

PERSONAL AND CONTACT INFORMATION

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• EDUCATION

- 2013 Ph. D. in Ecology and Environmental Sciences
Coastal Research and Planning Institute, Klaipėda University, Lithuania
- 2008 M. Sc. in Biology
Department of Microbiology, Faculty of Natural Sciences, Vilnius University, Lithuania
- 2006 B. Sc. in Biology
Department of Microbiology, Faculty of Natural Sciences, Vilnius University, Lithuania

• CURRENT POSITION(S)

- 2024 – Visiting Lecturer (without stipend)
Faculty of Biology, Technion – Israel Institute of Technology, Israel
- 2023 – Senior (independent) Researcher (full time position)
Laboratory of Algology and Microbial Ecology, Nature Research Centre, Lithuania
- 2023 – Head of Bioinformatics Department (part time position)
Bioinformatics Department, Nature Research Centre, Lithuania

• PREVIOUS POSITIONS

- 2022 – 2023 Principal Investigator (full time position)
Department of Microbiology and Biotechnology, Life Sciences Center, Vilnius University, Lithuania
- 2019 – 2022 Research Associate (full time position)
Lindell Lab, Faculty of Biology, Technion – Israel Institute of Technology, Israel
- 2018 – 2019 Invited Researcher (full time position)
Laboratory of Marine Microbiology, Graduate School of Agriculture, Kyoto University, Japan
- 2016 – 2018 Post-doctoral Research Fellow (full time position)
Department of Biology and Environmental Science, Linnaeus University, Sweden
- 2014 – 2016 Researcher (part time position)
Laboratory of Algology, Nature Research Centre, Lithuania
- 2013 – 2014 Junior Researcher (part time position)
Coastal Research and Planning Institute, Klaipėda University, Lithuania

• AWARDS

- 2016 Young Scientist Award, Lithuanian Academy of Sciences, Lithuania.
- 2012 Award for academic excellence, Research Council of Lithuania, Lithuania.

• TEACHING ACTIVITIES

- 2019 Lecturer – Series of lectures “Introduction into Aquatic Virus Ecology” for undergraduate

students at the Faculty of Agriculture, Kyoto University, Japan.
2010 – 2013 Teaching assistant, lecturer – Laboratory exercises for undergraduate students in Biochemistry and Microbiology, Klaipėda University, Lithuania.

- **SPERVISION OF GRADUATE STUDENTS**

2020 – 2024 PhD student Valiantsin Lukashevich. Nature Research Centre, Vilnius, Lithuania.
2016 – 2020 PhD student Jolita (Kemeraitė) Kuznecova. Nature Research Centre, Vilnius, Lithuania.

- **SPERVISION OF UNDERGRADUATE STUDENTS (2019-2023)**

2024 – 2025 Marta Vitkevič. Project “Resistance in *Aphanizomenon flos-aquae*”, Molecular biology and Biotechnology program at Vilnius University, Vilnius, Lithuania.
2023 – 2024 Augustė Matiukaitė. Project “Infection transcriptome of *Aphanizomenon flos-aquae*”, Microbiology program at Vilnius University, Vilnius, Lithuania.
2023 – 2024 Rugilė Blauzdžiūnaitė. Project “Metagenomics of cyanobacteria blooms”, Microbiology program at Vilnius University, Vilnius, Lithuania.
2020 – 2021 Viktorija Juknevičiūtė. Project “Single cell genomics of green sulfur bacteria”, Microbiology program at Vilnius University, Vilnius, Lithuania.

- **ORGANISATION OF SCIENTIFIC MEETINGS**

2023 Member of the Organizational Committee of the international conference “5th Congress of Baltic Microbiologists” (CBM2023), October 11-13, 2023, Vilnius, Lithuania.
2019 Member of the Scientific Committee of the international conference “International Conference on Toxic Cyanobacteria” (11th ICTC), May 5-10, 2019, Kraków, Poland.

