



BABÜR ERDEM

CONTACT

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EDUCATION

PhD candidate, Biology

Middle East Technical University, Department of Biological Sciences, Ankara, Türkiye

Thesis: *Investigation of Lithium Effects on Honey Bee Physiology and Behavior Using Computational Methods*

Master of Science, Biology (2018)

Middle East Technical University, Department of Biological Sciences, Ankara, Türkiye

Thesis: *Differences in Learning Performance and Related Behaviors Across Three Honey Bee Subspecies from Turkey*

Bachelor of Science, Biology (2015)

Middle East Technical University, Department of Biological Sciences, Ankara, Türkiye

EXPERIENCE

Researcher



Middle East Technical University, Center for Robotics and Artificial Intelligence (ROMER)

Project: *RoboRoyal: ROBOTic Replicants for Optimizing the Yield by Augmenting Living Ecosystems EU-H2020-FET-Open – ID: 964492* (December 2021 – Present)

Founder & CEO

Vitaliter Natural Sciences and Engineering R&D Ltd. (March 2016 – November 2018)

LANGUAGE and COMPUTER SKILLS

 English - Full professional proficiency  Turkish - Native

 Python  R  Matlab  SPSS

PUBLICATIONS

- Erdem, B.**, Arslan, O. C., Sevin, S., Gozen, A. G., Agosto-Rivera, J. L., Giray, T., & Alemdar, H. (2023). Effects of lithium on locomotor activity and circadian rhythm of honey bees. *Scientific Reports*, 13,19861. <https://doi.org/10.1038/s41598-023-46777-7> (SCIE)
- Arslan, O. C., **Erdem, B.**, Somel, M., Giray, T., & Kence, M. (2023). Effects of coumaphos on locomotor activities of different honeybee (*Apis mellifera* L.) subspecies and ecotypes. *Apidologie*, 54, 39. <https://doi.org/10.1007/s13592-023-01017-9> (SCIE)
- Arslan, O. C., Sevin, S., & **Erdem, B.** (2023). Practical protocol for honey bee immobilization for oral administration of drugs and pathogens. *Journal of Apicultural Research*; 62(4), 932-935. <https://doi.org/10.1080/00218839.2021.2014645> (SCIE)
- Sevin, S., Bommuraj, V., Chen, Y., Afik, O., Zarchin, S., Barel, S., Arslan, O. C., **Erdem, B.**, Tutun, H., & Shimshoni, J. A. (2022). Lithium salts: assessment of their chronic and acute toxicities to honey bees and their anti-Varroa field efficacy. *Pest Management Science* 78(11), 4507-4516. <https://doi.org/10.1002/ps.7071> (SCIE)
- Kirman, E.A., Asar, N. V., **Erdem, B.**, Turkyilmaz, I. (2022). Effects of abutment length and platform size on the retention of implant-supported CAD/CAM crowns using six different cements. *Journal of Dental Sciences*, 17(1), 601-603. <https://doi.org/10.1016/j.jds.2021.04.013> (SCIE)
- Yapar, E., Sağlıcan, E., Dönertaş H. M., Özkurt, E., Hu, H., Guo, S., **Erdem, B.**, Rohlf, R. V., Khaitovich, P., Somel, M. (2021). Convergent evolution of primate testis transcriptomes reflects mating strategy. *bioRxiv*. <https://doi.org/10.1101/010553> (Pre-print)

Erdem, B., & Özkök, A. (2017). Can food supplement produced from apilarnil be alternative to testosterone replacement therapy? *Hacettepe Journal of Biology and Chemistry*, 45(4), 635 – 638. DOI: 10.15671/HJBC.2018.207

PATENT

Erdem, B., Arslan, O. C., Mülayim, M. S. (2018). *Turkish Patent No. TR 2016 14275 B. "Separation of Apilarnil lipid extract and usage as testosterone booster."* Ankara: Turkish Patent and Trademark Office.

PROJECTS

Monitoring of Honey Bee Colonies with Computer Vision and Environmental Sensors and Determination of Hive Health with Artificial Intelligence (December 2021 – December 2022) Supported METU Scientific Research Projects Coordination Unit (Position: Researcher, Project Manager: Hande Alemdar / Budget: \$ 6,250)

Determination of the Queen Bee Feeding and Behavioral Pattern Interaction between the Queen and Worker Bees Acting on the Queen Bees Health (July 2021 – July 2022) Supported METU Scientific Research Projects Coordination Unit (Position: Researcher, Project Manager: Hande Alemdar / Budget: \$ 1,175)

Biosensor Development for Explosives and Narcotics Detection Using Honeybees (July 2016 – September 2017) Supported by Scientific and Technological Research Council of Türkiye (TÜBİTAK), 1512 Technopreneurship Capital Support Program (Position: Project Manager / Budget: \$ 5,200)

Effects of Light and Serotonin on Sex Determination in *Daphnia magna* (September 2013 – September 2014) Supported by Scientific and Technological Research Council of Türkiye (TÜBİTAK), 2209/A Undergraduate Students Domestic Research Projects Support Program (Position: Project Manager / Budget: \$ 750)

SCHOLARSHIP

Scientific and Technological Research Council of Türkiye - TÜBİTAK BİDEB 2250 Graduate Performance Scholarship (September 2022 – Present)

