive tasks in EEG resulted in publication: Cognitive tasks as provocation methods in routine EEG: a multicenter field study.

In collaboration with the Faculty of Mathematics and Informatics the analysis of automated algorithms for EEG data extraction and classification was completed. Findings were summarized in an article.

Main publication:

Misiukas Misiūnas, A. V., Rapševičius, V., Samaitienė, R., Meškauskas, T. Electroencephalogram spike detection and classification by diagnosis with convolutional neural network. *Nonlinear Analysis: Modelling and Control*. 2020, 25(4): 692–704.

Significance of Biochemical and Immunological Markers in Amniotic Fluid in Predicting Intrauterine Infection. Dr I. Pilypiene, V. Gulbinienė. 2017–2021.

This project will evaluate immunological markers in amniotic fluid by non-invasive method, collecting them transvaginally. The study will seek to determine the cut-off values of immunological markers for FIRS. The cut-off values would help in clinical practice, using them in diagnostic and treatment algorithms.

Acute Kidney Injury in Children after Allogeneic Hematopoietic Stem Cell Transplantation.

Prof. A. Jankauskiene, Assoc. Prof. G. Vaitkeviciene, Assoc. Prof. J. Rascon, K. Azukaitis. 2017–2020.

Data analysis has been completed. The results on the prevalence and risk factors of acute kidney injury for the first 100 days after allogeneic HSCT have been summarized in a manuscript and published.

Main publication:

Daraskevicius, J., Azukaitis, K., Dziugeviciute-Tupko, J., Peciulyte, M., Planciunaite, R., Vaitkeviciene, G., Rascon, J., Jankauskiene, A. Phenotypes and baseline risk factors of acute kidney injury in children after allogeneic hematopoietic stem cell transplantation. *Front Pediatr.* 2020 Aug 27, 8: 499.

National Research Projects

Research Council of Lithuania. **School AQR Seasonal Peculiarities of In-door Air Pollution and Its Impact on Respiratory Morbidity and Allergy of Primary School Children.** Prof. A. Valiulis, Assoc. Prof. V. Kvedarienė, I. Juškienė. 2019–2022.

SchoolAQR project is prospective study of air pollution in primary schools and its impact on health of children. Gaseous and particulate pollutants as well as bioaerosols such as mold and fungi are measured seasonally in Vilnius (Lithuania) schools since May 2020 till December 2022. Validated clinical questionnaires, quality of life and fatigue questionnaires as well as NO concentration in exhal air are recorded repeatedly. Project is realised by Vilnius University (Lithuania, leading organization), Siauliai University (Lithuania), Helmholtz Centre for Environmental Research - UFZ (Leipzig, Germany), Center of Innovative Allergology (Vilnius, Lithuania), Vilnius University Center of Life Sciences (Lithuania), Nature Research Centre (Vilnius, Lithuania). Current project is based on our previous pilot study (*Environ Sci Pollut Res*, 2020; *Chin Med J*, 2020).

Main publications:

Prokopciuk, N., [...] Valiulis, A. Global alliance against chronic respiratory diseases demonstration project: aerosol pollution and its seasonal peculiarities in primary schools of Vilnius. *Chin Med J (Engl)*. 2020 Jul 5, 133(13): 1516–1525.

To, T., [...] Valiulis, A., [...] Yorgancioglu, A. A global respiratory perspective on the COVID-19 pandemic: commentary and action proposals. *Eur Respir J*. 2020 Jul 23, 56(1): 2001704.

Prokopciuk, N., [...] Valiulis, A., [...] Ulevicius, V. On the seasonal aerosol pollution levels and its sources in some primary schools in Vilnius, Lithuania. *Environ Sci Pollut Res Int*. 2020 May, 27(13): 15592–15606.

Markers of Gut Microbiota and Gut Microbiota Modulation in Autism-Spectrum Disorders.

Research Council of Lithuania (Co-funded by the EU Structural Funds). A. Burokas, V. Urbonas, D. Varnas, A. Aučynaitė, M. Sadauskas, L. Kalinienė and others. Started in October 2020.

The project aims to study the efficacy of microbiota transplantation in children with autism-spectrum disorders and to determine potential gut microbiota biomarkers-targets, in order to create a system that allows for timely detection, control and monitoring of these biomarkers.

Research Council of Lithuania (Co-funded by the EU Structural Funds). **Studies of Remote Childhood Education during a Pandemic on Covid-19: Threats and Opportunities from an Ecosystem Point of View.** R. Jusienė, V. Urbonas, I. Adomaitytė Subačienė, V. Būdienė, J. Buzaitytė-Kašalynienė, G. Gintilienė, S. Girdzijauskienė, V. Grabauskienė, S. Kairė, R. Praninskienė, E. Ruschhoff, I. Stonkuvienė, J. Žėkaitė. 2020–2021.

Surveys for parents, teachers, primary and high school students have been prepared. A total of 257 teachers, 329 children, 1,120 parents have been surveyed. Data is currently being analysed and results are being prepared for publications, and reported to the government of Lithuania.

National Public Health Strengthening Fund. **Studies on the Long-term Impact of Exposure to Screens on Children's Physical and Mental Health.** R. Jusienė, V. Urbonas, R. Praninskienė, I. Laurinaitytė, E. Baukienė. 2020–2022.

Research Council of Lithuania (Co-funded by the EU Structural Funds). **Studies on the Virulence Potential of Meningococcal Isolates: Implications for an Improved Molecular Diagnostics of Invasive Meningococcal Disease.** Research leader: M. Plečkaitytė, principal members: Žvirblienė A., Ivaškevičienė I. and others. Started in October 2020.

Research Council of Lithuania. **Prognostic Value of Biomarkers for Graft vs Host Disease in Pediatric Hematopoietic Stem Cell Transplantation in Children.** Assoc. Prof. J. Rascon, PhD student I. Kairienė. 2020-ongoing.

Project received funding approval in 2020. Study documentation and protocol are being prepared.

International Research Projects

Leonardo da Vinci project & Lithuanian Council of Science. **Alfa-1-Qual Introducing Standards of the Best Medical Practice for the Patients with Inherited Alpha-1 Antitrypsin Deficiency in Central Eastern Europe.** Prof. A. Valiulis, T. Alasevičius, E. Poluziorovienė. 2011–2013 ext 2019–2024.

Research Council of Lithuania & IPOKRATES Lithuania Fund. **e-QoL Asthma Health Related Paediatric Asthma Quality of Life in Eastern Europe.** Prof. A. Valiulis, V. Taminskienė. 2013–2017 ext 2019–2022.

EU Grants and private sponsorship. **ARIA Allergic Rhinitis and Its Impact on Asthma.** Prof. A. Valiulis, Assoc. Prof. V. Kvedarrienė, Prof. R. Dubakienė, Prof. R. Ėmužytė. 2015-ongoing.

Elaboration and implementation of COVID-19 App based on MASK Air App. The main task is self-assessment of symptoms and differentiation between COVID-19, allergic rhinitis and common cold.

Main publications:

Bousquet, J., [...] Valiulis, A., [...] Agache, I. ARIA-EAACI statement on asthma and COVID-19. *Allergy*. 2020 Jun 26: 10.1111/all.14471.

Klimek, L., [...] Valiulis, A., [...] Zuberbier, T., ARIA-MASK Study Group. Handling of allergen immunotherapy in the COVID-19 pandemic: An ARIA-EAACI statement. *Allergy*. 2020 Jul, 75(7): 1546–1554.

Bousquet, J., [...] Valiulis, A., [...] Zuberbier, T., ARIA-MASK study group. Intranasal corticosteroids in allergic rhinitis in COVID-19 infected patients: An ARIA-EAACI statement. *Allergy*. 2020 Mar 31.

EU Action Plan B3 / DG Sante & DG Connect. **MASK-air MACVIA ARIA Sentinel Network for Airway Diseases.** Prof. A. Valiulis, Assoc. Prof. V. Kvedarrienė, Prof. R. Dubakienė Prof. R. Ėmužytė. 2015-ongoing.

Implementation and publication of research data done earlier.

Main publications:

Papadopoulos, N. G., [...] Valiulis, A., Zar, H. J., Pediatric Asthma in Real Life Collaborators. Impact of COVID-19 on pediatric asthma: practice adjustments and disease burden. *J Allergy Clin Immunol Pract.* 2020 Sep, 8(8): 2592–2599.e3.

Bousquet, J., [...] Valiulis, A., [...] Zidarn, M. ARIA digital anamorphosis: digital transformation of health and care in airway diseases from research to practice. *Allergy.* 2020 Jun 8.

Bousquet, J., Farrell, J., Illario, M., ARIA-MASK study group [incl. Valiulis A]. Aligning the good practice MASK with the objectives of the European Innovation Partnership on Active and Healthy Ageing. *Allergy Asthma Immunol Res.* 2020 Mar, 12(2): 238–258.

E. RA-EDTA, German Federal Ministry of Education and Research. **4C Study Cardiovascular Comorbidity in Children with Chronic Kidney Disease.** Prof. A. Jankauskiene, Prof. R. Cerkauskiene, K. Azukaitis. 2014-ongoing.

Data collected during the study is being analyzed, including biomarkers of cardiovascular stress in children with CKD and various aspects of arterial stiffness. A follow-up study coordinated by K. Azukaitis has been launched and surveys are being actively collected.

Main publications:

Holle, J., [...] Azukaitis, K., [...] Jankauskiene, A., [...] Schaefer, F., 4C Study Consortium. Serum indoxyl sulfate concentrations associate with progression of chronic kidney disease in children. *PLoS One.* 2020 Oct 27, 15(10): e0240446.

Schön, A., [...] Azukaitis, K., [...] Haffner, D. Active vitamin D is cardioprotective in experimental uraemia but not in children with CKD Stages 3-5. *Nephrol Dial Transplant.* 2020 Nov 26: gfaa227.

Azukaitis, K., Schaefer, F. Targeting tubulointerstitium to predict kidney outcomes in childhood nephrotic syndrome. *Kidney Int Rep.* 2020 Jan 21, 5(4): 383–385.

van den Belt, S. M., [...] Azukaitis, K., [...] Schaefer, F. Discontinuation of RAAS inhibition in children with advanced CKD. *Clin J Am Soc Nephrol.* 2020 May 7, 15(5): 625–632.

ALLTogether - A Treatment Study Protocol of the ALLTogether Consortium for Children with Newly Diagnosed Acute Lymphoblastic Leukaemia (ALL). Assoc. Prof. J. Rascon, G. Vaitkeviciene, G. Kleinotiene, S. Saulyte-Trakymiene. 2019–2022.

The main observational study started in 2020 with the full scope of PK/PD studies and interventions, including three randomisations.

TOO-CUTE International Study Outcome of Children with Urinary Tract Infection due to Extended Spectrum Beta-Lactamase-Producing Bacteria in Europe. Prof. R. Cerkauskiene. 2018–2020 (study initiator: St George Hospital, UK).

Data collection and analysis have been completed

Main publication:

Vazouras, K., [...] Cerkauskiene, R., [...] Basmaci, R. Treatment and outcomes of children with febrile urinary tract infection due to extended spectrum Beta-lactamase-producing bacteria in Europe: TOO CUTE Study. *Pediatr Infect Dis J.* 2020 Dec, 39(12): 1081–1087.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

University of Heidelberg (Germany)

University of Cologne (Germany)

University of Bologna (Italy)

Bambino Gesù Hospital, Rome (Italy)
Karolinska Institutet and Karolinska University Hospital (Sweden)
Universitätsklinikum Hamburg-Eppendorf (UKE), Hamburg (Germany)
Instytut "Pomnik - Centrum Zdrowia Dziecka", Warsaw (Poland)
PENTA Foundation (Italy)
Harvard University, Harvard Medical School and Boston Children's Hospital (USA)
Riga Children's Hospital and Riga Stradins University (Latvia)
Children's Hospital of Philadelphia (USA)
Poltava University (Ukraine)
Kyiv Medical University (Ukraine)
Montpellier University (France)
Aberdeen University (UK)
London Imperial College (UK)
Great Ormond Street Hospital (UK)
Leuven University (Belgium)
Columbia University (USA)
Zurich University (Switzerland)

OTHER RESEARCH ACTIVITIES

Prof. A. Jankauskienė –

- member of European Pediatric Nephrology Society Council;
- leader of Vilnius Reference Centre for European Rare Kidney Disease;
- member of ESCAPE Pediatric Nephrology Research Consortium;
- president of Lithuanian Society for Paediatric Nephrology;
- member of Lithuanian Nephrology, Dialysis and Transplantation Association;
- member of International Paediatric Nephrology Association;
- member of Dialysis working group of the European Society for Paediatric Nephrology;
- member of International Paediatric Hypertension Association;
- member of Lithuanian Paediatric Society;
- member of Regional Bioethical Committee;
- member of organising committee of international conference "BHK2020";
- editorial board member of the journals *Pediatrija. Acta Medica Lituanica*.

Prof. Dr Habil. V. Usonis –

- member of Central European Vaccination Advisory Group (CEVAG);
- expert on vaccine-related issues at the European Disease Control Centre (ECDC);
- expert of the Research Council of Lithuania;
- member of the European Society of Paediatric Infectious Diseases (ESPID);
- board member of the Lithuanian Paediatric Society;
- chairman of Lithuanian Committee for Poliomyelitis Eradication Certification;
- editorial board member of the *Paediatric Infectious Disease Journal*;
- editorial board member of the journal *Vaikų pulmonologija ir alergologija (Paediatric Pulmonology and Allergology)*;
- editorial board member of the journal *Pediatrija (Paediatrics)*.

Prof. R. Čerkauskienė –

- vice-president of Lithuanian Society for Paediatric Nephrology;

- member of Lithuanian Nephrology, Dialysis and Transplantation Association;
- member of European Society Pediatric Nephrology (ESPN)
- member of International Paediatric Nephrology Association (IPNA);
- member of International society of nephrology (ISN)
- member of Vilnius Paediatric Society;
- member of International Pediatric PD Biobank;
- member of Oxaleurope;
- member of International Alport Mutation Collaborative Group;
- member of Workgroup Metabolic Nephropathies & Stone Disorders, (ERKNet, The European Rare Kidney Disease Reference Network), <https://www.erknet.org>;
- editorial board member of the journal *Pediatrija* (Paediatrics);
- organising committee member of the international conference “BHK2020”;
- organising committee member of the Virtual 2nd Baltics Fabry expert meeting, 30 October 2020.

Prof. R. Ėmužytė –

- editorial board member of the journals: *Vaikų pulmonologija ir alergologija* (Paediatric Pulmonology and Allergology); *Alergologija ir klinikinė imunologija* (Allergology and Clinical Immunology); *Medinfo*; *Pediatrija* (Paediatrics);
- international editorial board member of the journal *Alergia astma immunologia* (Allergy Asthma Immunology) (Poland);
- Lithuanian representative in European Training Committee of Paediatric Allergology;
- national representative of European ARIA (Allergic Rhinitis and Its Impact on Asthma) Committee;
- member of the Lithuanian Society of Allergology and Clinical Immunology.

Prof. O. Rudzevičienė –

- board member of the Lithuanian Paediatric Society;
- Lithuanian representative in European Training Committee of Paediatric Allergology;
- member of the European Academy of Allergology and Clinical Immunology;
- member of Lithuanian Society of Paediatric Allergology;
- member of the Lithuanian Society of Allergology and Clinical Immunology;
- editorial board member of the journal *Vaikų pulmonologija ir alergologija* (Paediatric Pulmonology and Allergology);
- editorial board member of the journal *Pediatrija* (Paediatrics);
- INUNIMAI (International Network of Universities for Molecular Allergology and Immunology) coordinator for Lithuania.

Prof. Dr Habil. A. Valiulis –

- Executive Committee member and Treasurer of European Academy of Paediatrics (EAP/UEMS-SP);
- Chairman of the Commission of Mother and Child of the Lithuanian Academy of Sciences;
- Chairman of Commission of Experts of National Programme of Immunoprophylaxis of Lithuanian Ministry of Health;
- President of the Lithuanian Paediatric Respiratory Society;
- Vice-president of the Lithuanian Paediatric Society;
- Chairman of Vilnius International Paediatric Pulmonology and Allergology Conference-School;
- Editor-in-Chief of the journal *Vaikų pulmonologija ir alergologija* (Paediatric Pulmonology and Allergology);
- national coordinator and Planning Committee member of WHO project Global Alliance against Chronic Respiratory Diseases (WHO-GARD Lithuania);

- national coordinator and Representative of Lithuania in International Guidelines of Allergic Rhinitis and Its Impact on Asthma (ARIA Lithuania);
- site coordinator in international research projects MACVIA MASK, MASK-air, AIRWAYS ICPs, QoHproLT, e-QoL ASTHMA, Alfa-1-Qual, RareBestPractice.

