

<http://news.doctorat.ubbcluj.ro/>

## Doctoral School of Integrative Biology

### 1. PhD Student:

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### 2. Doctorate

**2.1. PhD thesis title:** Evaluating the spread of antibiotics, antibiotic resistance, and bacterial contaminants in selected water environments from Romania

**2.2. PhD coordinator:** prof. dr. Nicolae Dragoș

**2.3. Date of PhD thesis defense (link from site):** 17 decembrie 2018

(<https://doctorat.ubbcluj.ro/ro/sustinerile-publice-ale-tezelor-de-doctorat/?an=2018&luna=0&facultate=0&domeniu=0> )

**2.4. Grade:** Excelent

### 3. Scientific articles published in:

#### 3.1. Impact factor journals (IF, AIS):

**3.1.1. Szekeres, E.,** Sicora, C., Dragoș, N., Drugă, B. 2014. Selection of proper reference genes for the cyanobacterium *Synechococcus* PCC 7002 using real-time quantitative PCR. *FEMS Microbiol. Lett.* 359: 102-109. DOI:10.1111/1574-6968; **IF** 3.22; **AIS** 0.699.

**3.1.2. Szekeres, E.,** Baricz, A., Chirac, C., Farkas A., Opriș, O., Soran, M., Andrei, A.S., Rudi, K., Balcazar, J.L., Dragoș, N., Coman, C., 2017. Abundance of antibiotics, antibiotic resistance genes and bacterial community composition in wastewater effluents from different Romanian hospitals. *Environ. Pollut.* 225, 304-315. DOI: 10.1016/j.envpol.2017.01.054; **IF** 4.68; **AIS** 1.118.

**3.1.3. Szekeres, E.,** Chiriac, C.M., Baricz, A., Szőke-Nagy, T., Lung, I., Soran, M.-L., Rudi, K., Dragoș, N., Coman, C., 2018. Investigating antibiotics, antibiotic resistance genes, and microbial contaminants in groundwater in relation to the proximity of urban areas. *Environ. Pollut.* 236, 734–744. DOI:10.1016/j.envpol.2018.01.107; **IF** 5.95; **AIS** 1.163.



**3.1.4.** Farkas, A., Craciunaș C., Chiriac, C., **Szekeres, E.**, Coman, C., Butiuc-Keul, A., 2016. Exploring the role of coliform bacteria in class 1 integron carriage and biofilm formation during drinking water treatment. *Microbial Ecol.* 72, 773–782. DOI: 10.1007/s00248-016-0758-0; **IF** 3.66;  **AIS** 1.003.

**3.1.5.** Chiriac, C.M., **Szekeres, E.**, Rudi, K., Baricz, A., Hegedűs, A., Dragoș, N., and Coman, C. 2017. Differences in temperature and water chemistry shape distinct diversity patterns in thermophilic microbial communities. *Appl. Environ. Microbiol.* 83, e01363-17. DOI:10.1128/AEM.01363-17; **IF** 3.79;  **AIS** 1.166.

**3.1.6.** Andrei, A.S., Baricz, A., Robeson, M.S., Păușan, M.R., Tămaș, T., Chiriac, C., **Szekeres, E.**, Barbu-Tudoran, L., Levei, E.A., Coman, C., Podar, M., Banciu, H.L. 2017. Hypersaline sapropels act as hotspots for microbial dark matter. *Sci. Rep.* 7, 6150. DOI:10.1038/s41598-017-06232-w; **IF** 4.44;  **AIS** 1.356.

**3.1.7.** Chiriac, C.M., Baricz, A., **Szekeres, E.**, Rudi, K., Dragoș, N., Coman, C., 2018. Microbial Composition and Diversity Patterns in Deep Hyperthermal Aquifers from the Western Plain of Romania. *Microb. Ecol.* 75, 38–51. DOI:10.1007/s00248-017-1031-x; **IF** 3.66;  **AIS** 0.97.

**3.1.8.** Baricz, A., Teban, A., Chiriac, C.M., **Szekeres, E.**, Farkas, A., Nica, M., Dascălu, A., Oprișan, C., Lavin, P., Coman, C., 2018. Investigating the potential use of an Antarctic variant of *Janthinobacterium lividum* for tackling antimicrobial resistance in a One Health approach. *Sci. Rep.* 8, 15272. DOI:10.1038/s41598-018-33691-6; **IF** 4.12;  **AIS** 1.286.

**3.1.9.** Drugă, B., Buda, D.M , **Szekeres, E.**, Chiș, C., Chiș, I., Sicora, C., 2019. The impact of cation concentration on *Microcystis* (cyanobacteria) scum formation. *Sci. Rep.* 9, 3017. DOI:10.1038/s41598-019-39619-y; **IF** 4.12;  **AIS** 1.286.