Project assistant. Hive 4.0: Artificial intelligence-based objective approaches in honeybee monitoring. Middle East Technical University, Department of Computer Engineering, Hande Alemdar's laboratory (May 2022 – Present) Supported by TÜBİTAK

YÖK (The Council of Higher Education) 100/2000 Doctoral Fellowship in Bioinformatics – Biostatistics field (2019 – 2021)

Project assistant. Investigation of the neural basis of attention in the fruit fly. TOBB Economy and Technology University, Psychology Department, Münire Özlem Çevik's Laboratory. (December 2017 – July 2018) Supported by TÜBİTAK

AWARD

Erdem, B., Akpolat, M. T., & Arslan, O. C. (Kovan Team) *"Biosensor development for explosives and narcotics detection using honeybees."* Yeni Fikirler Yeni İşler (New Ideas New Businesses) technopreneurship program special prize in IDEA Category, organized by ODTÜ Teknokent & METU. December 5, 2015. Ankara, Türkiye.

TRAININGS & CERTIFICATES

T-Jump Entrepreneurship Bootcamp. 9- 19 February 2016. ODTÜ Teknokent, San Francisco, USA

Yeni Fikirler Yeni İşler (New Ideas New Businesses) Technopreneurship Program. June - October 2015. ODTÜ Teknokent, Ankara, Türkiye

Mt. Erciyes & Sultan Reeds Nature Education Certificate. August 2010. Erciyes University & Scientific and Technological Research Council of Türkiye, Kayseri, Türkiye

CONFERENCE PAPERS

Erdem, B., Arslan, O. C., Sevin, S., Gödelek, O., Gözen A. G., Agosto Rivera, J. L., Giray, T. & Alemdar, H. *"Effect of lithium on locomotor activity, circadian rhythm and social behaviors of honeybees."* 47th Apimondia International Apicultural Congress. August 24-28, 2022. İstanbul, Türkiye. Abstract Book: p 83 (Oral Presentation)

- Roboroyale Consortium. "Robotic replicants for improving queen bee health and persistence of the honey bee colony." 47th Apimondia International Apicultural Congress. August 24-28, 2022. İstanbul, Türkiye. (Poster Presentation)
- Erdem, B.**, Arslan, O. C., Kence, M., Somel, M., & Giray, T. "Determining the differences of learning abilities and behaviors between the three honeybee subspecies." 45th Apimondia International Apicultural Congress. September 29 – October 4, 2017. İstanbul, Türkiye. Abstract Book: p 205 (Poster Presentation)
- Erdem, B.**, Mandacı, B. C., Kence, M., Beklioğlu, M. "The effect of serotonin in hypoxia induced hemoglobin producing pathway in water fleas (*Daphnia magna*)." Ecology and Evolutionary Biology Symposium, organized by Ecology and Evolutionary Biology Society of Türkiye & İstanbul Technical University. July 11-13, 2017. İstanbul, Türkiye. Abstract Book: p 40 (Poster Presentation)
- Erdem, B.**, Usal, K. A., & Hohenberger, A. "Smell recognition and odor – shape matching." 4th International Symposium on Brain and Cognitive Science, organized by Hacettepe University. April 30, 2017. Ankara, Türkiye. (Poster Presentation)
- Saglican, E., Donertas, M., Rohlf, R., Ozkurt, E., Hu, H., Neme, R., **Erdem, B.**, Khaitovich, P., & Somel, M. "Mechanisms of convergent testis transcriptome evolution in primates." 86th Annual Meeting of the American Association of Physical Anthropologists, organized by AAPA. April 19-22, 2017. New Orleans, USA. Abstract Book: p 364 (Oral Presentation)
- Parvizi, P., Turan, Z. G., Özkurt, E., Baloğlu, O., **Erdem, B.**, Karaca, M., Erbaba, B., Burduroğlu, H. C., Doğru, E., Somel, M. "Testing the hypothesis that chronic stress accelerates brain aging in a mouse model". 3rd International Congress of the Molecular Biology Association of Türkiye, organized by İzmir Institute of Technology & Molecular Biology Association of Türkiye. September 10-12, 2014. İzmir, Türkiye. Abstract Book: p 186 (Poster Presentation)
- Erdem, B.**, & Kence, M. "Role of serotonin in environmental stress induced sex determination in *Daphnia*." Ecology and Evolutionary Biology Symposium, organized by Boğaziçi University. July 12-13, 2014. İstanbul, Türkiye. Abstract Book: p 25 (Poster Presentation)
- Erdem, B.** "Daphnia: a rising model organism." Laboratory Animal Science 3rd National Congress, organized by Erciyes University. September 26-28, 2013. Kayseri, Türkiye. Abstract Book: pp 68-69 (Oral presentation in Turkish)
- Erdem, B.** "Biological origins of obesity and food-based regulations for prevention." Turkish 11th Food Congress, organized by Mustafa Kemal University & The Association of Food Technology. October 11-12, 2012. Hatay, Türkiye. Abstract Book: p 18 (Oral presentation in Turkish)
- Erdem, B.**, & Akyüz, C. "Contradictions between scientific theories for obesity and government policies." Obesity and Ethics: 3rd National Medical Ethics Project Contest, organized by Gazi University. May 23, 2012. Ankara, Türkiye. Contest Projects Book: pp 189-201 (Finalist)