- **REVIEWING ACTIVITIES**

2022 – Scientific Evaluator and Member of the Thesis defense committee of Ph. D. thesis by Aliona Avižiniienė “The application of bacteriophage vB_EcoS_NBD2 derived nanotubes for the presentation of protein fragments”, Vilnius University, Lithuania.
2018 – Pre-examiner of Ph. D. thesis by Sebastian Coloma "Ecological and evolutionary effects of cyanophages on experimental plankton dynamics" University of Helsinki, Finland
Journals ISME Journal
Virology
Archives in Virology
Microbial Ecology
Frontiers in Microbiology
Harmful Algae
Marine Pollution Bulletin

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

2023 – Member of the Board of the Lithuanian Association for Microbiology, Lithuania.
2022 – Ambassador of the International Society for Microbial Ecology (www.isme-microbes.org) for Lithuania.
2017 – Member of the Lithuanian Association for Microbiology, Lithuania.
2016 – 2017 Member of the Board of the Lithuanian Association for Microbiology, Lithuania.

- **MAJOR COLLABORATIONS**

Debbie Lindell, Cyanophage ecology, Lindel Lab, Faculty of Biology, Technion – Israel Institute of Technology, Haifa, Israel.

Dariusz Dziga, Cyanobacteria/cyanophage ecology, Laboratory of Metabolomics, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Poland.

- **PRESENTATIONS AT THE SCIENTIFIC CONFERENCES (2019-2023)**

- 2023 – Invited speaker at the International Conference “EcoBalt 2023: Chemicals & Environment”, 09-11 October 2023, Tallinn, Estonia.
- 2023 – Oral presentation at the 11th Aquatic Virus Workshop, 23-27 May 2023, Québec, Canada.
- 2021 Virtual Poster presentation at the 10th Aquatic Virus Workshop, 27 June-1 July 2021, Kyoto, Japan.
- 2020 Poster presentation at the 15th International conference of Life sciences “The Coins 2020”. 25-27 February 2020, Vilnius, Lithuania.
- 2019 Oral presentation at the 11th International Conference on Toxic Cyanobacteria, 5-10 May 2019, Krakow, Poland

- **SCIENCE POPULARIZATION ACTIVITIES**

- 2023 Keynote speaker at the Thermo Fisher Scientific Day of Science (www.mokslodiena.lt), 2023, 25 October 2023, Vilnius, Lithuania.
- 2023 Invited lecture “Ecological aspects of virus-host interactions” at Vilnius University for Molecular Biotechnology program students, 28 April 2023, Vilnius, Lithuania.
- 2023 Invited lecture “Why should we care about Ocean’s health?” for students at Karalienės Mortos Mokykla private school, 15 March 2023, Vilnius, Lithuania.
- 2018 Invited lecture “Cyanobacteria: Good, Bad and Ugly” at the Embassy of Lithuania, 20 August 2018, Helsinki, Finland.
- 2015 Popular science article “Cyanobacteria: good or bad?“, Mens Libera, Klaipėda University Journal, ISSN 2351-7212, 2015.
- 2013 Popular science article “Mesocosmic future” published at www.jaunasis-tyrejas.lt, 2013.
- 2013 Popular science article “Bacteriophages of the Curonian Lagoon” published at www.jaunasis-tyrejas.lt, 2013
- 2011 Popular science article “Alien vs. Predator: phages therapy in aquatic ecosystems” published at www.jaunasis-tyrejas.lt, 2011
- 2011 Popular science article “Pirates of the cells: The Curse of the Plankton Bacteria” published at www.jaunasis-tyrejas.lt, 2011.

- **EXPEDITION EXPERIENCE**

- Marine 200+ days-at-sea collecting samples and data, including expeditions to the Baltic Sea (as a Chief Scientist in one 7-days long expedition) and Pacific Ocean (58 days).
- Freshwater 600+ days-at-field collecting samples and data, including expeditions to the Curonian Lagoon, lakes, and rivers.

