

LIST OF DISSERTATIONS TOPICS FOR DOCTORAL STUDIES COURSES IN 2022

NATURAL SCIENCES

Scientific area	Topics of doctoral dissertations	Supervisors
BIOCHEMISTRY – N 004	1. <i>Synthesis and application of DNA and enzymes-based self-assembled monolayers</i>	Dr. Gintautas Bagdžiūnas
	2. <i>Investigation of self-assembling proteins of bacteriophages and application of them for development of hybrid nanostructures</i>	Dr. Vida Časaitė
	3. <i>Interaction of pathogens causing upper respiratory tract diseases with artificial lipid membranes</i>	Dr. Marija Jankunec – supervisor Dr. Tadas Ragaliauskas – consultant
	4. <i>Non-coding transcriptome analysis in single-cell resolution</i>	Dr. Simonas Juzėnas
	5. <i>Determinants of DNA repair in CRISPR nuclease-mediated gene editing</i>	Dr. Stephen Jones
	6. <i>Exploration of novel genome editing tools</i>	Dr. Tautvydas Karvelis – supervisor Prof. Virginijus Šikšnys – consultant
	7. <i>Origin, evolution and diversity of Cas9, Cas12 and Cas13 proteins</i>	Dr. Darius Kazlauskas
	8. <i>Structure and function of procaryotic anti-phage defence systems and associated proteins</i>	Dr. Elena Manakova – supervisor Dr. Lina Malinauskaitė – consultant
	9. <i>Development of Retron-based Precision Genome Editors</i>	Dr. Patrick Pausch
	10. <i>Investigation of off-target effects in epigenome editing</i>	Dr. Giancarlo Russo
	11. <i>Modelling the co-development of methylation patterns and CRISPR adaptation in prokaryotes</i>	Dr. Giancarlo Russo
	12. <i>Investigation of catabolism of methylated nucleosides</i>	Dr. Rasa Rutkienė

	13. <i>Investigation of molecular mechanisms of resistance to anticancer treatment</i>	Dr. Aušra Sasnauskienė
	14. <i>Aggregation of ALS-related proteins</i>	Dr. Vytautas Smirnovas
	15. <i>Biodegradation Pathways of Alkylated Pyrimidines</i>	Dr. Jonita Stankevičiūtė
	16. <i>Investigation of multi-enzymatic reactions and their use in biosensors and bioconversion systems</i>	Dr. Lidiya Tetianec
	17. <i>Detection and characterization of antiviral defense systems in prokaryotes using bioinformatics approaches</i>	Prof. Česlovas Venclovas – supervisor Dr. Darius Kazlauskas – consultant
	18. <i>Computational analysis and prediction of protein-protein and protein-nucleic acid complexes</i>	Prof. Česlovas Venclovas – supervisor Dr. Justas Dapkūnas – consultant Dr. Kliment Olechnovič – consultant
	19. <i>Mechanistic studies of DNA motors</i>	Dr. Mindaugas Zaremba – supervisor Dr. Algirdas Toleikis – consultant