

Dr. Bilgenur Baloglu

Molecular biologist, data scientist

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PROFESSIONAL APPOINTMENTS

Freelance science writer, Asian Scientist, 2020-Present

Postdoctoral Fellow, University of Guelph, 2018-2020

Centre for Biodiversity Genomics

Graduate Research Assistant, National University of Singapore, 2013-18

Department of Biological Sciences

Graduate Teaching Assistant, National University of Singapore, 2014-17

Department of Biological Sciences

EMPLOYMENT HISTORY

2012 Field research assistant, KuzeyDoga Society, Turkey

2012 Intern, EMBL Structural and Computational Biology Department, Germany

2012 Project assistant and translator, Phenology Network of Turkey, Turkey

2011 Intern, Helmholtz Zentrum München, AGV Research Unit Gene Vectors, Germany

2010-2011 Research assistant, Bavarian State Institute for Agriculture (LfL), Germany

2010-2011 Intern, TUM School of Life Sciences Biopolymer Chemistry Department, Germany

2010 Intern, Koc University, Molecular Biology and Genetics Department, Turkey

2008-2010 Student assistant, ITU Erasmus Office

EDUCATION

National University of Singapore, Singapore — Ph.D. in Biological Sciences, 2018

Advisor: Dr. Rudolf Meier

Thesis: Biological assessment & monitoring of Singapore aquatic environments with NGS

Istanbul Technical University, Istanbul, Turkey — BSc. in Molecular Biology and Genetics, 2012

Advisor: Dr. Asli Kumbasar

Thesis: Characterization of Nuclear Factor I Protein Expression in Human Neural Stem Cells

Munich Technical University, Munich, Germany — Exchange studies in Molecular Biology and Genetics, 2010-11

GRANTS & AWARDS (Total to date: \$170,546 USD)

2020 Insight Health Data Science Fellowship (*rejected*)

2020 TEDx talk invitation (*cancelled due to Covid19 pandemic*)

2020-2018 Centre for Biodiversity Genomics Postdoctoral Fellowship

2019 Northern Research Fund and Food From Thought Grants for Sub-Arctic Research

2019 Centre for Biodiversity Genomics travel grant (2X)

2019 AllGenetics award for industrial applications using DNA barcoding and DNA metabarcoding

2018-2017 National University of Singapore travel grant (3X)

2018-2013 TEV-SINGA PhD scholarship

2011 European Molecular Biology Laboratory (EMBL) internship travel grant

2011 1st International Conference on Stem Cell Research and Applications Youth travel fellowship

2011-2010 Scholarship from Turkish National Agency for Erasmus Exchange Program

2010 BEST, Board of European Students of Technology Summer School travel grant

PUBLICATIONS

- [1] **Baloglu, B.**, Chen, Z., Elbrecht, V., Braukmann, T., MacDonald, S., Steinke, D. 2020. *A workflow for accurate metabarcoding using Nanopore MinION sequencing*. bioRxiv: 2020.05.21.108852.
- [2] Shepherd, B. A., Tanjil, M. R. E., Jeong, Y., **Baloglu, B.**, Liao, J., Wang, M. C. 2020. *Ångström- and Nano-scale Pore-Based Nucleic Acid Sequencing of Current and Emergent Pathogens*. MRS Advances. pp. 1-18.
- [3] **Baloglu, B.**, Clews E., Meier R., 2018. *NGS barcoding reveals high resistance of a hyperdiverse chironomid (Diptera) swamp fauna against invasion from adjacent freshwater reservoirs*. Frontiers in Zoology, 15(1):31.
- [4] Srivathsan, A. *, **Baloglu, B.***, Wang, W., Tan, W.X., Bertrand, D., Ng, A.H.Q., Boey, E.J.H., Koh, J.J.Y., Nagarajan, N. and Meier, R., 2018. *A MinION™-based pipeline for fast and cost-effective DNA barcoding*. Molecular ecology resources, 18(5), 1035-1049. *Equal contribution.
- [5] **Baloglu, B.** 2018. *Biological assessment and monitoring of Singapore aquatic environments* (Doctoral dissertation).
- [6] Lim, N.K., Tay, Y.C., Srivathsan, A., Tan, J.W., Kwik, J.T., **Baloglu, B.**, Meier, R. and Yeo, D.C., 2016. *Next-generation freshwater bioassessment: eDNA metabarcoding with a conserved metazoan primer reveals species-rich and reservoir-specific communities*. Royal Society Open Science, 3(11), p.160635.

