"THERMO FISHER SCIENTIFIC BALTICS" NOMINAL SCHOLARSHIP COMPETITION TERMS AND CONDITIONS 2024-2025

1. „Thermo Fisher Scientific Baltics", UAB (further – the Company) in cooperation with Vilnius University (further – VU) invites prospective 3- and 4-year Bachelor students from VU Life Sciences Center, Faculty of Chemistry and Geosciences, Faculty of Medicine, Faculty of Mathematics and Informatics to prepare Bachelor final thesis at the Company.
2. Favorite students selected to prepare Bachelor final thesis at the Company will receive "Thermo Fisher Scientific Baltics" nominal scholarship (further – the Scholarship).
3. Main goal of the Scholarship is to promote active participation in scientific research, manufacturing operations processes and advance perspective VU students' career in biotechnology sector.
4. "Thermo Fisher Scientific Baltics" nominal scholarship is 1100 Eur per single academic year, payed out to students in equal parts each academic month.
5. VU students who prepare the final thesis at the Company for two academic years and if study results do not worsen, are entitled for a second-year scholarship, therefore total scholarship would amount up to 2200 Eur.
6. This nominal scholarship does not impact students' chances to receive other scholarships from the State, "Thermo Fisher Scientific Baltics" or other.
7. Applicants Final thesis topic should correspond any of the following Research areas:

Research group and Manager	Methods and research areas
Molecular Biology Advanced Technologies Group Manager Dr. R.Skirgaila	**Methods**: NA purification, PCR, qPCR, protein purification and characterization, EMSA, protein screening using microfluidics, protein exposure on ribosomes, in vitro compartmentalization of cells. **Research areas**: • DNA polymerase research and applications; • Research on nucleic acid modification enzymes; • Use of *in vitro* protein evolution to improve enzyme properties.
Products Verification-Validation Group Manager Dr. A. Lagunavičius	**Methods**: Nucleic acids and enzyme purification; PCR, RT-PCR and qPCR; enzymology and EMSA; NGS; enzyme mutagenesis, immobilisation and chemical modifications; protein lyophilization and air-drying. **Research areas**: • Nucleic acid enzyme research and applications; • Enzyme mutagenesis and chemical modifications; • Protein lyophilisation and air drying.
Molecular Cloning Innovations Group Manager dr. V.Šeputienė	**Methods**: DNA cloning and DNA assembly, DNA mutagenesis **Research areas**: • Innovative tools for *in vitro*, *in vivo* and synthetic DNA molecular cloning workflow
Molecular diagnostics solutions group Manager dr. R. Sukackaitė	**Methods**: PCR, qPCR, isothermal amplification, protein purification and characterization, enzyme modification via targeted mutagenesis and *in vitro* evolution. **Research areas**: • New isothermal amplification methods for molecular diagnostics • Improvement of DNA polymerases and other proteins used in DNA/RNA amplification
Molecular Biology PCR Products Development Group Manager dr. B. Gagilienė	**Methods**: DNA / RNA purification, PCR, qPCR and other alternative DNA / RNA detection methods, genetic engineering of recombinant proteins, protein purification and molecular biology analysis. **Research areas**: • Development and refinement of methods for the rapid and reliable detection of viral and non-viral DNA /RNA • Investigation of the properties of a new generation of polymerases suitable for virological research, next generation sequencing (NGS), single cell, gene editing technologies