Prof. V. Urbonas –

- president of the Lithuanian Paediatric Society;
- president of the Lithuanian Society for Paediatric Gastroenterology and Nutrition;
- board member of Lithuanian Society for Parenteral and Enteral Nutrition;
- member of the European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN);
- member of the European Society for Parenteral and Enteral Nutrition (ESPEN);
- member of the Commission of Mother and Child of the Lithuanian Academy of Sciences;
- editorial board member of the journal *Gastroenterologija ir hepatologija*;
- editorial board member of the journal *Pediatrics*;

Assoc. Prof. S. Burokienė –

- member of Scientific Paediatric Committee (PDCO) at European Medicines Agency;
- member of the Lithuanian Paediatric Society;
- vice-president of Vilnius Paediatric Society;
- member of the European Society of Paediatric Infectious Diseases (ESPID);
- member of the European Academy of Paediatrics (EAP);
- member of the the Harvard Alumni Association.

Assoc. Prof. N. Drazdienė –

- editor-in-Chief of the journal *Lietuvos akušerija ir ginekologija (Lithuanian Obstetrics and Gynaecology)*;
- editorial board member of the journal *Pediatrics (Paediatrics)*;
- board member of Lithuanian Paediatric Society and Vilnius Pediatric Society;
- representative person of Lithuania on the project EUscreen 2020 (www.euscreen.eu),
- vice-president of Lithuanian section of German-Baltic Physicians Society (Deutsch-Baltische Arztegesellschaft).

Assoc. Prof. J. Grikinienė –

- member of Lithuanian Association of Neurology;
- member of Lithuanian Paediatric Neurology Society;
- member of Lithuanian Society of Epileptology;
- member of Lithuanian Paediatric Society.

Assoc. Prof. V. V. Panavienė –

- member of Paediatric Rheumatology European Society (PRES);
- national representative in the PRES Training and Education Committee;
- member of Paediatric Rheumatology International Trial Organisation (PRINTO);
- member of the Council of Lithuanian Rheumatology Association;
- editorial board member of the journal *Pediatrics (Paediatrics)*;
- editorial board member of the journal *Reumatologija (Rheumatology)*.

Assoc. Prof. S. Petraitiene –

- editorial board member of the journal *Paediatric Pulmonology and Allergology*, <http://www.pediatrics.org>;
- board member of Lithuanian Children's Pulmonologist Society.

Assoc. Prof. V. Žilinskaitė –

- board member of the Lithuanian Paediatric Intensive Care Society;

- member of the European Society of Intensive Care Medicine;
- editorial board member of the journal *Pediatrija (Paediatrics)*.

Assoc. Prof. J. Rascon –

- member of the Mission Assembly for Cancer of the Horizon Europe programme 2021–2027;
- board member of the European Reference of Paediatric Oncology (ENR-PaedCan);
- board member of the Lithuanian Society of Haematology (LHD);
- member of the Lithuanian Society of Pediatric Oncology and Hematology (LVOHD);
- member of the National Cancer Prevention and Control Programme 2015–2025 of the Lithuanian Ministry of Health;
- member of the Nordic Society of Pediatric Oncology and Hematology (NOPHO);
- member of the European Society for Blood and Marrow Transplantation (EBMT);
- member of the European Society of Pediatric Oncology (SIOPE);
- member of the European Society for Immune Deficiency (ESID).

Assoc. Prof. G. E. Vaitkevičienė –

- board member of the Nordic Society of Pediatric Oncology and Hematology (NOPHO);
- board member of the Lithuanian Society for Pediatric Oncology and Hematology (LVOHD)
- Chair of the Nordic Society of Pediatric Oncology and Hematology (NOPHO) Pharmacology group;
- member of the Lithuanian Society of Hematology (LHD);
- member of the European Society for Blood and Marrow Transplantation (EBMT);
- member of the European Society of Pediatric Oncology (SIOPE).

Lect. R. Kemežys –

- editorial board member of the journal *Baltic Endocrinology*;
- member of Lithuanian Paediatric Endocrinology Association;
- member of the International Growth Hormone Research Society (GRS);
- member of the European Society of Endocrinology (ESE);
- member of International Society for Paediatric and Adolescent Diabetes (ISPAD).

Lect V. Radžiūnienė –

- member of the European Respiratory Society;
- member of the European Cystic Fibrosis Association;
- member of Vilnius Paediatric Society.

Assist. Prof. S. Dumčius –

- member of the European Respiratory Society;
- member of the European Cystic Fibrosis Association;
- editorial board member of the journal *Pediatrija (Paediatrics)*.

Assist. Prof. I. Ivaškevičienė –

- member of the Lithuanian Paediatric Society;
- member of the European Society of Paediatric Infectious Diseases (ESPID);
- member of Central European Vaccination Advisory Group (CEVAG);
- member of Paediatric tuberculosis network (PTBNET);
- member of Lithuanian Committee for Poliomyelitis Eradication Certification.

Assist. Prof. O. Kinčinienė –

- president of the Lithuanian Paediatric Cardiology Society;
- deputy editor of the journal *Pediatrija (Paediatrics)*;
- member of the Council of Lithuanian Paediatric Society;
- member of the Council of Vilnius Paediatric Society.

Assist. Prof. I. Pilypienė –

- member of Vilnius Paediatric Society;
- member of the Lithuanian Neonatology Association.

Assist. Prof. R. Samaitienė –

- member of Baltic Child Neurology Association;
- board member of Lithuanian Paediatric Neurology Society;
- board member of Lithuanian Society of Epileptology.

Assist. Prof. R. Vankevičienė –

- president of Vilnius Paediatric Society;
- member of the Council of Lithuanian Paediatric Society;
- member of Lithuanian Paediatric Cardiology Society.

Assist. Prof. S. Šaulytė Trakymienė –

- Chair of the Lithuanian Society of Pediatric Hematology and Oncology (LVOHD);
- board member of the NOPHO Scientific Committee;
- member of the Lithuanian Society of Hematology (LHD);
- member of the Nordic Society of Pediatric Oncology and Hematology (NOPHO);
- member of of the Nordic Society of Pediatric Oncology and Hematology (NOPHO) Thrombosis and Haemostasis working group;
- member of the European Society of Pediatric Oncology (SIOPE).

Assist. Prof. R. Praninskienė –

- board member of Lithuanian Paediatric Neurology Society;
- member of Lithuanian Society of Epileptology;
- member of Baltic Child Neurology Association;
- member of European Paediatric Neurology Society;
- member of International Pediatric Sleep Association.

Teaching Assist. K. Ažukaitis –

- member of the Lithuanian Pediatric Nephrology Society;
- member of the European Society for Pediatric Nephrology;
- member of the International Pediatric Nephrology Association;
- member of the ESCAPE Pediatric Nephrology Research Consortium.

Research Assist. D. Ruzgienė –

- member of the Lithuanian Paediatric Society;
- member of the Lithuanian Pediatric Nephrology Society.

BEST REPORTS DELIVERED AT CONFERENCES ABROAD

- Prof. V. Urbonas. Pulmonary complications in liver disease. 4th Joint Ukrainian-Polish-Georgian-Lithuanian Paediatric Congress under the auspices of Ukrainian Academy of Paediatrics (UAP-SMS). Child health 2020 (virtual)
- Prof. A. Jankauskiene. Hemolytic uremic syndrome: kidneys, brain and heart. International conference Brain, Heart and Kidney. 22–24 October 2020. Vilnius, Lithuania
- K. Azukaitis. Arterial stiffness in children with chronic kidney disease: pathophysiology, measurements and functional consequences. International conference Brain, Heart and Kidney. 22–24 October 2020. Vilnius, Lithuania
- S. Šaulytė Trakymienė et al. Health-related quality-of-life and treatment satisfaction with Esperoct® in the clinical trials. 13th Annual Congress of EAHAD, 5–7 February 2020, The Hague, Netherlands.

- Valiulis. Community acquired pneumonia in children: Past, present and future. International Congress of UAP-SMS with official participation of paediatric societies of Lithuania, Poland and Georgia Child Health Care and Wellbeing 2020. 2–3 October 2020. Lviv, Ukraine

MOST IMPORTANT NATIONAL AND INTERNATIONAL AWARDS RECEIVED FOR R&D ACTIVITIES

- Annual Scientific Award of Vilnius University Rector was granted to Prof. Arunas Valiulis

MOST IMPORTANT PARTICIPATION CASES OF RESEARCHERS IN WORKING GROUPS OR COMMISSIONS SET UP BY STATE AUTHORITIES, STATE AND MUNICIPAL INSTITUTIONS AND ORGANISATIONS, AND BUSINESS ENTITIES

- Participation at Commission of Experts of National Programme of Immunoprophylaxis of Lithuanian Ministry of Health (Prof. Arunas Valiulis – chairman, members: Prof. V. Urbonas, Assoc. Prof. I. Ivaskeviciene)
- Group of Experts of COVID-19 Diagnostics and Treatment of Lithuanian Ministry of Health (Assoc. Prof. I. Ivaskeviciene)
- Expert neonatologist. The State Forensic Medicine Service, Lithuanian Ministry of Justice (Dr I. Pilypiene)
- Member of the coordination commission for Activity related to rare diseases of Lithuanian Ministry of Health (Prof. R. Cerkauskiene)
- 2018–2020 SAM European Union Investment Project “Improving the Efficiency and Capacity of Health Public Administration Institutions by Implementing Evidence-Based Management Measures”, Head of the Expert Group – Prof. R. Cerkauskiene

MOST IMPORTANT RESEARCH DISSEMINATION ACTIVITIES

- The results of the effect of screen use on children health are disseminated through media and internet website (www.mediavaikai.lt)
- Interviews about biomedical research, society relationships with research activities and the future of cancer treatment in News Radio (www.ziniuradijas.lt): 3 interviews by Prof. A. Jankauskiene, Assoc. Prof. J. Rascon and PhD student K. Azukaitis
- Radio, TV and internet media interviews on rare diseases and hemolytic uremic syndrome (prof. R. Cerkauskiene)

Clinic of Internal Medicine, Family Practice and Oncology

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Head – Prof. Dr *Virginijus Šapoka*

STAFF

Professors: Dr V. Šapoka, Dr V. Kasiulevičius, Dr V. Alekna, Dr L. Griškevičius, Dr N. Samalavičius, Dr Habil. D. Kalibatienė, Dr Habil. V. Gaigalaitė, Dr V. Ostapenko (part-time).

Associate professors: Dr V. Urbanavičius, Dr E. Mišeikytė Kaubrienė, Dr V. Dženkevičiūtė, Dr Ž. Visockienė, Dr V. Ožeraitienė, Dr L. Vencevičienė (part-time).

Research professor: Dr S. Cicėnas.

Assistant professors: Dr A. Abraitienė, Dr V. Pečeliūnas, Dr A. Marcijonienė (part-time), Dr K. Simanauskas (part-time), N. Burokienė (part-time), V. Andrejevaitė (part-time), Dr S. Varvuolytė, Dr R. Staigis (part-time), Dr V. Karpavičienė (part-time), Dr O. Nečajauskaitė (part-time).

Teaching assistants: R. Laukienė (part-time), K. Švaikevičienė (part-time).

Lecturers: A. Slobinas (part-time), S. Tulytė (part-time), L. Vaitkevičiūtė (part-time), D. Diglys (part-time), A. Galkinė (part-time), E. Vitkauskaitė (part-time), G. Jonuškienė (part-time), A. Degulys (part-time), I. Fomčenko (part-time), D. Jakučionis (part-time), M. Buitkus (part-time), E. Gruodytė (part-time), E. Bagurskienė (part-time), dr. A. Mastavičiūtė (part-time), T. Maselienė (part-time).

Doctoral students: A. Krasauskas, R. Pileckytė, V. Dirsė, J. Mozūraitienė, I. Fomčenko, J. Bublevič, A. Bliūdžius, S. Tulytė, K. Švaikevičienė.

Scientific groups of students:

Oncohematology: scientific leader – Dr Ž. Gudlevičienė, coordinator – student V. Vaitekėnaitė; 28 members of students.

Endocrinology: scientific leader – Dr A. Abraitienė, coordinator – student G. Labul; 26 members of students.

Family medicine: scientific leader – Dr V. Andrejevaitė, coordinator – student M. Burneikaitė; 38 members of students.

RESEARCH INTERESTS

Etiopathogenesis, diagnostics, treatment of diseases: fundamental and clinical research, innovative technologies

Early diagnostics and prevention of non-infection diseases in family practice and in gerontology

Biomarker research in hematology and oncology

Investigation of etiopathogenetic risk factors and quality of patients' life with internal diseases

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Validation of the Lithuanian Version of Sarcopenia-Specific Quality of Life Questionnaire SarQoL. Prof. V. Alekna, Prof. M. Tamulaitienė. 2019–2023.

The research evaluating the dependence of the quality of life of elderly persons on the manifestation of sarcopenia has been started and Lithuanian version of sarcopenia-specific quality of life questionnaire has been validated.

Detection of Optimal Diagnostic and Treatment Methods. Early Diagnostics and Prevention of Non-Infection Diseases. Prof. V. Šapoka, Prof. V. Kasiulevičius. 2019–2023.

Preparation for the start of a pilot study on the influence of physical activity on the transformation of prediabetes into type II diabetes. Preparation to determine the relationship between changes in body composition and metabolic activity indices of individuals with different body weights. A study of the application of the polymorbidity patient care model is currently underway, in which 200 patients were studied in 2020. Preliminary data were presented at the European Congress of Endocrinologists.

Genetic, Epigenetic Factors and Life Style Influence on the Development of Diabetes

Complications. PhD project in collaboration with Center of Life Sciences “Evaluation and FUP of multimorbid patients”. Project leader Prof. J. R. Lazutka, Assoc. Prof. Ž. Visockienė, PhD student L. Šiaulienė, Assoc. Prof. E. Lastauskienė. 2019–2023.

In 2020, 45 patients with type 1 or type 2 diabetes and 2 healthy subjects for control group were recruited. The following work-up was done: DNA oxidative damage was evaluated in blood samples; blood samples for non-coding RNA evaluation and biochemical assessment were collected; foot skin microbiota samples were taken with cotton swabs; subjects with diabetes underwent instrumental assessment for diabetic neuropathy.

Analysis of Biomarkers for Suicidal Tendencies and Depression, and Validation of the Prognostic Model in Lithuania. Investigator L. Venceviciene. 2020–2026.

53 healthy control subjects, 35 major depressive disorder and 23 suicide attempts according to the Protocol were enrolled to the study from 01 August 2020.

The Importance of Multimorbidity Patient’s Healthcare Model and Innovative Diabetes Treatment and Monitoring for Patient Clinical Outcomes. Project leader V. Kasiulevicius. 2019–2023.

Assessment of the Sodium and Iodine Status of the Lithuanian Population and Development of Public Health Policy Guidelines (NATRIJOD). Prof. M. Miglinas, MD D. Sukackienė, Assist. Prof. L. Zabulienė, MD, PhD, Assist. K. Simanauskas. 2018–2020.

During the project the sodium (salt) and iodine intake was assessed, the public about salt and iodine inequalities has been informed and recommendations on how to reduce salt consumption and achieve adequate iodine intake for the Lithuanian population were prepared.

Physical Activity Evaluation Using Wearable for the Patient with Prediabetes to Prevent Type 2 Diabetes, pilot study. Prof. Dr V. Kasiulevicius, PhD student A. Bliudzius. 2019–2021.

The progress of research in 2020:

The literature review is prepared and updated with recent scientific research in this field.

Bioethical authorization was obtained and research is in progress. Patients with impaired fasting glucose and impaired glucose tolerance were selected and started the trial. The research will last for 6 months and after that, all the data will be collected and prepared for scientific publishing.

Main publication:

Apsęga, A., Petrauskas, L., Alekna, V., Daunoraviciene, K., Sevchenko, V., Mastaviciute, A., Vitkus, D., Tamulaitiene, M., Griskevicius, J. Wearable sensors technology as a tool for discriminating frailty levels during instrumented gait analysis. *Appl Sci.* 2020, 10 (23): 8451.

<https://doi.org/10.3390/app10238451>.

National Research Projects

European Social Fund. **Implementation of the Integrated Multimorbidity Care Model in Primary Care.** Principal investigator L. Venceviciene. 2020–2022.

Project has just started.

International Research Projects

Implementation of Good Practices for Chronic Diseases CHRODIS-PLUS. V. Kasiulevicius, L. Vencevičienė, K. Simanuskas, A. Bliudzius. 2017–2020.

Different measures have been included for the evaluation of the results. For the quality of care and quality of life EQ-5D and PACIC+ questionnaires were analyzed to evaluate received care and congruency with the IMCM from the point of view of the patient (PACICI+, EQ-5D). To evaluate costs and effectiveness, the patient healthcare utilisation data was collected.

EUROASPIRE V European Survey of Cardiovascular Disease Prevention and Diabetes. Principal investigator L. Venceviciene. 2016–2020.

Data was collected as a part of the EUROASPIRE V survey, a multicenter, prospective, cross-sectional observational study carried out in 27 European countries. In Lithuania, a primary care arm of the study was conducted at two primary health care centers, Clinic of Family Medicine at Hospital of the Lithuanian University of Health Sciences Kauno Klinikos (Kaunas) and Center of Family Medicine at Vilnius University Hospital Santaros Klinikos (Vilnius). Data were collected through the review of medical records, patients' interview, physical examination, and laboratory tests. A total of 201 patients were enrolled.

