

Dr. Bilgenur Baloglu

Molecular biologist, bioinformatics scientist
Pasadena, CA

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PROFESSIONAL APPOINTMENTS

Present-2021 Clinical instructor for translational genomics, USC Keck School of Medicine, Los Angeles, CA, USA (part time)
Present-2021 Field Bioinformatics Scientist III, Thermo Fisher Scientific, CA, USA (full time, remote)
Present-2021 Bioinformatics consultant, Sequential Skin (project basis, September-)
2021 Bioinformatics lead, Sequential Skin, NYC, USA (full time, February-August)
2021-2020 Freelance science writer, Asian Scientist, Singapore (remote)
2020-2018 Postdoctoral Fellow, Centre for Biodiversity Genomics, University of Guelph, Canada
2018-2013 Graduate Research Assistant, Department of Biological Sciences, NUS, Singapore
2017-2014 Graduate Teaching Assistant, Department of Biological Sciences, NUS, Singapore

EMPLOYMENT HISTORY

2021 PVNet instructor, PVNet Technology Education Center, Los Angeles, CA, USA
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, HelmholtzZentrum muenchen, AGV Research Unit Gene Vectors, Germany
2011-2010 Research assistant, Bavarian State Institute for Agriculture (LfL), Germany
2011-2010 Intern, TUM School of Life Sciences Biopolymer Chemistry Department, Germany
2010 Intern, Koc University, Molecular Biology and Genetics Department, Turkey
2010-2008 Student assistant, ITU Erasmus Office

EDUCATION

National University of Singapore (NUS), Singapore — Ph.D. in Biological Sciences, 2018
Advisor: Dr. Rudolf Meier
Thesis: Biological assessment & monitoring of Singapore aquatic environments with NGS
Istanbul Technical University (ITU), 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 (TUM), 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
2011-2010 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. 2021. *A workflow for accurate metabarcoding using Nanopore MinION sequencing*. *Methods Ecol Evol.* 12:794–804.
- [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*, 5(56), 2889-2906.
- [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 (Chironomidae) 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. 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.
- [8] *PVNetTechnology Education Center lecture* for high school students, Los Angeles, California, USA, 2021.

CONFERENCE PRESENTATIONS

- [9] *13th International Symposium on Health Informatics and Bioinformatics (HIBIT)*, Virtual event, 2020.
- [10] *London Calling 2020*, Virtual event, 2020.
- [11] *8th International Barcode of Life Conference*, Trondheim, Norway, 2019.
- [12] *Society for Freshwater Science Annual Meeting*, Salt Lake City, USA, 2019.

- [13] *5th Ecology and Evolutionary Biology Symposium*, Izmir, Turkey, 2018.
 [14] *3rd Southeast Asian Gateway Evolution Meeting*, Bogor, Indonesia, 2017.
 [15] *21st Biological Sciences Graduate Congress*, University of Malaya, Malaysia, 2016.
 [16] *25th International Congress of Entomology*, Orlando, Florida, USA, 2016.
 [17] *International ITU 6th Molecular Biology and Genetics Student Congress*, Istanbul, Turkey, 2012.

CERTIFICATIONS

- 2020 “Deep Learning with PyTorch: Zero to GANs”, [Jovian.ml](#)
 2020 “Machine learning with Python”, [Udemy](#)
 2020 “Python: Python Programming for Artificial Intelligence and Data Science”, [Udemy](#)
 2019 SCUBA PADI open water diver
 2019 Wilderness first responder

TEACHING & MENTORING EXPERIENCE

Mentoring Experience

- Sibora Peca, Cynnia Deng, Undergraduate students – May-July (2021), Sequential Skin
 Project: Skin microbiome characterization using Nanopore sequencing
 Britney Shepherd, Undergraduate Student – 2020-2021, University of South Florida
 Project: Nanopore sequencing of current and emergent pathogens
 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

Lecturer, Bioinformatics and programming with Python, StarDust Squad — May - July (2021)

I taught StarDust Squad, a community of high school, undergraduate, and graduate students from Turkey. I gave lectures and practical classes about coding with Python in Jupyter notebook environment, bioinformatics tools, and data visualization. I designed the module myself. [Github site](#)

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

I assisted in undergraduate biodiversity, animal behavior, and comparative genomics and evolution courses, where I was responsible for grading essays, homework assignments, and laboratory courses.

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

I structured teaching experience where bioinformatics lectures were 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

- Present-2020 Youth Mentor for 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 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”*
- 2017-2012 Author and editor, Turkish science website Bilim.org