MANUSCRIPTS IN PREPARATION

- [1] **Baloglu, B.**, Hempel, C., Adamowicz, S., Steinke, D. *A phylogenetic perspective on the distribution of aquatic midges (Chironomide) in sub-arctic ponds as revealed by PacBio Sequel sequencing of COI gene*.
- [2] **Baloglu, B.**, MacDonald, S., Braukmann, T., Steinke, D. 2020. *Does size sorting matter? Validation of COI metabarcoding primers for aquatic invertebrates*.
- [3] Deiner, K., Marshall, C., Simonin, P., Burlakova, L., Karatayev, A., **Baloglu, B.**, Coggins, B., Daniel, S., Frankiewicz, A., Whitmore, E., Connolly, J., DeWalt, E., Andres, K., Andres, J., Rogalskyj, G., Pilgrim, E., Westergaard, S., Watkins, J., Rudstam, L., Pfrender, M., Lodge, D., *A new reference database for Great Lakes benthic invertebrate diversity based on DNA based identification*.
- [4] Marshall, C., Connolly, J., Daniel, S., Whitmore, E., **Baloglu, B.**, Dewalt, E., Simonin, P., Deiner, K., Rudstam, L., Watkins, J. *Barcoding Sheds Light on the Natural History of Various Aquatic Invertebrate Taxa in the Great Lakes*.

OTHER PRODUCTS

- [1] **Baloglu, B.**, Chen, Z., Elbrecht, V., Braukmann, T., MacDonald, S., Steinke, D. Python-based bioinformatics algorithm for analyzing metabarcoding data obtained with Nanopore sequencing. [Github site](#)
- [2] Srivathsan, A. *, **Baloglu, B.***, Wang, W., Tan, W.X., Bertrand, D., Ng, A.H.Q., Boey, E.J.H., Koh, J.J.Y., Nagarajan, N. and Meier, R. Python-based bioinformatics algorithm for analyzing DNA barcoding data obtained with Nanopore sequencing. [Github site](#)

SEMINARS & INVITED TALKS

- [1] *International Society for Computational Biology Seminar*, Regional Student Group Turkey, Virtual event, 2020.
- [2] *Ecology and Evolutionary Biology Society of Turkey Seminar*, Virtual event, 2020.
- [3] *Pattern Ag Seminar*, Virtual event, 2020.
- [4] *50th Ontario Ecology, Ethology, and Evolution Colloquium*, Virtual event, 2020.
- [5] *Great Lakes Restoration Initiative Meeting*, Cornell University Biological Station, USA, 2020.
- [6] *Food From Thought, Research Integration Symposium*, Guelph, Canada, 2020.
- [7] *Biodiversity Institute of Ontario Seminar*, Guelph, Canada, 2018.

CONFERENCE PRESENTATIONS

- [8] *13th International Symposium on Health Informatics and Bioinformatics (HIBIT)*, Virtual event, 2020.
- [9] *London Calling 2020*, Virtual event, 2020.
- [10] *8th International Barcode of Life Conference*, Trondheim, Norway, 2019.
- [11] *Society for Freshwater Science Annual Meeting*, Salt Lake City, USA, 2019.
- [12] *5th Ecology and Evolutionary Biology Symposium*, Izmir, Turkey, 2018.
- [13] *3rd Southeast Asian Gateway Evolution Meeting*, Bogor, Indonesia, 2017.

[14] *21st Biological Sciences Graduate Congress*, University of Malaya, Malaysia, 2016.

[15] *25th International Congress of Entomology*, Orlando, Florida, USA, 2016.

[16] *International ITU 6th Molecular Biology and Genetics Student Congress*, Istanbul, Turkey, 2012.

