# Gaye Defne Ceyhan

Assistant Professor of Science Education

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## EDUCATION

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| 2016 – 2019 | Ph.D. in Science Education, Syracuse University, NY, USA |
| 2013 – 2016 | M.A. in Primary (Science) Education, Bogazici University, Turkey |
| 2000 – 2005 | B.S. in Science Education, Bogazici University, Turkey |
| 2000 – 2005 | Certificate in Mathematics Education, Bogazici University, Turkey |

## WORK EXPERIENCE

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|---|---|
| 07/20 – Current | *Assistant Professor,* Department of Mathematics and Science Education*,* Bogazici University, Turkey |
| 01/20 – 07/20 | *Part-time Instructor,* Department of Mathematics and Science Education*,* Bogazici University, Turkey |
| 01/20 – 07/20 | *Consultant,* Strategic Undergraduate STEM Talent Acceleration Initiative (SUSTAIN) Project, National Science Foundation (NSF) Grant (Grant No: 1644148) |
| 2016 – 2019 | *Research/Teaching Assistant*, Department of Science Teaching, College of Arts & Sciences, Syracuse University, Syracuse, NY, USA |
| 2014 – 2016 | *Research Assistant,* Department of Primary Education, Bogazici University, Turkey |
| 2005 – 2013 | *Middle School Science Teacher*, Istanbul, Turkey |

## PROJECT/RESEARCH EXPERIENCE

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| 05/25 - Current | *Primary Investigator,* Faculty members' perspectives on sustainable development goals and their course integration practices in the Faculty of Education, supported by Bogazici University BAP (Project No: 20339) |
| 12/24 - Current | *Researcher,* Quantum technologies training for teachers, supported by TUBITAK (Project No: 323K345) |
| 07/24 – Current | *Primary Investigator,* Designing and implementation of a climate education program with systems thinking approach, supported by TUBITAK (Project No: 124K058) |
| 04/23 – 09/25 | *Researcher*, Designing and implementation of climate change teaching module with socioscientific subject-based teaching approach, supported by TUBITAK (Project No: 123K129) |
| 08/22 – 08/24 | *Primary Investigator*, Science-e-communication, supported by Bogazici University BAP Start-up (Project No: 18661) |
| 09/23 - 09/24 | *Advisor,* Investigation of prospective science teachers' global climate change profiles, knowledge, and perception levels, supported by TUBITAK (Project No: 1919B012300777) |
| 04/23 – 06/23 | *Expert,* Education for sustainable living, supported by UNICEF |

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| 04/23 – 12/23 | *Instructor*, Teachers 2030: Sustainable development goals and climate mobilization training, supported by UN SDSN Türkiye |
| 07/22 – 07/23 | *Researcher,* Designing and implementation of a systems thinking course in education for teacher candidates, supported by TUBITAK (Project No: 122K111) |
| 10/21 – 12/21 | *Researcher*, Environmental education with system thinking and World Climate Game project, supported by UNDP Turkey (Project No: UNDP-TUR-20210805-0010519) |
| 07/21 – 12/21 | *Researcher*, Towards achieving a shared aim: Education for global citizenship and sustainable development by using socio-scientific issues in science education, supported by Netherlands Science Diplomacy Fund (Project No: 1005611) |
| 01/20 – 07/20 | *Consultant*, Strategic Undergraduate STEM Talent Acceleration Initiative (SUSTAIN) Project |
| 08/18 – 12/19 | *Consultant*, Strategic Undergraduate STEM Talent Acceleration Initiative (SUSTAIN) Project, National Science Foundation (NSF) Grant (Grant No: 1644148) |
| 01/14 – 01/16 | *Research Assistant*, Revisiting scientific inquiry in the classroom: towards an interdisciplinary framework in science teaching and learning, supported by TUBITAK and European Union Marie Curie Co-Fund Brain Circulation Scheme Fellowship (291762/2236) |
| 07/15 | *Instructor*, New model mathematics and science education project, supported by TUBITAK and Kocaeli National Education Directorate (92005345-604.02-169206) |
| 07/14 | *Instructor*, Clean Environment, Clean Black Sea Project, supported by TUBITAK (213B638) |
| 05/14 | *Researcher*, Technical Assistance for Strengthening the Special Education (TASSE), supported by the EU and coordinated by the Ministry of Education in Turkey (EuropeAid/128640/D/SER/TR) |

## PUBLICATIONS

1. Karga, B., & **Ceyhan, G. D.** (2026). Investigating middle school science teachers' stock-flow, causal-loop, and dynamic thinking skills with scenario-based questions. *International Journal of Science Education*, 48(2), 268–287. https://doi.org/10.1080/09500693.2024.2404546 *(SSCI)*

2. Demirtaş, M., Ünal, İ., & **Ceyhan, G. D.** (2025). Examining the effect of teaching greenhouse effect to secondary school students with system dynamics tools in terms of different variables. *Necatibey Faculty of Education Electronic Journal of Science and Mathematics Education*, 19(2), 612-639. https://doi.org/10.17522/balikesirnef.1786858 (*TR Dizin*)