PEER REVIEWED ARTICLES

- 2024 ▪ Toporowska M., Żebracki K., Mazur A., Mazur-Marzec H., **Šulčius** S., Alzbutas G., Lukashovich V., Dziga D., Mieczan T. (2024). Biodegradation of microcystins by microbiota of duckweed *Spirodela polyrhiza*. *Chemosphere*, 366, 143436. <https://doi.org/10.1016/j.chemosphere.2024.143436>.
- 2022 ▪ Antosiak* A., **Šulčius*** S., Malec P., Tokodi N., Łobodzińska A., Dziga D. (2022). Cyanophage infections reduce photosynthetic activity and expression of CO₂ fixation genes in the freshwater bloom-forming cyanobacterium *Aphanizomenon flos-aquae*. *Harmful Algae*, 116, 102215. <https://doi.org/10.1016/j.hal.2022.102215>.
▪ * Antosiak A. and **Šulčius** S. contributed equally to this work.
- Jaskulska A., **Šulčius** S., Kokociński M., Koreivienė J., Nájera A.F., Mankiewicz-Boczek J. (2022). Cyanophage distribution across European lakes of the temperate-humid continental climate zone assessed using PCR-based genetic markers. *Microbial Ecology*, 83, 284-95. <https://doi.org/10.1007/s00248-021-01783-y>.
- 2021 ▪ **Šulčius** S., Alzbutas G., Juknevičiūtė V., Šimoliūnas E., Venckus P., Šimoliūnienė M., Paškauskas R. (2021). Exploring viral diversity in a gypsum karst lake ecosystem using targeted single-cell genomics. *Genes*, 12: 886. <https://doi.org/10.3390/genes12060886>.
- 2020 ▪ Morimoto D., **Šulčius** S., Yoshida T. (2020). Viruses of freshwater bloom-forming cyanobacteria: Genomic features, infection strategies and coexistence with the host. *Environmental Microbiology Reports*, 12(5): 486-502. <https://doi.org/10.1111/1758-2229.12872>.
- Kuznecova* J., **Šulčius*** S., Vogts A., Voss M., Jürgens K., Šimoliūnas E. (2020). Nitrogen flow in diazotrophic cyanobacterium *Aphanizomenon flos-aquae* is altered by cyanophage infection. *Frontiers in Microbiology*, 11: 2010. <https://doi.org/10.3389/fmicb.2020.02010>.
▪ * Kuznecova J. and **Šulčius** S. contributed equally to this work.
- Songailienė I., Juozapaitis J., Tamulaitienė G., Rukšėnaitė A., **Šulčius** S., Sasnauskas G., Venclovas Č., Šikšnys V. (2020). HEPN-MNT Toxin-Antitoxin system: The HEPN ribonuclease is neutralized by OligoAMPylation. *Molecular Cell*, 80: 955-970. <https://doi.org/10.1016/j.molcel.2020.11.034>.
- Montvydienė* D., **Šulčius*** S., Jurgelėnė Ž., Makaras T., Kalcienė V., Taraškevičius R., Kazlauskas M., Kazlauskienė N. (2020). Contrasting ecotoxic effects of landfill leachate and cyanobacterial biomass on aquatic organisms. *Water, Air, & Soil Pollution*, 231: 323. <https://doi.org/10.1007/s11270-020-04684-x>.
▪ * Montvydienė D. and **Šulčius** S. contributed equally to this work.
- Šimoliūnienė M., Tumėnas D., Kvederavičiūtė K., Meškys R., **Šulčius** S., Šimoliūnas E. (2020). Complete genome sequence of *Bacillus cereus* bacteriophage vB_BceS_KLEB30-3S. *Microbiology Resource Announcements*, 9: e00348-20. <https://doi.org/10.1128/MRA.00348-20>.
- 2019 ▪ Nilsson E., Li K., Fridlund J., **Šulčius** S., Bunse C., Karlsson C. M. G., Lindh M., Lundin D., Pinhassi J., Holmfeldt K. (2019). Genomic and seasonal variations among aquatic phages infecting the Baltic Sea Gammaproteobacteria *Rheinheimera* sp. BAL341. 85: e01003-19. *Applied and Environmental Microbiology*, <https://doi.org/10.1128/AEM.01003-19>.
