

## RESEARCH INTERESTS

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I study the evolution of fungal-algal symbioses, known as lichens. For my current project, I apply cutting-edge bioinformatics methods combined with wet-lab techniques to try to understand how microbial partners communicate in the symbiotic setting and what each of them contributes to the system.

## EDUCATION

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| Present<br><b>University of Alberta</b><br><i>Edmonton AB, Canada</i>     | <b>PhD candidate</b> in Systematics and Evolution<br>GPA 3.9 (4.0 max). Expected graduation: Aug 2022<br>Advisor: Dr. Toby Spribille<br>Projects: Metagenomics of lichen symbiosis (PhD project), Lichens of Alberta  |
| 2017<br><b>St. Petersburg University</b><br><i>St. Petersburg, Russia</i> | <b>MSc.</b> in Biology<br>GPA 4.0 (4.0 max). <i>Diploma cum laude</i><br>Supervisor: Dr. Irina Stepanchikova<br>Projects: Globally endangered lichen <i>Erioderma pedicellatum</i> in Kamchatka (MSc. Thesis)   |
| 2015<br><b>St. Petersburg University</b><br><i>St. Petersburg, Russia</i> | <b>BSc.</b> in Biology<br>GPA 3.9 (4.0 max). <i>Diploma cum laude</i><br>Supervisor: Dr. Irina Stepanchikova<br>Projects: Epiphytic lichens of aspen in old growth forests of the Valday upland (BSc. Thesis), Lichens of Leningrad region and St. Petersburg |
| 2017  | <b>Additional education: Data Analysis</b><br>Online certificate program organized by the St. Petersburg Academic University and Bioinformatics Institute   |

## AWARDS AND FUNDING (TOTAL ~\$86,000)

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| <b>Scholarships:</b> |   |
| 2020–                | Alberta Innovate Graduate Student Scholarship (UAlberta, \$62,000)                |
| 2020                 | Alberta Graduate Excellence Scholarship (UAlberta, \$12,000)                      |
| 2013–2017            | Increased State Academic Scholarship for Excellence in Research (St.PU, \$10,000) |
| <b>Awards:</b>       |   |
| 2020                 | Lionel Cinq-Mars Award for the best oral presentation (\$500)                     |
| 2019                 | Second prize at the departmental 3 Minute Thesis Competition (\$100)              |
| 2018                 | St. Petersburg Naturalist Society Award for the best MSc thesis (\$100)           |
| <b>Grants:</b>       |   |
| 2018                 | Genetics Society of America Travel Grant (\$400)                                  |
| 2018                 | International Symbiosis Society Congress Travel Grant (\$300)                     |
| 2014                 | St. Petersburg University Travel Grant (\$400)                                    |

## SELECTED PUBLICATIONS (see end of CV for the full list)

1. **Tagirdzhanova G.**, McCutcheon J. P., Spribille T. 2021. Lichen fungi do not depend on the alga for ATP production: a comment on Pogoda et al. (2018). *Molecular Ecology*, in press. (Preprint on *bioRxiv*: [doi.org/10.1101/2021.03.17.435722](https://doi.org/10.1101/2021.03.17.435722))
2. **Tagirdzhanova G.**, Saary P., Tingley J., Diaz Escandon D., Abbott W., Finn R., Spribille T. 2021. Predicted input of uncultured fungal symbionts to a lichen symbiosis from metagenome-assembled genomes. *Genome Biology and Evolution*: 13(4):evab047, [doi.org/10.1093/gbe/evab047](https://doi.org/10.1093/gbe/evab047).
3. Spribille T., **Tagirdzhanova G.**, Goyette S., Tuovinen V., Case R., Zandberg W. 2020. 3D biofilms: in search of the polysaccharides holding together lichen symbioses. *FEMS Microbiology Letters* 367(5): p.fnaa023.
4. **Tagirdzhanova G.**, Stepanchikova I., Himelbrant D., Vyatkina M., Dyomina A., Dirksen V., Scheidegger C. 2019. Distribution and assessment of the conservation status of *Erioderma pedicellatum* in Asia. *Lichenologist* 51(6): 575-585.
5. **Tagirdzhanova G. M.**, Kataeva O. A., Stepanchikova I. S. 2014. New lichen records from the Novgorod Region, Russia. *Folia Cryptogamica Estonica* 51: 103–107.