Main publications:

Kotseva, K., de Backer, G., de Bacquer, D., Rydén, L., Hoes, A., Grobbee, D., Maggioni, A., Marques-Vidal, P., Jennings, C., Abreu, A., Aguiar, C., Badariene, J., Bruthans, J., Cifkova, R., Davletov, K., Dilic, M., Dolzhenko, M., Gaita, D., Gotcheva, N., Hasan-Ali, H., Jankowski, P., Lionis, C., Mancas, S., Miličić, D., Mirrakhimov, E., Oganov, R., Pogosova, N., Reiner, Ž., Vulić, D., Wood, D. Primary prevention efforts are poorly developed in people at high cardiovascular risk: A report from European Society of Cardiology EURObservational Research Programme EUROASPIRE V survey in 16 European countries. *European Journal of Preventive Cardiology*. 2020, first on line, p. [1–13]. DOI: [10.1177/2047487320908698](https://doi.org/10.1177/2047487320908698).

Urbonas, G., Vencevičienė, L., Valius, L., Krivickienė, I., Petrauskas, L., Lazarenkienė, G., Karpavičienė, J., Briedė, G., Žučenkienė, E., Vencevičius, K. Primary prevention of cardiovascular risk in Lithuania – results from EUROASPIRE V survey. *Medicina*. 2020, 56(3): 134. DOI: [10.3390/medicina56030134](https://doi.org/10.3390/medicina56030134).

Badariene, J., Rinkūnienė, E., Kasiulevičius, V., Smaliukaitė, G., Selskaitė, V., Barysienė, J., Dženkevičiūtė, V. Management of patients with coronary artery disease in Lithuania: a comparison with other Central Eastern European countries based on data from the International CLARIFY Registry. *Adv Ther*. 2020 Jun, 37(6): 3010–3018. DOI: 10.1007/s12325-020-01290-5.

Laucevičius, A., Rinkūnienė, E., Petrulionienė, Ž., Rylisškytė, L., Jucevičienė, A., Purnaitė, R., Badariene, J., Navickas, R., Mikolaitytė, J., Gargalskaitė, U., Dženkevičiūtė, V., Kutkienė, S., Gimžauskaitė, S., Mainelis, A., Šlapikas, R., Gurevičius, R., Jatužis, D., Kasiulevičius, V. Trends in cardiovascular risk factor prevalence among Lithuanian middle-aged adults between 2009 and 2018. *Atherosclerosis*. 2020 Apr, 299: 9–14. DOI: 10.1016/j.atherosclerosis.2020.02.025.

Badariene, J., Dženkevičiūtė, V., Rinkūnienė, E., Girkantaitė, Ž., Šilinskienė, D., Skiauterytė, E., Kovaitė, M., Mainelis, A., Rylisškytė, L., Čypienė, A., Barysienė, J. Does education degree affect

the patient's attitude towards the treatment after myocardial infarction? *Seminars in Cardiovascular Medicine*. 2020, 26(1): 1–6. DOI: [10.2478/semcard-2020-0001](https://doi.org/10.2478/semcard-2020-0001).

Contractual Research

Vytautas Kasiulevicius – coordinator of representative study of the Lithuanian population to assess the prevalence of COVID-19 disease (coronavirus infection) **COVID-19 sero-epidemiological study of the adult population**. Funded by the state budget in accordance with the Minister of Health of the Republic of Lithuania - Head of State Operations for State Emergencies in 2020 May 4 decision no. V-1062.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

Dramemen Hospital (Norway)

Oslo University Hospital (Norway)

Norwegian University of Science and Technology, Department of Cancer Research and Molecular Medicine (Norway)

The Oncoplastic Breast Consortium, Switzerland Academic Clinical Study Scientific Group (SAKK), Senologic International Society /International School of Senology

OTHER RESEARCH ACTIVITIES

Prof. V. Šapoka –

- board member of International and European Society of Internal Medicine and president of Lithuanian Society of Internal Medicine;
- editor-in-Chief of the journal *Internistas (Internist)*;
- president of Lithuanian Evidence-Based Medicine Society;
- board member of journals *Medicinos teorija ir praktika (Theory and Practice in Medicine)*, *Geriatrija (Geriatrics)* and *Lietuvos bendrosios praktikos gydytojas (General Practitioner of Lithuania)*.

Assoc. Prof. V. Urbanavičius –

- member of Eurodiabetes index 2015 committee;
- editorial board member of journals *Lietuvos endokrinologija (Endocrinology of Lithuania)*, *Medicinos teorija ir praktika (Theory and Practice in Medicine)*, *Diabetes Review* and *Internistas (Internist)*;
- member of the organizing committees of endocrinological conferences;
- member of European Association of the Study of Diabetes.

Prof. V. Alekna –

- president of Lithuanian Osteoporosis Foundation;
- editor-in-Chief of journal *Gerontologija (Lithuania)*;
- president Lithuanian Association of Gerontology and Geriatrics;
- board member of European Geriatric Medicine Society;
- board member of European Union of Medical Specialists, Geriatric Medicine Section.

Assoc. Prof. Dr Žydrūnė Visockienė –

- President of Vilnius Society of Endocrinology;
- member of Lithuanian Society of Endocrinology;
- board member of Lithuanian Bioethics Committee;
- member of European Association for the Study of Diabetes;

- editorial board member of the journal *Lietuvos endokrinologija*.

Prof. D. Kalibatiėnė –

- editorial board member of the journal *Slauga. Mokslas ir praktika*, <http://www.sdtsc.lt/index.php?id=285>;
- member of the Lithuanian Society of Gastroenterology, <http://www.gastroenterologija.lt/>;
- member of the Lithuanian Society of Internists;
- member of the Lithuanian Society of Palliative Medicine, <http://www.paliatyvipagalba.lt/>;
- board member of the Society of Lithuanian Nurses with University Education, <http://www.lusd.lt/>.

Prof. V. Gaigalaitė –

- member of Lithuanian Society of Neurology;
- member of Lithuanian Society of Stroke;
- editorial board member of the journal *Slauga. Mokslas ir praktika*, <http://www.sdtsc.lt/index.php?id=285>.

Assoc. Prof. Dr V. Ožeraitienė –

- member of the world Society of Gastroenterology;
- member of the Lithuanian Society of Gastroenterology, <http://www.gastroenterologija.lt/>;
- member of the Lithuanian Society of General Practitioners, <http://gydytojas.blogspot.com/>;
- editorial board member of the journal *Slauga. Mokslas ir praktika*, <http://www.sdtsc.lt/index.php?id=285>.

Assist. Prof. Dr S. Varvuolytė –

- president of Lithuanian Society of General Practitioners;
- country delegate of UEMO (European Union of General Practitioners/Family Physicians);
- board member and country delegate of EURACT (European Academy of Teachers in GP/FM);
- member of BARN (Baltic Antibiotic Resistance Collaborative Network);
- independent expert consultant of The National Immunoprophylaxis Programme 2014–2018;
- expert consultant family physician of the Ministry of Health of the Republic of Lithuania;
- expert consultant of Experts Group for Prevention of Microorganisms Resistance for Antimicrobial Treatment Development and Prevalence;
- expert of Vilnius region's Antimicrobial Resistance Inter Institutional Management Group;
- expert consultant family physician of European Medical Agency;
- member of Medications Reimbursement Commission.

BEST REPORTS DELIVERED AT CONFERENCES ABROAD

- Abstract as an Audio ePoster at the 22nd Annual European Congress of Endocrinology (e-ECE 2020), online, 5–9 September 2020. Programme Code: AEP337. Title: The complexity of associations between type 2 diabetes mellitus and comorbidities in multimorbid population in Lithuania. Authors: Kristina Švaikevičienė, Roma Puronaitė, Žydrūnė Visockienė, Vytautas Kasiulevičius
- Z. Visockiene. Type 2 Diabetes – Does it Stand Alone? Endocrinology, Radiology and Pathology: interplay for the best personalized approach in patients with pituitary tumors. 5th Baltic Endocrinology Conference for Young Specialists. 9–10 October 2020, virtual
- L. Vencevičienė. Methylation analysis of vitamin D signaling pathway genes in rheumatoid arthritis patients. Annual European Congress of Rheumatology, 3 June 2020. London, UK

- L. Vencevičienė. Plasma microRNA profiles as a potential diagnostic biomarker of rheumatoid arthritis. Interantional conference COINS 2020: international conference of life sciences, 25–27 February 2020. Vilnius, Lithuania.
- Kabašinskaitė E, Borodičaitė N, Žukauskaitė I, Strupinskienė V, Norkus A, Pečeliūnienė J. The relationship of hypoesthesia with diabetes risk in outpatients' patients. Prehypertension, Hypertension, Metabolic Disorders and Cardiovascular Disease: the 7th international conference, virtually. Geneva : Paragon Group, 20–22 November 2020.
- Vitkus D, Tamulaitiene M, Griskevicius J, Petrauskas L, Apsėga A, Sevčenko V, Daunoraviciene K, Mastaviciute A, Vitkus D, Sevčenko V, Barisauškaite M, Bajorinaite B, Alekna V. Virtual poster presentations: Relationships between risk of falling, physical functions and gait parameters in elderly people. Temporal features of gait in elderly persons with frailty: a cross-sectional study. Relationships between physical activity, fear of falling and fall risk in institutionalized older persons. Analysis of physical capacity, health-related quality of life and subjective well-being of elderly persons living in residential homes. Available from: www.iofbonehealth.org. Abstract number P1115. Virtual congress WCO-IOF-ESCEO World Congress on Osteoporosis, Osteoarthritis and Musculoskeletal Diseases, August 20–22, 2020.

PARTICIPATION CASES OF RESEARCHERS IN WORKING GROUPS OR COMMISSIONS SET UP BY STATE AUTHORITIES, STATE AND MUNICIPAL INSTITUTIONS AND ORGANISATIONS, AND BUSINESS ENTITIES

Dr V. Pečeliūnas, Prof. V. Kasiulevičius: participation in the Committee on criteria for assessment of health technologies, Ministry of Health of the Republic of Lithuania.

- Prof. Vytautas Kasiulevicius: member of The Council of Health Experts by the President of the Republic; member of Government Covid-19 medical group; expert of Vilnius University working group for coronavirus prevention.
- Dr V. Pečeliūnas, Prof. L. Griškevičius: participation in the working group for Health technology reimbursement strategy, Ministry of Health of the Republic of Lithuania.
- Assoc. Prof. Ž. Visockienė: member of the SAM Working Group “Diabetes Prevention, Diagnosis and Treatment Monitoring Council”; member of the SAM working group “Compilation of the Procedure for Compensatory Medicines for the Treatment of Diabetes”; member of the Board of the Lithuanian Bioethics Committee.
- Romėna Laukienė: member of the SAM working group “Compilation of a description of special requirements for the provision of inpatient personal health care services in adult endocrinology”.
- Agnė Abraitienė: member of SAM Working Group Medical Standards “Endocrinologist. Rights, Duties, Competences and Responsibilities”.

CONSULTATIONS PROVIDED BY THE UNIT TO THE PUBLIC OR ECONOMIC ENTITIES

- Vytautas Kasiulevicius. Advising Government of Lithuania on the introduction of quarantine measures in March 2020

MOST IMPORTANT RESEARCH DISSEMINATION ACTIVITIES

- Vytautas Kasiulevicius. 30 interviews with Lithuania media journalists: <https://www.lrt.lt/naujienos/sveikata/682/1289531/kasiulevicius-aptare-koronaviruso-niuansus-kaip-aplinka-ir-musu-elgesys-gali-sumazinti-susirgimu-skaiciu>

<https://www.lrt.lt/naujienos/sveikata/682/1276707/kasiulevicius-apzvelge-covid-19-plitimo-visuomeneje-kelius-kur-uzsikresti-turite-didziausia-rizika>

<https://www.lrt.lt/naujienos/lietuvoje/2/1266797/profesorius-kasiulevicius-siulo-kovos-su-covid-19-plana-viena-is-priemoniu-3-6-savaiciu-karantinas>

<https://www.lrt.lt/naujienos/sveikata/682/1260748/profesorius-kasiulevicius-apie-covid-19-eiga-ir-ligas-kuriomis-sergant-privalu-laikytis-itin-grieztu-taisykliu>

<https://www.lrt.lt/naujienos/mokslas-ir-it/11/1199400/kasiulevicius-vakcinu-bandymai-galetu-buti-baigti-dar-siais-metais>

- Keževičiūtė, Monika; Dženkevičiūtė, Vilma (supervisor). Prevalence of familial hypercholesterolemia in different age groups of patients with acute coronary syndrome. Student LXXII Conference: Vilnius, 18–22 May 2020. Abstracts. Vilnius University, Faculty of Medicine; Vilnius University Press. 2020, p. 218. DOI: 10.15388 / Proceedings.2020.1
- Monograph *Diabetes and Cardiovascular Risk*. V. Dženkevičiūtė, V. Šapoka - authors of the part “Diabetes mellitus and coronary heart disease”. 2020, 248–262
- Family Medicine: Modern Disease Diagnosis, Treatment and Prevention Handbook. Scientific editor Prof. Vytautas Kasiulevičius, Vilnius University. 2020. V. Dženkevičiūtė - author of the part “Chest pain”; V. Šapoka – author of the part “Hemostasis and coagulation disorders”

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Head – Prof. Dr *Pranas Šerpytis*

STAFF

Professors: Dr P. Šerpytis, Dr R. Samalavičius.

Visiting professors: Dr T. Jovaiša, Dr A. Khoury, Dr R. Jalali.

Associate professors: Dr I. Norkienė, Dr S. Vosylius, Dr R. Badaras.

Teaching assistants: Dr V. Žilinskaitė, P. Uksas.

Senior researcher: Dr R. Samalavičius.

Lecturers: A. Černauskas, Š. Maciulevičius, A. Vilimas, M. Gedminas.

Doctoral students: P. Uksas, A. Briedis, K. Urbonas, N. Ščupakova.

RESEARCH INTERESTS

Emergency medicine

Acute cardiac care

Resuscitation

Polytrauma

Triage

Acute coronary syndromes

Sudden death

Acute heart failure

ECMO

RESEARCH PROJECTS CARRIED OUT IN 2020

National Research Projects

Research Council of Lithuania. **Consequences of the COVID-19 Pandemic for Human and Public Health, Functioning of the Health Care System: Case Study of Circulatory System Diseases.**

Project leader Prof. Dr G. Davidavičius. 01 June 2020–30 December 2020.

Due to the COVID 19 pandemic, the restrictions imposed on health care institutions during the first quarantine (March–June 2020) significantly limited the activities of the cardiology service throughout Lithuania. In March–June, scheduled ambulatory and stationary care was restricted, which partially recovered only after the quarantine was lifted, and reached 2019 level in September. From the collected data and the performed analysis (compared to the same period in 2019) conclusions and recommendations have been prepared. Results and publications of project will be prepared in 2021.

Research Council of Lithuania. **Application of Extraordinary Membrane Oxygenation (ecmo) for the Treatment of Cardiogenic Shock in Elderly Patients.** Prof. R. S. Samalavičius, Assoc. Prof. I. Norkienė, PhD student K. Urbonas. 2020–2024.

Project aims to investigate the possibilities of applying extracorporeal membrane oxygenation in the treatment of cardiogenic shock, and their relationship with risk factors in the elderly patient population.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

Heart Center Leipzig- University Hospital Cardiology Department of Internal Medicine/ Cardiology (Germany)

San Filippo Neri Hospital, Rome (Italy)

Olsztyn University Clinic of Emergency Medicine (Poland)

Tel- Aviv University Hospital (Israel)

Department of Medicine, University of Arizona Medical School, Tucson (USA)

National Research Center of Preventive Medicine, Moscow (Russia)

OTHER RESEARCH ACTIVITIES

Prof. P. Šerpytis –

- member of the Research Council Committee of Natural and Technical Sciences, <https://www.lmt.lt/lt/apie-taryba/gamtos-ir-technikos-mokslu-komitetas/prof.-pranas-serpytis/2813>;
- editorial board member of the journals *Sveikatos mokslai*; *Santara*; *International Heart and Vascular Disease Journal*; *Annals of Medical Case Reports*; *Emergency Medicine and Critical care Journal*;
- scientific board member of the journal *Emergency Medicine Service*;
- co- chairman of 3rd international conference *Progress of ECMO in Lithuania*. 20 September 2019. Vilnius.

MOST IMPORTANT NATIONAL AND INTERNATIONAL AWARDS RECEIVED FOR R&D ACTIVITIES

- Gratitude for Prof. Pranas Šerpytis from Prime Minister of Lithuania regarding initiative in fighting COVID-19 infection in Lithuania
- March 11, 2020 award. Collection of medals of the dukes of Samogitia, no. 031. For Professor Pranas Šerpytis achievements in professional activities and caring for the health of patients in outgoing treatment sessions.
- October 2020, Government of the Republic of Lithuania XVII 2016-2020. Medal of Thanks to Professor Pranas Šerpytis for cooperation and contribution to creating a successful future for Lithuania. Prime Minister Saulius Skvernelis.