- **Šulčius** S., Šimoliūnas E., Alzbutas G., Gasiūnas G., Jauniškis V., Kuznecova J., Miettinen S., Nilsson E., Meškys R., Roine R., Paškauskas R., Holmfeldt K. (2019). Genomic characterisation of cyanophage vB_AphaS-CL131 infecting filamentous diazotrophic cyanobacteria *Aphanizomenon flos-aquae* reveals novel insights into virus-bacterium interactions. *Applied and Environmental Microbiology*, 85: e01311-18. <https://doi.org/10.1128/AEM.01311-18>.
- 2018 ▪ **Šulčius** S., Mazur-Marzec H., Vitonytė I., Kvederavičiūtė K., Kuznecova J., Šimoliūnas E., Holmfeldt K. (2018). Insights into cyanophage-mediated dynamics of nodularin and other non-ribosomal peptides in *Nodularia spumigena*. *Harmful Algae*, 78: 69-74. <https://doi.org/10.1016/j.hal.2018.07.004>.
- Driscoll C. B., Meyer K. A., **Šulčius** S., Brown N. M., Dick G. J., Cao H., Gasiūnas G., Timinskas A., Yin Y., Landry Z. C., Otten T. G., Davis T. W., Watson S. B., Dreher T. W. (2018). A closely-related clade of globally distributed bloom-forming cyanobacteria within the *Nostocales*. *Harmful Algae*, 77: 93-107. <https://doi.org/10.1016/j.hal.2018.05.009>.
- **Šulčius** S., Reunamo A., Paškauskas R., Leskinen P. (2018). Influence of environmental variation on the bacterioplankton community and its loss to viral lysis in the Curonian Lagoon. *Estuarine, Coastal and Shelf Science*, 204: 76-85. <http://dx.doi.org/10.1016/j.ecss.2018.02.029>.
- 2017 ▪ **Šulčius** S., Montvydienė D., Mazur-Marzec H., Kasperovičienė J., Rulevičius R., Cibulskaitė Ž. (2017). The profound effect of harmful cyanobacterial blooms: From food-web and management perspectives. *Science of the Total Environment*, 609: 1443-50. <http://dx.doi.org/10.1016/j.scitotenv.2017.07.253>.
- **Šulčius** S., Slavuckytė K., Paškauskas R. (2017). The Predation Paradox: Synergistic and antagonistic interactions between grazing by crustacean predator and infection by cyanophages promotes bloom formation in filamentous cyanobacteria. *Limnology and Oceanography*, 62(5): 2189-99. <http://dx.doi.org/10.1002/lno.10559>.
- **Šulčius** S., Slavuckytė K., Januškaitė M., Paškauskas R. (2017). Establishment of axenic cultures from cyanobacterium *Aphanizomenon flos-aquae* akinetes by micromanipulation and chemical treatment. *Algal Research*, 23: 43-50. <http://dx.doi.org/10.1016/j.algal.2017.01.006>.
- 2016 ▪ Grinienė E., **Šulčius** S., Kuosa H. (2016). Size-selective microzooplankton grazing on the phytoplankton in the Curonian Lagoon (SE Baltic Sea). *Oceanologia*, 58(4): 292-301. <http://dx.doi.org/10.1016/j.oceano.2016.05.002>.
- **Šulčius** S., Holmfeldt K. (2016). Viruses of microorganisms in the Baltic Sea: Current state of research and perspectives. *Marine Biology Research*, 12(2):115-24. <http://dx.doi.org/10.1080/17451000.2015.1118514>.
- Olenina I., Vaičiukynas E., **Šulčius** S., Paškauskas R., Verikas A., Gelžinis A., Bačkauskienė M., Bertašiūtė V., Olenin S. (2016). The dinoflagellate *Prorocentrum cordatum* at the edge of the salinity tolerance: the growth is

