"Lithuanian-French scientific cooperation in Horizon Europe: results and perspectives" 2021.10.20



Vilnius University



About

Vilnius University – the first and largest university in Lithuania, one of the oldest and most prominent higher education institutions in Central and Eastern Europe, established in 1579 in Lithuania's capital city Vilnius, with a faculty in the second largest city, Kaunas and the Academy in Šiauliai, fourth largest city.





Facts and Figures



Founded in 1579 m.



246 study programmes offered



#1 in Lithuania

1	

~1 500 scientific publications annually



400 in the world*



22 747 students

*QS World University Rankings

Research



- Humanities
- Lithuanian Studies
- Structure and Development of Society
- Biological and Sociopsychological Cognition and Evolution of Man
- Healthy Man, Prevention, Diagnostics and Treatment of Diseases

- Genomics, Biomolecules and Biotechnologies
- New Functional Materials and Derivatives
- Theoretical and Condensed Matter Physics
- Laser Physics and Light Technologies
- Fundamental and Applied Mathematics
- Informatics and Information Technologies





High-tech achievements

- Prof. Virginijus Šikšnys: Warren Alpert prize winner, Novozymes Prize, Kavli Prize winner, pioneer in CRISPR/Cas9 technology
- The development of Lithuanian space programme: 2 Lithuanian satellites "LituanicaSAT-1" and "LituanicaSAT-2" successfully launched in collaboration with High Tech Vilnius University spinoff "NanoAvionics"
- Prof. Dr. Linas Mažutis: leading scientist in microfluidics technology application for cancer diagnostics
- "Vilnius-Lithuania iGEM": awardwinning synthetic biology technology development team
- Prof. Saulius Klimašauskas and Biological DNA Modification team: 14 patents in epigenome studies



Membership in international networks:

- ERASMUS
- NORDPLUS
- UTRECHT, MAUI, AEN
- BSRUN
- CREPUQ
- UNICA
- ISEP
- Scholars at Risk/New York University

- EUA
- IAU
- EAIE
- ALTE
- BUP
- Magna Charta Observatory
- COIMBRA Group





International projects

Educational Erasmus projects:

- Knowledge alliances
- Capacity building
- Strategic partnerships

Research projects:

- Horizon Europe, Horizon 2020
- Justice programme
- NATO Research programmes
- The National Institutes of Health (NIH)
- Others (CERN, EUROSTAT, etc.)



VU scientific cooperation in H2020 with France



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Project Status





VU scientific cooperation in FP with France: TOP 10 FR partners in H2020









H2020 Project: LASERLAB-EUROPE: Promoting laser-based technology research and innovation in Europe

- Programme: <u>H2020-EU.1.4. EXCELLENT SCIENCE Research Infrastructures</u>
- Funding scheme: <u>RIA Research and Innovation action</u>
- Coordinator: CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS
- FR participants: COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES
- LT partner: VU (Prof. A.Matijošius)
 - European consortium of major national laser research infrastructures, covering advanced laser science and applications in most domains of research and technology, with particular emphasis on areas with high industrial and social impact, such as bio- and nanophotonics, material analyses, biology and medicine.

Recently the field of advanced lasers has experienced remarkable advances and breakthroughs in laser technologies and novel applications. Laser technology is a key innovation driver for highly varied applications and products in many areas of modern society, thereby substantially contributing to economic growth.

- The topics of the joint research acitivities are selected in order to facilitate major improvements, beyond the present state-of-the-art, of the participating RIs and their services, in particular their abilities to enable novel applications with high industrial and social impact. They help preparing the Consortium and its Users for the future, in synergies with ESFRI infrastructures such as <u>European XFEL</u>, <u>EUROFEL</u> and <u>ELI</u>.
- Lasers and cancer





End date 30 November 2023













H2020 Project: CanBioSe: Novel 1D photonic metal oxide nanostructures for early stage cancer detection

- Programme: H2020-EU.1.3. EXCELLENT SCIENCE Marie Skłodowska-Curie Actions
- Funding scheme: <u>MSCA-RISE Marie Skłodowska-Curie Research and Innovation Staff</u> <u>Exchange (RISE)</u>
- Coordinator: LATVIJAS UNIVERSITATE
- FR participants: ECOLE NATIONALE SUPERIEURE DE CHIMIE DE MONTPELLIER
- LT partners: VU (prof. (HP) dr. Almira Ramanavičienė)
- Project partners provide research and training activities in the fields of nanotechnology, surface functionalization, bioengineering, microfluidics and biosensor testing, market analysis and commercialization. Provided research and management training to experienced researchers and early stage researchers strengthen their personal skills and CVs via new scientific papers and conference theses and strengthen a development of EU research human resources.
- Goal: to develop a new portable tool for early stage cancer detection which can solve one of the important health challenges in EU society. The CanBioSe project is targeted to strengthen international and intersectoral collaboration, sharing new ideas, knowledge transfer from research to market, and vice versa in the field of nanostructured metal oxide optical biosensors for cancer cell detection.



Start dateEnd date1 January 201831 December 2021











H2020 Project: EVOdrops: directed EVOlution in DROPS

- Programme: H2020-EU.1.3. EXCELLENT SCIENCE Marie Skłodowska-Curie Actions
- Funding scheme: MSCA-ITN-ETN European Training Networks
- Coordinator: UNIVERSITY OF GLASGOW
- FR participants and partners: CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS; UNIVERSITE DE PARIS BIOMILLENIA; ECOLE SUPERIEURE DE PHYSIQUE ET DECHIMIE INDUSTRIELLES DE LA VILLE DEPARIS



- EVOdrops ITN trains a new generation of Phd students in a multidisciplinary network of researchers from different communities - biology, biotechnology, microfluidics and microtechnology engineering – to explore directed evolution processes for protein engineering in an integrative way that transcends the training provided in one single team or even institution. The students are trained to develop and apply a global and multi-disciplinary approach based on key enabling technologies for high-throughput analysis in biological fields.
- Goal: to optimize processes at all levels of the chain of operation to reach ultra-high throughput, improved sensitivity and reliability of systems for the selection of variants of fundamental, medicinal, practical and industrial interest.



High-throughput evolution in picodrops



New double emulsions reactors









End date





H2020 Project: iNEXT-Discovery: Infrastructure for transnational access and discovery in structural biology

- Programme: H2020-EU.1.4. EXCELLENT SCIENCE Research Infrastructures
- Funding scheme: RIA Research and Innovation action
- Coordinator: STICHTING HET NEDERLANDS KANKER INSTITUUT-ANTONI VAN LEEUWENHOEK ZIEKENHUIS
- FR participants: SYNCHROTRON SOLEIL SOCIETE CIVILE, CENTRE NATIONAL DE LA **RECHERCHE SCIENTIFIQUE CNRS, CENTRE EUROPEEN DE RECHERCHE EN BIOLOGIE ET MEDECINE**
- LT partners: VU (dr S.Grazulis)
- iNEXT-Discovery aims to enable access to structural biology research infrastructures for all European researchers, and especially also for non-experts in structural biology. For that reason it brings together a diversity of large research facilities and other groups in a single consortium.
- If you are a cell biologist, a biochemist, a medicinal chemist, working with biomaterials or biotechnology, or work in the food sector, and you have a research question that involves knowledge of the structures of biomolecules and their interactions you can apply for access with iNEXT-Discovery.

HTP cryo-EM &serial MX











1 February 2020





Structural Biology for cellular imaging and challenging systems



Time scales states - dynamics



End date 31 January 2024





Vilnius University

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