MOST IMPORTANT PARTICIPATION CASES OF RESEARCHERS IN WORKING GROUPS OR COMMISSIONS SET UP BY STATE AUTHORITIES, STATE AND MUNICIPAL INSTITUTIONS AND ORGANISATIONS, AND BUSINESS ENTITIES

- P. Šerpytis. Working groups of the Ministry of Health of the Republic of Lithuania: Lithuanian Health Ministry working group of law number V-208 (dated April 8th, 2004) “For ratification of the emergency medicine care and emergency medicine service provision order and extent”; Working group of Emergency medicine service for traumas and other external conditioned injuries (Trauma cluster); Working group for use of ECMO system in emergency medicine service;
- Member of the Health Council; member of the Health Council; member of the Research Council of Lithuania; Working group of Emergency medicine service for traumas and other external conditioned injuries (Trauma cluster).
- A working group of medical experts examining the issues of COVID-19 infection and submitting proposals to the Government of the Republic of Lithuania.

- A working group to coordinate and address issues related to improving access to innovative medicines and innovative treatments.

CONSULTATIONS PROVIDED BY THE UNIT TO THE PUBLIC OR ECONOMIC ENTITIES

- Lecture provided in municipality of Trakai, Business Club. Topic: “How to reduce the risk of heart diseases?” P. Šerpytis, 22/29 May.
- Lecture provided in municipality of Šilalė. Topic: “How to live with the atrial fibrillation?” P. Šerpytis, 14 July.
- Lecture provided in municipality of Nida. Topic: “How to live with the atrial fibrillation?” P. Šerpytis, 17 July.
- Lecture provided in municipality of Kretinga. Topic: “Prevention of cardiovascular diseases and atrial fibrillation” P. Šerpytis, 10 September.
- Project “Student for one day” Lecture online to Secondary School pupils of Lithuania. Topic: “Does a heart attack occur only in the elderly? P. Šerpytis, 9 November, Vilnius.
- Project "Tuk tuk heart - be healthy!" lectures about „Prevention of heart diseases. Clinical death. Primary resuscitation”. Lectures held to 1060 pupils in secondary schools of Vilnius during the year of 2020.

MOST IMPORTANT RESEARCH DISSEMINATION ACTIVITIES

- Interviews for Lithuanian National Radio and TV shows. Topics: Emergency Medicine, Cardiology, Preventive Medicine, Covid-19. P. Šerpytis, 2020.

Centre for Visceral Medicine and Translational Research (established in 2020)

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Head – Prof. Dr Habil. *Kęstutis Strupas*

STAFF

Professor: Kęstutis Strupas.

Research assistant: Aistė Kielaitė-Gulla.

RESEARCH INTERESTS

Single cell diagnostics

Intraoperative visualization

Non-invasive biomarkers

"Organ-On-A-Chip" models

Microbiome

Artificial intelligence

Genetics and proteomics

Individualized cancer treatment

RESEARCH PROJECTS CARRIED OUT IN 2020

National Research Projects

Single-cell Transcriptomics and Genomics Parallel Computational Biology Laboratories. Funded under Measure 01.2.2-LMT-K-718 ‘Targeted Research in Smart Specialisation Areas’ (Funding instrument - European Regional Development Fund). Prof. K. Strupas, Prof. L. Mazutis, Research Assist. Dr A. Gulla. 2020–2023.

Treatment of complex human diseases largely depends on the physiological response of the individual cells’, constituting given tissue or organ. It is single cells rather than their populations that are driving tumorigenesis, metastasis and other human diseases. In 2020, the researchers initiated the development of microfluidics technology and single cell genomics/transcriptomics data analytics of human samples creating a liver cell atlas.

CAIX and hypoxia marker detection and intraoperative application in solid tumors

visualization. Funded by Lithuanian Research Council. Prof. D. Matulis, Prof. K. Strupas, Research Assist. Dr A. Gulla, Senior Researcher Dr J. Matuliene. 2020–2022.

A conjugated compound bearing a CA IX-recognizing and IR fluorescent parts to be used for the diagnosis and visualization of tumor in optically guided cancer surgery especially for pancreas and liver cancers. In 2020, the activities were focused on CAIX synthesis and *in vitro* experiments.

Non-invasive Approach to Early Diagnosis and Prognosis of Acute Severe Pancreatitis Based on

Heat Shock Protein Mechanism of Action. Funded under Measure 01.2.2-LMT-K-718 ‘Targeted Research in Smart Specialisation Areas’ (Funding instrument - European Regional Development Fund). Prof. K. Strupas, Dr A. Gulla, Prof. J. Razumiene. 2018–2021.

A non-invasive platform will be established for early diagnosis and prognosis of acute pancreatitis. In 2020, the methods on tethered lipid membranes as a platform towards non-invasive electrochemical analysis of Acute Pancreatitis were established.

Lithuanian Research Council. **3D Matrices: Engineered Growth Factors and Morphogens for the Induction of Endothelial-like Cell Signalling in Liver Regeneration.** Prof. K. Strupas, Assoc.Prof. V. Sokolovas, Dr A. Gulla, Dr R. Rackauskas, Dr A. Ziogas. 2019–2021.

Hepatocyte transplantation as alternative to operation have shown promise in treating metabolic liver disorders, but low engraftment efficiency and poor long-term efficacy are precluding broader clinical application. In 2020, we developed 3D tissue structure with biocompatible scaffolds, growth factors (GF) and analyzed cell-cell and cell-to-extracellular matrix (ECM) interactions for long lasting regenerative potential *in vivo*.

International Research Projects

CovidSurg - International Initiative - Lithuanian National Coordination Center. Funding: voluntary basis. Prof. K. Strupas, Prof. T. Poskus, Assoc. Prof. A. Zelvys. Researcher A.Čekauskas, Research Assist. Dr A. Gulla. 2020.

A collaborative international project on establishing guidelines and framework for optimal timing of elective surgeries during Covid-19 pandemic. In 2020, the team of researchers joined the international CovidSurg team to coordinate Lithuania's participation in the study.

OTHER RESEARCH ACTIVITIES

Prof. Dr Habil. K. Strupas –

- board member of the European Academy of Surgical Sciences (EAeSS);
- member of International Hepato-Pancreato-Biliary Association;
- elected president of the Association of Lithuanian Surgeons;
- member of European Association for Endoscopic Surgery (EAES);
- editorial board member of the international journal *Viszeralmedizin*, <http://content.karger.com/Journal/EditorialBoard/223970>;
- editorial board member of the journal *Medicinos teorija ir praktika (Theory and Practice in Medicine)*, <http://www.mtp.lt/lt/redaktoriu-kolegija-8/>;
- editorial board member of the journal *Lietuvos chirurgija (Lithuanian Surgery)* <http://www.chirurgija.lt>;
- editorial board member of the journal *Medicina (Lithuania, ISI)*, <http://medicina.kmu.lt>.

INSTITUTE OF DENTISTRY

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Head – Prof. Dr *Vytautė Pečiulienė*

STAFF

Professors: Dr V. Pečiulienė, Dr A. Pūrienė, Dr T. Linkevicius, Dr V. Rutkūnas, Dr V. Brukienė.

Associate professors: Dr R. Manelienė, Dr L. Zaleckas, Dr S. Drukteinis, Dr L. Linkevičienė, Dr R. Bendinskaitė.

Assistant professors: Dr V. Berlin (part-time), E. Nedzinskienė (part-time), A. Rimkevičius (part-time), Dr R. Žaliūnienė (part-time), E. Vindašiūtė-Narbutė (part-time).

Teaching assistants: A. Gedrimienė (part-time), R. Trumpaitė-Vanagienė (part-time), V. Zaleckienė (part-time), S. K. Žukauskas (part-time).

Lecturers: Dr E. Miliūnienė (part-time), Dr D. Ivanauskaitė (part-time), Dr R. Almonaitienė (part-time), V. Almonaitis (part-time), R. Pletkus (part-time), D. Janavičiene (part-time), G. Krukonis (part-time), D. Matkevicius (part-time), J. Žekonienė (part-time), G. Naujokaitytė (part-time), P. Andrijauskas (part-time), G. Janarauskaitė (part-time), P. Mikalauskiene (part-time), J. Pletkus (part-time), J. Vaščiušaitė-Tyliene (part-time).

Doctoral students: L. Džiaugytė-Eyberdiyev, I. Gendvilienė, S. K. Žukauskas, A. Gedrimienė, R. Borusevičius, A. Rovas, P. Tušas, I. Stankevičienė, J. Pletkus.

Students' scientific group of Odontology: scientific leader – Prof. Dr. V. Brukienė, Coordinator – student M. Ralytė; 61 Members of the group.

RESEARCH INTERESTS

Etiopathogenesis, diagnostics, treatment, rehabilitation and prevention of stomatognathic system disease: fundamental and clinical research

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Xerostomia, Autoimmune and Non-Autoimmune Sicca Syndrome Epidemiology, Epigenetics and Neuroimmune Axis Relation with Oral Health. Prof. A. Puriene, PhD st. I. Stankevičienė. 2019–2023.

This aim of the project is to understand xerostomia, autoimmune and non-autoimmune sicca syndrome epidemiology, epigenetics and neuroimmune axis relation with oral health. Bioethics committee approval is obtained, data collection is in progress. Manuscript “Xerostomia and its determinants in Lithuanian adults” is submitted in *Gerodontology* journal, abstract for EADPH 2020 congress “Xerostomia and its Determinants - a Cross-sectional National Lithuanian Adult Study” is prepared and submitted, postponed to 2021 due to epidemiological situation.

Main publication:

Stankevičienė, I. Mouth dryness: challenges for both the patient and oral health care specialist. LBHD congress, 07 November 2020, Kaunas.

Theory-Based Interventions for Improving Oral Self-Care of 15–16 Years Old Schoolchildren. Prof. V. Pečiulienė, Prof. V. Brukienė, PhD st. L. Džiaugytė-Eyberdiyev. 2016–2020.

Targeting adolescent cohorts for health promotion is important due to the fact that adults who maintained their oral health lifestyle from adolescence through adulthood presented with better oral health than the ones who had a poorer health-related lifestyle in their adolescence. Main hypothesis of research done so far is the theory-guided interventions are superior to a one-time conventional dental instruction for improving and sustaining oral self-care in adolescents. Final draft for thesis was prepared.

Salivary Factors and Caries in Family Members. Preparation of Patients with Childhood Autism for Dental Procedures: Assessment of Possibilities. Oral Health and Dental Treatment Needs of Children with Cerebral Palsy in Vilnius City. Prof. V. Brukiene. 2018–2022.

Evaluation of the possibilities to prepare patients diagnosed with childhood autism for dental procedures is important. The research has been made to reveal and to assess the prognostic criteria for possibilities of the child with autism to cooperate during dental procedures according to clinics of autism, evaluating patient developmental abilities and skills and the effectiveness of behavioural management methods based on accomplishment of repeated tasks. Study data were collected, statistical analyses performed and data prepared for publishing.

Epidemiological Oral Health Survey in Lithuania. Assoc. Prof. R. Bendinskaitė, Prof. A. Pūrienė. 2015–2020.

Epidemiological oral health survey aims to collect data regarding the distribution of different oral conditions and their determinants in key age groups in different regions of Lithuania and to compare present findings with the results of the adult Lithuanian survey done in 1997/1998. National oral health survey is a cross-sectional study, which take place in 15 geographic locations.

Main publication:

Stangvaltaite-Mouhat, L., Puriene, A., Stankeviciene, I. and Aleksejuniene, J. Erosive tooth wear among adults in Lithuania: a cross-sectional national oral health study. *Caries Res.* 2020, 54(3): 283–291.

Exploring the Effectiveness of Oral Health Problem Solving with Interactive Training. Assoc. Prof. R. Bendinskaitė, Prof. A. Pūrienė. 2017–2021.

The study aims to explore the effectiveness of interactive training in addressing dietary and oral health problems among different dental risk groups, to explore the effectiveness of interactive training in solving oral health problems among high-risk dental populations. Data were collected on the effectiveness of web intervention for oral health-related knowledge in various groups of the population. Data in adult groups of pregnant women, physically disabled people, elderly and community members without special needs collected.

Prevalence of Physical and Psychological Disorders among Dentistry Undergraduate Students – a Pilot Study in Seven European Countries. Prof. A. Pūrienė, V. Berlin. 2017–2021.

One dental school each in Albania, Bulgaria, Lithuania, Macedonia, Norway, Poland and Romania participated in this cross-sectional, questionnaire pilot study. All 3rd–4th and 5th-year undergraduate students enrolled in the dentistry programme of participating schools were invited to complete a questionnaire. Total of 1063 3rd and 5th year dental students (response rate 70%) participated in this pilot study and completed a pre-tested, structured questionnaire. This year the data was analyzed, two studies made ready for publication, one being published.

Main publication:

Stangvaltaite-Mouhat, L., Puriene, A., Chalas, R., Hysi, D., Katrova, L., Nacaite, M., Nikolovska, J., Oancea, R. and Berlin, V. Self-reported psychological problems amongst undergraduate dental students: A pilot study in seven European countries. *Eur J Dent Educ.* 2020 May, 24(2): 341-350. DOI: 10.1111/eje.12505.

New Technology for Dental Pulp-dentin Complex Regeneration. Characterization and Sealing Ability of the Flowable Bioceramic Materials. Shaping and Centering Ability, Cyclic Fatigue Resistance and Fractographic Analysis of Conventional and Thermally Treated Nickel Titanium Endodontic Instruments. Assoc. Prof. S. Drukteinis, Prof. Dr V. Pečiulienė, PhD student P. Tusas, Prof. J. Camillieri. 2019–2023.

The aim was to assess MTA Flow, MTA Flow White, using scanning electron microscopy, energy dispersive spectroscopy and x-ray diffractometry; to evaluate the root canal sealing quality by MTA Flow and BioRoot RCS/single-cone obturation technique in artificially perforated roots and to evaluate the effect of ultrasound agitation on the porosity of the flowable bioceramic materials. Furthermore, the shaping and centering ability as well as cyclic fatigue resistance of conventional and thermally treated nickel-titanium endodontic instrument systems were evaluated, using SEM and μ CT.

Main publications:

Drukteinis, S., Pečiulienė, V., Bendinskaitė, R., Brukienė, V., Manelienė, R., Nedzinskienė, E. Shaping ability, cyclic fatigue resistance and fractographic analysis of hybrid and reciprocating nickel titanium endodontic instruments. *Metals*. 2020, 10: 172. DOI: [10.3390/met10020172](https://doi.org/10.3390/met10020172).

Drukteinis, S., Pečiulienė, V., Bendinskaitė, R., Brukienė, V., Manelienė, R., Rutkūnas, V. Shaping and centering ability, cyclic fatigue resistance and fractographic analysis of three thermally treated nickel titanium endodontic instrument systems. *Materials*. 2020, 13(24): 5823. <https://doi.org/10.3390/ma13245823>

Evaluation of Procedural Errors Frequency during Endodontic Treatment and Their Influence on Tooth Prognosis. Prof. Dr V. Pečiulienė, Assoc. Prof. S. Drukteinis, Lect. G. Naujokaitytė. 2017–2023.

Successful root canal treatment is determined by many factors. Inappropriate root canal treatment procedures result in endodontic treatment errors. It is precisely they that become the main thrills that can determine not only the course of the treatment, but also the further prediction of the treatment. The aim of this study is to evaluate the incidence of endodontic treatment errors, the impact of endodontic treatment outcomes, the prognosis and the possibility of correcting these procedural errors. Two year follow-up of 150 retreated teeth are done and statistical analysis of data is done.

Dental Trauma Experience, Attitudes and Trauma Prevention in 11 to 13 Year-Old Lithuanian Schoolchildren. Teaching Assist. V. Zaleckienė, Prof. V. Pečiulienė. 2014–2020.

The aim of this study was to identify the prevalence and determinants of dental trauma in permanent anterior teeth among 11- to 13-year-old schoolchildren, to compare self-reported dental trauma rates with clinical examination trauma rates, and to examine mouth guard use among children engaged in contact sports. A probability sampling scheme was used to recruit schools, with all sixth grade children in the selected schools invited to participate. Final draft of thesis is prepared.

Main publication:

Zaleckienė, V., Pečiulienė, V., Aleksejūnienė, J., Drukteinis, S., Brukienė, V. Dental trauma experience, attitudes and trauma prevention in 11- to 13-year-old Lithuanian schoolchildren. *Oral Health & Preventive Dentistry*. 2020, 18(2): 373–378. DOI: [10.3290/j.ohpd.a43309](https://doi.org/10.3290/j.ohpd.a43309).

Mechanical Wear and Bioavailability of Prosthetic Cement Materials. Teaching Assist. R. Trumpaite-Vanagiene, Prof. A. Puriene. 2014–2020.