## INVITED TALKS

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| 2021 | Students Mycology Colloquium (Mycological Society of America) |
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## SELECTED CONFERENCES

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| 2021 | Canadian Fungal Research Network Meeting (oral presentation)  |
| 2021 | The British Lichen Society Annual General Meeting (oral presentation)   |
| 2020 | Canadian Botanical Association Virtual Meeting (oral presentation)  |
| 2020 | Dr. R. E. Peter Biology Conference. <i>Edmonton, AB, Canada</i> (oral presentation)   |
| 2019 | 3rd International Conference “Bioinformatics: from Algorithms to Applications”. <i>St. Petersburg, Russia</i> (poster presentation)           |
| 2019 | 30th Fungal Genetics Conference. <i>Pacific Grove, CA, USA</i> (poster presentation)  |
| 2018 | International Symbiosis Society Congress. <i>Corvallis, OR, USA</i> (poster presentation)   |
| 2017 | International Conference “The use of modern information technologies in botanical investigations”. <i>Apatity, Russia</i> (oral presentation) |
| 2016 | VIII Symposium of the International Association for Lichenology. <i>Helsinki, Finland</i> (poster presentation)                               |
| 2014 | II international conference “Lichenology in Russia: problems and perspectives”. <i>St. Petersburg, Russia</i> (poster presentation)           |
| 2014 | XIX Symposium of the Baltic Mycologists and Lichenologists. <i>Šķēde, Latvia</i> (poster presentation)  |

## TEACHING AND SUPERVISING EXPERIENCE

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- 2020– **Co-supervisor** to an undergraduate student working on a research project (BIOL398, BIOL498). The student presented a poster at the 2020 CBA Virtual Meeting
- 2018–2019 **Teaching assistant**, University of Alberta.  
Taught labs for BIO108: Introduction to Biodiversity, BOT306: Biology of the Fungi
- 2014–2016 **Teaching assistant**, St. Petersburg State University.  
Taught labs for Biology of the fungi, lichens, and algae.

## Guest lectures:

- 2021 BIO46: Introduction to research in ecology and evolutionary biology (Stanford University)
- 2020 BOT306: Biology of the Fungi (UAlberta), MATH322: Introduction to Graph Theory (UAlberta)
- 2019 BOT306: Biology of the Fungi (UAlberta), BIOL322: Microbial Diversity and Evolution (UAlberta), BIOL430: Experimental Biology (UAlberta)

## SERVICE

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- 2021– **CanFunNet 2022 Conference Organizing Committee, Member**
- Biology Graduate Students' Association UAlberta:**
- 2020–2021 *President.*
- 2020–2021 *Graduate student representative* at the Departmental Council.
- 2020–2021 *Co-organizer* of Dr. Richard E. Peter Biology Conference (UAlberta).
- 2019–2020 *Volunteer:* Co-organizer of the weekly BGSA Coffee Hour.
- 2019–2020 **EDI (Equity Diversity Inclusion) Committee at the BGSA, Member**
- 2020–2021 **Working Group for Respect, Equity, Accountability and Departmental Culture, Member and grad student representative**
- 2020– **The Science Mentors, Mentor, Speaker:**  
TSM is a mentorship program for STEM undergraduate students.
- 2020– **Journal peer reviewer** for The Lichenologist, Symbiosis
- 2017 **Volunteer** at the 1st International Conference “Bioinformatics: from Algorithms to Applications”.

## SCIENCE COMMUNICATION

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- 2019 Member of Research Zone **Science Communication Program** organized by Telus World of Science
- 2019 **Invited speaker** at The Great Alberta Mushroom Foray

- 2018        **Lichen expert** at the Tombstone Park BioBlitz in Yukon, Canada (BioBlitz is an event bringing together biologists and nature enthusiasts from public, and focused on describing biodiversity of a certain area)
- 2017        Presented at the **workshop** “Lichen Revival III: Rediscovering Macrolichens in the Canadian Rockies”
- 2017        Co-teacher at the **field seminar** for students and NGO volunteers “Nature Conservation and biologically valuable forests”
- 2011–2017    Co-organizer and judge for **biological conferences** and contests for high school students (Student conference “Future Scientists” 2011, 2017; Biology Olympiad 2011–2017; Youth Biology Tournament 2011–2013).

## NATURE CONSERVATION EFFORTS

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- 2017        **Contributed** to project of Valhalla Wilderness Society dedicated to the protection of Inland Temperate Rainforests in British Columbia
- 2012–2017    Participated in research leading to establishment of several **Nature Reserves** in Russia, Participated in monitoring of **endangered species**

