TURGUT BATUHAN BATURALP

MECHANICAL ENGINEER, Ph.D.

EDUCATION

Ph.D., Texas Tech University, Department of Mechanical Engineering, USA	2010 - 2016
M.Sc., Yeditepe University, Department of Mechanical Engineering, Turkey, (High Honor Graduation) (With 100% Scholarship)	2007 - 2010
B.Sc., Yeditepe University, Department of Mechanical Engineering, Turkey, (With 100% Scholarship)	2001 - 2006

PROFESSIONAL EXPERIENCE

Instructor, Texas Tech University, Department of Mechanical Engineering, USA	2018 – Present
Worked as an Instructor for ME 3365 Introduction to Design, ME 2301 Statics, ME 2115 Introduction to Programming Lab, ME 3333 Dynamic System & Vibrations, ME 4234 Dynamic Systems & Control Lab, ME 4251 Thermal - Fluid Systems Lab, ME 2322 Thermodynamics 1, ME 3164 FEA Lab, ME 3403 Mechanics of Solids, ME 4370 Engineering Design 1 and ME 4371 Engineering Design 2 courses.	
Post-Doctoral Research Associate, Texas Tech University, Department of Mechanical Engineering, USA	2016 – 2018
Worked as a researcher in NASA NIAC funded APERTURE Project in collaboration with Northwestern University (Phase II)	
Teaching Assistant - GPTI, Texas Tech University, Department of Mechanical Engineering, USA	2010 – 2016
Worked as an Instructor for ME 4370 Engineering Design I and ME 4371 Engineering Design II Courses, also Co-Instructor of Transdisciplinary Pilot Engineering Design courses	
Research & Teaching Assistant, Yeditepe University, Department of Mechanical Engineering, Turkey	2007 - 2010
Worked as Research Assistant in a TUBITAK (The Scientific and Technological Research Council of Turkey) funded project entitled as “Biomimetic Bipedal Walking Robot”	

Also, worked as a Teaching Assistant and assisted the following courses: ME 244 Dynamics, ME 331 Vehicle Dynamics, ME 351 Modeling and Control of Dynamic Systems, ME 456 Mechatronics, ME 445 Mechanical Vibrations, ME 472 Computer Aided Mechanical Engineering, ME 452 Mechanisms and Applications, ME 402 Experimental Mechanical Engineering, ME 461 Manufacturing Techniques and ME 352 System Dynamics and Control.

Northern Pacific Seafood, Inc, USA 06-09/2004

Worked as Supervisor Assistant with Work & Travel Program (J-1 Visa)

Festo AG & Co. KG, Turkey 07-08/2003

Technical Undergraduate Student Intern

RESEARCH INTERESTS

Biomedical Engineering, Robotics, Space Telescopes and Structures, Transdisciplinary Research and Education, and Vibration.

TEACHING INTERESTS

Bio-inspired design and Social Technical Thinking, Computational Thinking with Data Science, Engineering Design I and II, Dynamics, Statics, Dynamic Systems & Vibration, Programming, Introduction to Design, Mechatronics, Mechanisms and Applications, Systematic Thinking and Complex Problem Solving.

PUBLICATIONS

Bio-inspired Design Related Publications:

• Baturalp, T.B., Ertas, A., (2015). A State of the Art Mock Circulation Loop and a Proposed Novel Design. Int'l Conf. Biomedical Engineering and Science, BIOENG'15, pp. 23-29.

• Baturalp, T.B., (2014). Transdisciplinary Collaboration in Developing and Designing Patient Handling/Transfer Assistive Devices: Current & Future Designs. Transdisciplinary Journal of Engineering & Science, 4, pp. 148-161.

• Safak, K.K., Baturalp, T.B., (2010). Design and Analysis of a Foot Contact Sensor for Posture Control of a Biped Robot. In ASME 2010 10th Biennial Conference on Engineering Systems Design and Analysis, pp. 669-673.

• Safak, K.K., Baturalp, T.B., (2008). Determination of Gait Synthesis Methods and Design Criteria for a Biomimetic Biped Robot, Turkish National Committee of Automatic Control 2008 (TOK'08), pp. 258-262.

• Baturalp, T.B., Ertas, A., Emerging Trends in Computational Biology, Bioinformatics, and Systems Biology - Systems & Applications, "State of the Art Mock Human Blood Circulation Loop: Prototyping and Introduction of a New Heart", Elsevier Morgan Kaufman Publications, Chapter 25, ISBN: 978-0-12-802508-6, 2015.

• Gulbulak, U., Ertas, A., Baturalp, T.B., Pavelka, T., "The Effect of Fundamental Curves on Geometric Orifice Area of Bioprosthetic Heart Valves", accepted to "Journal of the Mechanical Behavior of Biomedical Materials" with minor revisions.

Engineering Education Related Publications:

• Ertas, A., Greenhalgh-Spencer, H., Gulbulak, U., Baturalp, T.B., Frias, K. (2016). Transdisciplinary Engineering Education Pilot Study: Implementation & Evaluation. TheATLAS T3 Biennial Conference.

