Founded in 1998, the L'Oréal-UNESCO For Women in Science partnership was created to recognize and promote women in science. Its programs reward established women scientists whose outstanding achievements have contributed to the advancement of scientific knowledge and of its benefits to society and provide support to promising young women who are already making significant contributions in their scientific disciplines.

The L'Oréal Baltic For Women in Science fellowship awards are offered by a partnership involving L'Oréal Baltic, Latvian National Commission for UNESCO, Latvian Academy of Sciences, Estonian National Commission for UNESCO, the Estonian Academy of Sciences and the Lithuanian National Commission for UNESCO and the Lithuanian Academy of Sciences.

Fellowship program For Women In Science in Latvia was established in 2005. During 13 years, 41 talented young women scientists have been granted with the fellowships to pursue promising research projects. In 2017 fellowship For Women In Science program was established in Estonia and Lithuania to promote, enhance and encourage the contribution of women pursuing research careers in Latvia, Lithuania and Estonia in the fields of life and environmental sciences, physical sciences and engineering.

Mg. sc. ing. Marina Sokolova (Latvia)
Riga Technical University, Rudolfs Cimdins Riga Biomaterials Innovations and Development Centre
Calcium phosphate / hyaluronic acid composite material for bone regeneration

Aging of population and increasing popularity of extreme sports have led to increased numbers of bone diseases and bone trauma. Such diseases as osteoporosis, arthritis, bone cancer and other are the source of movement disability. Bone is key construction element of human body – it needs to be strong, like concrete block, but also elastic like rubber, to absorb shock. The aim of research is to develop composite materials which mimic bone structure. By combining biocompatibility and osteoconductivity of calcium phosphates with polymer materials, such as hyaluronic acid, it is possible to obtain material with similar structure, composition and mechanical properties as natural bone.

Mg. sc. ing. Jekaterīna Ivanova (Latvia)
Latvian Institute of Organic Synthesis
Synthesis of aromatic sulfonamides as inhibitors of carbonic anhydrases

Research is related to development of potential anti-cancer agents. Enzymes carbonic anhydrases are responsible for pH regulation in living organisms. Many of the isoforms of carbonic anhydrases are present in several tissues and organs but some of them - in cancer cells only. In the case of cancer we need to suppress the activity of the specific isoform of this enzyme and develop such compounds that would inhibit only those isoforms of carbonic anhydrases that are present in cancer cells and don't affect other ones. If we could achieve this selectivity, the cancer cells would die, reducing the tumor and ideally the tumor disappearing completely.

L'ORÉAL BALTIC FELLOWSHIP
FOR WOMEN IN SCIENCE

Dr. Els Heinsalu (Estonia)
National Institute of Chemical Physics and Biophysics, Laboratory of High Energy and Computational Physics
Spreading, evolution and competition in linguistics and ecology

Linguistic and ecological systems seem to be very different in nature, however, the mathematical models of the undergoing processes are quite similar. Thus, it is natural to study these topics in parallel, applying the tools, methods, and models developed in one field to the problems of the other filed, as is usually done in the study of complex systems. Concerning the linguistic problems, one approach is more theoretical and more oriented toward statistical physics, for example the spreading of languages as diffusion on a substrate. The other one is more linguistics oriented and concerns mostly the analysis of real data through complex networks and using other tools from complex systems theory. Applying the mathematical tools, one can obtain some interesting additional information concerning the linguistic systems.

Dr. boil. Renāte Ranka (Latvia)
Latvian Biomedical Research and Study Centre, Laboratory of Molecular microbiology and host-pathogen interaction
Microbiome of different tick species in Latvia: exploring possible impacts on the ecology of tick-borne diseases

Research is related to the characterization of the microbial communities, or microbiome, in different tick species and deciphering factors which affect the spread of important infections in population. The comparison of the tick microbiomes will reveal the presence of various pathogens in different ecological niches and provide important information which will help us to understand ongoing epidemiological processes. The findings will be important for monitoring different infections and surveillance of newly emerging pathogens in future.

Dr. Urtė Neniškytė (Lithuania)
Department of Neurobiology and Biophysics, Life Science Center, Vilnius University
Lipid scrambling as a signal for synaptic pruning

Research has a potential to reveal the molecular basis of certain neurodevelopmental and neuropsychiatric diseases such as autism or schizophrenia.
We investigate how unnecessary neuronal connections, known as synapses, are removed from the brain during development. Certain molecules on such synapses signal to immune cells which connections need to be removed. We have some exciting preliminary data about the molecular tags that label synapses destined for elimination. We expect to use these tags to isolate such synapses, to compare them to those that are maintained and to reveal their differences that guide the maturation of the brain.