**3.1.10.** Baricz, A., Chiriac, C.M., Andrei, A.-Ștefan, Bulzu, P.-A., Levei, E.A., Cadar, O., Battes, K.P., Cîmpean, M., Șenilă, M., Cristea, A., Muntean, V., Alexe, M., Coman, C., **Szekeres, E.K.**, Sicora, C.I., Ionescu, A., Blain, D., O'Neill, W.K., Edwards, J., Hallsworth, J.E., Banciu, H.L., 2020. Spatio-temporal insights into microbiology of the freshwater-to-hypersaline, oxic-hypoxic-euxinic waters of Ursu Lake. *Environ. Microbiol.* n/a. DOI:10.1111/1462-2920.14909; **IF** 3.66;  **AIS** 0.99.

**3.1.11.** Remizovschi, A., Carpa, R., Forray, F.L., Chiriac, C., Roba, C.-A., Beldean-Galea, S., Andrei, A.-Ștefan, **Szekeres, E.**, Baricz, A., Lupan, I., Rudi, K., Coman, C., 2020. Mud



volcanoes and the presence of PAHs. *Sci. Rep.* 10, 1253. DOI:10.1038/s41598-020-58282-2; **IF** 4.12; **AI**S 1.263.

**3.2.12.** Moldovan, O.T., Baricz, A., **Szekeres, E.**, Kenesz, M., Hoaghia, M.A., Levei, E.A., Mirea, I.C., Năstase-Bucur, R., Brad, T., Chiciudean, I., Banciu, H.L., 2020. Testing different membrane filters for 16s rRNA gene-based metabarcoding in karstic springs. *Water* 12, 3400. DOI:10.3390/w12123400; **IF** 2.59; **AI**S.

### 3.2. IDB journals:

**3.2.1.** **Szekeres, E.**, Bercea, V., Dragoș, N., Drugă, B. 2014. Effects of microaerobiosis on photosynthesis in the cyanobacterium *Synechococcus* sp. PCC 7002. *Studia UBB Biologia* 59: 21-39.

**3.2.2.** **Szekeres, E.**, Dragoș, N., Porav, A.S., Baricz, A., Chiriac, C., Szőke-Nagy, T., Coman, C. 2015. Evaluation of bio-resources: monitoring *Arthrospira* growth in supplemented brackish water. *Studia UBB Biologia* 60(2): 45-48.

**3.2.3.** Szőke-Nagy, T., Hegedűs, A., Baricz, A., Chiriac, C.M., **Szekeres, E.**, Coman, C., Dragoș, N. 2015. Identification, isolation and bioinformatic analysis of squalene synthase-like cDNA fragments in *Botryococcus terribilis* AICB 870 strain. *Studia UBB Biologia* 60(1): 23-37.

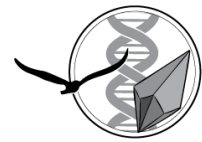
**3.2.4.** Chiriac, C.M., Barbu-Tudoran, L., Baricz, A., **Szekeres, E.**, Szőke-Nagy, T., Dragoș, N., Coman, C. 2015. Bacterial diversity in a microbial mat colonizing a man-made geothermal spring from romania. *Studia UBB Biologia* 60(1): 5-22.

**3.2.5.** Török, L., Ciorca, A.M., **Szekeres, E.**, Coman, C., Török, ZS. 2017. Drinking water quality assessment in the Danube Delta Biosphere Reserve. *Studia UBB Biologia* 62(2): 61-73.

**3.2.6.** Țugui, C., **Szekeres, E.**, Baricz, A. 2017. Sources and mechanisms of combined heavy-metal and antibiotic resistance traits in bacteria. *Studia UBB Biologia* 62(1): 101-114.

### 3.3. Other journals:

**3.3.1.** **Szekeres, E.**, Andrei, A.S., 2016. Quantification of antibiotic resistance genes in environmental samples using real-time qPCR, in *Methodological guide for monitoring*



antibiotics and antibiotic resistance in the environment, (ed.) Coman, C., Cluj-Napoca, Accent, 137-154.

**3.3.2.** Chirac, C., **Szekeres, E.**, 2016. The metagenomic approach for microbial diversity investigation and antibiotic resistance evaluation in environmental samples, in Methodological guide for monitoring antibiotics and antibiotic resistance in the environment, (ed.) Coman, C., Cluj-Napoca, Accent, 155-190.

**3.3.3.** Baricz, A., Szőke-Nagy, T., **Szekeres, E.**, Chirac, C., 2016. Method for nucleic acid extraction, in Methodological guide for monitoring antibiotics and antibiotic resistance in the environment, (ed.) Coman, C., Cluj-Napoca, Accent, 41-62.