3. Kara-Zorluoglu, D. & **Ceyhan, G. D.** (2025). Effects of computational thinking approaches on 8th grade students' computational thinking skills and knowledge about climate change. *Journal of Science Education and Technology,* 1-20. https://doi.org/10.1007/s10956-025-10252-x (SSCI)

4. Ozyazici, G., Hanedar, M., **Ceyhan, G. D.** & Tillotson J. (2025). Systems thinking and climate plausibility: Unrevealing perceptions and patterns among non-science undergraduates. *Environmental Education Research*, 1-22. https://doi.org/10.1080/13504622.2025.2553174 (SSCI)

5. Yabas, D., **Ceyhan, G. D.**, Doganca Kucuk, Z., & Corlu, M. S. (2025). STEM teachers' authentic problems of the knowledge society in their instructional designs. *Teacher Development*, 1-20. https://doi.org/10.1080/13664530.2025.2550413 (ESCI)

6. **Ceyhan, G. D.**, Budak, U. S., Gungor Cabbar, B., Ertugrul, N., & Genc, B. (2025). Using a systems thinking approach for a climate change education training program in teacher education. *Science Activities*, 62(4), 267-279. https://doi.org/10.1080/00368121.2025.2533779 (ESCI)

7. Kara-Zorluoglu, D., Budak, U. S., Atay, E., & **Ceyhan, G. D.** (2025). What, why, how?… Cognitive and motivational question patterns of 7th graders in science communication meetings. *International Journal of Science and Mathematics Education*, 23(8), 3297–3329. https://doi.org/10.1007/s10763-025-10595-2 (SSCI)

8. **Ceyhan, G. D.** & Budak, U. S. (2025). Exploring how pre-service science and mathematics teachers utilize systems dynamics tools to explain sustainable development goals. *International Journal of Sustainability in Higher Education,* https://doi.org/10.1108/IJSHE-08-2024-0518 (SSCI)

9. Ozyazici, G., **Ceyhan, G. D.** (2025). College students plausibility perceptions about global climate change: Implementation of model evidence link diagram. *Research in Science Education,* 55(6), 1665–1683. https://doi.org/10.1007/s11165-025-10244-2 (SSCI)

10. Paksoy, I., Hanedar, M., & **Ceyhan, G. D.** (2025). Student-scientist interactions: student value perceptions in science communication meetings. *International Journal of Science Education, Part B*, 15 (2), 272-287. https://doi.org/10.1080/21548455.2024.2381839. (*ESCI*)

11. **Ceyhan, G. D.**, Budak, U. S., & Karga, B. (2024). Assessing the pre-service science and mathematics teachers' systems thinking skills through case scenarios. *Necatibey Faculty of Education Electronic Journal of Science and Mathematics Education*, 18(2), 375-403. https://doi.org/10.17522/balikesirnef.1511926 (*TR Dizin*)

12. **Ceyhan, G. D.**, & Sarıbaş, D. (2024). Fen öğretmen adaylarının mRNA aşılarının kullanımına ilişkin kanıta dayalı açıklamalarının incelenmesi. *Bogazici University Journal of Education*, 41(2), 69-92. https://doi.org/10.52597/buje.1291627 (*TR Dizin*)

13. Altıntaş, S., Ozdinc, I., & **Ceyhan, G. D.** (2024). Teachers' knowledge and views on developing zero waste education within the sustainable development goals framework. *International Research in Geographical and Environmental Education*, 1-15. https://doi.org/10.1080/10382046.2024.2363653 (*ESCI*)

14. Hanedar, M., Ozyazici, G., & **Ceyhan, G. D.** (2024). Assessment and validation: an updated climate change Plausibility Perception Measure. *Environmental Education Research*, 30(12), 2291–2314. https://doi.org/10.1080/13504622.2024.2341172 (SSCI)

*15.* Ozdinc, I., & **Ceyhan, G. D.** (2024). A gamified-integrated STEM activity about global climate change. *Science Activities*, 61(2), 71-80. https://doi.org/10.1080/00368121.2024.2304579. (*ESCI*)

16. Budak, U. S. & **Ceyhan, G. D.** (2024). Research trends on systems thinking approach in science education. *International Journal of Science Education*. 46 (5), 485-502. https://doi.org/10.1080/09500693.2023.2245106. (*SSCI*)

17. Yabaş, D., **Ceyhan, G.D.**, Doganca-Kucuk, Z., & Corlu, M. S. (2023). Authentic problems of knowledge society: mathematics teachers' integration of cognitive and social dimensions into STEM lesson plans. *In Thirteenth Congress of the European Society for Research in Mathematics Education* (CERME13) (No. 18). Alfréd Rényi Institute of Mathematics, CERME. (Proceeding)

18. Kara, D., Ozdinc, I., Karga, B., & **Ceyhan, G. D.** (2023). Pre-service teachers' motivations to participate in the Near-Peer Mentoring Program. *Sakarya University Journal of Education,* 13(3), 484 - 503. https://doi.org/10.19126/suje.1335650. (*TR Dizin*)

19. Yildiz Degirmenci S., **Ceyhan, G.D.** & Alibeyoglu M. (2022). Merging climate policy simulation games and systems thinking approach in an environmental education program. In the International History, Philosophy, and Science Teaching (IHPST) Conference, 105-107. (Proceeding)

20. **Ceyhan, G. D.**, & Saribas, D. (2022). Research trends on climate communication in the post-truth era. *Educational and Developmental Psychologist*, 1(39), 5-16. https://doi.org/10.1080/20590776.2021.2001295. (*ESCI*)

21. **Ceyhan, G. D.**, Lombardi, D. & Saribas, D. (2021). Probing into preservice science teachers' practices of critical evaluation and decision-making on controversial issues. *Journal of Science Teacher Education*, 32(8), 865-889. https://doi.org/10.1080/1046560X.2021.1894762. (*ESCI*)
22. **Ceyhan, G. D.** & Tillotson, J. W. (2020). Early-year undergraduate researchers' reflections on the values and perceived costs of their research experience. *International Journal of STEM Education*. 7(1), 1-19. https://doi.org/10.1186/s40594-020-00248-x. (*SSCI*)
23. **Ceyhan, G. D.** & Tillotson, J. W. (2020). Mentoring structures and the types of support provided to early-year undergraduate researchers. *CBE-Life Sciences Education*. 19(3), ar26. http://dx.doi.org/10.1187/cbe.19-09-0183. (*SSCI*)
24. **Ceyhan, G. D.** & Mugaloglu, E. Z. (2020). The role of cognitive, behavioral and personal variables of pre-service teachers' plausibility perceptions about global climate change. *Research in Science & Technological Education*, 38(2), 131-145. http://dx.doi.org/10.1080/02635143.2019.1597695. (*SSCI*)
25. **Ceyhan, G. D.,** Thompson, A., Sloane, J. D., Wiles, J. R., Aksoy, S., & Tillotson, J. W. (2019). The socialization and retention of low-income college students: The impact of a wrap-around intervention. *International Journal of Higher Education*, 8(6), 249-261. https://doi.org/10.5430/ijhe.v8n6p249. (*ERIH, Scopus*)
26. **Ceyhan, G. D.,** Mugaloglu, E. Z., & Tillotson, J. W. (2019). Teachers' views about teaching climate change through evidence-based thinking practices: Appropriateness, benefits, and challenges of using an instructional scaffold. *Elementary Education Online*, 18 (4), 1405-1417. https://doi.org/10.17051/ilkonline.2019.630305. (*TR Dizin*)
27. **Ceyhan, G. D.,** Thompson, A., Sloane, J. D., Tillotson, J. W., & Wiles, J. R. (2019). Exploring how the Strategic Undergraduate STEM Talent Acceleration INitiative (SUSTAIN) influenced students' understanding of the nature of science. *International History Philosophy and Science Teaching (IHPST) Conference Book of Proceedings*, 523-529. (*Proceeding*)
28. Saribas, D., **Ceyhan, G. D.**, & Lombardi, D. (2019). Zooming in on scientific practices and evidence-based explanations during teaching NOS: A study in pre-service teacher education program. *Elementary Education Online*, 18(1), 343-366. https://doi.org/10.17051/ilkonline.2019.527626. (*TR Dizin*)
29. Yapıcıoğlu, A.E., Atmaca, S., Akbulut, A., **Ceyhan, G. D.**, Durmuş, Y., Akaydın, G. & Demirsoy, A. (2017). Journey to natural history museum in perspective of children. *European Journal of Science and Mathematics Education*, 5(4), 365-375. https://doi.org/10.30935/scimath/9517. (*ERIH, Scopus*)
30. Saribas, D., & **Ceyhan, G. D.** (2015). Learning to teach scientific practices: Pedagogical decisions and reflections during a course for pre-service science teachers. *International Journal of STEM Education*, 2(7), 1-13. https://doi.org/10.1186/s40594-015-0023-y. (*ESCI in 2015, currently SSCI*)

## PUBLISHED RESOURCES/ TECHNICAL REPORT

1. Erduran, S., Mugaloglu, E. Z., Kaya, E., Sarıbaş, D., **Ceyhan, G. D.** & Dagher, Z. (2016). *Learning to teach scientific practices: A professional development resource*. University of Limerick.

## BOOK CHAPTERS

1. **Ceyhan, G. D.**, Doganca Kucuk, Z., & Yabas, D. (In Press). Teacher practices in climate change education through various levels of STEM integration. *Handbook of Climate Change Research in Transdisciplinary Education,* Springer Nature/ Palgrave Macmillan.
2. **Ceyhan, G. D.,** Güngör-Cabbar, B. (2025). Sistem düşüncesiyle iklim: İlişki çemberi aracını kullanarak fen bilgisi öğretmen adaylarının SKA ve iklim değişikliği bağlantılarını görselleştirmesi, Prof. Dr. Oğuz Özdemir ve Prof. Dr. Abbas Ertürk (Ed.). *Kuramdan Uygulamaya SÜRDÜRÜLEBİLİRLİK VE EĞİTİMİ-II,* Eğiten Kitap Yayınları, 85-98.

3. **Ceyhan, G. D.,** Budak U. S. (2024). Fen öğretiminde sistem okuryazarlığı becerisinin geliştirilmesi. Prof. Dr. Harun Çelik (Ed). *Bütüncül Eğitim Yaklaşımına Göre Etkinlik Temelli Fen Öğretimi*, Eğiten Kitap Yayınları, 137-167.
4. **Ceyhan, G. D.** (2024). Su hasadı ile sürdürülebilir çözümler. Prof. Dr. Sedef Canbazoğlu Bilici, Prof. Dr. Faik Özgür Karataş, Do. Dr. Yasemin Özdem Yılmaz (Ed). *Mühendislik Tasarım Temelli Fen Eğitimi Uygulamaları*, Pegem Akademi Yayınları, 101-120.
5. Alibeyoglu, M., Baskahya, Z. I., **Ceyhan, G. D.,** Yildiz Degirmenci S., Gunes Demir, N., Etli, S., Girgin, G., Goktepe, E., Karga, B.,Unsal, E., & Yararbas, U. (2024). Examining the alignment of student explanations with the system model in climate education using systems thinking. *Cases on Collaborative Experiential Ecological Literacy for Education,* IGI Global, 77-110.
6. Aksit, O., **Ceyhan, G. D.,** Mugaloglu, E. Z. (2023). Fen egitiminin sozde-gerceklik (Post-truth) dünyasında rolü ve onemi. Mustafa Ergun (Ed.). *Fen Öğretimi I.* Nobel Yayınları
7. Mugaloglu, E. Z., Can, N. & **Ceyhan, G. D.** (2017). Kanita dayali fen egitimi: Model kanit iliski seması [Evidence-based science education: Model-evidence link diagram]. Mutlu Pinar Demirci Guler (Ed.) *Fen Bilimleri Öğretimi: Kuram ve uygulama Örnekleri*. Pegem Yayınları

## CONFERENCE PRESENTATIONS & TALKS

1. Dayan, A., Taylan, S., Olgun, E. M., Sarıboğa, Y., Özcan, E., Ünlü, B., Mercan, F. Ç., **Ceyhan, G.D.** (2025). Öğretmenlerin gözünden kuantum teknolojileri eğitiminin katkıları. *Ulusal Fizik Eğitimi Kongresi*, İstanbul, Türkiye.
2. **Ceyhan, G. D.**, Gunckel, K. (2025). Advancing teacher development in climate change education: Transdisciplinary approaches across educational levels. *European Science Education Research Association (ESERA) Conference*, Copenhagen, Denmark.
3. **Ceyhan, G. D.**, Budak, S., Gungor Cabbar, B., Ertuğrul, N., Genc, B. (2025). Pre-service science teachers' expectations and perceived value of a climate change education program using a systems thinking approach. *European Science Education Research Association (ESERA) Conference*, Copenhagen, Denmark.
4. Ertuğrul, N., **Ceyhan, G. D.** (2025). Investigation of pre-service teachers' system thinking competencies on a climate change scenario through causal loop diagrams. *European Science Education Research Association (ESERA) Conference*, Copenhagen, Denmark.
5. Ertuğrul, N., Genc, B., Goktepe E., Gungor Cabbar, B., **Ceyhan, G. D.** (2025). Sistem düşüncesiyle iklim: Fen bilgisi öğretmen adaylarına göre sürdürülebilir kalkınma amaçları ve iklim değişikliği ilişkisinin incelenmesi. *Ulusal Biyoloji Eğitimi Kongresi*, Cunda, Ayvalık, Balıkesir.
6. **Ceyhan, G. D.** (2025). Eğitim Fakültelerinde SD: Boğaziçi Üniversitesi. *Sistem Düşüncesi Derneği Deneyim Paylaşımı Sempozyumu*, Online.
7. **Ceyhan, G. D.** & Gungor Cabbar, B. (2025). Systems thinking approach to climate education: A training program for pre-service teachers. *International Pre-College Systems Thinking Symposium 2025*, Online.
8. Ozyazici, G., & **Ceyhan, G. D.** (2025). Using Model-Evidence Link diagram to assess college students' plausibility perceptions on climate change. *National Association for Research in Science Teaching (NARST) Conference,* Washington, D.C.
9. Aksit, O. **Ceyhan, G. D.,** Hagevik, R., Yuruk, N., Alatli, B., Kocakulah, S., Adadan, E., Ucar, S., …. (2025). A cross-cultural study comparing Turkish and Indonesian preservice science teachers' orientations towards climate change. *National Association for Research in Science Teaching (NARST) Conference,* Washington, D.C.

10. Hanedar, M. & **Ceyhan G. D.** (2025). Exploring the inclusion of systems thinking in middle school science curricula and textbooks. *National Association for Research in Science Teaching (NARST) Conference,* Washington, D.C.
11. Ozturk, N, Aksit, O., Ertugrul, N., Celenk, A., Cibik, N, F., Aydin, Z, Ozdem Yilmaz, Y., **Ceyhan, G. D.** (2025). Middle school students' climate literacy and climate change awareness: Validation of two instruments. *National Association for Research in Science Teaching (NARST) Conference,* Washington, D.C.
12. **Ceyhan, G. D.,** Ertugrul, N., Budak, S., Goktepe E., Gungor Cabbar, B., Nuhoglu, H. (2024). Systems thinking in climate change education: Exploring university students' competencies through a climate scenario. *I. Uluslararası Sürdürülebilirlik Kongresi*, Muğla, Turkey.
13. Gungor Cabbar, B., **Ceyhan, G. D.**, Nuhoglu, H., Ceylan Alibeyoglu, M., Goktepe, E. (2024). Analyzing preservice teachers' lesson plans for systems thinking integration. *International Education Congress (EDUCongress)*, Diyarbakır, Turkey.
14. Öztürk, N. , Özdem Yılmaz, Y., **Ceyhan, G. D.**, Ertugrul, N., Çelenk, A. G., Çibik, N. F. & Aydin, Z. (2024). İklim değişikliği eğitiminde sosyobilimsel konu temelli öğretim modülü geliştirme süreci ve öğretmen görüşleri, *Ulusal Matematik ve Fen Eğitimi Kongresi (UFBMEK), Edirne, Turkey.*
15. Genç, B., **Ceyhan, G. D.** (2024). Matematik ve fen bilgisi öğretmen adaylarının küresel iklim değişikliği profillerinin ve algı düzeylerinin incelenmesi, *Ulusal Matematik ve Fen Eğitimi Kongresi (UFBMEK), Edirne, Turkey.*
16. Demirtaş, M., Ünal, İ., **Ceyhan, G. D.** (2024). Sistem dinamikleri ile sera etkisi öğretiminin ortaokul öğrencilerinin yapılandırmacı öğrenme algısına etkisi, *Ulusal Matematik ve Fen Eğitimi Kongresi (UFBMEK), Edirne, Turkey.*
17. Yerişenoğlu, S., **Ceyhan, G. D.** (2024). Öğretmen eğitiminde sürdürülebilir kalkınma hedefleriyle ilgili yapılan araştırmaların bibliyometrik analizi, *Ulusal Matematik ve Fen Eğitimi Kongresi (UFBMEK), Edirne, Turkey.*
18. Nuhoğlu, H., Güngör Cabbar, B., **Ceyhan, G. D.**, Ceylan Alibeyoğlu, M. Göktepe, E., Yararbaş, Ü., Çetinkaya, Ö., Yalçın, E., & Budak, Ü. S. (2024). Sürdürülebilirlik eğitiminde sistem düşüncesi yaklaşımı uygulamaları paneli, *Ulusal Matematik ve Fen Eğitimi Kongresi (UFBMEK), Edirne, Turkey.*
19. Ertugrul, N., **Ceyhan, G. D**. (2024). Analyzing pre-service teachers' mental models on climate change using systems thinking. *International System Dynamics Conference (ISDC)*, Bergen, Norway.
20. Budak, S., **Ceyhan, G. D**. (2024). Evaluating the feedback thinking level of pre-service science teachers through scenarios. *International System Dynamics Conference (ISDC)*, Bergen, Norway.
21. Tillotson, J. W., **Ceyhan, G. D**., Ozyazici, G., Surman, A. (2024). Undergraduate STEM students' expectations and value perceptions from a longitudinal STEM-focused support program experience. *National Association for Research in Science Teaching (NARST) Conference, Denver, U.S.*
22. Ozdinc, I., Altintas S. & **Ceyhan G. D.** (2023). Teachers' views on developing zero waste education within the scope of sustainable development goals. *European Science Education Research Association (ESERA) Conference*, Nevsehir, Turkey.
23. Paksoy I., Hanedar M. & **Ceyhan G. D.** (2023). Exploring middle school students' perceived value of science communication meetings. *European Science Education Research Association (ESERA) Conference*, Nevsehir, Turkey.
24. Ceylan Alibeyoglu M., Başkahya Z. I. & **Ceyhan G. D.**, Yildiz Degirmenci S., Gunes Demir N., Etli S., Girgin G., Goktepe E., Karga B., Unsal E., Yararbas U. (2023). Climate education with systems thinking: How well students' explanations match with the systems model. *European Science Education Research Association (ESERA) Conference*, Nevsehir, Turkey.

25. Kara Zorluoglu D., Budak Ü. S., Atay E., & **Ceyhan G. D.** (2023). Informal science communication meetings shaped by student questions: Exploring middle school students' questions on space science. *European Science Education Research Association (ESERA) Conference*, Nevsehir, Turkey.
26. **Ceyhan G. D.**, Ozay B., Kula A., Atabarut T. (2023). Exploring teachers' reflections on sustainable development goals and climate change teacher training program. *International Conference on Sustainable Development (ICSD)*, Online.
27. Doganca Kucuk Z., Yabas D., **Ceyhan G. D.**, Corlu M. S. (2023). Sustainability and STEM Education: STEM teachers' contextualization of sustainable development goals. *European Association for Research on Learning and Instruction (EARLI) Conference*, Thessaloniki, Greece.
28. Yabas D., **Ceyhan G. D.**, Doganca Kucuk Z., Corlu M. S. (2023). Authentic problems of knowledge society: mathematics teachers' integration of cognitive and social dimensions into STEM lesson plans. *Congress of the European Society for Research in Mathematics Education (CERME*), Budapest, Hungary.
29. Hanedar, M., Ozyazici, G., & **Ceyhan, G. D.** (2023). Pre-service teachers' plausibility perceptions of global climate change: Results of the updated plausibility perception measure, *National Association for Research in Science Teaching (NARST) Conference*, Chicago, U.S.
30. Girgin, G., Ünsal, E., Alibeyoglu, M. C. & **Ceyhan, G. D.** (2022). Investigation of the effect of environmental education with system thinking on students' future time perspective level and hope perspectives. *Ulusal Biyoloji Eğitim Kongresi (UBEK)*, Ankara, Turkey.
31. Alibeyoglu, M. C. & **Ceyhan, G. D.** (2022). Environmental education and world climate game applications with system thinking. *Uluslararası Sürdürülebilir Eğitim Günleri Kongresi (USEG)*, Ankara, Turkey.
32. Degirmenci, S. Y., **Ceyhan, G. D.,** & Alibeyoglu, M. C. (2022). Merging climate policy simulation games and systems thinking approach in an environmental education program. *International History Philosophy and Science Teaching (IHPST) Biennial Conference*, Calgary, Canada.
33. Demir, N. G., Alibeyoglu, M. C., **Ceyhan, G. D.,** Degirmenci, S. Y., & Karga, B. (2022). An educational program design: Environmental education with systems thinking and the World Climate Game project. *International System Dynamics Conference (ISDC)*, Frankfurt, Germany.
34. Saribas, D., **Ceyhan, G. D.** (2022). Öğretmen adaylarının fen ve matematik iletişimi yaklaşımları. *Ulusal Disiplinlerarası Fen Eğitimi Öğretmenler Konferansı (DİFEÖK)*, Ankara, Turkey.
35. Ozdinc, I. & **Ceyhan, G.D.** (2022). Gamified STEM-based instructional design for climate change education. *GamiFIN 2022 Conference*, Finland.
36. Yabas, D., **Ceyhan, G.D.,** Doganca Kucuk, Z., & Corlu, S. (2022). The analysis of the authentic problems of the knowledge society within STEM instructional designs. *Association for Teacher Education in Europe (ATEE) Conference*, Teaching and Learning for an Inclusive, Interconnected World, Italy.
37. Ozdinc, I., Kara, D., Karga, B., & **Ceyhan, G.D.** (2022). Pre-service teachers' motivations to participate in the Near-Peer Mentoring Program. *2022 NARST International Conference*, Vancouver.
38. **Ceyhan G.D.** & Tillotson J.W. (2021). Mentoring early-year undergraduate researchers: Structures and support mechanisms. *2021 NARST Virtual International Conference*
39. **Ceyhan G.D.** & Tillotson J.W. (2021). Early-year undergraduate researchers' reflections on the values of their research experience. *2021 AERA Virtual Meeting*
40. **Ceyhan, G. D.,** Thompson, A. & Tillotson, J. W. (2020). The effects of purposeful academic, social, and professional interventions on diverse undergraduate STEM student socialization. *AERA Annual Meeting* San Francisco, CA http://tinyurl.com/rhpawat (Conference Canceled)
41. **Ceyhan G.D.** & Tillotson J.W. (2020). Mentoring structures and the types of support provided to early-year undergraduate researchers. Paper accepted for poster presentation at the *2020 NARST*

*Annual International Conference*, Portland, Oregon; however, this conference was canceled due to the COVID-19 outbreak.

42. Sloane J. D., **Ceyhan G. D.,** Thompson A. N. & Tillotson J. W. (2019). Undergraduate research experience as an early intervention for at-risk STEM scholars. *Association of American Colleges & Universities (AAC&U) Conference*, Chicago, IL, USA.

43. Thompson A. N., **Ceyhan G. D.,** Sloane J. D., & Tillotson J. W. (2019). What are the barriers and incentives to change?: A STEM faculty needs assessment to inform pedagogical professional development. *Association of American Colleges & Universities (AAC&U) Conference*, Chicago, IL, USA.

44. **Ceyhan, G. D.**, Sloane, J. D., Tillotson, J. W. (2019). The impact of support interventions on the STEM learning experiences of low-income college students. *Northeast Association for Science Teacher Education (NE-ASTE) Regional Conference*, Burlington, VT, USA.

45. Thompson A. N., **Ceyhan G. D**., Tillotson, J. W. (2019). Results from a STEM faculty needs assessment and recommendations to inform pedagogical professional development. *Northeast Association for Science Teacher Education (NE-ASTE) Regional Conference*, Burlington, VT, USA.

46. Tillotson, J. W., **Ceyhan, G. D**., Sloane, J. D., Wiles, J. R., & Aksoy, S. (2019). Strategic Undergraduate STEM Talent Acceleration INitiative (SUSTAIN): Impacts on underrepresented college students' STEM learning experiences. *National Association for Research in Science Teaching (NARST) Annual Conference*, Baltimore, MD, USA.

47. Tillotson, J. W., Aksoy, S., **Ceyhan, G. D.,** Sloane, J. D., & Wiles, J. R. (2018). The Strategic Undergraduate STEM Talent Acceleration INitiative (SUSTAIN) to promote socialization. *Association of American Colleges & Universities (AAC&U) 2018 Conference on Transforming STEM Higher Education: Confirming the Authority of Evidence*, Atlanta, NE.

48. **Ceyhan, G. D.**, Sloane, J., & Tillotson, J. W. (2018). The impact of faculty mentoring and early-immersion pre-research experiences: The Strategic Undergraduate STEM Talent Acceleration Initiative (SUSTAIN). *Northeast Association for Science Teacher Education (NE-ASTE) Regional Conference*, Burlington, VT, USA.

49. Aksoy, S., **Ceyhan, G. D.**, & Tillotson, J. W. (2018). The Strategic Undergraduate STEM Talent Acceleration Initiative (SUSTAIN): Overcoming the challenges of the college transition. *Northeast Association for Science Teacher Education (NE-ASTE) Regional Conference*, Burlington, VT, USA.

50. **Ceyhan, G. D.,** & Akbulut, A. (2018). Acceptance of evolution facts and the credibility of evolution among college biology students in a Middle Eastern Society. *Northeast Association for Science Teacher Education (NE-ASTE) Regional Conference*, Burlington, VT, USA.

51. **Ceyhan, G. D.,** & Mugaloglu, E. Z. (2017). Does teaching experience matter? Teachers' ideas about evidence-based teaching through an instructional scaffold. *Northeast Association for Science Teacher Education (NE-ASTE) Regional Conference*, Burlington, VT, USA.

52. **Ceyhan, G. D.**, & Mugaloglu, E. Z. (2017). The role of cognitive, behavioral and personal variables on preservice teachers' plausibility perceptions of global climate change. *International History Philosophy and Science Teaching (IHPST) Biennial Conference*, Ankara, Turkey.

53. Saribas, D., **Ceyhan, G. D.**, & Lombardi, D. (2017). Pre-service teachers' preference to apply NOS aspects and evidence-based thinking in their teaching. *National Association for Research in Science Teaching (NARST) Annual Conference*, San Antonio, TX, USA.

54. **Ceyhan, G. D.**, Saribas, D., & Lombardi, D. (2017). Pre-service teachers' thinking about evidence and evaluations of trustworthiness of the claims in socio-scientific issues. *National Association for Research in Science Teaching (NARST) Annual Conference*, San Antonio, TX, USA.

55. **Ceyhan, G. D.**, & Mugloglu, E. Z. (2016). Pre-service teachers' plausibility perceptions and understanding of global climate change. *International Conference on Education in Mathematics, Science & Technology (ICEMST)*, Bodrum, Turkey.

56. **Ceyhan, G. D.**, & Mugloglu, E. Z. (2016). Teachers' ideas about the benefits and challenges of teaching climate change through evidence-based thinking. *International Conference on Education in Mathematics, Science & Technology (ICEMST)*, Bodrum, Turkey.
57. **Ceyhan, G. D.**, & Mugloglu, E. Z. (2015). Pre-service teachers' plausibility perceptions and their willingness to take action about global climate change. *International Organization for Science and Technology Education (IOSTE) Regional Symposium*, Bahcesehir University, Istanbul, Turkey.
58. Erduran, S., Dagher, Z., Mugaloglu, E., Kaya, E., Saribas, D., & **Ceyhan, G. D.** (2015). Towards a holistic account of scientific practices in science teacher education. *American Educational Research Association (AERA)*, Chicago, USA.
59. Saribas, D., & **Ceyhan, G. D.** (2015). Implementing scientific practices: An auto-ethnographic study for the professional development of an instructor in pre-service teacher education program. *National Association for Research in Science Teaching (NARST) Annual Conference*, Chicago, USA.
60. Can Al, N., Azuz, B., **Ceyhan, G. D.**, Cebi, E., Kose, M., & Olgun, B. (2014). The role of parent involvement, academic and social self-concept on the academic achievement of fourth-grade students. *VI. International Congress of Educational Research (ICER)*, Ankara, Turkey.
61. **Ceyhan, G. D.**, & Guven, D. (2014). Perceptions of pre-service science teachers about planning and its implementation. *Ulusal Matematik ve Fen Eğitimi Kongresi (UFBMEK)*, Adana, Turkey.
62. Atmaca, S., Evren, A., **Ceyhan, G. D.**, Akbulut, A., Durmuş, Y., Akaydın, G., & Demirsoy, A. (2012). Journey to Natural History Museum in perspective of children. *Cyprus International Conference on Educational Research (CY-ICER)*, Cyprus.

## DIRECTED MASTER'S THESES

1. Ayşe Buket Karasu (In Progress).
2. Sevde Nur Yerişenoğlu (In Progress).
3. Nazmiye Ertuğrul (2025). Examining the mental models of pre-service teachers on a climate change based case scenario with the systems thinking approach.
4. Melda Demirtas (2024) (Co-advisor). Investigation of the effect of teaching the greenhouse effect to secondary school students with system dynamics tools in terms of different variables.
5. Melike Hanedar (2024) Exploring the representation of systems thinking in the Turkish middle school science curriculum and textbook.
6. Ülkü Seher Budak (2024). Assessing the feedback thinking level of senior pre-service middle school science teachers using domain-specific and domain-general scenarios.
7. Gizem Ozyazici (2024). College students' plausibility perceptions about global climate change.
8. Dilara Kara Zorluoglu (2023). Using a STEM education approach with a computational tool: The impact on students' computational thinking skills and understanding of climate change.
9. Ilkem Ozdinc (2023). Gamified-integrated STEM: Exploring 8th grade students' problem-solving skill perceptions and critical thinking dispositions about global climate change.
10. Busra Karga (2023). Science teachers' understanding of systems and systems thinking skills and their views on implementing a systems thinking approach in the classroom.

## DIRECTED PHD THESES

1. Ilkem Ozdinc (In Progress).
2. Nazmiye Ertuğrul (In Progress).
3. Zeynep Aydin (In Progress).

## THESIS COMMITTEE MEMBERSHIP

1. İlke İçingir (PhD, In Progress). Balıkesir University
2. Zeynep Güler (PhD, In progress). Balıkesir University
3. Gizem Alvan (PhD, In Progress). Bogazici University
4. Duygu Ozturk (PhD, In Progress). Bogazici University
5. Merve Koçoğlu (PhD, In Progress). Bogazici University
6. Elif Ozdengelen (Master, In Progress). Bogazici University
7. Zeynep Çengel (Master, 2025). Duzce University
8. Erenay Atay (Master, 2025). Bogazici University
9. Zeynep Aydin (Master, 2024). Bogazici University
10. Damla Karatas (Master, 2024). Bogazici University
11. Ipek Paksoy (Master, 2023). Bogazici University
12. Ayşe Akkır (Master, 2023). Bogazici University
13. Gizem Camlica (Master, 2022). Bahcesehir University

## TEACHING EXPERIENCE

**Instructor** Department of Mathematics and Science Education, Bogazici University, 2020 – Current

- SCED 282 - Principles and Methods of Instruction in Science & Mathematics
- SCED 320 - Teaching Methods in Science & Mathematics
- SCED 404 - Research Methods in Science & Mathematics Education
- SCED 450 - Practice Teaching in Mathematics and Science
- SCED 462 - Practice Teaching in Science
- SCED 464 - Seminar on Practice Teaching in Science
- SCED 48E - Systems Thinking in Science and Mathematics Education
- SCED 48H - Climate Change Education
- SCED 511 - Instructional Science for Science & Mathematics Instruction
- SCED 579 - Graduate Seminar in Science/Mathematics Education
- LS 700 - Graduate Seminar

**Instructor** Department of Science Teaching, Syracuse University, NY, USA, 2016 – 2018

- SCI 104 - Quests and Questions in Physical Science II - Spring 2017, 2018
- SCI 105 - Quests and Questions in Physical Science I - Fall 2016, 2017

## GRANTS, AWARDS, ACHIEVEMENTS

| | |
|---|---|
| ***2020*** | Outstanding Teaching Award, Bogazici University |
| ***2019*** | Nomination for the Outstanding Doctoral Dissertation Prize, Syracuse University |
| | Certificate in University Teaching (CUT), Syracuse University |
| | Summer Dissertation Fellowship, Syracuse University |
| | Creative & Research Grant, School of Education, Syracuse University |
| ***2018*** | Outstanding Teaching Assistant Award, Syracuse University |
| | Creative & Research Grant, School of Education, Syracuse University |
| | Moynihan Institute of Global Affairs Middle Eastern Studies Summer Research Grant, Syracuse University |
| ***2017*** | Himan Brown Trust Scholarship, School of Education, Syracuse University |

## SERVICES TO THE ACADEMIC COMMUNITY, THE SCHOOL, AND THE UNIVERSITY

- School of Education Faculty Board Member, Bogazici University, 2025 - Current
- Board Member - Science Education Research Association in Turkey, 2023 - Current
- Board Member - System Dynamics Society Pre-college Special Interest Group, 2023 - Current
- Vice Department Chair - Bogazici University, 2022 – 2024
- Accreditation Commission - Bogazici University, 2022 – Current
- Erasmus Coordinator – Bogazici University, 2020 – 2023
- Scholarship Commission – Bogazici University, 2020 – 2024
- Graduate Student Research Symposium Organization Committee, 2022 – 2024
- Reviewer - Science & Education, 2021 – Current
- Reviewer - Science Education, 2021 – Current
- Reviewer – Journal of Research in Science Teaching, 2020 – Current
- Reviewer - American Educational Research Association, 2020 – Current
- Reviewer - Elementary Education Online, 2020 – Current
- Reviewer – Education and Science Journal, 2019 – Current
- Reviewer - National Association for Research in Science Education Conference, 2018 – Current
- Vice-president – Graduate Science Policy Group, Syracuse University, 2018 – 2019
- Jury member – Best Educational Practices Conference, Sabanci University, 2014, 2015
- Graduate Students' Vice-President – Bogazici University, 2013 – 2014
- Graduate Student Representative – Bogazici University Institute for Graduate Studies in Social Sciences, 2013 – 2014
- Team Manager – TED Istanbul College Destination Imagination, 2012 – 2013
- Eco-Schools Project Coordinator – IELEV Private Elementary School, 2009 – 2010; Istanbul Çevre College, 2008-2009

## PROFESSIONAL MEMBERSHIPS

- American Educational Research Association (AERA)
- European Association for Research on Learning and Instruction (EARLI)
- European Science Education Research Association (ESERA)
- National Association for Research in Science Teaching (NARST)
- Turkish Science Education and Research Association (SERA)
- System Dynamics Society Pre-College Special Interest Group (SDS)
- Sistem Düşüncesi Derneği (SDD)