## PUBLICATIONS

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### I. Papers

1. **Tagirdzhanova G.**, McCutcheon J. P., Spribille T. 2021. Lichen fungi do not depend on the alga for ATP production: a comment on Pogoda et al. (2018). *Molecular Ecology*, in press. (Preprint on *bioRxiv*: [doi.org/10.1101/2021.03.17.435722](https://doi.org/10.1101/2021.03.17.435722)).
2. **Tagirdzhanova G.**, Saary P., Tingley J., Diaz Escandon D., Abbott W., Finn R., Spribille T. 2021. Predicted input of uncultured fungal symbionts to a lichen symbiosis from metagenome-assembled genomes. *Genome Biology and Evolution*: 13(4):evab047, [doi.org/10.1093/gbe/evab047](https://doi.org/10.1093/gbe/evab047).
3. Spribille T., **Tagirdzhanova G.**, Goyette S., Tuovinen V., Case R., Zandberg W. 2020. 3D biofilms: in search of the polysaccharides holding together lichen symbioses. *FEMS Microbiology Letters* 367(5): p.fnaa023.
4. **Tagirdzhanova G.**, Stepanchikova I., Himelbrant D., Vyatkina M., Dyomina A., Dirksen V., Scheidegger C. 2019. Distribution and assessment of the conservation status of *Erioderma pedicellatum* in Asia. *Lichenologist* 51(6): 575-585.
5. Himelbrant D. E., Stepanchikova I. S., Motiejūnaitė J., Kuznetsova E. S., **Tagirdzhanova G.**, Frolov I. V. 2019. New records of lichens and allied fungi from the Leningrad Region, Russia. X. *Folia Cryptogamica Estonica* 56: 23-29.
6. Motiejūnaitė J., Chesnokov S. V., Czarnota P., ..., **Tagirdzhanova G.**, Thell A., Stepanchikova, I. 2016. Ninety-One Species of Lichens and Allied Fungi New to Latvia with a List of Additional Records from Kurzeme. *Herzogia* 29(1): 143–163.

7. Himelbrant D. E., Stepanchikova I. S., **Tagirdzhanova G. M.** 2016. The lichens and allied fungi of the Oranienbaumsky Prospective Protected Area (St. Petersburg). *Novitates systematicae plantarum non vascularum* 50: 210–230.
8. Himelbrant D. E., Stepanchikova I. S., Motiejūnaitė J., Vondrak J., **Tagirdzhanova G. M.**, Gagarina L. V., Kuznetsova E. S. 2015. New records of lichens and allied fungi from the Leningrad Region, Russia. VI. *Folia Cryptogamica Estonica* 52: 21–28.
9. Stepanchikova I. S., Gagarina L. V., **Tagirdzhanova G. M.**, Himelbrant D. E. 2015. The lichens of juniper communities of Shuryagsky Cape (Leningrad Region). *Vestnik Tverskogo Gosudarstvennogo Universiteta, Biology and Ecology series* 34: 121–126. (in Russian, English summary).
10. Stepanchikova I. S., Himelbrant D. E., Dyomina A. V., **Tagirdzhanova G. M.** 2015. The lichens and allied fungi of the Zapadny Kotlin protected area and its vicinities (Saint Petersburg). *Novitates systematicae plantarum non vascularum* 49: 265–281.
11. **Tagirdzhanova G. M.**, Kataeva O. A., Stepanchikova I. S. 2014. New lichen records from the Novgorod Region, Russia. *Folia Cryptogamica Estonica* 51: 103–107.
12. Himelbrant D. E., Motiejūnaitė J., Stepanchikova I. S., **Tagirdzhanova G. M.** 2014. New records of lichens and allied fungi from the Leningrad Region, Russia. V. *Folia Cryptogamica Estonica* 51: 49–55.
13. Sorokina I. A., Himelbrant D. E., Stepanchikova I. S., ..., **Tagirdzhanova G. M.** 2013. Forest certification as a tool for detection and conservation of biologically valuable forests and scientific research in the eastern part of Leningrad Region. *Vestnik Tverskogo Gosudarstvennogo Universiteta, Biology and Ecology series* 32: 246–264. (In Russian, English summary).
14. Stepanchikova I. S., **Tagirdzhanova G. M.**, Himelbrant D. E. 2013. The lichens and allied fungi of the Smorodinka River valley (Leningrad Region). *Novitates systematicae plantarum non vascularum* 47: 262–278.

## II. Book Chapters

1. **Tagirdzhanova G.** Boreal Felt Lichen, an endangered cyanolichen *Erioderma pedicellatum*. In: DiPaolo D., Vilella J. (Eds.). *Imperiled: The Encyclopedia of Conservation*. In press.
2. **Tagirdzhanova G. M.** 2018. *Lobaria scrobiculata*. In Geltman D. (Ed.). *Red Data Book of Leningrad Region: Plants*. P. 519–520. (in Russian).
3. **Tagirdzhanova G. M.** 2018. *Lobaria pulmonaria*. In Geltman D. (Ed.). *Red Data Book of Leningrad Region: Plants*. P. 781–782. (in Russian).

## III. Published Conference Abstracts

- Tagirdzhanova G.**, Spribille T. 2019. Genome heterogeneity affecting binning of complex fungal communities. *BMC Bioinformatics* 20 (Suppl 17): P7.