We have investigated the resistance of wearing teeth cementing materials to the wear and the effect of the edge precision of the protrusion on wear intensity and carried out a quantitative analysis of the cytotoxicity of dental cementation agents in human gum fibroblasts. A qualitative analysis of the cytotoxicity of dental cementation in human gum fibroblasts has been done aimed to determine the

primary mechanism of cement cell death. Doctoral thesis: Rita Trumpaite-Vanagiene "Wear resistance and biocompatibility of dental luting cements" was defended.

In Vivo and in Vitro Accuracy Evaluation of Digitally Made Impressions and Restorations on Dental Implants. Assoc. Prof. V. Rutkūnas, PhD st. A. Gečiauskaitė. 2016–2020.

The team aimed to improve the accuracy of digital workflow and to achieve aesthetic and functional restorations with minimal effort. Due to constant changes in intraoral scanners hardware and software, reliable methodology and clinical guidelines will be provided. Finalization of *in vitro* experiment, data collection and analysis were performed. Preparation and submission of 3 papers to peer-review journals with IF. Finalization of the dissertation work, reviewing procedures and formation of PhD defense committee.

Main publications:

Rutkunas, V., Larsson, C., Vult von Steyern, P., Mangano, F., Gedrimiene, A. Clinical and laboratory passive fit assessment of implant-supported zirconia restorations fabricated using conventional and digital workflow. *Clin Implant Dent Relat Res*. Online ahead of print, 2020 Feb 5. DOI:10.1111/cid.12885.

Rutkunas, V., Gedrimiene, A., Adaskevicius, R., Al-Haj Husain, N., Özcan, M. Comparison of the clinical accuracy of digital and conventional dental implant impressions. *Eur J Prosthodont Restor Dent*. 2020 Jul 10. DOI: 10.1922/EJPRD_02028Rutkunas09. Online ahead of print. PMID: 32673469.

Mangano, F. G., Admakin, O., Bonacina, M., Lerner, H., Rutkunas, V., Mangano, C. Trueness of 12 intraoral scanners in the full-arch implant impression: a comparative in vitro study. *BMC Oral Health*. 2020 Sep 22, 20(1): 263. DOI: 10.1186/s12903-020-01254-9.

Comprehensive Evaluation of Factors Influencing the Accuracy of Digital Workflow. Prof. V. Rutkūnas. 2019–2024, PhD st. J. Pletkus, st. L. Auškalnis, residents J. Dirse and V. Bilius. 2016–2020.

Separate steps of the digital workflow have been analysed trying to identify the steps most susceptible to the errors. This will help to identify better the clinical indications of fully digital and combined digital/analogue workflows. Based on the findings, the solutions helping to increase potential of digital technologies in prosthodontics will be offered. Set up of the experiments. Clinical and laboratory study initiation. Data collection, analysis and preparation for publication.

Effect of Different Prosthetic Materials on Human Fibroblast Cell Cultures. Prof. V. Rutkūnas. 2017–2021.

Completion of the experiments and collection and analysis of the data.

Main publication:

Rutkunas, V., Borusevicius, R., Liaudanskaite, D., Jasinskyte, U., Drukteinis, S., Bukelskiene, V., Mijiritsky, E. The effect of different cleaning protocols of polymer-based prosthetic materials on the behavior of human gingival fibroblasts. *Int J Environ Res Public Health*. 2020 Oct 23, 17(21): 7753. doi: 10.3390/ijerph17217753.

Influence of Implant Placement Depth and Soft Tissue Thickness on Crestal Bone Stability around Implants with and without Platform Switching. A comparative Clinical Trial. Prof. Dr. T. Linkevicius, PhD st. S. Zukauskas. 2016–2020.

The aim of our study was to investigate if implant placement depth in relation with soft tissue thickness has influence on crestal bone stability around dental implants. The research hypothesis was that bone level implants with platform switching, placed subcrestally when surrounding gingiva is thin would have similar bone resorption with bone level implants without platform switching, placed in thick soft tissue

supracrestally.

Main publications:

Linkevicius, T., Puisys, A., Linkevicius, R., Alkimavicius, J., Gineviciute, E., Linkeviciene, L. The influence of submerged healing abutment or subcrestal implant placement on soft tissue thickness and crestal bone stability. *Clin Implant Dent Relat Res.* 2020 Aug, 22(4): 497–506.

Puisys, A., Schlee, M., Linkevicius, T., Petrakakis, P., Tjaden, A. Photo-activated implants: a triple-blinded, split-mouth, randomized controlled clinical trial on the resistance to removal torque at various healing intervals. *Clin Oral Investig.* 2020 May, 24(5): 1789–1799.

Linkevicius, T., Valantiejene, V., Alkimavicius, J., Gineviciute, E., Andrijauskas, R., Linkeviciene, L. The effect of a polishing protocol on the surface roughness of zirconium oxide. *Int J Prosthodont.* 2020, 33(2): 217–223.

Enamel Changes after Removal of Metal and Ceramic Braces. Assoc. Prof. L. Linkeviciene. 2016–2020.

The aim of the study was to evaluate and compare emcs characteristics before and after removal metal and ceramic brackets from the teeth of the younger and older age groups. The teeth were extracted for orthodontic reasons or periodontal pathology from two groups of patients: younger age group (age range 18–34 years), and older age group (age range 35–54 years). PhD thesis I. Dumbryte. Evaluation of enamel micro-cracking characteristics before and after removal of metal and ceramic braces in different age groups: *in vitro* study was defended.

Prospective Randomised Long Term Three Centre Study of the Baltic Cleft Network (Rostock, Germany; Ryga, Latvia and Vilnius, Lithuania): Appearance of Lip and Nose in Patients with Unilateral Clefts of Lip, Alveolus, and Palate. Assoc. Prof. L. Zaleckas. 2016–2021.

The aim of this study was to compare long-term results of three different cleft treatment protocols treating patients with unilateral complete clefts of lip, alveolus and palate. Photographies were taken before surgery and at the age of 5 and 10 years. The evaluation of function and aesthetics of the lip as well as of symmetry and harmony was done. Finalization of results. Prepared manuscript “Lips and noses in 10-year-old patients with repaired complete unilateral clefts of lip, alveolus, and palate. First results from a prospective three centre study of the Baltic Cleft Network”.

Practice Characteristics and Views of Dental Hygienists in Lithuania. Prof. A. Puriene, V. Berlin, Postgrad. st. G. Aidukaitė. 2019–2022.

The study analyzed practice characteristics and views and employment possibilities of Lithuanian dental hygienists. The questionnaire asked about the demographics of dental hygienists, characteristics of practice, patient load, career intentions, opinion about dental hygienists workforce and the need of governmental workforce regulation.

This year the data was analysed, two studies made ready for publication, one under review, one being published.

Main publication:

Rederiene, G., Aidukaite, G., Berlin, V., Buunk-Werkhoven, Y. A. B. and Puriene, A. Practice characteristics and views of dental hygienists in Lithuania. *Int J Dent Hyg.* 2020, 18(4): 43.

Knowledge, Dentist Confidence and Management of Periodontal Patients among General Dentists. Prof. A. Puriene, Assist. A. Rimkevicius. 2018–2020.

The aim of the present study was to investigate periodontal risk knowledge, patient management and self-perceived confidence among General Dentists from five European countries regarding their provision of periodontal care. The socio-demographic domain inquired about dentist's age, gender and

years of clinical experience. The dental practice domain inquired about practice location, practising or not practising in a group practice and having or not having a periodontist or a dental hygienist in the practice. We found substantial differences among GDs in the five countries regarding diagnosis, dentist's confidence and management of periodontal patients.

Main publication:

Aleksejuniene, J., Puriene, A., Rimkevicius, A., Amariei, C., Oancea, R., Porosencova, T., Porosencov, E., Nikolovska, J., Mirnaya, E., Serova-Papakul, A. and Eaton, K. A. Knowledge, dentist confidence and management of periodontal patients among general dentists from Belarus, Lithuania, Macedonia, Moldova and Romania. *BMC.Oral Health*. 2020, 20(1): 47.

***In vitro* and *in vivo* Research about Influence of the Cement Type on Its Removal Quality from the Zirconium Oxide Implant-supported Restorations.** Assist. Prof. E.Vindasiute-Narbutė. 2018–2023.

First stage was to implement an *in vitro* study. Idea was to compare two different cements (resin cement and glass ionomer resin modified cement) and their excess removal quality after cementation on implant supported zirconia restorations. Study design and data collection was done during 2018–2019, data analysis and publication was done in 2020. Results of the following study were presented at an international conference “Odontologijos naujovės” in Palanga, Lithuania, 11–12 September 2020.

National Research Projects

Lithuanian Research Council. **Construction of Composite Bone Scaffold Material and *in Vivo* Evaluation of Biocompatibility and Osteopromotion** (No NKPDOKT-15078). Prof. V. Rutkūnas, PhD st. I. Gendviliene. 2015–2020.

The aim was to evaluate effectiveness of innovative 3D printed composite scaffolds in *in vitro* and *in vivo* studies on bone regeneration. Creation of the experimental models, implementation of the experiments and data collection. Preparation of 3D printed specimens. Analysis of *in vivo* and *in vitro* study results.

Main publications:

Gendviliene, I., Simoliunas, E., Rekstyte, S. et al. Assessment of the morphology and dimensional accuracy of 3D printed PLA and PLA/HAp scaffolds. *J Mech Behav Biomed Mater*. 2020, 104: 103616. DOI:10.1016/j.jmbbm.2020.103616.

Alksne, M., Kalvaityte, M., Simoliunas, E., Rinkunaite, I., Gendviliene, I., Locs, J., Rutkunas, V., Bukelskiene, V. *In vitro* comparison of 3D printed polylactic acid/hydroxyapatite and polylactic acid/bioglass composite scaffolds: Insights into materials for bone regeneration. *J Mech Behav Biomed Mater*. 2020 Apr, 104: 103641. DOI: 10.1016/j.jmbbm.2020.103641.

Accuracy of Digitally Planned Implant Placement and Cad/Cam Immediate Prosthesis. Project No KD-16137. Assoc. Prof. V. Rutkūnas, PhD st. R. Borusevičius. 2017–2021.

The aim of this doctoral thesis is to evaluate the accuracy as well as biological, technical and clinical aspects of digitally planned dental implantation and immediate prosthodontics rehabilitation. Creation of the experimental models, implementation of the experiments and data collection. Presentations made at conferences abroad and in Lithuania.

Research Council of Lithuania. **Evaluation of Microarchitecture and Collagen Coating of Regular and Irregular Structure 3D Polycaprolactone Scaffolds for Dental Pulp Tissue Regeneration** (09.3.3-LMT-K-712-16-0232). Prof. V. Pečiulienė, St. E.M. Jonaitytė, PhD St. P. Tušas. 2020.

The aim of this project was to create a biodegradable 3D scaffold, which mimics the chemical composition and physical morphology of the pulp, and can be a promising method to aid pulp regeneration. Regular and irregular structure polycaprolactone 3D scaffolds were printed using 3D printer melted electrospinning writing head. Scaffolds' mean pore size, pore area, pore circularity, and porosity were evaluated. Moreover scaffolds were successfully coated with collagen. Human dental pulp stem cells were isolated from human third molar teeth pulp, which may be used in later *in vitro* studies.

The Association of Epigenetic Factors with the Etiopathogenesis and Clinical Status of Periodontal Diseases and Rheumatoid Arthritis. Funded by Research Council of Lithuania. Prof. A. Puriene, PhD St. A. Rovas. 2017–2021.

Clinical examination and sample collection was completed for all 240 participants according to the plan. Laboratory tests are being conducted. Three articles were prepared and submitted. Article “Associations of periodontal status in periodontitis and rheumatoid arthritis patients” was accepted for publication in Journal of Periodontal & Implant Science. International EU patent was prepared “Micro-RNA Composition functionalized for dental implants“.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

ACTA (the Netherlands)

University of Birmingham (England)

Center for Physical Sciences and Technology (Lithuania)

University of British Columbia, Vancouver (Canada)

Institute of Biotechnology, Vilnius University (Lithuania)

Institute of Biochemistry, Vilnius University (Lithuania)

Laser Research Center, Vilnius University (Lithuania)

UiT Arctic University of Norway (Norway)

University College London and University of Kent (UK)

SPOH ARTS – International Oral Health Psychology, Amsterdam (the Netherlands)

Medical University of Lublin (Poland)

University of Medicine (Albania)

Medical University (Bulgaria)

University of Medicine and Pharmacy (Romania)

Malmo University (Sweden)

Zurich University (Switzerland)

University of Medicine (Albania)

Medical University (Bulgaria)

University Ss. Cyril and Methodius, Faculty of Dental Medicine, University of Sts Cyril and Methodius (Macedonia)

Faculty of Dentistry, State University of Medicine and Pharmacy “Nicolae Testemițanu” (Republic of Moldova)

Dental Faculty, Belarussian State Medical University (Belarus)

Centre for Innovative Medicine (Lithuania)

OTHER RESEARCH ACTIVITIES

Prof. V. Pečiulienė –

- member of study committee of European Society of Endodontists;

- editorial board member of the journal *Stomatologija (Dentistry)*;
- editorial board member of the *European Journal of General Dentistry*;
- editorial board member of the journal *Acta Medica Lituanica*;
- editorial board member of the journal *Health Sciences*.

Prof. A. Pūrienė –

- member of EAHM (European Association of Hospital Managers) 2015-2020, member of EAHM Scientific committee 2019-2020
- member of LAHM (Lithuanian Association of Hospital Managers)
- editorial board member of the journal *Stomatologija (Dentistry)*;
- editorial board member of the journal *Dental and Medical Problems* (Poland);
- editorial board member of the journal *Health Sciences (Lithuania)*;
- board member of the *Stomatology Edu Journal (Romania)*;
- president of Lithuanian society of Ergonomics;
- member of Lithuanian society of Periodontology;
- expert of the Lithuanian Business Support Agency (LVPA), 2015-2017, 2020
- member of ESDE European Society of Dental Ergonomics;
- member of EADPH European Association of Dental Public Health;
- member of Academy of Osseointegration,
- member of EAHM (European Association of Hospital Managers) 2018-2020, member of EAHM Scientific committee 2019-2020
- Member of LAHM (Lithuanian Association of Hospital Managers), President of council 2018-2020

Prof. V. Rutkūnas –

- president of Lithuanian Society of Prosthodontics;
- council member of European Prosthodontic Association;
- council member of Digital Dentistry Society;
- editorial board member of Journal of Dentistry;
- editorial board member European Journal of Prosthodontics and Restorative Dentistry
- editorial board member Frontiers in Dental Medicine
- editorial board member Stomatology Edu Journal
- editorial board member of *Stomatologija, Baltic Maxillofacial and Dental Journal*;
- participation of the organizing committees of international meetings: The annual meeting of Lithuanian Society of Prosthodontics 2020; Consensus Conference of Digital Dentistry Society “Accuracy in Digital Dentistry”.

Prof. T. Linkevičius –

- editorial board member of the journal *Stomatologija (Dentistry)*;
- visiting Professor in Ghent University, Belgium.

Assoc. Prof. R. Bendinskaitė –

- member of Vilnius Regional Bioethics Committee;
- expert in working groups of the Ministry of Health of the Republic of Lithuania.

Prof. V. Brukienė –

- vice-president of the International Association of Dental Research, NOF section;
- member of the Association of Dental Education in Europe;
- editorial board member of the journals *Stomatologija (Dentistry)*, *Baltic Dental and Maxillofacial Journal*, <http://www.sbdmj.com/editors.html>;

- editorial board member of the journal *Slauga. Mokslas ir praktika (Nursing. Science and Practice)*;
- President of the Lithuanian Dental Chamber.

Assoc. Prof. L. Zaleckas –

- member of Association of Oral and Maxillofacial surgeons of Lithuania, member of council;
- member of Baltic Association of Maxillofacial and Plastic Surgeons;
- member of European Association for Cranio-Maxillo-Facial Surgery;
- editorial board member of the *Baltic Dental and Maxillofacial Journal*.

Assoc. Prof. S. Drukteinis –

- member of the Research Committee of the European Society of Endodontology;
- president of the Lithuanian Endodontic Society.

Assoc. Prof. L. Linkevičienė –

- editorial board member of the journals *Stomatologija (Dentistry)*, *Baltic Dental and Maxillofacial Journal*, <http://www.sbdmj.com/editors.html>;
- member of Lithuanian Dental Chamber;
- member of Lithuanian Orthodontics Association, member of council;
- member of European Cleft organization.

BEST REPORTS DELIVERED AT CONFERENCES ABROAD

- Prof. Rutkunas V. New protocols for increasing the accuracy of digital workflow in implant prosthetics. AEEDC meeting in Dubai, UAE. February 5th, 2020.

