

Constantine Tarawneh, Ph.D., Louis A. Beecherl, Jr. Endowed Professor

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Education:

- Ph.D., Mechanical Engineering, University of Nebraska-Lincoln, Lincoln, NE, 2003
- M.S., Mechanical Engineering, University of Nebraska-Lincoln, Lincoln, NE, 1999
- B.S., Mechanical Engineering, University of Jordan-Amman, Amman, Jordan, 1996

Employment History:

- 2021-Present (1 year), Sr. