

BUGRAHAN YALVAC

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Areas of Research Interest

Integrated STEM Education
Science and Engineering Education
Learning Environment Design
21st century skills (e.g., adaptive expertise, life-long learning, personal epistemologies, self-regulated learning, effective communication, critical thinking)

Educational Background

Postdoc/Research Associate 2003-2006	VaNTH Engineering Research Center, Learning Sciences and College of Engineering Northwestern University, IL
PhD. 2005	Major in Curriculum and Instruction (C&I), College of Education Minor in Science, Technology, and Society, College of Engineering The Pennsylvania State University, PA
M.S. 1999	Science Education, College of Education Middle East Technical University, Ankara
B. S. 1996	Physics Education, College of Education Middle East Technical University, Ankara
B. S. 1996	Physics (Double Major), College of Arts and Sciences Middle East Technical University, Ankara

Appointments

2011- current	Associate Professor, Department of Teaching, Learning, and Culture, Texas A&M University, TX
2006-2011	Assistant Professor, Department of Teaching, Learning, and Culture, Texas A&M University, TX.

- 2005-2006 Research Associate, VaNTH Engineering Research Center (a collaboration of Vanderbilt, Northwestern, Texas at Austin, Harvard, and MIT), Learning Sciences, Northwestern University, IL.
- 2003-2005 Postdoctoral Research Fellow, VaNTH Engineering Research Center, Learning Sciences, Northwestern University, IL.
- 2002-2003 Instructor, The Pennsylvania State University, Colleges of Engineering and Education, Curriculum and Instruction (C&I) Department, PA.
- 2002 AAAS Research Assistant, The Pennsylvania State University, College of Education, Curriculum and Instruction Department, PA.
- 2001 Teaching Assistant, The Pennsylvania State University, College of Engineering, Science, Technology, and Society (STS) Department, PA.

Federally and Externally Funded Grant Activity (NSF, NIH, IES only)

Current Grants

- (1) National Science Foundation (NSF), Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR): \$ 299,980 *Integrating Inquiry-Based and Project-Based Learning in the Preservice STEM Teacher Curriculum (Co-PI)* with Garth Crosby (PI), & Shelly Tornquist (Co-I) at Texas A&M University. August, 2022 – July 2025. 0.5 month summer salary over two years.
- (2) National Science Foundation (NSF), BCSEER: \$349,948 *Exploring Faculty Perception and Self-Efficacy in Lab-intensive Online Courses, (Co-I)* with Garth Crosby (PI), Micheal de Miranda (Co-I), Karen Hernandez (Co-I), & Paul Hernandez (Co-I) at Texas A&M University. September, 2021 – October 2024. 0.25 month summer salary and graduate research assistant funding over two years.
- (3) National Science Foundation (NSF), Targeted Infusion Project: \$400,000, *Infuse Virtual Reality and Industry 4.0 into Design and Manufacturing Laboratory for Student-centered Learning Experience (External Evaluator)* with Drs. Jaejong Park (PI), Lai Jiang (Co-PI), and Xiaobo Peng (Co-PI) at Prairie View A&M University (PVAMU). September 2021 – August 2024. 0.39 month academic salary over three years.
- (4) Department of Education (IES), Minority Science & Engineering Improvement Program (MSEIP): \$676,000 *Enhancing Evidence-Based Pedagogies with Maker Culture in STEM Education, (Co-PI)* with Yonghui Wang (PI) and Suxia Cui (Co-PI) at Prairie View A&M University; and Wei Zhan (Co-PI) at Texas A&M University. November 2018 – October 2024. 1.32 month academic salary and half-time graduate research assistant funding over three years.

Completed Grants

- (5) National Institutes of Health (**NIH**), Science Education Partnership Award Program (SEPA): \$1,349,461 *The MENTORS: Model Education Networks to Optimize Rural Science Project*, (**Co-PI**) with Robin Fuchs-Young (PI), Natalie Johnson, Gerald Cote, Carolyn Cannon, & John Lightfoot (Co-PIs) at Texas A&M University. August 2016 – July 2022. 0.6 month summer salary over six years.
- (6) National Science Foundation (**NSF**), Innovative Technology Experiences for Students and Teachers Program (ITEST): \$834,654 *Connected STEM - Promoting STEM Education through Connected Devices and Building Automation*, (**Senior Personnel**) with Michael Johnson (PI), Joseph Morgan, Jay Porter, Jennifer Whitfield, & Mathew Kuttolamadom (Co-PIs) at Texas A&M University. September. September 2016 – August 2021. 1 month summer salary over three years.
- (7) National Science Foundation (**NSF**), Historically Black Colleges and Universities - Undergraduate Program (HBCU-UP): \$400,000 *Targeted Infusion Project: Building a Learner-Centered Cyberlearning Environment in Computer-Aided Design Education*, (**Co-PI**) with Xiaobo Peng (PI) and Dongdong Zhang (Co-PI) at Prairie View A&M University; and Deniz Eseryel (Co-PI) at North Carolina State University. July 2014 – June 2020. 1.25 month academic salary over three years.
- (8) Department of Education (**IES**), Minority Science & Engineering Improvement Program (MSEIP): \$611,453 *Widening Implementation of Evidence-Based Pedagogies in STEM Education (WIEP)*, (**Co-PI**) with Xiaobo Peng (PI), Suxia Cui, Lin Li, Yongpeng Zhang (Co-PIs) at Prairie View A&M University; and Deniz Eseryel (Co-PI) at North Carolina State University. October 2014 - September 2019. 1.5 month academic salary and full-time graduate research assistant funding over three years.
- (9) National Science Foundation (**NSF**), Division of Engineering Education and Centers (EEC): \$358,983. *Collaborative Research: Assessing the Effect of Contextual Exercises on Student Adoption of Expert CAD Modeling Techniques*. (**Co-PI**) with Michael Johnson (PI) at Texas A&M University; and Xiaobo Peng (PI) at Prairie View Texas A&M University. October 2011- October 2015. One-month summer salary and full-time graduate research assistant funding over three years.

(10) National Science Foundation (**NSF**), TUES (formerly CCLI) Type II Grant: \$600,000 *Collaborative Research: Live Energy*, (**Co-PI**) with Christine Ehlig-Economides (PI) & Don Gilman (Co-PI) at Texas A&M University, Anthony R. Kovscek (PI) at Stanford University, Sarma V. Pisupati (PI) at Pennsylvania State University, Dr. Reza Toossi (PI) at California State University Long Beach, and Sukesh Aghara (PI) at Prairie View A&M University. October 01, 2010 - October 31, 2013. One-month summer salary and full-time graduate research assistant funding over three years.

(11) National Science Foundation (**NSF**), TUES (formerly CCLI) Type I Grant: \$149,330 *Reading, Writing-Energy*, (**Co-PI**) with Christine Ehlig-Economides (PI), Nancy Simpson (Co-PI), Ramesh Talreja (Co-PI), and Dennie Smith (Co-PI). March 01, 2007 - February 28, 2009. One-month summer salary and full-time graduate research assistant funding.

Other Grant Activity (State, Private, Local, University, etc.)

Completed

Texas A&M Triads for Transformation (T3) Program- Round 4: \$30,000. Virtual Participatory Simulation Games For Teaching And Learning Project Management Principles (**Co-PI**) with Drs. H. David Jeong (PI) and Zofia Rybkowski (Co-PI) at TAMU Department of Construction Science. 2021/1/1-2022/12/31

Catapult Triad - How Study Abroad Experiences Influence Pre-service Teachers Level of Cultural Preparedness (**Co-PI**) with William H. Rupley (PI), Christine A. Stanley, and Helen Muyina (Co-PIs), TAMU The School of Education & Human Development, 2018/11 - 2020/5

Catapult Round 2 - Follow-up Snook ISD as a CEHD Lab School Project Mission \$30,345, (**Co-PI**), TAMU The School of Education & Human Development, 2016/05/01 - 2017/05/31

Catapult Round 1 - Exploration of Snook ISD as a CEHD Lab School Project, \$11,911, (**Co-PI**), TAMU The School of Education & Human Development, 2016/02/01 - 2016/12/31

Faculty Fellowship for STEM Education and Innovation \$12,000, (**PI**), Texas A&M Foundation (Private), 2015/09/01 - 2018/08/31.

Faculty Development Leave. \$5,000, (**PI**), TAMU Dean of Faculties, 2017/01/01 - 2017/05/31.

Murphy Society: \$45,550 (**Co-PI**) awarded for developing communication standards for undergraduate students of the McCormick School of Engineering, Northwestern University, 2005, <http://www2.writing.northwestern.edu/standards/>.

Hewlett Funding and Writing Program at Northwestern: \$6750 (**Co-PI**) awarded for exploring the school-wide standards for science writing at Northwestern University, 2006.

The School of Education and Human Development (CEHD), Texas A&M University, Undergraduate Student Research Initiative (USRI) Award: Support for a work-study position, (**PI**) September 1, 2014-May 1, 2015.

The School of Education and Human Development (CEHD), Texas A&M University, Undergraduate Student Research Initiative (USRI) Award: Support for a work-study position, (**PI**) September 1, 2013-May 1, 2014.

Peer-Reviewed Journal Papers (*Graduate Students)

- (1) *Alpaslan, M. M., & Yalvac, B. (2023). Integrating mathematical modelling into problem based research: An evaporation activity, *Journal of Problem-Based Learning in Higher Education*, 1-13, Early View on: <https://doi.org/10.54337/ojs.jpblhe.v11i3.7501>
- (2) *Ozturk, E., Johnson, M., Yalvac, B., & Peng, X. (2023). Development of adaptive expertise in engineering undergraduates through contextual computer aided design modeling activities, *International Journal of Engineering Education*, 39 (3), 685–702.
- (3) *Stiles, T. W., Adams, T. H., Yalvac, B., & Quick, C. M. (2022). Predicting undergraduate career goal change in a research-intensive community. *Journal of Research in Science Teaching*, 1-26. [DOI: 10.1002/tea.21837]. [Impact factor of JRST: 4.83].
- (4) *Ayar, M., & Yalvac, B. (2022). An ethnographic study of an engineering community: Mentoring as a tacit rule and implications for How People Learn, *Journal of Engineering Education*, 111 (2), 400-419 .[Impact factor of JEE: 6.71]
- (5) *Spears, E., Schuett, M. A., & Yalvac, B. (2021). Landownership as a socio-psychological phenomenon: Exploration of the owner-land relationship, *The Social Science Journal*, 1-15. [DOI: 10.1080/03623319.2021.1960045]. [Impact factor of Social Science Journal: 1.61]
- (6) Zhan, W. Hur, B., Wang, Y., Cui, S., & Yalvac, B. (2021). Creating Maker Culture in an Engineering Technology Program, *International Journal of Engineering Education*, 37 (3), 712-720. [Impact factor of Int. J. Eng. Educ: 1.29]

- (7) *Ozturk, E., **Yalvac, B.**, Johnson, M. D., & Peng, X. (2020). Investigating the relationships among engineering practitioners and undergraduate students' adaptive expertise characteristics and experiences, *International Journal of Engineering Education*, 36 (5), 1585–1594.
- (8) Peng, X., Zhang, D., Jackson, M., **Yalvac, B.**, *Ketsetzi, A., & Eseryel, E. (2019). Examining the learning by teaching method in computer-aided design instruction, *Computer-Aided Design & Applications*, 16 (1), 129-139. [doi: 10.14733/cadaps.2019.129-139].
- (9) *Alpaslan, M. M., **Yalvac, B.**, & Loving, C. (2017). High school physics students' personal epistemologies and school science practice. *Science & Education* 26(7-9), 841-865.
- (10) *Alpaslan, M. M., & **Yalvac, B.** (2017). Exploring the anxiety state of the science majoring international graduate students with conditional acceptance in the United States. *International Journal of Research in Education and Science*, 3(2), 614-623.
- (11) *Alpaslan, M.M., **Yalvac, B.**, & Wilson, V. (2017). A meta analytical review of the relationship between personal epistemology and self-regulated learning. *Turkish Journal of Education*, 6(2), 48-67.
- (12) Zhang, D., Peng, X., **Yalvac, B.**, Eseryel, E., *Nadeem, U., & *Islam, A. (2017). Integrating student-made screencasts into computer-aided design education. *Computer-Aided Design & Applications*, 14(Sup1), 41-50.
- (13) Cui, S., Wang, Y., Li, L., Peng, X., & **Yalvac, B.** (2016). Introducing high performance computing to undergraduate students, *Computers in Education Journal*, 26(4), 104-112.
- (14) *Tuysuz, M., Bektas, O., Geban, O., *Ozturk, G., & **Yalvac, B.** (2016). Pre-service physics and chemistry teachers' conceptual integration of physics and chemistry concepts, *Eurasia Journal of Mathematics, Science, & Technology Education*, 12(6), 1549-1568.
- (15) *Alpaslan, M, M., **Yalvac, B.**, Loving, C, C., & Willson, V. (2016). Exploring the relationship between high school students' physics-related personal epistemologies and self-regulated learning in Turkey. *International Journal of Science and Mathematics Education*, 14(2), 297-317.
- (16) *Ayar, M. C., & **Yalvac, B.** (2016). Lessons learned: Authenticity, interdisciplinary, and mentoring for STEM learning environments, *International Journal of Education in Mathematics, Science, and Technology*, 4(1), 30-43.
- (17) *Liu, K, Peng, X., *McGary, P., **Yalvac, B.**, *Ozturk, E., Johnson, M. D., & *Valverde, L. (2015). Integration of contextual exercises in computer-aided design education. *Computer-Aided Design and Applications*, 12(sup1),13-21.

- (18) *Ayar, M. C., Bauchspies, W. K., & **Yalvac, B.** (2015). Examining interpretive studies of science: Meta-ethnography. *Educational Sciences: Theory and Practice*, 15(1), 253-265.
- (19) *Alpaslan, M. M., **Yalvac, B.**, & Loving, C. C. (2015). Curriculum reform movements and science textbooks: A retrospective examination of 6th grade science textbooks. *Eurasia Journal of Mathematics, Science, & Technology Education*, 11(2), 207-216.
- (20) *Han, S. Y., **Yalvac, B.**, Capraro, M. M., & Capraro, R. M. (2015). In-service teachers' implementation and understanding of project based learning in science, technology, engineering, and mathematics fields. *Eurasia Journal of Mathematics, Science, & Technology*, 11(1), 63-76.
- (21) *Ayar, M. C., Aydeniz, M., & **Yalvac, B.** (2015). Analyzing science activities in force and motion concepts: A design of an immersion unit. *International Journal of Science and Mathematics Education*, 13(1), 95-121.
- (22) *Ayar, M. C., Bauchspies, W. K., & **Yalvac, B.** (2014). Exploring social dynamics in school science context. *SAGE Open*, 4(3), 1-10.
- (23) Peng, X., *McGary, P., *Ozturk, E., **Yalvac, B.**, Johnson, M., & *Lauralee, L. M. (2014). Analyzing adaptive expertise and contextual exercise in computer-aided design. *Computer-Aided Design and Application*, 11 (5), 597-607.
- (24) *Arghode, V., **Yalvac, B.**, & Liew, J., (2013). Teacher empathy and science education: A collective case study. *Eurasia Journal of Mathematics, Science, and Technology Education* 9(2), 89-99.
- (25) Peng, X., *McGary, P., Johnson, M., **Yalvac, B.**, & *Ozturk, E., (2012). Assessing novice computer-aided model creation and alteration. *Computer-Aided Design and Application*, PACE, 2, 9-19.
- (26) **Yalvac, B.**, *Ayar, M., & *Soylu, F. (2012). Teaching engineering with wikis. *International Journal of Engineering Education* 28(3), 701-712.
- (27) **Yalvac, B.**, *Soylu, F., & Arikan, A., (2011). Embodied cognition and education. *ETHOS: Dialogues in Philosophy and Social Science* 4(1), 1-20.
- (28) *Sokolowski, A., **Yalvac, B.**, & Loving, C. (2011). Science modeling in pre-calculus: How to make mathematics problems contextually meaningful, *International Journal of Mathematical Education in Science and Technology* 42(3), 238-297.
- (29) *Ayar, M., & **Yalvac, B.** (2010). A sociological standpoint to authentic scientific practices and its role in school science teaching. *Ahi Evran Uni. Kirsehir Journal of Education (KEFAD)* 11(4), 113-127.

- (30) McKenna, A. F., **Yalvac, B.**, & Light, G. J. (2009). The role of collaborative reflection on shaping engineering faculty teaching approaches. *Journal of Engineering Education*, 98(1), 17-26.
- (31) **Yalvac, B.**, Smith, H. D., Hirsch, P., & Troy, J. (2007). Promoting advanced writing skills in an upper-level engineering class. *Journal of Engineering Education*, 96(2), 117-128.
- (32) **Yalvac, B.**, Tekkaya, C., Cakiroglu, J., & Kahyaoglu, E. (2007). Turkish pre-service science teachers' views on science-technology-society issues. *International Journal of Science Education*, 29(3), 331-348.
- (33) McKenna, A. F., & **Yalvac, B.** (2007). Characterizing engineering faculty's teaching approaches. *Teaching in Higher Education*, 12(3), 405-418.
- (34) **Yalvac, B.**, Smith, H. D., Hirsch, P., & Birol, G. (2006). Teaching writing in a laboratory-based engineering course with a "How People Learn" framework. *New Directions for Teaching and Learning*, 108, 59-73.
- (35) Kolikant, B.Y., McKenna, A. F., & **Yalvac, B.** (2006). The emergence of a community of practice in engineering education. *New Directions for Teaching and Learning*, 108, 7-16.
- (36) **Yalvac B.**, & Sungur, S. (2000). An investigation of pre-service science teachers' attitudes toward laboratory courses. *Dokuz Eylül Üniversitesi Eğitim Fakültesi Dergisi*, 12, 56-64.
- (37) **Yalvac B.**, Yilmaz O., & Tekkaya C. (1998). Measuring achievement in and attitudes towards science courses, *TED Journal of Education and Science*, 22, 45-50.

Peer-Reviewed Proceeding Papers (*Graduate students)

- (38) Babalola, I. P., Ugaz, V. M., & **Yalvac, B.** (2023, June). Switching research labs: A phenomenological study of international graduate students. *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Baltimore, MD. <https://peer.asee.org/44392>
- (39) Park, J., Islam, R., King, C. A., Jiang, L., Peng, X., & **Yalvac, B.** (2023, June), Work in progress: Virtual reality for manufacturing equipment training for future workforce development. *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Baltimore, MD. <https://peer.asee.org/44397>
- (40) *A. Maram, **Yalvac, B.**, Johnson, M., Cevik, E., Kuttolamadom, M., Porter, J., & Whitfield, J. (2022, June). Students' lived experiences with the integrated STEM activities, *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Minneapolis, MN.

- (41) Zhan, W., Wang, Y., Cui, S., & **Yalvac, B.** (2022, June). Actively engaging project-based learning through a mini maker faire in an engineering technology program, *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Minneapolis, MN.
- (42) *Cevik, E., **Yalvac, B.**, Johnson, M., Kuttolamadam, M. Porter, J. R., & Whitfield, J. G. (2021, June). Improving in-service science and mathematics teachers' engineering and technology content and pedagogical knowledge (Evaluation), *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Online Virtual.
- (43) Zhan, W., Wang, Y., **Yalvac, B.**, & Hur, B. (2021, March). A mini-maker faire, *Proceedings of the American Society for Engineering Education (ASEE) Gulf-Southwest Annual Conference*, Waco, TX.
- (44) Zhan, W., Hur, B., Wang, Y., Cui, S., & **Yalvac, B.** (2020, June). Actively engaging project-based learning through a mini maker faire in an engineering technology program, *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Online Virtual.
- (45) *Xie, L., Natarajarathinam, M., & **Yalvac, B.** (2020, June). Impact of mentor-mentee fit in preparing undergraduate STEM students to teach engineering technology for elementary students, *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Online Virtual.
- (46) *Cevik, E. Johnson, M. **Yalvac, B.** Whitfield, J. G. Kuttolamadam, M. Porter, J. R., & Morgan, J. A. (2020, June). Professional development activities for secondary STEM teachers and students' engineering content knowledge and attitudes, *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Online Virtual.
- (47) *Cevik, E. Johnson, M. **Yalvac, B.** Whitfield, J. G. Kuttolamadam, M. Porter, J. R., & Morgan, J. A. (2020, June). A study of secondary teachers' perceptions of engineers and conceptions of engineering, *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Online Virtual.
- (48) Wang, Y., Cui, S., Zhan, W., & **Yalvac, B.** (2019, June), Cultivating the maker culture through evidence-based pedagogies, *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Tampa, FL.
- (49) *Cevik, E. Johnson, M. **Yalvac, B.** Whitfield, J. G. Kuttolamadam, M. Porter, J. R., & Morgan, J. A. (2019, June). Exploring parents' knowledge and awareness of engineering through middle school students' summer camps, *Proceedings*

of the American Society for Engineering Education (ASEE) Annual Conference and Exposition, Tampa, FL.

- (50) Zhan, W., Wang, Y., Cui, S., & **Yalvac, B.** (2019, March). Enhancing student learning with maker events, *Proceedings of the Industry, Engineering, and Management Systems (IEMS) Conference*, Clearwater Beach, FL.
- (51) *Cevik, E., Johnson, M., **Yalvac, B.**, Whitfield, J., G., Kuttolamadom, M., Porter, J. R., & Morgan, J. A. (2018, June). Assessing the effects of authentic experiential learning activities on teacher confidence with engineering concepts, *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Salt Lake City, UT.
- (52) **Yalvac, B.**, Bewaji, O. A., Spier, M. E., Elizondo, G. M., Umah, C. T., Sherron, T., Lightfoot, J. T., Cannon, C. L., & Fuchs-Young, R. S. (2018, June). Promoting the STEM pipeline and enhancing STEM career awareness through participation in authentic research activities (RTP, Diversity). *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Salt Lake City, UT.
- (53) Chang, D., E., Peng, X., *Yuan, T., **Yalvac, B.**, *Ketsetzi, A., *Lai Hing, Eseryel, D., & *Eyupoglu, T. F. (2017, November). Promoting life-long learning skills in CAD using the peer-generated screencast tutorials. *Proceedings of the ASME International Mechanical Engineering Congress and Exposition, IMECE2017*, Tampa, FL.
- (54) **Yalvac, B.**, *Ketsetzi, A., Peng, X., Cui, S., Li, L., Zhang, Y., Eseryel, D., *Eyupoglu, T. F., & Yuan, T. (2017, June). Cultivating evidence-based pedagogies in STEM education. *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Columbus, OH.
- (55) Zhang, D., Peng, X., **Yalvac, B.**, Eseryel, D., *Nadeem, U., *Islam, A., *Eyupoglu, T. F., & *Yuan, T. (2016, June). Using peer-generated screencasts in teaching computer-aided design. *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, New Orleans, LA.
- (56) Suxia, C., Wang, Y., Li, L., Peng, X., & **Yalvac, B.** (2016, June). Introducing high-performance computing to undergraduate students. *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, New Orleans, LA.
- (57) Peng, X., *Yuan, T., *Nadeem, U., *Ketsetzi, A., **Yalvac, B.**, Eseryel, D., & *Eyupoglu, T. F. (2016, November). Assigning students teacher's role: A student-centered approach in computer-aided design education, *Proceedings of the ASME International Mechanical Engineering Congress and Exposition, IMECE2016*, Phoenix, AZ. [3 citation].

- (58) Johnson, M. D., *Ozturk, E., **Yalvac, B.**, *Valverde, L., Peng, X., & *Liu, K. (2015, November). Examining adaptive expertise: A novel comparison of student and practicing engineer CAD modeling performance. *Proceedings of the ASME International Mechanical Engineering Congress and Exposition, IMECE2016*, Houston, TX.
- (59) *Ozturk, E., **Yalvac, B.** Johnson, M. D., Peng, X., & *Liu, K. (2015, June). Adaptive expertise and its manifestation in CAD modeling: A comparison of practitioners and students. *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Seattle, WA.
- (60) Zhang, D., Peng, X., **Yalvac, B.**, Eseryel, D., *Nadeem, U., *Islam, A., & *Arceneaux, D. (2015, June). Exploring the impact of peer-generated screencast tutorials on computer- aided design education, *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Seattle, WA.
- (61) Alpaslan, M. M., & Yalvac, B. (2015). A practical dilemma: High school students' physics related personal epistemology. *The Eurasia Proceedings of Educational & Social Sciences (EPESS)*, 2, 22-26.
- (62) Ehlig-Economides, C., **Yalvac, B.**, Binks-Cantrell, E., Pisupati, S. V., Gilman, D. R., Toossi, R., Aghara, S. K., Robinson, T. A., Kovscek, A. R., Smith, D. L., & Ayar, M. (2014, June). Live Energy: US faculty co-author an electronic textbook to deliver the most up-to-date and relevant content in energy and sustainability. *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Indianapolis, IN.
- (63) Johnson, M. D., Peng, X., **Yalvac, B.**, *Ozturk, E., & *Liu, K. (2014, June). An examination of the effects of contextual computer-aided design exercises on student modeling performance. *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Indianapolis, IN.
- (64) *Liu, K., Peng, X., *McGary, P., **Yalvac, B.**, *Ozturk, E., Johnson, M., & *Valverde, L. (2014, July). Examining the effect of adaptive expertise and contextual exercises on students' CAD modeling. *Proceedings of the International Symposium on Flexible Automation*, Awaji- Island, Hyogo, Japan.
- (65) **Yalvac, B.**, *Ayar, M., Smith, D. L., & Ehlig-Economides, C. (2013, June). A case study of engineering faculty collaboration: Co-authoring an e-book on energy and sustainability. *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Atlanta, GA.
- (66) *Ayar, M., **Yalvac, B.**, Ugurdag, F., & Sahin, A., (2013, June). A robotics summer camp for high school students: Pipelines activities promoting careers in

engineering fields, *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Atlanta, GA. [4 citation].

- (67) Ehlig-Economides, C., **Yalvac, B.**, Binks-Cantrell, E., Gilman, D. R., Ayar, M., Robinson, T. A., Kovscek, A. R., Toossi, R. Pisupati, S. V., & Aghara, S. K. (2013, June). Live energy: An initiative for teaching energy and sustainability topics with the most up-to-date and relevant content. *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Atlanta, GA.
- (68) *Ozturk, E., **Yalvac, B.**, Peng, X., *Valverde, L. M., *McGray, P. D., & Johnson, M. D. (2013, June) Analysis of contextual computer-aided design (CAD) exercises. *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Atlanta, GA.
- (69) Johnson, M. D., *Ozturk, E., *Valverde, L., **Yalvac, B.**, & Peng, X. (2013) Examining the role of contextual exercises and adaptive expertise on CAD model creation procedures. M. Kurosu (Ed.): *Human-computer interaction*, Part II, HCII 2013, LNCS 8005, pp. 408– 417, Springer-Verlag Berlin Heidelberg. ISBN: 978-3-642-39261-0.
- (70) Johnson, M. D., *Ozturk, E., *Valverde, L., **Yalvac, B.**, *McGary, P., & Peng, X. (2013, August) A methodology for examining the role of adaptive expertise on CAD modeling. *Proceedings of the ASME 2013 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference*, Portland, OR. (1) [2 citations].
- (71) Ehlig-Economides, C., Aghara, S. K., Pisupati, V. S., Toossi, R., Kovscek, A., *Ayar, M. C., Binks-Cantrell, E., Gilman, R. D., Smith, L. D., & **Yalvac, B.** (2012, June). Live energy: An initiative for teaching energy and sustainability topics with the most up-to-date and relevant content. *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, San Antonio, TX.
- (72) Johnson, M., *Ozturk, E., *Johnson, J., **Yalvac, B.**, & Peng, X. (2012, June) Assessing an adaptive expertise instrument in Computer-aided Design (CAD) courses at two campuses. *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, San Antonio, TX.
- (73) *Han, S. Y., **Yalvac, B.**, Capraro, M. M., & Capraro, R. M. (2012). In-service teachers' implementation of and understanding from the Project-Based Learning (PBL) in Science, Technology, Engineering, and Mathematics (STEM) fields. *Proceedings of the 12th International Congress on Mathematical Education, [CD-ROM]*. Seoul, Korea.

- (74) Hodge, J. O., Hobson, M., **Yalvac, B.**, Magdalini, M. Z., Froyd, J., Ostrovskaya, N., Erukhimova, T., Malave, C. O., & Walton, S. (2011, June). Undergraduate academic experience for first-year engineering students through a summer bridge program. *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Vancouver, BC. [1 citation].
- (75) Magdalini, M. Z., & **Yalvac, B.** (2011, June). A model for multidisciplinary experiences for undergraduates that promotes retention and pipeline to graduate school. *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Vancouver, BC.
- (76) *Arghode, V., & **Yalvac, B.** (2010, April). Role of empathy in science class: A collective case study. *Proceedings of the International Conference on Education, Training and Informatics (ICETI)*, Orlando, FL.
- (77) **Yalvac, B.**, Ehlig-Economides, C., *Brooks, L. A., & Smith, D. (2009, July). An international, interdisciplinary, and dynamic approach to teaching energy utilization and sustainability. *Proceedings of the International Symposium on Engineering Education and Educational Technologies (EEET)*. Orlando, FL.
- (78) **Yalvac, B.**, *Brooks, L., & Ehlig-Economides, C. (2008, June). Research on the evolution of college instructors' perspectives of teaching and learning. *Proceedings of the American Society for Engineering Education (ASEE) Annual Conference and Exposition*, Pittsburgh, PA.
- (79) Kolikant, B. Y., McKenna, A. F., & **Yalvac, B.** (2005, June). Using the personal response system as a cultural bridge from silent absorption to active participation. *Proceedings of the 17th Annual Ed- Media Meeting*, Montreal, Canada.
- (80) Hirsch, P., Smith, H. D., Birol, G., **Yalvac, B.**, Casler, J., Anderson, J., & Troy, J. (2005, June). Establishing school-wide standards for engineering writing: A data driven approach. *Proceedings of the American Society for Engineering Education Annual Conference and Exposition*, Oregon.
- (81) McKenna, A. F., Kolikant, B. Y., & **Yalvac, B.** (2005, June). Cultivating a community of practice. *Proceedings of the American Society for Engineering Education Annual Conference and Exposition*, Oregon.
- (82) Sahakian, V. A., Hayes, C., & **Yalvac, B.** (2005, June). An inexpensive laboratory module to teach principles of NMR/MRI. *Proceedings of the American Society for Engineering Education Annual Conference and Exposition*, Oregon.
- (83) Olds, A. S., Patel, D. C., **Yalvac, B.**, Kanter, E. D., & Goel, N. (2004, June). Developing a standards-based K12 engineering curricula through partnership with university students and industry. *Proceedings of the American Society*

for Engineering Education Annual Conference and Exposition, Salt Lake City.

- (84) Troy, J., Hirsch, P., Smith, H. D., & **Yalvac, B.** (2004, June). Team-based written communication exercises for biomedical engineering juniors: Where to do it and what works. *Proceedings of the American Society for Engineering Education Annual Conference and Exposition*, Salt Lake City.
- (85) **Yalvac, B.**, & Crawford, B. (2002, January). Eliciting prospective science education students' conceptions of nature of science. *Proceedings of the 2002 AETS Annual International Meeting*, Charlotte, NC.

Book Chapters (*Graduate students)

- (86) Ayar, M. C., & **Yalvac, B.** (2018). Interdisciplinary approaches in Science and Technology Studies (STS): Learning environment design. In D. Akgunduz & H. Ertepinar (Eds.) *STEM education in theory and practice*. Istanbul, Turkey: Ani Publishing.
- (87) *Tabo, J. W., Capraro, M. M., & **Yalvac, B.** (2017). Where have all the tablets gone? An examination of the technology purchasing habits of suburban Texas school districts. In M. Pehlivan & W. Wu (Eds.), *Research highlights in education and science 2017*. (pp. 101-113). Ames, IA: International Society for Research in Education and Science (ISRES) Publishing.
- (88) Liew, J., *Chang, Y., *Kelly, L., & **Yalvac, B.** (2010). Self-regulated and social emotional learning in the multitasking generation. In D. Sahnuseyinoglu & J. Dzintra, (Eds.), *How do children learn best?* (pp.62-70). Ankara, Turkey: Children's Research Center.

Invited Journal Manuscripts/ Editorials:

- (89) **Yalvac, B.**, Craig, C., Hill-Jackson, V., & Cole, C. (2023). Toward inquiry and problem posing in teacher education, *Journal of Teacher Education* 74 (5), 417–421.
- (90) McKenna, A. F., **Yalvac, B.**, & Light, G. J. (2009). Time to reflect: Learning specialists help point the way to better teaching, *Prism*, p. 51.

Peer-Reviewed Conference Papers (*Graduate Students)

- (1) Crosby, G. V., *Alaqra, M., Rambo-Hernandez, K., Hernandez, P., de Miranda, M., & **Yalvac, B.** (2023, October) *The development of an instrument to measure engineering faculty's self-efficacy and perceptions of teaching laboratory intensive online courses*, Paper presentation at the 2023 IEEE Frontiers in Education Conference (FIE), College Station, TX, October 18–21, 2023.