**4. Scientific conferences/symposia** (please mention the author/s, title of the conference/symposium, year, country, link)

**4.1. International:**

**4.1.1. Szekeres, E.**, Buda, D.M., Sicora, C., Chiș, C., Drugă, B., The impact of ion concentration on cyanobacteria scum formation, 6th Fresh Blood for Fresh Water Conference, Tihany, Hungary, April 2019 – poster ([https://www.researchgate.net/profile/Anett\\_Endredi/publication/335543073\\_Abstracts\\_of\\_the\\_6th\\_Fresh\\_Blood\\_for\\_Fresh\\_Water\\_Conference/links/5d6ce0d5299bf1808d5eb7d1/Abstracts-of-the-6th-Fresh-Blood-for-Fresh-Water-Conference.pdf](https://www.researchgate.net/profile/Anett_Endredi/publication/335543073_Abstracts_of_the_6th_Fresh_Blood_for_Fresh_Water_Conference/links/5d6ce0d5299bf1808d5eb7d1/Abstracts-of-the-6th-Fresh-Blood-for-Fresh-Water-Conference.pdf) ).

**4.1.2.** Chiriac, C.M., Hegedűs, A., Coman, C., **Szekeres, E.**, Drugă, B., Adaptative evolution to climate change in fresh water cyanobacteria, 6th Fresh Blood for Fresh Water Conference, Tihany, Hungary, April 2019 – poster ([https://www.researchgate.net/profile/Anett\\_Endredi/publication/335543073\\_Abstracts\\_of\\_the\\_6th\\_Fresh\\_Blood\\_for\\_Fresh\\_Water\\_Conference/links/5d6ce0d5299bf1808d5eb7d1/Abstracts-of-the-6th-Fresh-Blood-for-Fresh-Water-Conference.pdf](https://www.researchgate.net/profile/Anett_Endredi/publication/335543073_Abstracts_of_the_6th_Fresh_Blood_for_Fresh_Water_Conference/links/5d6ce0d5299bf1808d5eb7d1/Abstracts-of-the-6th-Fresh-Blood-for-Fresh-Water-Conference.pdf) ).

**4.1.3. Szekeres, E.**, Coman, C., Baricz, A.I., Chiriac, C.M., Hegedűs, A., Dragos, N., Evaluating the microbial community shift in brackish water *Arthrospira* cultures, 10th European Workshop on the Molecular Biology of Cyanobacteria, Cluj-Napoca, Romania, August 2017 – poster ([http://www.ccbjb.ro/10EWMBC/docs/abstract\\_book.pdf](http://www.ccbjb.ro/10EWMBC/docs/abstract_book.pdf) ).

**4.1.4. Szekeres, E.**, Baricz, A.I., Chiriac, C.M., Coman, C., Antibiotic resistance in hospital wastewater microbiota, ICAR2016, Torremollinos, Spain, June 2016 – poster (<https://medimeetings.com/microbiology-and-immunology/iv-international-conference-on-antimicrobial-research-icar2016.html> ).



**4.1.5. Szekeres, E.,** Andrei, S.A., Szőke-Nagy, T., Chiriac, C.M., Baricz, A.I., Dragoș, N., Coman, C., Environmental filtering reduces antibiotic resistance genes abundance in urban wastewater treatment plants, BioMicroWorld, Barcelona, Spain, October 2015 – poster (<https://10times.com/biomicroworld> ).

**4.1.6. Szekeres, E.,** Dragoș, N., Porav A.S., Baricz, A.I., Chiriac, C.M., Szőke-Nagy, T., Coman, C. Evaluation of bio-resources: Monitoring *Arthrospira* growth in supplemented brackish water, International Conference: Molecular Biology – Current Aspects and Prospects, Cluj-Napoca, Romania, November 2015 – poster (<http://icmb.conference.ubbcluj.ro/en/> ).

**4.1.7. Szekeres, E.,** Dragoș, N., Drugă, B., Selection of proper reference genes in the cyanobacterium *Synechococcus* PCC 7002 using real-time PCR, International Congress of Cell Biology and the 32st Annual Scientific Session of the Romanian Society for Cell Biology - June 2014, Târgu Mureș, Romania – poster ([http://www.snbc.ro/pages/Annual\\_meeting.html](http://www.snbc.ro/pages/Annual_meeting.html) ).

**4.1.8. Chiriac, C.M., Szekeres, E.,** Baricz, A.I., Rudi, K., Coman, C., Antibiotic resistance and prokaryotic diversity in surface waters - a human activity impact perspective, ICAR2016, Torremollinos, Spain, iunie 2016 – poster (<https://medimeetings.com/microbiology-and-immunology/iv-international-conference-on-antimicrobial-research-icar2016.html> ).

**4.1.9. Chiriac, C.M., Szekeres, E.,** Baricz, A.I., Szőke-Nagy, T., Andrei, S.A., Coman, C., Evaluation of antibiotic resistance genes in human impacted environments: a preliminary step for an environmental protection strategy, BioMicroWorld, Barcelona, Spain, October 2015 – poster (<https://10times.com/biomicroworld> ).