MOST IMPORTANT PARTICIPATION CASES OF RESEARCHERS IN WORKING GROUPS OR COMMISSIONS SET UP BY STATE AUTHORITIES, STATE AND MUNICIPAL INSTITUTIONS, ORGANISATIONS, BUSINESS ENTITIES

- Assoc. Prof. L. Linkevičienė. Member of Lithuanian Health Ministry working group to establish the orthodontist qualification
- Assoc. Prof. S. Drukteinis. Member of Lithuanian Health Ministry working group to establish the endodontologist qualification

CONSULTATIONS PROVIDED BY THE UNIT TO THE PUBLIC OR ECONOMIC ENTITIES

Prof. A. Puriene. Member of 2014-2020 Monitoring committee of the EU funds Investments program

MOST IMPORTANT RESEARCH DISSEMINATION ACTIVITIES

- A. Puriene Short interview: LRT Labas rytas, Tele3 žinios Delfi, LNK, LRT „Klauskite daktaro“, on oral cancer and dentistry in time of Covid-19.
- Prof. V. Rutkūnas, Assist. Prof. I. Gendvilienė. Lithuanian radio and television internet site, republished article from journal “Spectrum” – “Pasitelkdami biospausdinimo technologiją mokslininkai kuria dirbtinius žandikaulio pakaitalus”, <https://www.lrt.lt/naujienos/mokslas-ir-it/11/1166817/pasitelkdami-biospausdinimo-technologija-mokslininkai-kuria-dirbtinius-zandikaulio-pakaitalus>

INSTITUTE OF HEALTH SCIENCES

Department of Rehabilitation, Physical and Sports Medicine

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Head – Prof. Dr *Rūta Dadelienė*

STAFF

Professors: Dr J. Raistenskis, Dr V. Alekna, Dr R. Dadelienė, Dr M. Tamulaitienė, Dr J. Griškevičius, Dr A. Skurvydas.

Associate professors: Dr A. Adomavičienė, Dr L. Samsonienė, Dr A. Šidlauskienė, Dr R. Žilinskienė, Dr J. Armonienė.

Assistant professors: Dr J. Indriūnienė, Dr I. E. Jamontaitė, Dr A. Mastavičiūtė, Dr I. Muntianaitė, Dr J. Petrulytė, Dr S. Lenickienė, Dr I. Laucevičienė.

Research assistants: J. Blaževičius, A. Černovas.

Lecturers: L. Aučynienė, A. Budėjienė, L. Budrienė, A. Cirtautas, J. Kesienė, R. Petraitienė, L. Mikulėnaitė, T. Palšytė, M. Grybauskaitė, A. Juodytė, V. Strukčinskaitė, T. Gritėnienė, S. Buklienė, D. Šatkutė, R. Venskaitis, L. Uščinas, T. Jenikova, R. Ramanauskas, D. Mikučionytė, A. Juodytė, R. Jonaitienė, A. Vaitukaitienė, A. Marcinkonytė, T. Sinevičius, M. Serbendtavičiūtė, S. Buklienė.

Doctoral students: T. Aukštikalnis, Sinkevičius.

Students' scientific group of Rehabilitation, physical and sports medicine: scientific leader – Lect. T. Palšytė, coordinators – Student R. Gerdaitytė, Student M. Gaušytė; 19 members of the group.

RESEARCH INTERESTS

Biopsychosocial model

Effectiveness of rehabilitation, physical and sport medicine

Components of physical capacity

Prevention of disease and injury

RESEARCH PROJECTS CARRIED OUT IN 2020

International Research Projects

European Commission Erasmus+ Programme: Sport. **Supporting Teachers to Maximize Enjoyable MVPA Minutes in Children and Youth: Project Enjoyable MVPA.** Dr B. Miežienė. 2019–2022.

Main publications:

Bausys, A., Luksta, M., Kuliavas, J., Anglickiene, G., Maneikiene, V., Gedvilaite, L., Celutkiene, J., Jamontaite, I., Cirtautas, A., Lenickiene, S., Vaitkeviciute, D., Gaveliene, E., Klimaviciute, G., Bausys, R., Strupas, K. Personalized trimodal rehabilitation for gastrectomy. *Medicine*. 2020, 99(27): e20687. DOI: [10.1097/MD.00000000000020687](https://doi.org/10.1097/MD.00000000000020687).

Dadelienė, R., Dadelo, S., Pozniak, N., Sakalauskas, L. Analysis of top kayakers' training-intensity distribution and physiological adaptation based on structural modelling. *Annals of Operations Research*. 2020. DOI: [10.1007/s10479-020-03560-5](https://doi.org/10.1007/s10479-020-03560-5).

Krylovas, A., Kosareva, N., Dadelienė, R., Dadelo, S. Evaluation of elite athletes training Management efficiency based on multiple criteria measure of conditioning using fewer data. *Mathematics*. 2020, 8(1): 66. DOI: [10.3390/math8010066](https://doi.org/10.3390/math8010066).

Miežienė, B., Emeljanovas, A., Fatkulina, N. & Stukas, R. Dietary pattern and its correlates among Lithuanian young adults: mediterranean diet approach. *Nutrients*. 2020, 12(7): 1–15. DOI:10.3390/nu12072025.

MAIN RESEARCH, DEVELOPMENT AND INNOVATION PARTNERS

Rīga Stradiņš University, Faculty of Rehabilitation (Latvia)

Haapsalu Neurological Rehabilitation Centre (Estonia)

Karolinska Institute (Sweden)

Notwill Rehabilitation Centre (Switzerland)

Hannover medical school (Germany)

OTHER RESEARCH ACTIVITIES

Prof. J. Raistenskis –

- editorial board member of the journals *Gerontologija (Gerontology)*, *Polish Annals of Medicine*;
- board member of Association of Physical Medicine and Rehabilitation Physicians;
- member of the Association of Acupuncture, Manual and Traditional Medicine Physicians.

Prof. V. Alekna –

- editor-in-chief of the journal *Gerontologija (Gerontology)*;
- president of Lithuanian Association of Gerontology and Geriatrics;
- president of Lithuanian Osteoporosis Foundation;
- board member of UEMS Geriatric Section;
- board member of European Geriatric Medicine Society (EUGMS).

Prof. M. Tamulaitienė –

- editorial board member of the journal *Gerontologija (Gerontology)*.

Prof. R. Dadelienė –

- editorial boards member of the journals: *Biology of Exercises; Journal of Physical Education and Human Movement; Sporto mokslas (Sport Science)*;
- member of European Sport Science College;
- member of Lithuanian Olympic Academy;
- member of LNOG group (scientist, consultant) for preparation sportsmen for 2020.

Prof. J. Griškevičius –

- editorial board member of the journal *Technology & Health Care*, the Netherlands;
- member of study committee, coordinator of the Biomechanics and Biomedical Engineering study programs at VGTU;
- scientific council member of the Faculty of Mechanics, VGTU;
- member of European Society of Biomechanics;
- president of Lithuanian Society of Biomechanics;

- general secretary of non-profit association Educating Students in Engineering and Medicine, www.esem.eu;
- chairman of organizing committee of international conference BIOMDLORE, <http://biomdlore.vgtu.lt>.

Assoc. Prof. A. Adomavičienė –

- member of ENOTHE;
- member of Lithuanian Occupational Therapy Association.

Assoc. Prof. A. Šidlauskienė –

- board member of Lithuanian Physiotherapy Association.

Assoc. Prof. R. Žilinskienė –

- co-opted member of Executive Committee of European Network of Academic Sport, www.enas-sport.net;
- member of the Executive Committee of Lithuanian Student Sport Association.

Assoc. Prof. L. Samsonienė –

- member of the Team Publons: Public Health and Health Services;
- member of International Council for Physical Activity and Fitness Research (ICPA);
- member of Lithuanian Association for Adapted Physical Activity.

Assoc. Prof. J. Armonienė –

- member of Lithuanian Athletic Federation;
- member of Lithuanian Physical Education Teachers' Association.

Assist. I. E. Jamontaitė –

- board member of Lithuanian Physiotherapy Association.

Assist. A. Mastavičiūtė –

- member of the board of Lithuanian Gerontologists and Geriatrics Association;
- member of European Academy for Medicine of Ageing;
- editorial board member and managing editor of the journal *Gerontologija*, <http://www.gerontologija.lt>.

Assist. J. Petrulytė –

- chairman of Society of Social Pediatrics of Lithuania.

Department of Public Health

21/27 M. K. Čiurlionio, LT-03101 Vilnius, Lithuania

Tel. 239 8732, 239 8738

E-mail: rimantas.stukas@mf.vu.lt

Head – Prof. Dr *Rimantas Stukas*

STAFF

Professors: Dr R. Stukas, Dr J. Dadonienė.

Associate professors: Dr M. Jakubauskienė, Dr L. Murauskienė, Dr R. Buckus (part-time), Dr O. Katakiniene (part-time), Dr G. Smailytė (part-time).

Assistant professors: Dr J. Stanislavovienė, Dr M. Butikis, Dr S. Vainauskas, Dr J. Kairys (part-time), Dr L. Ašoklienė (part-time), Dr R. Bartkevičiūtė (part-time), A. Barzda (part-time), Dr A. Beržanskytė, Dr N. Kuprevičienė (part-time), Dr R. Sketerskienė (part-time), Dr A. Juodaitė–Račkauskienė (part-time), Dr V. Taminskienė, Dr V. Dobrovolskij (part-time), Dr D. Austys, R. Maceinaitė (part-time), J. Račaitė (part-time), I. Tamulaitytė–Morozovienė.

Researchers: Dr A. Valiulis, Dr R. Zuoza, Dr A. Emeljjanovas.

Lecturers: Dr A. Astrauskienė (part-time), D D. Brogienė (part-time), V. Jaeck (part-time), Dr R. Vaitkienė (part-time), Dr R. Jankauskas (part-time), M. Pauliukas (part-time).

Doctoral students: V. Andreikėnaitė, I. Tamulaitytė–Morozovienė, I. Pačiauskaitė, A. Černovas, O. Ubartienė, D. Dudutienė, A. Bilotienė–Motiejūnienė, S. Grubytė, R. Maceinaitė, J. Račaitė, Ž. Žandaras, J. Lekstutienė, A. Patašius, G. Valinčiūtė, J. Blaževičius, R. Perminienė, V. Radzevič, J. Šuminienė, A. Gaupšienė, V. Rutkauskas, P. Kavaliauskas.

Public health scientific group of students: scientific leader – Dr V. Dobrovolskij, coordinator – student L. Kacėnaitė, 30 members of the group.

RESEARCH INTERESTS

Environmental and social factors and public health

History of medicine

Epidemiology of non-infectious and infectious diseases

Scientific basis of health care management

Assessment of health care activities and biostatistics

Health and quality of life

Medical ethics

Public mental health, social determinants of population health, health services research

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Assessment of Health Risk Factors and Sense of Coherence of Elderly People. Prof. R. Stukas. 2014–2020.

Main publications:

Vikertaite, E., Cernovas, A., Mastaviciute, A. The relationship between physical activity, capacity and psychoemotional indicators 65 years and older age. *Health Sciences in Eastern Europe*. 2020, 30(2): 43–49.

National Research Projects

Economic Means for Smoking Prevention (Ministry of Health, Public Health Fund). Project leader – Assoc. Prof. Dr Marija Jakubauskienė. 2019–2020.

In 2020, a qualitative study validating the suitability of international smoking prevention measures for Lithuania was conducted. Later, a representative study of Lithuanian population on the acceptability of economic impact smoking prevention measures in different social groups was carried out. A database of economic impact of smoking prevention measures has been created. The results of the whole project were presented at the conference.

International Research Projects

International multicenter study **CoMix** (Measuring Behavioral Change during Covid-19 Epidemic) which is a part of **H2020 EpiPose project - Epidemic Intelligence to Minimize 2019-nCoV's Public Health, Economic and Social Impact in Europe**. Principal investigator in Lithuania – Assoc. Prof. Dr M. Jakubauskienė, 2020–2023.

In 2020, the following tasks have been performed: the approval ethical review body; linguistic and cultural translation and adaptation of questionnaire initiated.

International multicenter study **COPER** (Pandemic and its impact on mental health of men and women in the European Region). Principal investigator in Lithuania – Assoc. Prof. Dr M. Jakubauskienė, 2020–2022.

An international longitudinal research instrument has been prepared and validated, it has been validated also in Lithuania. A representative study of the mental health of the Lithuanian population under the influence of the first wave of coronavirus pandemic was conducted. Management of the database and its preparation for the analysis. Initiated preparations for the second research.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

Lancaster University (UK)
Universidad de Deusto (Spain)
University of Verona (Italy)
Corvinus University of Budapest (Hungary)
Ministry of Health of the Republic of Lithuania (Lithuania)
University of Hasselt (Belgium)
London School of Hygiene and Tropical Medicine (UK)
University of Applied Sciences Emden/Leer (Germany)

OTHER RESEARCH ACTIVITIES

Prof. R. Stukas –

- editorial college member of the journal *Visuomenės sveikata (Public Health)*;
- editorial board member of the journal *Sveikatos mokslai (Health Sciences)*;
- board member of the Lithuanian Society of Hygienists and Epidemiologists.

Prof. J. Dadonienė –

- President of Lithuanian Rheumatologist Association;
- board member of Lithuanian Arthritis Association (patient organization);
- member of European Network for Vasculitis Research (EUVAS);
- organizing committee member for the annual conference *Vilnius Seminars in Rheumatology*.

Assoc. Prof. Dr M. Jakubauskienė –

- President president of the Public Mental Health Section of the European Public Health Association (EUPHA);
- member of the International Scientific Committee of the European Public Health Association (EUPHA);
- member of the review board of the International Society for Traumatic Stress Studies (USA)';
- member of the Lithuanian Association for Trauma Psychology;
- member of the Lithuanian Bioethics Society;
- member of the Board of Federation Global Initiative on Psychiatry;
- co-leader of the International Research in Public Mental Health Course.

Prof. A. Valiulis –

- president of Lithuanian Paediatric Respiratory Society;
- vice-president of Lithuanian Paediatric Society;
- chairman of Lithuanian Alliance Against Chronic Lung Diseases (WHO-GARD Lithuania);
- vice chairman of Mother and Child Health Commission of Lithuanian Academy of Sciences;
- national coordinator in Strategic Pediatric Alliance for the Child Health in Europe;
- national delegate at Global Asthma Initiative (GINA) and Global Allergic Rhinitis Initiative (ARIA);
- chairman of Advisory Board of Lithuanian Council of Asthma Clubs;
- chief executive of IPOKRATES Lithuania Fund;
- editor-in-Chief of the journal *Paediatric Pulmonology and Allergology* (Index Copernicus);
- editor-in-Chief of the journal *Lithuanian Paediatric Chronicle*;
- editorial boards member of the journals *Paediatric Respiratory Reviews*, *Pneumonologia i Alergologia Polska*, *Pediatrics Polska*, *Russian Paediatric Journal*;
- chairman of Vilnius International Paediatric Pulmonology Conference – School (20th annual international conferences of Paediatric Asthma, Pneumonia, CF, TB and Orphan Lung Diseases; more than 8000 trained doctors);
- honorary fellow of British Royal College of Paediatrics and Child Health;
- member of Commissions of Rare Diseases, TB, Immunoprophylaxis, Mother & Child, Suckling, Human Resources, Accessibility of Health Service of the Ministry of Health of the Republic of Lithuania;
- chief Vilnius Paediatrician of the Ministry of Health of the Republic of Lithuania.

Assoc. Prof. J. Kairys –

- editorial board member of the journal *Sveikatos mokslai (Health Sciences)*.

Assoc. Prof. L. Murauskienė –

- associate editor for *BMC Health Services Research*;
- member of the *Health Systems and Policies Monitoring Network*, European Observatory on Health Systems and Policies.

Assist. R. Vaitkienė –

- deputy member of the Administrative Commission for the Coordination of Social Security Systems, European Commission, since 2009, Brussels, Belgium;

- member of the intersectoral working party on implementation of United Nations 2030 Agenda for Sustainable Development in Lithuania.

Assist. R. Jankauskas –

- editorial board chair of the journal *Visuomenės sveikata (Public Health)*.

Assist. R. Bartkevičiūtė –

- member of Lithuanian Breastfeeding Committee;
- alternate representative of European Food Safety Authority Food Consumption Data Network.

Assist. R. Barzda –

- representative of Republic of Lithuania in Codex Alimentarius Commission;
- representative of European Food Safety Authority Food Consumption Data Network.

Assist. D. Brogienė –

- executive director of the Foundation for Patient Safety, Innovations and Quality;
- member of Lithuanian Society of Obstetricians and Gynecologists. Chair of Legal, Ethics and Competence Evaluation Commission;
- member of the Board of Lithuanian Doctors Association. Chair of the Legal Commission;
- board member of Lithuanian Bioethics Committee under the Ministry of Health;
- Vice-president of CPME (The Standing Committee of European Doctors).

Assist. A. Juodaitė-Račkauskienė –

- member of *European Palliative Care Association*, Belgium.

Assist. D. Austys –

- member of Commission for Attestation of Lecturers Aiming the Right to Train in Radiation Safety and Security.

MOST IMPORTANT NATIONAL AND INTERNATIONAL AWARDS RECEIVED FOR R&D ACTIVITIES

- Assoc. Prof. M. Jakubauskienė. Lithuanian Research Council fellowship award for Public Mental Health Surveillance Model (No. 09.3.3-LMT-K-712-21-0094).

