| LIST OF DISSERTATIONS TOPICS FOR DOCTORAL STUDIES COURSES IN 2020<br>NATURAL SCIENCES |  |                          |  |
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|   |  |                          |  |
| BIOCHEMISTRY – N 004  | 1. Virulence factors and their role in pathogenesis of emerging Gram-<br>negative bacterial pathogens                    | Dr. Julija Armalytė      |  |
|   | 2. Application of self-assembled supramolecular systems in biosensors  | Dr. Gintautas Bagdžiūnas |  |
|   | 3. Interaction between misfolded proteins and phospholipid membranes   | Dr. Rima Budvytytė       |  |
|   | 4. Biomarkers of the gut microbiota in autistic spectrum disorders   | Dr. Aurelijus Burokas    |  |
|   | 5. Involvement of the microbiota in the development of food addiction  | Dr. Aurelijus Burokas    |  |
|   | 6. The role of cell signaling perturbation for the acquisition of drug resistance in cancer cells                        | Dr. Mindaugas Valius     |  |
|   | 7. Creation of biosensors for measurement of analytes at low concentrations  | Dr. Marius Dagys         |  |
|   | 8. Creation of biosensors for remote environmental monitoring  | Dr. Marius Dagys         |  |
|   | 9. Identification of new Polyomaviruses and investigation of their evolutionary history and interaction with their hosts | Dr. Alma Gedvilaitė      |  |
|   | 10. Interplay between chromatin structure and DNA modification in cancer cells   | Dr. Edita Kriukienė      |  |
|   | 11. Construction and characterization of prodrug-activating enzymes  | Dr. Rolandas Meškys      |  |
|   | 12. Recombinantly produced bacteriocins for infection treatment  | Dr. Aušra Ražanskienė    |  |
|   | 13. Establishment of screening systems for polymer degrading enzymes   | Dr. Jonita Stankevičiūtė |  |
|   | 14. Emerging opportunistic bacterial patogens and their antibiotic resistance mechanisms                                 | Dr. Edita Sužiedelienė   |  |

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| 15. Research of bacteriophages and their components as biocontrol agents | Dr. Eugenijus Šimoliūnas |
|--|--------------------------|
| 16. Chemoenzymatic synthesis of modified nucleotides                     | Dr. Daiva Tauraitė       |
| 17. Computational studies of prokaryotic antiviral defense systems in    | Dr. Česlovas Venclovas   |
| viruses  | Dr. Darius Kazlauskas    |
| 18. New approaches for the analysis of DNA methyltransferase-specific    | Dr. Giedrius Vilkaitis   |
| methylome  |                          |