CERTIFICATIONS

2020 “Deep Learning with PyTorch: Zero to GANs”, [Jovian.ml](https://www.jovian.ml)

2020 “Machine learning with Python”, [Udemy](https://www.udemy.com/)

2020 “Python: Python Programming for Artificial Intelligence and Data Science”, [Udemy](https://www.udemy.com/)

2019 SCUBA PADI open water diver

2019 Wilderness first responder

TEACHING & MENTORING EXPERIENCE

Mentoring Experience

Shanna MacDonald, Undergraduate Student – 2018-2020

Centre for Biodiversity Genomics, University of Guelph

Project: Metabarcoding of aquatic habitats with DNA sequencing tools

Jake Gonzales, Wan Ting Lee, Koa Jia Tong, Singapore Polytech Students – 2014-2016

Department of Biological Sciences, National University of Singapore

Project: NGS barcoding of aquatic midges of Singapore

Teaching Assistant, National University of Singapore; Singapore — 2014-17

Responsible for grading essays, homework assignments, and exams, holding help sessions, and assisting in laboratory courses. Assisted in undergraduate biodiversity, animal behavior, and comparative genomics and evolution courses.

Teaching Practicum for Bioinformatics, Istanbul Technical University; Istanbul, Turkey — 2012

Structured teaching experience where bioinformatics lectures are planned and delivered for molecular biology and genetics majors for one semester.

ACADEMIC SERVICE

2020-2018 Reviewer: Molecular Ecology Resources, Ecology and Evolution, Scientific Reports

2020-2018 Member: Ecology and Evolutionary Biology Society of Turkey, Society for Freshwater Science

2020-2018 Project coordinator and consultant for Great Lakes research, US EPA

2016-2014 Consultant, PUB, Singapore's National Water Agency

2014-2012 Graduate Student Council Representative, Department of Biological Sciences, National University of Singapore

2012 Organizer, Bioinformatics workshop, Istanbul Technical University, Turkey

2012-2011 Young Scholar, Global Relations Forum, Istanbul, Turkey

2010 Organizer, ITU 4th National Molecular Biology and Genetics Congress, Turkey

EQUITY & INCLUSION

2020-Present Youth Mentor for underprivileged high school and undergraduate students, StarDust Squad, Turkey

2019-2018 Mentor for one undergraduate student, University of Guelph, Canada

2016-2014 Mentor for three Singapore Polytech students, Singapore

PUBLIC OUTREACH

- 2020 Public feature, Canada based Turkish language newspaper CanadaTurk:
"Awarded molecular biologist Bilgenur Baloglu's journey from the tropics to the Arctic"
- 2020 Public feature, Turkish newspaper Bianet:
"Biologist Baloglu: Don't be afraid of being bold"
- 2020 Speaker, TEDx IKU Istanbul. TEDx talk:
*"How will insects save the world?"*¹
- 2020 Author, Barcode Bulletin (featured on the official US. EPA government website):
"What can't be measured won't be managed: Scientists and U.S. Environmental Protection Agency work together to conserve the Great Lakes"
 Author, Towards Data Science, Medium:
"Predicting ocean water temperature with machine learning"
 Author, Turkey's largest science website, Tree of Evolution:
"If we want to prevent the next pandemic, we have to value evolutionary biology"
 Author, Global Relations Forum & Turkish Society of Ecology and Evolutionary Biology:
"Ecological and evolutionary perspective on the novel coronavirus"
- 2020 Speaker, Discord event with high school students from Turkey on biology and genetics
- 2020 Public feature, Bilim Kadinlari (Eng: Women Scientists):
 A Twitter thread: *"Woman scientist of the week, Dr. Bilgenur Baloglu"*
- 2019 Author, Barcode Bulletin:
"Discovering a resilient and hyperdiverse midge fly fauna in a Singaporean swamp forest"
- 2019 Research coverage, Science Magazine:
"\$180 million DNA 'barcode' project aims to discover 2 million new species"
- 2019 Award announcement, AllGenetics postdoc award:
"Dr. Bilgenur Baloglu wins the «AllGenetics award for industrial applications using DNA barcoding and DNA metabarcoding» for environmental DNA study"
- 2018 Public feature, Woman Doing Science Instagram, Facebook, and Twitter pages
- 2018 Local newspaper coverage, Antalya Gundem Gazetesi, on my one day at a Montessori Kindergarten educating kids on ecology
- 2017 Speaker, Noroblog Podcast:
"Insects and Humans"
- 2017 Author and editor, Turkish science website Bilim.org
- 2012