MOST IMPORTANT PARTICIPATION CASES OF RESEARCHERS IN WORKING GROUPS OR COMMISSIONS SET UP BY STATE AUTHORITIES, STATE AND MUNICIPAL INSTITUTIONS AND ORGANISATIONS, AND BUSINESS ENTITIES

- Assoc. Prof. M. Jakubauskienė. Moderator of International Mental Health Forum (initiated by the Ministry of Health and Organization for Economic Development and Cooperation, OECD), 2020
- L. Murauskiene. Leading a Working Group for Setting Priorities for Health-related Activities Financing for 2021–2028. Commissioned by Consulting Company ESTEP and the Ministry of Finance.

- R. Vaitkienė. A member of the working group for the amendments for Lithuanian Health Strategy for 2014–2025 approved by the Resolution of the Parliament of the Republic of Lithuania No XII-964, 2014.
- J. Dadoniene. Research council expert since 2014 with focus on doctoral studies activities; research group projects evaluation; research and experimental activities of state research institutions.
- J. Dadoniene. Board member of national programme on *Healthy Ageing* 2017–2021.

MOST IMPORTANT RESEARCH DISSEMINATION ACTIVITIES

- Assoc. Prof. Marija Jakubauskienė. 04 April 2020, Delfi: <https://www.delfi.lt/news/daily/lithuania/tyrimas-atskleide-sokiruojanca-realybe-pirma-karta-narkotiku-svirksiasi-jau-trylikameciai.d?id=85390823> //Study revealed a shocking reality: intravenous drugs for the first time have been used by 13 year olds
- Assoc. Prof. Marija Jakubauskienė. 31 October 2020, Interview for LRTV programme “Panorama”: <https://www.lrt.lt/mediateka/irasas/2000127426/specialistai-pastebi-kad-stipriu-narkotiku-pabando-vis-jaunesni-paaugliai-kartais-net-trylikameciai> //Age of onset for injecting intravenous drugs is becoming younger - sometimes even at 13 years of age
- Prof. Rimantas Stukas. Delfi Portal Interview on Healthy Eating (12 issues)
- Prof. Rimantas Stukas. LRTV, Consumer Control Interview about Healthy Eating (4 issues)
- Prof. Rimantas Stukas. TV 3 News Interview about Healthy Eating (5 issues)

BEST REPORTS DELIVERED AT CONFERENCES ABROAD

- Jakubauskiene M. Prevalence of Drug Related Infectious Diseases (DRID) in Lithuania. European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), 22–23 October 2020, remote.
- Jakubauskiene M. Prevalence of suicidal behaviour and violence among young people. Report at World Congress on Public Health, 12–16 October 2020, remotely.
- Workshop: Public mental health policies – experiences and challenges. *European Journal of Public Health*. 2020, 30: Issue Supplement_5, September, ckaa165.953, <https://doi.org/10.1093/eurpub/ckaa165.953>
- Austys, D., Stukas, R., Dobrovolskij, V., Arlauskas, R. Differences in consumption of sugar and sweeteners in two neighbor countries: Lithuania and Poland. 16th World Congress on Public Health 2020. Public health for the future of humanity: analysis, advocacy and action. *European Journal of Public Health*. 2020, 30(Supplement_5):ckaa166-241). 12–16 October 2020, remotely.
- Austys, D., Bendikaitė, S., Arlauskas, R., Jakubauskienė, M., Stukas, R. Well-being of families of people with psychosocial disabilities in context of deinstitutionalization. 16th World Congress on Public Health 2020. Public health for the future of humanity: analysis, advocacy and action. *European Journal of Public Health*. 2020, 30(Supplement_5):ckaa166-1043). 12–16 October 2020, remotely.
- Austys, D., Sprudzanaite, A., Arlauskas, R., Stukas, R. Personal cell phones among children: attitudes of parents of primary school pupils. 16th World Congress on Public Health 2020. Public health for the future of humanity: analysis, advocacy and action. *European Journal of Public Health*. 2020, 30(Supplement_5):ckaa166-012). 12–16 October 2020, remotely.

Department of Nursing

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Tel. 239 8755

E-mail: Natalja.fatkulina@mf.vu.lt

Head – Prof. Dr *Natalja Fatkulina*

STAFF

Professor: Dr N. Fatkulina.

Associate professor: Dr A. Gradauskas, Dr A. Mikaliūkštienė, Dr J. Kutkauskienė.

Assistant professors: Dr R. Stundžienė (part-time), Dr Z. Gierasimovič, Dr A. Kurienė (part-time), Dr R. Šturienė (part-time), S. Sabaliauskas, L. Paškevičius, A. Jakavonytė-Akstinienė.

Researcher: Dr A. Emeljanovas.

Teaching assistants: V. Kielė, L. Gedrimė (part-time), J. Stirblienė (part-time), I. Čergelytė-Podgrušienė (part-time), J. Šuminienė (part-time), A. Gaupšienė (part-time), M. Čiurlionis (part-time).

Lecturers: V. Šilinskaitė, O. Misiūnienė (part-time), M. Skvarčevskaja (part-time), R. Urbanavičė (part-time), J. Žalalienė (part-time), N. Surgunt (part-time), R. Steikūnienė (part-time), V. Nomeikienė (part-time), A. Mečėjienė (part-time), R. Jankauskas (part-time), D. Guobužienė (part-time), B. Dautarienė (part-time), R. Darginavičienė (part-time), J. Bortkevič (part-time), Ž. Ramanauskienė (part-time).

Doctoral students: V. Kielė, L. Gedrimė, J. Stirblienė, I. Čergelytė-Podgrušienė, M. Čiurlionis, A. Gaupšienė, J. Šuminienė.

RESEARCH INTERESTS

Innovation in nursing science, research and studies

Nursing policy

Quality of nursing care

Nurse professional competence

Nursing and patient education

Research of nurses' working environment

Needs and features of perioperative nursing care

Patient safety and the role of nurse

Physical activity and nursing care

Advanced nursing practice

RESEARCH PROJECTS CARRIED OUT IN 2020

Projects Supported by University Budget

Health and Disease Research: Nurses' Competence and Education, Patients Teaching, Nursing Requirement and Quality. Prof. N. Fatkulina. 2019–2021.

Analysis of innovation and applicability of nursing research, with emphasis on nurse educational capabilities and competencies, patient education, nursing need and quality aspects.

Main publications:

Gierasimovič, Z., Mikaliūkštienė, A., Kuzborska, Z., Skunčikienė, D., Kutkauskienė, J. Didelės rizikos skyrių slaugos personalo žinių apie hospitalines infekcijas įvertinimas (On assessing nursing staff exposure to high risk infections). *Sveikatos mokslai (Health Sciences in Eastern Europe)*. 2020, 30(1): 183–189. DOI: 10.35988/sm-hs.2020.031.

Urbanavičė, R., Rozenbergaitė, R., Kairys, J., Kurienė, A., Kutkauskienė, J., Fatkulina, N. Slaugos politikos formavimas ir įgyvendinimas Lietuvoje (Nursing policy making and implementation in Lithuania). *Sveikatos mokslai*. 2020, 30(1): 172–182. DOI: 10.35988/sm-hs.2020.030.

Амлаев, К. Р., Бехтерева, И. С., Блинкова, Л. Н., Гавриленко, Н. П., Дахкильгова, Х. Т., Зафирова, В. Б., Карташев, А. В., Койчуева, С. М., Коробова, Т. В., Кравченко, О. О., Кошель, В. И., Мажаров, В. Н., Максименко, Е. В., Максименко, Л. Л., Муравьева, В. Н., Фаткулина-Истомина, Н. В., Францева, В. О., Хорошилова, Е. Ю., Хрипунова, А. А., Шикина, И. Б. Общественное здоровье и здравоохранение Том 1 : Учебное пособие для студентов медицинских колледжей и факультетов высшего сестринского образования медицинских вузов. Под редакцией К.Р. Амлаева. 2020, 228.

Амлаев, К. Р., Бехтерева, И. С., Блинкова, Л. Н., Гавриленко, Н. П., Дахкильгова, Х. Т., Зафирова, В. Б., Карташев, А. В., Койчуева, С. М., Коробова, Т. В., Кравченко, О. О., Кошель, В. И., Мажаров, В. Н., Максименко, Е. В., Максименко, Л. Л., Муравьева, В. Н., Фаткулина-Истомина, Н. В., Францева, В. О., Хорошилова, Е. Ю., Хрипунова, А. А., Шикина, И. Б. Общественное здоровье и здравоохранение Том 2 : Учебное пособие для студентов медицинских колледжей и факультетов высшего сестринского образования медицинских вузов / Под редакцией К.Р. 2020: 224.

Complex Assessment of Nurses' Professional Competence. Prof. N. Fatkulina. 2019–2021.

Investigation of the professional competence of nurses and identification of clinical, educational and social controlled and uncontrollable factors influencing the competence of nurses.

Main publications:

Jerdiakova, N., Mikaliūkštienė, A., Rabkovskaja, J., Kutkauskienė, J., Davydenko, E. Dažniausi pirminės asmens sveikatos priežiūros paslaugų kokybę lemiantys veiksniai. Pacientų požiūris. *Sveikatos mokslai (Health Sciences in Eastern Europe)*. 2020, 30(1): 56–64. DOI: 10.35988/sm-hs.2020.008.

Prontkelevič, A., Kielė, V., Fatkulina, N., Kutkauskienė, J. Operacinės komandos narių darbo saugos priemonių naudojimas ir veiksmai, patyrus mikrotraumą (Usage of the work safety measures and actions of the surgical team members during experienced micro traumas). *Sveikatos mokslai (Health sciences in Eastern Europe)*. 2020, 30(1): 93–97. DOI: 10.35988/sm-hs.2020.015.

Eismontienė, G., Gedrimė, L., Žilinskienė, R., Kurienė, A., Davydenko, E., Fatkulina, N. Greitosios medicinos pagalbos stoties specialistų komandinio darbo efektyvumas (Effectiveness of teamwork within specialists in ambulance). *Sveikatos mokslai*. 2020, 30(2): 139–144. DOI: 10.35988/sm-hs.2020.058.

Fatkulina, N. Collaborative teaching methods in nursing education. Biomedical and Social Sciences: Education, Research and Innovation. International conference abstract book: abstracts from the 5th Nordic forum for nurse educators, 10 November 2020, Klaipėda. 2020, 1(4): 17. https://www.kvk.lt/file/manual/2020/2021/LAPKRITIS/1New%20Folder/New%20Folder/Abstracts_Nursing_Forum_11_10_11_29_F.pdf;

Assessing Health Needs, Quality of Life, Improving Health Care and Education. Prof. N. Fatkulina. 2019–2021.

The investigation of the quality of life and nursing needs of patients with chronic somatic (therapeutic, surgical, pediatric, neurological) diseases has been initiated. One of the aims is to prepare basic guidelines for improving long-term care and nursing by examining the psychosocial risk factors of nurses in the work environment and the social reflections of teamwork and to evaluate future perspectives and organization of practical training process in health care institutions.

Main publications:

Gierasimovič, Z., Kuzborska, Z., Kutkauskienė, J. Rizikos veiksnių poveikis odos ir audinių vientisumui (Impact of risk factors on injuries of skin and tissue integrity). *Sveikatos mokslai (Health Sciences in Eastern Europe)*. 2020, 30(1): 98–103. DOI: 10.35988/sm-hs.2020.016.

Rutkauskas, V., Lesinskienė, S., Fatkulina, N. Žindymas ir psichiką veikiančios vaistai (Breastfeeding and psychotropic medications). *Sveikatos mokslai*. 2020, 30(1) 104–108. DOI: 10.35988/sm-hs.2020.017.

Aliukonis, V., Lasinskas, M., Pilvelis, A., Gradauskas, A. Intrauterine device migration into the lumen of large bowel: A case report. *International Journal of Surgery Case Reports*. 2020, 72: 306–308. DOI: [10.1016/j.ijscr.2020.06.011](https://doi.org/10.1016/j.ijscr.2020.06.011).

Lesinskienė, S., Dervinytė - Bongarzoni, A., Fatkulina, N., Zuoza, R., Vasiliauskienė, S., Jackevičienė, L. Psichikos sveikatos sutrikimų turinčių vaikų šeimos situacijos tyrimas (Research on the family situation of children with mental health disorders). *Sveikatos mokslai*. 2020, 30(1): 65–69. DOI: 10.35988/sm-hs.2020.009.

National Research Projects

Prototype of Student Physical Ability Determination, Monitoring and Analysis Model (LitFit).
Prof. Dr A. Emeljanovas. 2020–2021.

The project is designed to address the problem of persistently deteriorating student physical capacity (FP). Student FP is one of the risk factors for cardiovascular disease, type 2 diabetes, and mortality in old age, and is associated with cognitive abilities and academic achievement. This leads to a pre-existing risk of health problems and a financial burden on the state.

Main publications:

Emeljanovas, A., Mieziene, B., Cesnaitiene, V. J., Fjortoft, I., Kjønniksen, L. Physical fitness and anthropometric values among Lithuanian primary school children: population-based cross-sectional study. *Journal of Strength and Conditioning Research*. 2020, 34(2): 414–421. DOI: 10.1519/JSC.0000000000003387.

Mo Ching Mok, M., Chin, M.-K., Korcz, A., Popeska, B., Edginton, Ch. R., Sacli Uzunož, F., Podnar, H., Coetzee, D., Georgescu, L., Emeljanovas, A., Pasic, M., Balasekaran, G., Anderson, E., Durstine, J. L. Brain breaks® physical activity solutions in the classroom and on attitudes toward physical activity: a randomized controlled trial among primary students from eight countries. *International Journal of Environmental Research and Public Health*. 2020, 17(5): 1–11. DOI: 10.3390/ijerph17051666.

Vainauskas, T., Dilys, L., Šukys, S., Miežienė, B., Emeljanovas, A., Karanauskienė, D., Česnaitienė, V. J. Relationship between primary school children's physical fitness, physical activity and their parents' physical activity. *Baltic Journal of Sport & Health Sciences*. 2020, 2(117): 4–10. DOI: 10.33607/bjshs.v2i117.912.

Giuriato, M., Lovecchio, N., Fugiel, J., Lopez S., Guillermo, F., Pihu, M., Emeljanovas, A. Enjoyment and self-reported physical competence according to Body Mass Index: international study in European primary school children. *The Journal of Sports Medicine and Physical Fitness*. 2020, 60(7): 1049–1055. DOI: 10.23736/S0022-4707.20.10550-4.

Application of Complementary and Alternative Medicine (PAM) to Strengthen Mental Health in Cancer Patients and Their Relatives. Prof. N. Fatkulina. 2019–2021.

The effectiveness of the impact of complementary and alternative medicine (CVT) measures on mental health promotion will be assessed by correlating test, scale, and questionnaire data recorded for each subject at baseline, in target groups, and every 3 months with active participation in therapeutic groups. The developed recommendations will contribute to modeling the CVT perspective at the national and local levels. The obtained results will encourage the use of good practice by target organizations and improve the quality of training of CVT specialists in universities.

International Research Projects

Professional Competence in Nursing (PROCOMPnurse), funded by Turku University, Finland. Prof. N. Fatkulina. 2017–2021.

Main publications:

Kajander-Unkuri, S., Koskinen, S., Brugnolli, A., Torre, M. A. C., Elonen, I., Kielé, V., Lehwaldt, D., Löyttyniemi, E., Nemcová, J., de Oliveira, C. S., Palese, A., Rua, M., Salminen, L., Šateková, L., Stubner, J., Sveinsdóttir, H., Visiers-Jiménez, L., Leino-Kilpi, H. The level of competence of graduating nursing students in 10 European countries - Comparison between countries. *Nursing Open*. 2020, first on line, p. [1-15]. DOI: 10.1002/nop2.712.

Leino-Kilpi, H., Inkeroinen, S., Cabrera, E., Charalambous, A., Fatkulina, N., Katajisto, J., Sigurðardóttir, Á. K., Sourtzi, P., Suhonen, R., Zabalegui, A., Valkeapää, K. Instruments for patient education: psychometric evaluation of the expected knowledge (EKhp) and the received knowledge of hospital patients (RKhp). *Journal of Multidisciplinary Healthcare*. 2020, 13: 1481–1505. DOI: 10.2147/JMDH.S271043.

Educational Program for Doctoral and Postdoctoral Nurses (NURSE-LEAD). Erasmus + strategic partnership, Prof. N. Fatkulina. 2017–2019.

The project aims to direct doctoral nursing students and postdoctoral nurses into an academic career in nursing by providing them with opportunities to expand their educational, research and leadership competencies. Thus the project will attune nursing education into emerging labour market's needs.

Main publications:

Zabalegui, A., Cabrera, E., Cano, S., Copanitsanou, P., Fatkulina, N., Katajisto, J., Papastavrou, E., Sigurdardottir, A. K., Valkeapää, K., Leino-Kilpi, H. Emotions of orthopaedic arthroplasty patients. A European survey. *Orthopaedic Nursing*. 2020, 39(5): 315–323. DOI: 10.1097/NOR.0000000000000696.