Molecular and Synthetic Biology Tools Group Manager Dr. I. Vendelė	**Methods**: recombinant plasmid engineering, *E. coli* transformation, bacterial culture culture, qPCR, PCR, isothermal NA amplification methods, NGS, SDS-PAGE, electrophoresis, NA purification, protein characterization studies, in vitro transcription **Research areas**: • Investigation and characterization of DNA / RNA modifying enzyme properties • Development of new methods and/or validation
Molecular biology product application group Manager dr. E. Merkienė	**Methods**: qPCR, PCR, isothermal amplification, *in vitro* RNA transcription. RNA/DNA modification, NA electrophoresis, NA purification, gene engineering, sequencing, transfection. **Research areas**: molecular biology product research, search for innovative applications.
Cell Biology Group Manager Dr. L. Zaliauskienė	**Methods**: mammalian cell culture, functional studies; fusion protein generation - genetic engineering, transfection, protein purification, ELISA, cytometry, Western Blot, protein-protein interaction analysis using BLI. The group is working on methods and products that are being used in immunotherapy: cell extraction / differentiation using magnetic particles conjugated with cell surface specific antibodies. **Research areas**: • T lymphocyte functional studies in response to different activators: perspectives for immunotherapy. • Monocyte-macrophage activation and functional studies. • Feeder-free NK cell activation and expansion
Micro Array Products Group Manager dr. D.Motiejūnas	**Molecular biology methods**: MicroArrays, PCR, NA purification, enzymatic reactions (polymerases, restriction endonucleases, reverse transcriptases), NA / protein electrophoresis, etc.) **Bioanalytical methods**: absorption, fluorescence, ionic, pH, HPIC, etc. measurements. Working with pipetting robots. **Bioinformatics methods**: programming with Python, Linux environment, various data analysis methods and statistical data processing. **Research areas**: • Improvement and optimization of formulations, enzymatic reactions and molecular detection in MicroArray workflows. • Development of tools for automation of complex data analysis, trend tracking, anomaly detection, AI driven optimization.
Molecular Biology Product Optimization Group Manager M. Laime	**Methods**: NA purification, NA amplification, protein purification and characterization, fluorescent methods **Research areas**: • Development of new methods of analysis and improvement of existing ones • Analysis and modification of critical components of product composition • Improvement of product manufacturing technologies
NA Purification and Amplification Products Optimization Group Manager D. Nekrašienė	**Methods**: FRET, qPCR, PCR, PAGE-SDS, absorption measurement, NA purification, robotization of bioanalytical methods **Research areas**: • Development of new analysis methods and optimization of existing ones • Analysis and modification of critical components of product composition
Cell Banking Development Group Manager dr. K. Pagarauskaitė	**Methods**: gene engineering, cloning into plasmid DNA vectors, restriction analysis, PCR, qPCR, DNA purification, DNA electrophoresis, gene expression in bacterial, yeast, mammalian cells, microbiological methods **Research areas**: development of new biopharmaceutical recombinant products

Biopharmaceutical Product Development Group
 	
Manager
M. Vaicekauskė
	Methods: recombinant protein expression, tangential filtration, chromatography, IPC.
	
	Research areas:
	• Development of recombinant protein technology for cell biology applications in compliance with Good Manufacturing Practice (GMP) requirements
	  ○ Protein expression using microorganisms
	  ○ Protein purification

	○ In-process control • Transfers to GMP production: scaling, increasing yields, adapting technologies to Single Use systems.
Biopharmaceutical Analytical Methods Development Group Manager E. Damušienė	**Methods**: spectrophotometric, qPCR, HPLC, radioactive activity assays, mammalian cell assays, SDS-PAGE **Research areas**: • Development and validation of analytical methods for protein testing. • Protein stability studies • Protein characterization.
Bioprocess development group Manager K. Bargaila	**Methods**: recombinant protein chromatographic purification, depth filtration, centrifugation, tangential concentration, ultra/microdialysis, SDS PAGE analysis, protein concentration measurement, measurement of impurities. **Research areas**: • Research and development of GMP grade protein manufacturing schemes • Transfer of GMP grade protein manufacturing schemes to production
Biopharmaceutical method validation group Manager Dr. G. Stoškienė	**Methods**: qPCR, spectrophotometers, HPLC, radioactive activity tests, SDS-PAGE. **Research areas**: • Creation and validation of analytical methods for protein testing according to GMP requirements. • Protein stability analysis • Protein characterization.
Biopharmaceutical product sustaining group Manager Dr. D. Kavaliauskas	**Methods**: spectrophotometric tests, qPCR, PCR, RT-PCR, radioactive activity tests, SDS-PAGE, RNA/DNA electrophoresis, ELISA, protein chromatography and formulation. **Research areas**: • Analytical method development and validation for protein testing according to GMP requirements. • Protein stability analysis • Protein characterization • New product development.