• Ertas, A., Greenhalgh-Spencer, H., Gulbulak, U., Baturalp, T. B., & Frias, K. M. (2017). Transdisciplinary Collaborative Research Exploration for Undergraduate Engineering Students. International Journal of Engineering Education, 33(4), pp. 1242-1256.

• Baturalp, T.B., Transdisciplinary Education, Philosophy, & Applications, Chapter 12, pp. 235-253, ISBN: 0-9778129-7-9, 2014.

• Ertas, A., Rohman, J., Chillakanti, P., & Baturalp, T. B. (2015). Transdisciplinary Collaboration as a Vehicle for Collective Intelligence: A Case Study of Engineering Design Education. International Journal of Engineering Education, 31(6), pp. 1526-1536.

Other Conference Publications:

• Baturalp, T. B., Coverstone, V. L., Coppejans, R., Cao, J., Chung, Y., Buchholz, D. B., & Ulmer, M. P. (2018). Membrane mirror evaluation of APERTURE: a precise extremely large reflective telescope using re-configurable elements. Space Telescopes and Instrumentation 2018: Optical, Infrared, and Millimeter Wave, 10698, 106981K.

• Ulmer, M. P., Coppejans, R., Khreishi, M. A., Keely, K., Buchholz, D. B., Shiri, R., ... & Borgsmiller, L. E. (2018). Magnetostrictively deforming the surface of a silicon wafer at two locations. Adaptive X-Ray Optics V, 10761, 107610B.

• Baturalp, T. B., Coverstone, V. L., Coppejans, R., Cao, J., Chung, Y., Wang, X., ... & Ulmer, M. P. (2017). Deployment Design of APERTURE: a precise extremely large reflective telescope using re-configurable elements. In AIAA SPACE and Astronautics Forum and Exposition, p. 5378.

• Coppejans, R., Ulmer, M. P., Buchholz, D. B., Wang, X., Cao, J., Coverstone, V. L., ... & Reinhardt, W. H. (2017). APERTURE, a precise extremely-large reflective telescope using re-configurable element: a progress report. In UV/Optical/IR Space Telescopes and Instruments: Innovative Technologies and Concepts VIII (Vol. 10398, p. 103980N). International Society for Optics and Photonics.

Other Journal Publications:

• Baturalp, T. B., Coverstone, V. L., Coppejans, R., Cao, J., Chung, Y., ... & Ulmer, M. P., (2020), "Stable Membrane Candidate for Deployable Membrane Space Telescopes", Journal of Astronomical Telescopes, Instruments, and Systems, 6 (3), 034001.

• Ertas, A., Smith, M. W., Tate, D., Lawson, W. D., & Baturalp, T. B. (2016). Complexity of system maintainability analysis based on the interpretive structural modeling methodology: Transdisciplinary approach. Journal of Systems Science and Systems Engineering, 25(2), pp. 254-268.

Theses and Reports:

• Ulmer, M., Coverstone, V., Cao, J., Chung, Y. W., Shiri, R., Pappas, D., ... & Baturalp, T. B., "Further Development of Aperture: A Precise Extremely Large Reflective Telescope

Using Re-Configurable Elements", Phase II; NASA Innovative Advanced Concepts (NIAC), 2019.

• Baturalp, T.B., "Design and Development of a Systemic Mock Circulation Loop with a Novel Beating Left Ventricular Simulator", PhD. Thesis, Department of Mechanical Engineering, Texas Tech University, 2016.

• Baturalp, T.B., "Modeling, Simulation and Design of a Bipedal Walking Robot", MSc. Thesis, Department of Mechanical Engineering, Yeditepe University, 2010.

AWARDS & RECOGNITIONS

• Texas Tech Mortar Board, Apple Polishing Award, 2020.

• Texas Tech University, Innovation Hub, TTU Accelerator program – Accelerated Startup Company, 2017.

• Texas Tech University, Helen DeVitt Jones Graduate Fellowship Award, 2015-2016.

• Texas Tech University, Helen DeVitt Jones Graduate Fellowship Award, 2014-2015.

• Texas Tech University Mechanical Engineering Faculty Award – Teaching Award, In recognition of outstanding contribution as Department of Mechanical Engineering Ph.D. Student, Teaching Assistant, Fall 2013.

• The Academy of Transdisciplinary Learning & Advanced Studies (The ATLAS), Distinguished Service Award, In recognition of distinguished service for TheATLAS 2012 Transnational-Transcultural Biennial Conference, 2012.

• Texas Tech University Cross-Cultural Academic Advancement Center, In recognition of Turgut Baturalp's leadership in advancing cross-cultural dialogue and awareness, 2012.

• Texas Tech University Office of International Affairs, In recognition of Turgut Baturalp's outstanding participation in and successful completion as Texas Tech international student body leader for the West Texas Turkish American Student Association, 2011.

• Texas Tech University, Harrington Graduate Engineering Scholarship Award, 2010-2011.

• Yeditepe University, High Honor Graduation Award, 2010.