Inkeroinen, S., Leino-Kilpi, H., Katajisto, J., Suhonen, R., Valkeapää, K., Cabrera, E., Charalambous, A., Fatkulina, N., Sigurðardóttir, Á., Sourtzi, P., Zabalegui, A. Psychometrics of the expected knowledge (EKhp) and the received knowledge of hospital patients (RKhp) instruments. STTI (Sigma): 5th biennial European conference [virtual], Portugal, 2020 : European Region - Sigma. 2020, p. [1-3]. <http://hdl.handle.net/10755/20777>.

CHRODIS PLUS: Implementing Good Practice for Chronic Diseases. Prof. N. Fatkulina. 2017–2020.

CHRODIS PLUS aims to contribute to the reduction of this burden by promoting the implementation of policies and practices that have been demonstrated to be successful. The development and sharing of these tested policies and projects across EU countries is the core idea behind this action.

Main publications:

Lebedev, I., Gaibov, S. S.-H., Zakharchuk, J., Sominov, A., Andrejeva, J., Miežienė, B., Fatkulina, N. Dyslipidemia in patients with transient ischemic attack and stroke in middle tyumen oblast. *Sveikatos mokslai*. 2020, 30(2): 86–89. DOI: 10.35988/sm-hs.2020.048.

Kievisiene, J., Jautakyte, R., Rauckiene-Michaelsson, A., Fatkulina, N., Agostinis Sobrinho, C. The effect of art therapy and music therapy on breast cancer patients: what we know and what we need to find out - a systematic review. *Evidence-based Complementary and Alternative Medicine*. 2020, 2020: 7390321. DOI: 10.1155/2020/7390321.

Barzinskienė, E., Adomavičienė, A., Kurienė, A., Fatkulina, N. Inovatyvių ergoterapijos metodų taikymas cerebriniu paralyžiumi sergančių vaikų dėmesio koncentracijos lavinimui (Impact of rehacom program on attention of children with cerebral palsy). *Sveikatos mokslai*. 2020, 30(1): 129–133. DOI: 10.35988/sm-hs.2020.022.

European Sexual Medicine Network (COST project). Prof. N. Fatkulina. 2018–2022.

The Action aims to exchange research results produced by different disciplines in order to find commonalities in concepts and approaches to sexual medicine. This serves as the foundation for identifying shared concepts and definitions, and the start of joint interdisciplinary research, with a particular focus on including young researchers.

Supporting Teachers to Maximize Enjoyable MVPA Minutes in Children and Youth: Project Enjoyable MVPA. Funded under European Commission Erasmus+ Programme: Sport. Prof. Dr A. Emeljanovas, 2019–2022.

Main publications:

Mieziene, B., Emeljanovas, A., Cesnaitiene, V. J., Vizbaraite, D., Zumbakyte-Sermuksniene, R. Health behaviors and psychological distress among conscripts of the Lithuanian military service: a nationally representative cross-sectional study. *International Journal of Environmental Research and Public Health*. 2020, 17(3): 783. DOI: 10.3390/ijerph17030783.

Karanauskienė, D., Česnaitienė, V. J., Miežienė, B., Emeljanovas, A. Differences in understanding academic integrity: a Lithuanian case. *Corruption in Higher Education: Global Challenges and Responses*. E. Denisova-Schmidt (ed.). 2020, 25–29. (Global Perspectives on Higher Education, vol. 46). DOI: 10.1163/9789004433885_004.

Miežienė, B., Emeljanovas, A., Fatkulina, N., Stukas, R. Dietary pattern and its correlates among Lithuanian young adults: mediterranean diet approach. *Nutrients*. 2020, 12(7): 2025. DOI: 10.3390/nu12072025.

Gylytė, A., Pikūnienė, R., Liaudinskas, R., Urbanavičė, R., Emeljanovas, A., Raistenskis, J. Aerobinių pratimų poveikis vaikų pažintinėms funkcijoms, pusiausvyrai ir koordinacijai, esant mišriam raidos sutrikimui (Balance and coordination of children with mixed specific developmental disorders). *Sveikatos mokslai*. 2020, 30(2): 11–16. DOI: 10.35988/sm-hs.2020.036.

Erasmus+ Project **Virtual Advice, Nurture and Guidance in Undergraduate Research and Development (VANGUARD)**. Prof. N. Fatkulina. 2020–2023.

The VANGUARD Consortium is a collaborative partnership project between EU Universities, World Health Organization (WHO) and Ministry representatives that leads on the implementation of the WHO Global Action Plan for Physical Activity (GAPPA) 2018–2030 and aligns with all four objectives of the WHO GAPPA 2018 report and contributes to the delivery of specific Sustainable Development Goals (SDGs). The project addresses the first aim of the ERASMUS+ Collaborative partnerships by implementing physical activity in the undergraduate curricula of medical schools and healthcare professional institutions, so that future frontline health practitioners can advise and support increased

physical activity in the clinical setting to all patients with non-communicable diseases (NCDs), as well as in pregnancy and perioperatively.

During 2020, a strategy for integration of physical activity modules into integrated Bachelor study programmes in Medicine and Nursing at Partners' institutions (Lithuanian University of Health Sciences, Klaipėda University, Šiauliai State College, Utena College, Vilnius College) has been elaborated.

Developing Multi-professional Higher Education for Promoting Mental Health and Well-being at Schools (Well@School), Erasmus + programme. Prof. N. Fatkulina. 2020–2023.

Well@School aims to develop a new higher education open access platform that includes a framework, online course and a handbook for promoting mental health in primary schools, using digital methods. The project will promote key competences related to mental health promotion as well as build up digital competences in communication, co-creation, teaching and learning of professionals working in schools (teachers, school nurses, social workers). Moreover, the co-creation and validation process in the project will be implemented using several digital tools to support international collaboration and ensure transferability of the developed material across Europe.

MAIN R&D&I (RESEARCH, DEVELOPMENT AND INNOVATION) PARTNERS

Klaipėda University (Lithuania)

University of Turku, Department of Nursing Science, Turku (Finland)

Health Science Research Centre, University College Lillebaelt and Southern Denmark University (Denmark)

Karolinska Institutet, Department of Neurobiology, Care Sciences and Society, Stockholm (Sweden)

University of Utrecht, Utrecht (Netherlands)

University of Island, Reykjavik (Island)

Stavropol State Medical University (Russia)

Karaganda State Medical University (Kazakhstan)

Astana Medical University (Kazakhstan)

International University of Catalonia (Spain)

University Hospital of Barcelona (Spain)

OTHER RESEARCH ACTIVITIES

Prof. N. Fatkulina –

- elected member of Board of European Academy of Nursing Science, <https://european-academy-of-nursing-science.com/>;
- board member of the European Academy of Nursing Science;
- member of Anesthesia and Intensive Care Nurses' Society;
- member of Association Institute of Bute;
- editorial board member of the journal *Slauga: mokslas ir praktika (Nursing. Science and Practice)*.

Assoc. Prof. A. Gradauskas –

- vice-president of Vilnius Association of Surgeons;

- board member of the Lithuanian Association of Minimally Invasive Surgery, <http://www.mich.lt>.

Assoc. Prof. A. Mikaliūkštienė –

- chair of the Lithuanian University Education Nursing Society Board, <http://www.lusd.lt/>;
- member of the Lithuanian Society of Palliative Medicine, <http://www.paliatyvipagalba.lt/>;
- editorial board member of the journal *Sveikatos mokslai (Health Sciences)*;
- editorial board member of the journal *Slauga: mokslas ir praktika (Nursing. Science and Practice)*.

Assist. R. Stundžienė –

- member of the Lithuanian Society of Palliative Medicine, <http://www.paliatyvipagalba.lt/>;
- member of the Lithuanian University Education Nursing Society Board, <http://www.lusd.lt/>;
- member of Lithuanian Nursing Specialists Organization, <http://www.lssso.lt/>.

Assist. Z. Gierasimovič –

- member of the Lithuanian Society of Palliative Medicine, <http://www.paliatyvipagalba.lt/>;
- member of the Lithuanian University Education Nursing Society Board, <http://www.lusd.lt/>;
- editorial board member of the journal *Slauga: mokslas ir praktika (Nursing. Science and Practice)*.

Assist. A. Jakavonytė-Akstinienė –

- member of the Lithuanian University Education Nursing Society Board, <http://www.lusd.lt/>.

Assist. S. Sabaliauskas –

- member of Lithuanian Educational Research Association <http://www.lera.lt/>;
- member of School of Social Researcher www.stmokykla.lt.

Assist. L. Paškevičius –

- president of the Lithuanian Medical Tourism Association “Medicinos Lietuva”;
- president and chairman of the Board of the Lithuanian Association of Private Health Care Institutions;
- of the Board of the Lithuanian Medical Tourism Cluster LitCare;
- president of the Lithuanian Medical Tourism Cluster Association;
- member of the Council of the Lithuanian Medical Executives’ Union;
- member of the Presidium of the Lithuanian Chamber of Tourism;
- Lithuanian Confederation of Business Employers member of the presidium;
- Health matters chairman of the commission;
- member of the Presidium of the Lithuanian Business Confederation;
- vice-chairman of the Board of the Patient Safety, Innovation and Quality Foundation.

Researcher Dr A. Emeljanovas –

- member of FIEP (International Federation of Physical Education) National delegate;
- member of FIEP World Directorial Board;
- national delegate of International Network of Sport and Health Science (INSHS);
- member of NSSEE (European Network of Sport Science, Education & Employment), section of Physical Education;
- member of CEREPS European Council for Research in Physical Education and School Sports);
- national delegate of „Active Healthy Kids Global Alliance“, “Canada PA card“;
- member of Delegate Global Community Health (GCH).

Teaching Assist. V. Kielė –

- member of the Lithuanian University Education Nursing Society Board, <http://www.lusd.lt/>.

Teaching Assist. I. Čergelytė-Podgrušienė –

- Phd student of educology, main thesis – Children with diabetes education.

Lect. M. Čiurlionis –

- board member of the Lithuanian Society of Palliative Medicine, <http://www.paliatyvipagalba.lt/>;
- chair of the Baltic Palliative Care association <https://balticpca.com/>;
- steering committee board member of the Last Aid International. <https://www.letztehilfe.info/>;
- mentor of European Palliative Care Academy Mentoring Program <https://www.eupca.eu/>.

Lect. R. Steikūnienė –

- member of Lithuanian Nursing Specialists Organization, <http://www.lssso.lt/>.

Lect. N. Surgunt –

- vice-president of Lithuanian Society of Operating Nurses <http://www.losdraugija.eu>

MOST IMPORTANT RESEARCH DISSEMINATION ACTIVITIES

- Department of Nursing is a collaborating partner of CHRODIS+ project.
- Virtual scientific-practical conference “Right to health care: is access guaranteed”
- Scientific-practical conference “Development of pharmacists’ competences and improvement of skills in nursing”
- Virtual scientific-practical conference “Challenges and possibilities of nursing staff management”
- Virtual scientific-practical conference “Exercises and nutrition are the best “medicine” against 40 chronic diseases”

Center for Health Ethics, Law and History

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Head – Prof. Dr *Eugenijus Gefenas*

STAFF

Professors: Dr E. Gefenas.

Assistant Professor: Dr A. Bartkienė (part-time), Dr E. Sakalauskaitė-Juodeikienė, Dr A. Žalnora.

Lecturers: Dr A. Čekauskaitė (part-time), Dr M. Poškutė (part-time), V. Aliukonis (part-time), R. Baranauskienė, D. Milinkevičiūtė (part-time), N. Kancevičienė (part-time), V. Lukaševičienė (part-time), M. Ramonaitė (part-time).

RESEARCH INTERESTS

History of medicine

History of public health

Medical ethics

RESEARCH PROJECTS CARRIED OUT IN 2020

Legal and Institutional Aspects of Biomedical Research with Humans. Prof. E. Gefenas. 2019–2021.

Researchers of the Centre for Health Ethics, Law and History collected and analyzed data on Research Integrity and Research Ethics training programmes and their efficiency. The team of the Centre has analyzed ethical and legal issues emerging in research on human biological material, biobanks and “Big Data“.

Main publications:

Aliukonis, V., Poškutė, M., Gefenas, E. Perish or publish dilemma: challenges to responsible authorship. *Medicina*. 2020, 56(3): 123. DOI: [10.3390/medicina56030123](https://doi.org/10.3390/medicina56030123).

Lukaseviciene, V., Hasford, J., Lanzerath, D., Gefenas, E. Implementation of the EU clinical trial regulation transforms the ethics committee systems and endangers ethical standards. *J Med Ethics*. 2020, 0: 1–5. DOI:10.1136/medethics-2020-106757.

University. Asist. Dr A. Žalnora. 2019–2021.

In 2020, archival materials were collected and systemized. Data on hygiene education at the Stephen Bathory University was analysed, a publication is in the process of preparation.

International Research Projects

INTEGRITY: Empowering Students through Evidence-based, Scaffolded Learning of Responsible Conduct in Research (RCR). Prof. E. Gefenas. 2019–2021.

The aim of the project is to empower students in responsible research. The main strategy of the INTEGRITY’s team is to build knowledge and set up tools aimed at supporting high school teachers

and university professors, very often required to impart professional ethics and integrity training. In 2020, researchers of Vilnius University collected data for the survey on RI. The survey was sent to three respondents' cohorts of different educational levels (high school, BA and PhD students). The VU team held an annual project meeting, contributed to the development of educational tools for PhD students and dissemination of the project ideas with blog inscriptions.

EU-STANDS4PM: A European Standardization Framework for Data Integration and Data-driven *in silico* Models for Personalized Medicine. Prof. E. Gefenas. 2019–2021.

The so-called “Big Data” (combination of patient personal data such as electronic health records, patients’ registries and databases, as well as life style information) holds an immense potential for clinical applications, especially for *in silico* personalized medicine approaches. A Pan-European Expert forum has the overarching aim to bundle transnational standardization guidelines for *in silico* methodologies in transnational and clinical research to unfold the potential of PM. In 2020, the team of Vilnius University contributed to the first year report, collaboratively written across Work Package 3, further refined the Executive Summary of the report and focused on the following use case: ethical and regulatory analysis of the 1st and the 2nd generation of CURATE.AI platform. The VU team attended EU-STANDS4PM workshop “Assessing a new harmonized Data Access Agreement to advance Personalized Medicine and Data Science” on 24 January 2020.

OTHER RESEARCH ACTIVITIES

Prof. E. Gefenas –

- member of European Group on Ethics in Science and New Technologies (EGE);
- vice chair of European Network of Research Ethics Committees (EUREC);
- member of the bureau of the European Society for Philosophy of Medicine and Health Care (ESPMH);
- board member of ethics committee of European Academy of Allergy and Clinical Immunology (EAACI);
- member of the advisory editorial board of the journals *Medicine, Health Care and Philosophy: A European Journal*.

Dr A. Čekanauskaitė –

- member of the Council of Europe Steering Committee on Bioethics (CDBI);
- member of the Board of the Foundation for Patient Safety, Innovations and Quality.

Dr A. Žalnora –

- member of Lithuanian Morphological Society;
- member of Lithuanian Association of the History and Philosophy of Science;
- editorial board member of the *Acta medico-historica Rigensia*.

M. Ramonaitė –

- member of Universeum: European Academic Heritage Network;
- member of Association of Lithuanian Museums;
- member of International Council of Museums.

BEST REPORTS DELIVERED AT CONFERENCES ABROAD

- Gefenas E., Lekstutiene J. Lithuanian biobanking: ethical and legal issues. Online workshop Ethically and Socially Responsible Governance of Research Biobanks in the Baltic States, 29 October 2020, organizers BBMRI-ERIC (Biobanking and Biomolecular Resources Infrastructure – European Research Infrastructure Consortium).
- Žalnora A. Problems of hygiene in intellectual work behind the Iron Curtain in Lithuania. International conference Cleanliness and Dirt. Hygiene behind the Iron Curtain (1945–1989/1991, 11 December 2020, remotely).

MOST IMPORTANT RESEARCH DISSEMINATION ACTIVITIES

- Žalnora A. Participation in TV show “Daiktų istorijos“ (The Lithuanian public broadcaster, Lithuanian Radio and Television (LRT)) about the history of anatomy in Vilnius University, 4 March 2020.
- Žalnora A. Participation in TV show “Istorijos detektyvai“ (LRT) about the epidemics of Cholera and Plague, 15 March 2020.
- Žalnora A. Participation in TV show “Mokslo sriuba“ (LRT) about historical preconditions for the formation of medical science and treatment practice, different practices of therapy, surgical treatment and disease prevention; assumptions of the biggest historical epidemics, different challenges related to epidemics, strategies used to manage them, and the consequences of epidemics, 6 November 2020.
- Ramonaitė M. An interview on Lithuanian national radio show „Džiazuojanti istorija“: Healing culture in the Grand Duchy of Lithuania, 18 December 2020.
- Ramonaitė M. Educational excursion for the first year medical students of Vilnius University “Mokslo nutikimai M. K. Čiurliono gatvėje: brangakmeniai, žvaigždės ir mumijos”.