- (2) *Al Aqra, M., *Cevik, E., *Amin, S., & **Yalvac, B.** (2021, November). *What makes me ME?* Paper presentation at the Annual Meeting of the Science Teachers Association of Texas (STAT), Fort Worth, TX: November 11-13, 2021.
- (3) *Antonia, K., **Yalvac, B.**, Peng, X., Eseryel, D. Cui, S., Lin, L., Zhang, Y., *Eyupoglu, T. F., & *Yuan, T. (2020, November). *Evolution of STEM professors' teaching approaches.* Paper presentation at the 11th Panhellenic Conference on Science in Early Childhood Education, Ioannina, Greece: November 6-8, 2020 (<http://sece.gr/9thconference/>) [Conference was held online].
- (4) *Alaqla, M., **Yalvac, B.**, Schmitz, S., Lambertz, I., Breeden, J., Lightfoot, J. T., *Syahrul, A., *Cevik, E., Cannon, C. L., & Fuchs-Young, R. (2020, October). *Underrepresented Minority (URM) high school students' experiences with authentic research at a university campus.* Paper presentation at the 21th Curriculum and Pedagogy (C&P) Conference, McAllen, TX: October 21-24, 2020. [Conference was held online].
- (5) *Alaqla, M., **Yalvac, B.**, Schmitz, S., Lambertz, I., Breeden, J., Lightfoot, J. T., Cannon, C. L., *Cevik, E., & Fuchs-Young, R. (2020, October). *A culturally responsive and contextualized STEM outreach activity and its impact on hispanic high school students.* Paper presentation at the 21th Curriculum and Pedagogy (C&P) Conference, McAllen, TX: October 21-24, 2020. [Conference was held online].
- (6) *Cevik, E., **Yalvac, B.**, *Cankaya, E. M., *Alaqla, M., & *Elcan, N. (2020). *Which Cinderella Story Is Mine?* Paper presentation at the American Educational Research Association (AERA) annual meeting, San Francisco, CA, <http://tinyurl.com/rnuqwdv> [Conference Canceled].
- (7) *Alaqla, M., **Yalvac, B.**, Bewaji, O., *Cevik, E., Lambertz, I., Breeden, J., Lightfoot, J. T., Cannon, C. L., & Fuchs-Young, R. (2020). *A community-centered STEM education activity and its impact on high school students on the border.* Paper presentation at the American Educational Research Association (AERA) annual meeting, San Francisco, CA, <http://tinyurl.com/tksgfph> [Conference Canceled].
- (8) *Alaqla, M., *Cevik, E., *Amin, S., **Yalvac, B.**, Schmitz, S., Lambertz, I., Breeden, J., Lightfoot, J. T., Cannon, C. L., & Fuchs-Young, R. (2020, February). *Cultivating minority stem researchers: the power of early exposure to authentic and original research for successful academic achievement and personal identity development.* Paper presentation at the Ethnographic and Qualitative Research Conference (EQRC) Annual Conference, Las Vegas, NV: February 24-25, 2020.
- (9) *Amin, S., & **Yalvac, B.** (2020, February). *A single case study of a newcomer student's science learning experiences taught in English for the first time.* Paper presentation at the Southeast Asian Conference on Education (SEACE), Singapore: February 7-9, 2020.

- (10) *Cevik, E., *Al Aqra, M., *Amin, S., **Yalvac, B.**, & Raven, S. (2019, November). *Forget superheroes, I want to be a scientist!* Paper presentation at the Annual Meeting of the Science Teachers Association of Texas (STAT), Fort Worth, TX: November 21-23, 2019.
- (11) *Alaqla, M., **Yalvac, B.**, Bewaji, O. A., Spier, M. E., Lambertz, I., Breeden, J., Lightfoot, J. T., Cannon, C. L., & Fuchs-Young, R. S. (February, 2019). *A multiple case study of three English teachers developing and implementing an integrated-STEM and Health Sciences Curriculum informed by up-to-date and authentic research conducted on a university campus.* Paper presentation at the 20th Curriculum and Pedagogy (C&P) Conference, McAllen, TX: October 15-17, 2019.
- (12) *Al Aqra, M., **Yalvac, B.**, Bewaji, O. A., Spier, M. E., Lambertz, I., Breeden, J., Lightfoot, J. T., Cannon, C. L., & Fuchs-Young, R. S. (2019, March). *A community of practice that emerged through teachers' engagement in authentic scientific research.* Paper presentation at the annual meeting of the National Association for Research in Science Teaching (NARST), Baltimore, MD: March 31-April 3, 2019
- (13) *Al Aqra, M., **Yalvac, B.**, Bewaji, O. A., Spier, M. E., Lambertz, I., Breeden, J., Lightfoot, J. T., Cannon, C. L., & Fuchs-Young, R. S. (2019, February). *A case study of a high school student lead health exposition.* Paper presentation at the 22nd Annual Meeting of the American Association of Behavioral and Social Sciences (AABSS), Las Vegas, NV: Feb 25-26, 2019.
- (14) *Spears, E., Schuett, M. A., & **Yalvac, B.** (2019, February) *Landownership as a socio-psychological phenomenon.* Paper presentation at the 31st Annual Ethnographic & Qualitative Research Conference (EQRC), Las Vegas, NV: Feb 25-26, 2019.
- (15) *Cevik, E., **Yalvac, B.**, Whitfield, J., & Raven, S. (2019, February). *Middle school students' perceptions of engineers and engineering in an engineering-design summer camp.* Paper presented at the 42nd Annual Meeting of the Southwest Educational Research Association (SERA), San Antonio, TX: February 6-8, 2019.
- (16) * Ketsetzi, A., **Yalvac, B.**, Peng, X., Eseryel, D., *Yuan, T., *Eyupoglu, T. F., Li, L., Cui, S., & Zhang, Y. (2018, May). *STEM professors' approaches to teaching and understanding of learning,* Paper presented at the 20th annual International Conference on Education, Athens, Greece: May 21-24, 2018.
- (17) **Yalvac, B.**, Eseryel, D., *Ketsetzi, A., *Yuan, T., *Eyupoglu, T. F., Peng, X., Li, L., Cui, S., & Zhang, Y. (2018, April). *STEM faculty development activities to widen the implementation of evidence-based pedagogies.* Paper Presentation at the American Educational Research Association (AERA) annual meeting, New York City, NY: April 13-17, 2018.

- (18) *Cevik, E., Johnson, M., **Yalvac, B.**, Whitfield, J., Porter J., R., Morgan, J., A., Kuttolamadom, M., & Raven, S. (March, 2018). Project-based engineering and its effect on students' perceptions of engineers, engineering, and technology. Poster presentation at the National Association for Research in Science Teaching (NARST), Atlanta, GA.
- (19) *Stelzig, D., **Yalvac, B.**, & Suruky, V. (2016, February). *Latino women and life after breast cancer treatment: A phenomenological study*. Paper presentation at the 28th annual Ethnographic and Qualitative Research Conference (EQRC), Las Vegas, NV: February 1-2, 2016.
- (20) Eseryel, D., **Yalvac, B.**, Peng, X., Zhang, D., & *Eyupoglu, T. F., (2016, April). *Implementing evidence-based pedagogies in computer-aided design education with undergraduate mechanical engineering students*, Paper presentation at the American Educational Research Association (AERA) annual meeting, Washington, DC: April 8-12, 2016.
- (21) Johnson, M.D., *Ozturk, E., **Yalvac, B.**, *Valverde, L., Peng, X., & *Liu, K. (2015, November) *Examining Adaptive Expertise: A novel comparison of student and practicing engineer CAD modeling performance*. Paper presentation at the 2015 International Mechanical Engineering Congress and Exposition (IMECE), Houston, TX: Nov 13-19, 2015.
- (22) Zhang, D., Peng, X., Yalvac, B., Eseryel, D., *Nadeem, U., *Islam, A., & *Arceneaux, D., (2015, July). *Integrating student-made screencasts into computer-aided design education*. Paper presentation at the 2015 PACE (Partners for Advancement of Collaborative Engineering Education) Global Annual Forum, São Paulo, Brazil: July, 2015.
- (23) *Alpaslan, M., Willson, V. L., & **Yalvac, B.** (2013, April) *Epistemic beliefs and self-regulation learning: A meta-analytic review*. Poster presentation at the annual meeting of the American Educational Research Association (AERA), San Francisco, CA: April 27-May 1, 2013.
- (24) *Alpaslan, M., & **Yalvac, B.** (2013, April) *A phenomenological study: The lived experiences of the international students in the United States with low English proficiency*. Poster presentation at the annual meeting of the American Educational Research Association (AERA), San Francisco, CA: April 27-May 1, 2013.
- (25) *Han, S., **Yalvac, B.**, Capraro, M. M., & Capraro, M. R., (2012, July). *In-service teachers' implementation of and understanding from the Project-Based Learning (PBL) in Science, Technology, Engineering, and Mathematics (STEM) fields*, Paper presentation at the 12 International Congress of Mathematics Education (ICME-12), Seoul, Korea: July 8-12, 2012.

- (26) *Ayar, M. C., **Yalvac, B.**, Economides, C., & Smith, D. (2012, April). *An emergence of a community-of- practice: Five engineering faculty co-authoring an electronic-and-dynamic textbook material in energy sustainability*. Paper presentation at the annual meeting of American Education Research Association (AERA), Vancouver, British Columbia, Canada: April 13- 17, 2012.
- (27) Peng, X., McGary, P., Johnson, M., **Yalvac, B.**, & *Ozturk, E., (2012, July) *Assessing novice computer-aided model creation and alteration*. Paper presentation at the 2012 *Computer- Aided Design and Application, PACE*. Shanghai, China: July 23-27, 2012.
- (28) *Ayar, C. M., & **Yalvac, B.** (2011, September). *The cognitive and socio-cultural characteristics of a scientific community: Implications for science education*, Paper presentation at the biennial meeting of the European Science Education Research Association (ESERA), Lyon, France: September 5-9, 2011.
- (29) *Gulsum, G., & **Yalvac, B.** (2011, September). *Prospective science education researchers' scientific epistemologies*. Paper presentation at the biennial meeting of the European Science Education Research Association (ESERA), Lyon, France: September 5-9, 2011.
- (30) *Alpaslan, M. M., **Yalvac, B.**, & Loving, C. (2011, July). *The impact of two reform movements in science textbooks: An analysis of 6th grade science textbooks from 1975 to 1997*. Paper presentation at the 11th International History and Philosophy of Science Teaching Conference, Thessaloniki, Greece: July 1-5, 2011.
- (31) *Ayar, C. M., & **Yalvac, B.** (2011, April). *A critical analysis of force and motion unit at a newly reformed science and technology curriculum*. Poster presentation at the annual meeting of the National Association for Research in Science Teaching (NARST), Orlando, FL: April, 2008.
- (32) *Alpaslan, M.M., **Yalvac, B.**, & *Ozturk, G. (2011, February). *The impact of mathematics curriculum on 10th grade students' understanding of physics concepts*. Paper presentation at the 35th annual meeting of the Southwest Educational Research Association (SERA), San Antonio, TX: February, 2010.
- (33) *Arghode, V., & **Yalvac, B.** (2011, February). *The role of teachers in curriculum development: A synthesis of literature*. Paper presentation at the 35th annual meeting of the Southwest Educational Research Association (SERA), San Antonio, TX: February, 2010.
- (34) *Arghode, V., & **Yalvac, B.** (2011, January). *Effective teaching to enhance learning*. Poster presentation at 4th International Conference to Review Research on Science, Technology, and Mathematics Education (epiSTEME), Mumbai, India: January, 2011.

- (35) *Ayar, C. M., & **Yalvac, B.** (2010, June). *Faculty's personal epistemologies and practices about wikis*. Paper presentation at the 14th World Congress of Comparative Education Societies (WCCES), Istanbul: June, 2010.
- (36) *Soylu, F., & **Yalvac, B.** (2009, August). *What does embodied cognition have to offer for science education?* Paper presentation at the biennial meeting of the European Science Education Research Association (ESERA), Istanbul: August, 2009.
- (37) *Ayar, C. M., **Yalvac, B.**, & Stiles, T. (2009, August). *Undergraduate students learning science in a research program: An ethnographic study*. Paper presentation at the biennial meeting of the European Science Education Research Association (ESERA), Istanbul: August, 2009.
- (38) *Brooks, L. A., **Yalvac, B.**, Economides, C. E., Ferguson, J., & Cryer, J. (2009, April). *The influence of apprenticeships of observation on STEM recitation instructors' practices and epistemological flexibility*. Poster presentation at the annual meeting of the American Educational Research Association (AERA), San Diego, CA: April, 2009.
- (39) Arikan, A., **Yalvac, B.**, & Easley, J. (2008, April). *Curriculum for Cultivating Democracy: Perspectives of Turkish Faculty on Democracy and Human Rights*. Paper presentation at the annual meeting of the American Educational Research Association (AERA), New York City: April, 2008.
- (40) **Yalvac, B.**, *Turker, N., & Yilmaz, O. (2008, April). *Constructivist and traditional approaches to teaching and learning: Validation of Teacher Beliefs Survey*. Paper presentation at the annual meeting of the National Association for Research in Science Teaching (NARST), Baltimore: April, 2008.
- (41) Arikan, A., **Yalvac, B.**, & Easley, J. (2007, October). *Curriculum, research, and 'Another dream Deferred': Views of academics in Turkey on democratizing the educational experience*. Paper presentation at the 8th annual Curriculum and Pedagogy meeting, Marble Falls, TX: October, 2007.
- (42) **Yalvac, B.**, Hirsch, P., Cline, K. J., Carmichael, K., & Anderson, J. (2007, April). *Teaching science writing in a research university: Students' experiences vs. faculty expectations*. Paper presentation at the annual meeting of the American Educational Research Association (AERA), Chicago: April, 2007.
- (43) McKenna, A. F., & **Yalvac, B.** (2007, April). *Exploring disciplinary teaching approaches within engineering*. Paper presentation at the annual meeting of the American Educational Research Association (AERA), Chicago: April, 2007.
- (44) **Yalvac, B.**, Carlsen, S.W., & Bauchspies, W. (2006, April). *Online peer review and students' understanding of the Nature of Science*. Paper presentation at the

- annual meeting of the National Association for Research in Science Teaching (NARST), San Francisco: April, 2006.
- (45) **Yalvac, B., & McKenna, A. F.** (2006, April). *Faculty development and changes in approaches to teaching*. Paper presentation at the annual meeting of the American Educational Research Association (AERA), San Francisco: April, 2006.
- (46) **Yalvac, B., Myint, M. T., Smith, H. D., Liu, S. Q., & Birol, G.** (2004). *Teaching about ethics in an authentic learning environment: Lab experiments using animals*. Paper presentation at the annual meeting of the Biomedical Engineering Society, Philadelphia: October, 2004.
- (47) Trautmann, N., Carlsen, S. W., **Yalvac, B., Cakir, M., & Kohl, C.** (2003, MArch). *Learning nature of science concepts through online peer review of student research reports*. Paper presentation at the annual meeting of the National Association for Research in Science Teaching (NARST), Philadelphia: March, 2003.
- (48) **Yalvac, B., & Carlsen, S. W.** (2002, April). *A qualitative study of students' experiences with a peer review and students' understandings of the Nature of Science*. Paper presentation at the annual meeting of the American Educational Research Association (AERA), New Orleans: April, 2002.
- (49) **Yalvac, B.** (2002, April). *The effect of instruction on students' understanding of electric current concept using conceptual change text at 6th grade*. Paper presentation at the annual meeting of the National Association for Research in Science Teaching (NARST), New Orleans: April, 2002.
- (50) **Yalvac, B., Avraamidou, L., Munford, D., & Bauchspies, W.** (2002, February). *Out of sight, out of mind*. Paper presentation and workshop at 17th annual National Science, Technology, and Society (NSTS) meeting, Baltimore: February, 2002.
- (51) **Yalvac, B.** (2001, March). *Ethics and values entering into and exported from science and technology*. Paper presentation at 16th annual National Science, Technology, and Society (NSTS) meeting, Baltimore: March, 2001.
- (52) **Yalvac, B.** (1998). *Prospective science teachers' attitudes and relations with their achievements toward science laboratories*. Poster presentation at the Contemporary Teacher Education Symposium, Izmir: 1998.
- (53) **Yalvac, B., Yilmaz, O., & Tekkaya, C.** (1998). *Measuring achievement in and attitudes towards science courses*. Paper presentation at the Science Education Symposium, Trabzon: 1998.

Invited Lectures/Seminars/Workshops (selected)

- (54) **Yalvac, B.** (2019-2020). Weekly workshops delivered to a group of undergraduate students at Texas A&M University on evidence-based strategies, College Station, TX.
- (55) **Yalvac, B.** (October 14, 2019). *Student-centered instruction & 21st century skills*, A lecture and workshop delivered to the teachers located in McAllen, TX school districts.
- (56) **Yalvac, B.** (November 9, 2019). *Strategies for designing written materials for health info communication*, A lecture and workshop delivered to the middle school students visiting Texas A&M Campus from two school in McAllen, TX, College Station, TX.
- (57) **Yalvac, B.** (February 1, 2019). *Evidence-based pedagogies and strategies to evaluate students' 21st century skills*, A webinar delivered to STEM faculty in Huntsville, AL.
- (58) **Yalvac, B.** (November 9, 2018). Workshop on evidence-based pedagogies (that are all student-centered and learner-oriented instructional practices) and active learning techniques and their role in promoting and retaining student interest and motivation in STEM fields, Huntsville, AL.
- (59) **Yalvac, B.** (November 13, 2018). *Strategies for designing written materials for health info communication*, [Webinar] A lecture on effective communication to the middle school students in South Texas, McAllen, TX.
- (60) **Yalvac, B.** (July 18, 2017). *Widening implementation of STEM education*, Research presentation at the STEM Symposium, Middle East Technical University, Ankara.
- (61) **Yalvac, B.** (December 12, 2017). *Strategies for designing written materials for health info communication*, [Webinar] A lecture on effective communication to the middle school students in South Texas, McAllen, TX.
- (62) **Yalvac, B.** (December, 28, 2016). *Queer theory and feminist epistemologies*, [Webinar] Visiting-lecturer at a graduate level qualitative research methods course at the Middle East Technical University, Ankara.
- (63) **Yalvac, B.** (September 23, 2016). *Widening Implementation of Evidence Based Pedagogies in STEM Education (WIEP-STEM)*, Faculty Friday Seminar at the Center of Teaching Excellence, Prairie View A&M University, TX.
- (64) **Yalvac, B.** (December, 19, 2012). *Feminist epistemologies and queer theory in qualitative research*. An invited guest lecturer at a graduate level qualitative research methods course at the Middle East Technical University, Ankara.
- (65) **Yalvac, B.** (April, 20, 2010). *Post-structuralist, ethnographic, and phenomenological approaches to science education*. An invited guest lecturer in a graduate level research methods course at the Middle East Technical University, Ankara.

- (66) **Yalvac, B.** (November 13, 2009). *Student centered learning*. An invited presentation at Aerospace Engineering Department's Weekly Faculty Seminar at Texas A&M University, College Station, TX.
- (67) **Yalvac, B.** (December 26, 2007). *Qualitative research methods, five approaches to inquiry*. An invited guest lecturer in a graduate level research methods course at the Middle East Technical University, Ankara.
- (68) **Yalvac, B.** (October 22, 2007). *Social constructivism revisited: Implications for practice*. An invited guest lecturer in a graduate level educational psychology course at Texas A&M University, TX.
- (69) **Yalvac, B.** (October 29, 2007). *The power of contextualization: Teaching writing in an engineering course*. An invited guest lecturer in a graduate level educational psychology course at Texas A&M University, TX.

Editorial Activities (selected)

Managing Editor of Journal of Teacher Education (2021-current)

Editorial board member, *Science Education Review* (2002-2012)

Reviewer, *Science Education* (Since 2006)

Reviewer, *Journal of Research in Science Teaching* (Since 2007)

Reviewer, *Journal of Engineering Education* (Since 2007)

Reviewer, *American Society for Engineering Education (ASEE)* (Since 2006)

Reviewer, *Journal of Turkish Science Education* (Since 2007)

Reviewer, *Hacettepe University, Journal of Education* (Since 2007)

Reviewer, *Learning Environment Research Journal* (Since 2007)

Reviewer, *International Journal of Science Education* (Since 2007)

Reviewer, *International Journal of STEM Education* (Since 2017)

Reviewer, *The Sociological Quarterly* (2010).

Reviewer, *School Science and Mathematics* (Since 2010).

Reviewer, *International Journal of Qualitative Studies in Education* (Since 2010).

Reviewer, *European Journal of Educational Research* (Since 2020)

Reviewer, *Eurasian Journal of Educational Research* (Since 2020)

Reviewer, *Asian Journal of Science Education* (Since 2019)

Reviewer, *Teaching and Teacher Education* (Since 2022)

Reviewer, *Science and Education* (Since 2022)

Professional Associations (selected)

American Society for Engineering Education (Since 2004)

National Association of Research in Science Teaching (Since 2002)

American Educational Research Association (Since 2002)

European Science Education Research Association (Since 2009)

International (previously National) Association of Science, Technology, and Society
(2001-2002)

Member of Innovation by Design, Faculty Innovation Project Profile (FIPP), Sustaining
Collaborative Relevance in Communities of Practice team (2004-2005)

Member of the STEM Learning and Research (STELAR) Center (Since 2016)

Workshops, Educational Seminars, and Site Visits Attended (selected)

National Science Foundation, 2016, NSF Funding for Maker Education and SBIR/STTR
Projects, Webinar hosted by STELAR on behalf of the National Science Foundation,
October 18, 2016.

National Science Foundation, 2011 CCLI/TUES Principal Investigators (PIs) Conference,
Transforming Undergraduate Education in STEM: Making and Measuring Impacts,
January 26-28, 2011, Washington DC.

Biweekly Qualitative Research Methods, Tenure-Track Faculty Seminars, Spring/Summer
2008, by Yvonna Lincoln, Texas A&M University, College Station, TX.

Biweekly Quantitative Research Methods, Tenure-Track Faculty Seminars, Spring/Summer
2008 by Bruce Thompson, Texas A&M University, College Station, TX.

Write from Wrong: Responding Productively to Error in Student Writing, The University's
Writing Center Faculty Workshop, July 25, 2007, Texas A&M University, College
Station, TX.

Writing Successful Proposals to the NSF, June 12, 2005, American Society for Engineering
Education Annual Conference and Exposition, Portland, OR.

Beyond Books: Writing Grants- Effective Research and Writing Workshop, February 05,
2005, Northwestern University, Evanston, IL.

Professional Grant Writing Workshop, April 19-21, 2004, University of Illinois, Chicago, IL.

VaNTH ERC Site Visits and NSF reviews (MIT, January, 2004, Cambridge, MA; University
of Texas at Austin, June, 2004, Austin, TX; Northwestern University, September,
2004, Evanston, IL; & University of Texas at Austin, January, 2004, Austin, TX).

VaNTH ERC Workshops (University of Memphis, 2003, Memphis, TN & University of
Texas at Austin, 2003, Austin, TX).

Faculty Innovation Project Profile Workshop, Vanderbilt University, 2003, Nashville, TN.

Awards and Scholarships

Research Achievement Award, Department of Teaching, Learning, and Culture, Texas A&M
University, (2020, \$1000)

STEM Education and Innovation Research Fellowship (2015-2018, \$12,000).

Graduate Study Abroad Scholarship Award, Turkish Ministry of Education (1999-2004,
\$250,000).

Physics Teacher Scholarship Award, TED Ankara High School (1994-1996).

Service (selected)

Co-Managing Editor of the *Journal of Teacher Education* (2021-current)

Member of the Committee on Academic Freedom, Responsibility, and Tenure (CARFT), Texas A&M University, College Station, TX (2020-current)

Co-director of the Institute of Technology-Infused Learning (TITIL), Texas A&M University, College Station, TX (2019-current).

Chair of the TLAC Achievement Award Committee, Department of Teaching, Learning and Culture (TLAC) (2018-current).

Chair of the Graduate Student Award Committee, Department of Teaching, Learning and Culture (TLAC) (2018-current).

Member of the PhD Audit Committee, Department of Teaching, Learning and Culture (TLAC) (2018-2019).

Member of the department of Teaching, Learning and Culture (TLAC) Executive Committee (2016-2019).

Member of the 2017 Science Education Associate/Full Professor Search Committee (search was successful).

Member at the Graduate Faculty Committee in the Department of Teaching, Learning and Culture, at Texas A&M University (2011-2019).

Chair of the Science Education Cognate in the Department of Teaching, Learning and Culture, at Texas A&M University (2013 - 2016).

Chair of the Graduate Student Scholarship Committee in the Department of Teaching, Learning and Culture (2011 - 2019).

Chair of the 2016 Science Education Assistant Professor Search Committee (search was successful)

Co-chair of the 2015/2016 Science Education Associate/Full Professor Search Committee (search was unsuccessful)

Served as reviewer for the NSF Grant Proposals in 2015.

Member at the 2014 Science Education Associate/Full Professor Search Committee (search was unsuccessful).

Member in the Annual Evaluations (A-1) Committee in the Department of Teaching, Learning and Culture, at Texas A&M University (2012-2018).

Member in the Annual Tenure and Promotion Committee (A-2) in the Department of Teaching, Learning and Culture, at Texas A&M University (2010-2019).

Member of the Climate Committee in the Department of Teaching, Learning and Culture, at Texas A&M University (2012 - 2014).

Project Reviewer for the World Class University Program, Korea-U.S. Science Cooperation Center (2012 - 2013).

Member of the Scientific Committee for the Applied Education Congress, held in Ankara, Turkey at METU, on September 13-15, 2012.

Served as member at the 2012 TLAC STEM education assistant/associate professor search committee (search was successful).

Leadership Committee Member in the Department of Teaching, Learning and Culture, at Texas A&M University (2009-2011).

White Paper Submitter for the Institute for Nanomaterials Science, Technology, and Policy (INSTEP). Finalist white paper for Academic Master Plan, Texas A&M University.

Volunteer consultant for an NSF career research grant in Civil Engineering with Dr. Grasley Zachary. This grant proposal has been written to improve the educational context of Dr. Zachary's course offerings at Texas A&M University.

Judge in Annual Texas K-12 Science Olympiad, April 26, 2008, College Station, TX.

Judge in Navasota High School Science Fair, October 2007, Navasota, TX.

Judge in Annual Pennsylvania Junior Science and Humanities Symposium (PA-JSHS), 2001 and 2002, College Station, PA.

Representative of the Science, Technology, and Society Department in Engineering Graduate Students Association at the Pennsylvania State University, (1999- 2004).

Courses Taught (selected)

In Science and Engineering Education

ENTC 489: Special Topics in Engineering Design & Project-Based Learning (co-instructor)

ENGR/SCIED 497F: Fundamentals of Science, Technology, and Engineering Design.

STS 150: Out of the Fiery Furnace

MASC 320: Inquiries in Physical Science

EDCI 656: How People Learn Science and Mathematics (Original Design)

EDCI 665: Science Curriculum

EDCI 665: Science and Mathematics Curricula

EDCI 669: Science Education in Sociological Context (Original Design)

EDCI 689: Cognitive Foundations of Knowing and Learning in Science and Mathematics

EDCI 721: How People Learn STEM (Original Design)

EDCI 724: Science/Mathematics in the Teaching of Engineering Content in K-12 Schools (Original Design)

EDCI 722: Microcontrollers for Education

In Curriculum and Instruction

EDCI 690: Introduction to Qualitative Research Methods (Original Design)

EDCI 605: Qualitative Research Methods in Curriculum and Instruction (Original Design)

EDCI 661: Mixed Methods Research in Education (Original Design)

EDCI 602: Cultural Foundations of Education

EDCI 644: Curriculum Development

EDCI 646: Instruction Theory

EDCI 673: Analysis of Teaching Behavior

EDCI 690: Theory of Curriculum and Instruction (a proposal/dissertation writing course)

Visiting Scholars Hosted

- (1) Dr. Muhammet Mustafa Alpaslan, Associate Professor of Science Education, Mugla Sitki Kocman University, Mugla, Turkey (During the Summer and Fall 2023 semesters)
- (2) Dr. Muhammet Mustafa Alpaslan, Associate Professor of Science Education, Mugla Sitki Kocman University, Mugla, Turkey (During the Fall 2021 semester)
- (2) Dr. Mustafa Yildiz, Assistant Professor of Science Education, Van Yuzuncu Yil University, Van, Turkey (During the academic year of 2015-2016)
- (3) Dr. Muhammet Ozden, Assistant Professor of Elementary Education, Dumlupinar University, Kutahya, Turkey, (During the academic year of 2014-2015).
- (4) Ms. Gul Comert, Graduate student in Science Education, Middle East Technical University, Ankara, Turkey (During the academic year of 2011-2012).

Graduate Committees

Doctoral (Ph.D., Ed.D)

Cherilyn Porter	(Chair)
Antonia Ketsetzi	(Chair)
Maram Al Aqra	(Chair, Graduated 2023) Assistant Professor, Department of Teacher Education, Sharjah Education Academy, UAE.
Emel Cevik	(Chair, Graduated 2021) Science Teacher.
Kenneth John Fleming	(Chair, Graduated 2017) Instructional Assistant Professor at Texas A&M University.
Renee Daisy Dailey	(Chair, Graduated 2016) Coordinator at Texas A&M Galveston.
Henry Dwight McHazlett	(Chair, Graduated 2015) Associate Principle, Medina Valley High School.
Christopher Lee	(Chair, Graduated 2014) Teaching Coordinator in the Department of Biology at Texas A&M University.
Sarah Anderson	(Chair, Graduated 2014) Science Teacher Coordinator.

Mustafa M. Alpaslan	(Chair, Graduated 2014) Associate Prof of Science Education at the Mugla Sitki Kocman University.
Mehmet Ayar	(Chair, Graduated 2012) Associate Prof of Science Education at the Istanbul Aydin University.
Jessica Lee	(Co-chair with Dr. MM Capraro, Graduated in 2022)
Bobby D. Leshikar	(Co-chair with Dr. MM Capraro, Graduated in 2021)
Amy Boatman	(Co-chair with Dr. MM Capraro, Graduated in 2021)
Ebony Laihing	(Co-Chair with Dr. MM Capraro, Graduated in 2020)
Catherine L. Hill	(Co-Chair with Dr. MM Capraro, Graduated in 2020)
Heidi M. Baine	(Co-chair with Dr. MM Capraro, Graduated in 2019)
Donaji Stelzig	(Co-chair with Dr. Ory, Graduated in 2019)
Joshua W. Tabor	(Co-chair with Dr. MM Capraro, Graduated 2018)
Bart Taylor	(Co-chair with Dr. MM Capraro, Graduated 2018)
Michelle Hurst	(Co-chair with Dr. MM Capraro, Graduated 2018)
Gokhan Ozturk	(Co-chair with Dr. Stuessy, Graduated 2015), Assistant Professor of Science Education at Middle East Technical University.
Maria Bianca Coker	(Co-chair with Dr. MM Capraro, Graduated 2015)
Elif Ozturk	(Co-chair with Dr. Liew, Graduated 2015), Assistant Professor at Middle East Technical University.
Matthew Strader	(Committee Member)
Misty Germaine	(Committee Member)
Tiffani Cortez	(Committee Member)
Christopher Roosa	(Committee Member)
Xin Li	(Committee Member)
Armanto Sutedjo	(Committee Member, Graduated in 2023)
Christopher Rhoades	(Committee Member, Graduated in 2023)
Chad Alan Huckaby	(Committee Member, Graduated in 2022)
Yee Lok Dorothy Pang	(Committee Member, Graduated in 2021)

Travis Jonathan Brown	(Committee Member, Graduated in 2021)
Hyunkyung Kwon	(Committee Member, Graduated in 2021)
Javelo Jones	(Committee Member, Graduated in 2020)
Gloria Tachia	(Committee Member, Graduated in 2020)
Evgenia Marukhnenko	(Committee Member, Graduated in 2019)
Dorothy A. Muhammed	(Committee Member, Graduated in 2019)
Thomas Styles	(Committee Member, Graduated 2018)
Gurloveen Rathore	(Committee Member, Graduated 2017)
Baki Cavlazoglu	(Committee Member, Graduated 2016)
Steven K. McKissick	(Committee Member, Graduated 2015)
Sherow Ernestene	(Committee Member, Graduated 2015)
Feyi Obamehinti	(Committee Member, Graduated 2014)
Niyazi Erdogan	(Committee Member, Graduated 2014)
Ummugulsum Korkmaz	(Committee Member, Graduated 2014)
Chen To-Yu	(Committee Member, Graduated 2014)
Darrell J. Gililland	(Committee Member, Graduated 2014)
Vishal Arghode	(Committee Member, Graduated 2013)
Sun Young Han	(Committee Member, Graduated 2013)
Erhan Delen	(Committee Member, Graduated 2013)
Marcia J. Talkmitt	(Committee Member, Graduated 2013)
Tory C. Hill	(Committee Member, Graduated 2013)
Karen Herrera	(Committee Member, Graduated 2013)
Victoria M. Hollas	(Committee Member, Graduated 2011)
Ilham K. El-Saleh	(Committee Member, Graduated 2011)
Idalia Massa	(Committee Member, Graduated 2010)

Denise Gordon (Committee Member, Graduated 2009)

Masters (MS, MEd)

Syahrul Amin	(Chair, Graduated 2020 - MS)
Vanessa Rodriguez	(Chair, Graduated 2019)
Amy Lynn Ellis	(Chair, Graduated 2018)
Maram Alagra	(Chair, Graduated 2018)
Brittanie Polasek	(Chair, Graduated 2017)
Diana Al Hussein	(Chair, Graduated 2017)
Samantha A. Ballinger	(Chair, Graduated 2016)
Antonia Ketsetzi	(Chair, Graduated 2015)
Cassandra Ann Bulaclac	(Chair, Graduated 2015)
Kandice R. Melchor	(Chair, Graduated 2014)
Kenneth John Fleming	(Chair, Graduated 2013)
Colleen Ann Badders	(Chair, Graduated 2010)
Vishal Arghode	(Chair, Graduated 2010)
Melvina Nfn	(Chair, Graduated 2010)
Shawn E. Richard	(Chair, Graduated 2009)
Jacob Keller	(Committee Member)
Jonathan B. Goldstein	(Committee Member, Graduated 2021- MS)
Emily M. Lindsey	(Committee Member, Graduated 2021- MS)
Matthew D. Patterson	(Committee Member, Graduated 2019)
Badri M. Johnson	(Committee Member, Graduated 2018)
Daniel Brown	(Committee Member, Graduates 2017)
Kristen Koenig	(Committee Member, Graduate 2016)
Ehikowoicho Idoko	(Committee Member, Graduated 2015)

Qiong Yu	(Committee Member, Graduated 2015)
Jennifer Dow	(Committee Member, Graduated 2014)
Monica Waggoner	(Committee Member, Graduated 2013)
Yun Li	(Committee Member, Graduated 2012)
Yanliang Ding	(Committee Member, Graduated 2012)
Sherly Knibbe	(Committee Member, Graduated 2012)
Namik Top	(Committee Member, Graduated 2012)
Xinyuan Yang	(Committee Member, Graduated 2011)
Baki Cavlazoglu	(Committee Member, Graduated 2011)
Niyazi Erdogan	(Committee Member, Graduated 2010)
Julia C. Van Buskirk	(Committee Member, Graduated 2009)
Tzu-fen Chang	(Committee Member, Graduated 2009)
Annabelle G. Briggs	(Committee Member, Graduated 2008)
Susan Skidmore	(Committee Member, Graduated 2007)