**4.1.10. Andrei, A.S., Baricz, A., Chiriac, C., Szekeres, E.,** Coman, C., Banciu, H., Composition and diversity of microbial communities in hypersaline sapropels, SAME14 Aquatic Microbial Ecology, Uppsala, Sweden, August 2015 – poster ([https://www.researchgate.net/publication/319279365\\_OVERVIEW\\_Progress\\_and\\_perspectives\\_in\\_aquatic\\_microbial\\_ecology\\_highlights\\_of\\_the\\_SAME\\_14\\_Uppsala\\_Sweden\\_2015](https://www.researchgate.net/publication/319279365_OVERVIEW_Progress_and_perspectives_in_aquatic_microbial_ecology_highlights_of_the_SAME_14_Uppsala_Sweden_2015) ).

**4.1.11. Chiriac, C.M., Baricz, A., Szekeres, E.,** Szőke-Nagy, T., Dragoș, N., Coman, C., A perspective on the ecological functions of antibiotics in natural environments, International Congress of Cell Biology and the 33st Annual Scientific Session of the Romanian Society for Cell Biology - June 2015, Baia Mare, Romania – oral presentation ([http://www.snbc.ro/pages/Annual\\_meeting.html](http://www.snbc.ro/pages/Annual_meeting.html) ).



**4.1.12.** Szőke-Nagy T., Baricz A., Chiriac C. , **Szekeres E.**, Coman C. ,Dragoș N., Identification of gene encoding squalene synthase-like 1 in five *Botryococcus terribilis* AICB strains 1, International Congress of Cell Biology and the 33st Annual Scientific Session of the Romanian Society for Cell Biology - June 2015, Baia Mare, Romania – oral presentation ([http://www.snbc.ro/pages/Annual\\_meeting.html](http://www.snbc.ro/pages/Annual_meeting.html) ).

#### **4.2. National:**

**4.2.1. Szekeres, E.**, Baricz, A.I., Chiriac, C.M., Szőke-Nagy, T., Andrei, S.A, Coman, C. Antibiotics and antibiotic resistant microorganisms: anthropic impact on natural environments, “Kolozsvári Biológus Napok”, Cluj-Napoca, Romania, April 2016 – oral presentation (<https://adoc.pub/17-kolozsvari-biologus-napok-17-th-biology-days-kivonatfzet-.html> ).

**4.2.2. Szekeres, E.**, Sicora, C., Dragoș, N., Drugă, B., The evaluation of reference genes for real-time PCR in the cyanobacterium *Synechococcus* PCC 7002 in stress conditions, BIOTA-BIODiversity, Tradition and Actuality, II Edition, Cluj-Napoca, Romania, March 2015 – oral presentation.

**4.2.3. Chirac, C.**, **Szekeres, E.**, Baricz, A., Rudi, K., Coman, C., Noi perspective privind diversitatea microbiană a izvoarelor termale din Câmpia de Vest a României – o abordare metagenomică, BIOTA-BIODiversity, Tradition and Actuality, II Edition, Cluj-Napoca, Romania, March 2016 – oral presentation.

#### **5. Projects/Grants:**

##### **5.1. Scientific projects/grants:**

**5.1.1.** Research scholarship grant won through the POSDRU/187/1.5/S/155383 project, “Quality, excellence, transnational mobility in PhD Research”, 2015-2016, NIRDBS - Institute of Biological Research Cluj-Napoca.

**5.1.2.** Mobility grant for the Training Event (TE-E) on "Wastewater treatment by advanced technologies and risk assessment framework" and the 1st workshop on "Risk prognosis of environmental and public health aspects of antibiotics and antibiotic-resistant bacteria and antibiotic resistance genes (A&ARB&ARGs)", Fisciano (SA), Italy, September 2017, NIRDBS - Institute of Biological Research Cluj-Napoca.

**5.1.3.** CyanoWarm-2 grant – AQUACOSM Transnational Access, June-August 2020, NIRDBS - Institute of Biological Research Cluj-Napoca.



## Facultatea de Biologie și Geologie

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### 5.2. Projects for the community:

(please mention the title of the project/grant, period, coordinating institution, link)

### 6. Visibility (links):

6.1. Google Scholar: <https://scholar.google.com/citations?user=K4QaNCMAAAAJ&hl=en> .

6.2. ResearchGate: [https://www.researchgate.net/profile/Edina\\_Szekeres](https://www.researchgate.net/profile/Edina_Szekeres) .

6.3. Twitter (#AcademicTwitter): .....

6.4. Other accounts: <https://orcid.org/0000-0003-1463-6301> .

Date

03.02.2021

Signature