Research group and Manager	Methods and research areas
Chemistry Group Manager Dr. I. Čikotienė	**Methods**: HPLC, Mass spectrometry, UV / fluorescence **Research areas**: • Development of instrumental analytical methods • Characterization of low molecular weight and high molecular weight products Organic synthesis
Analytical Methods Development And QC Support Group Manager V. Sutkuvienė	**Methods**: spectrophotometric, HPLC, MS, NMR, SDS-PAGE, cIEF, FTIR, appearance, color and clarity, water content, density. Analytes: lipids, peptides, nucleotides, proteins, conjugates. **Research areas**: • Development and validation of analytical methods (acc. to Good Manufacturing Practice GMP, EU and USP guidlines) • Product characterization, determination and identification of product unknowns • Internal Reference standard characterization and implementation
Biopharmaceutical Chemical Products Development Group Manager I. Jaglinskaitė	**Methods**: various methods of organic synthesis, liquid chromatography (LC), NMR, MS, HPLC, UV, qPCR, IVT transcription, PCR. **Research areas**: • Synthesis and optimization of new chemical biopharmaceutical products • Development and validation of analytical methods
Chromatography and mass spectroscopy research center Manager.	**Methods**: HPLC –MS(MS2), HPIC, GC, ICP-MS, inorganic and organic synthesis, chemometrics. **Research areas**: • Consumables and instrumentation validation & verification.

Dr. L. Taujenis	• Application and workflow development form sample prep. to data interpretation. • Software testing. • Process design for chromatographic consumables. • Research & development of novel chromatographic consumables.

8. Applicant should choose no more than three research areas defined above.
9. Applicants must be prospective 3- and 4-year bachelor students studying Natural sciences or other sciences related to the activities of the Company and aiming to prepare their Final thesis at the Company. Weighted average of student's last two exam sessions grades must be no less than 8.
10. Applications for the competition must be submitted by September 15, 2024.
11. Student applicants must submit following documents:
    - Curriculum vitae (CV)
    - Motivational letter, also indicating preferred research areas from the list above
    - Certificate of completed semesters grades and their weighted average
    - Copy of secondary school graduation diploma
    - Copy of other achievements, such as scientific and/or social activities (e.g. participations in scientific competitions, tournaments and other)
    - Recommendation from VU Faculty or Employer would be additional benefit.
12. Application documents should be submitted to VU Study administration department via e.mail jurgita.alonderyte@cr.vu.lt and "Thermo Fisher Scientific Baltics" UAB via e.mail: stud@thermofisher.com titled "Thermo Fisher Scientific nominal scholarship".
13. Students applications are evaluated by an Appointed selection commission. This Commission evaluates provided application documents, and if needed, may ask applicants to meet prior to making decision.
14. The Commission evaluates applicant's study results (weighted average of student's last two exam sessions grades must be no less than 8), motivation, achievements and practical research capabilities.
15. Decision regarding the Scholarship will be communicated via applicant's e-mail.
16. The scholarship is reviewed each study semester and the scholarship holder may lose the scholarship or it may be terminated on withheld according to the terms and conditions of the Scholarship defined in Agreement between the Company and the VU.
17. Terms and conditions of the Scholarship are defined in accordance to the Agreement between the Company and VU.
18. In exceptional cases the Company or the VU have a right to change terms and conditions of the Scholarship or to terminate the call for applications.

26 April, 2024