slower but cells are larger. *Estuarine, Coastal and Shelf Science*, 168:71-9.
<http://dx.doi.org/10.1016/j.ecss.2015.11.013>.

- 2015
- Šulčius S., Pilkaitytė R., Mazur-Marzec H., Kasperovičienė J., Ezhova E., Błaszczyk A., & Paškauskas R. (2015). Increased risk of exposure to microcystins in the scum of the filamentous cyanobacterium *Aphanizomenon flos-aquae* accumulated on the western shoreline of the Curonian Lagoon. *Marine Pollution Bulletin*, 99(1-2):264-70. <http://dx.doi.org/10.1016/j.marpolbul.2015.07.057>.
 - Gelžinis A., Verikas A., Vaičiukynas E., Bačkauskienė M., Šulčius S., Šimoliūnas E., Staniulis J., Paškauskas R. (2015). Automatic detection and morphological delineation of bacteriophages in electron microscopy images. *Computers in Biology and Medicine*, 64:101-16. <http://dx.doi.org/10.1016/j.compbiomed.2015.06.015>.
 - Stoecker D. K., Nejtgaard J. C., Madhusoodhanan R., Pohnert G., Wolfram S., Jakobsen H. H., Šulčius S., Larsen A. (2015). Underestimation of microzooplankton grazing in dilution experiments due to inhibition of phytoplankton growth. *Limnology and Oceanography*, 60(4):1426-38. <http://dx.doi.org/10.1002/lno.10106>.
 - Šulčius S., Šimoliūnas E., Staniulis J., Koreivienė J., Baltrušis P., Meškys R., Paškauskas R. (2015). Characterization of a lytic cyanophage that infects the bloom-forming cyanobacterium *Aphanizomenon flos-aquae*. *FEMS Microbiology Ecology*, 91(2):1-7. <http://dx.doi.org/10.1093/femsec/fiu012>.
 - Šulčius S., Alzbutas G., Kvederavičiūtė K., Koreivienė J., Zakrys L., Lubys A., Paškauskas R. (2015). Draft genome sequence of the cyanobacterium *Aphanizomenon flos-aquae* strain 2012/KM1/D3, isolated from the Curonian Lagoon (Baltic Sea). *Genome Announcements*, 3(1): e01392-14. <http://dx.doi.org/10.1128/genomeA.01392-14>.
- 2014
- Šulčius S., Staniulis J., Paškauskas R., Olenina I., Salytė A., Ivanauskaitė A., Grininė E. (2014). Absence of evidence for viral infection in colony-embedded cyanobacterial isolates from the Curonian Lagoon. *Oceanologia*, 56(3):651-60. <http://dx.doi.org/10.5697/oc.56-3.651>.

BOOK CHAPTERS

- 2022
- Morimoto D., Tominaga K., Takebe H., Šulčius S., Yoshida T. (2022) Viral nature of the aquatic ecosystems. In: Hurst C.J. (Ed.) *The biological role of a virus*. *Advances in Environmental Microbiology*, 9: 3-25. Springer, Cham. https://doi.org/10.1007/978-3-030-85395-2_1.
- 2020
- Morimoto D., Šulčius S., Tominaga K., Yoshida T. (2020). Predetermined clockwork microbial worlds: Current understanding of aquatic microbial diel response from model systems to complex environments. In Gadd G. M., Sariaslani S. (Eds.) *Advances in Applied Microbiology*, 113: 163-191. Elsevier, Amsterdam. <https://doi.org/10.1016/bs.aambs.2020.06.001>.
- 2017
- D'Hondt E., Martin-Juárez J., Bolado S., Kasperovičienė J., Koreivienė J., Šulčius S., Elst K., Bastiaens L. (2017). Cell disruption technologies. In Muñoz R., Gonzalez C. (Eds.) *Microalgae-based biofuels and bioproducts: From feedstock cultivation to end-products*. pp. 133-154. Woodhead Publishing, Totnes. <https://doi.org/10.1016/B978-0-08-101023-5.00006-6>.

CONFERENCE PROCEEDINGS

- 2023
- Šulčius S., Kuznecova J., Antosiak A., Alzbutas G., Lukaszewich V., Dziga D. (2023). Viral effect on carbon and nitrogen cycling in bloom-forming cyanobacteria. *Proceedings* 92(1): 36; <https://doi.org/10.3390/proceedings2023092036>.
- 2015
- Dyachkov V., Mickevičienė R., Gedvilas M., Šulčius S. (2011). Conceptual design of ECO research floating self-propelled laboratory. *Transport means: Proceedings of the 15th international conference:174-176*. 15th International conference "Transport Means 2011". October 20-21, 2011, Kaunas, Lithuania.
- 2013
- Vaičiukynas E., Verikas A., Gelžinis A., Bačkauskienė M., Šulčius S., Paškauskas R., Olenina I. (2013). Prototype-based contour detection applied to segmentation of phytoplankton images. *AWERProcedia Information Technology and Computer Science*, 3, 1285–1292. 3rd World Conference on Information Technology (WCIT-2012), 14-16 November 2012, University of Barcelona, Barcelona, Spain.
- 2012
- Gelžinis A., Vaičiukynas E., Bačkauskienė M., Verikas A., Šulčius S., Paškauskas R., Olenina I. (2012). Boosting performance of the edge-based active contour model applied to phytoplankton images. *Computational Intelligence and Informatics (CINTI)*, 273–277. IEEE 13th International Symposium on Computational Intelligence and Informatics, 20–22 November, 2012, Budapest, Hungary.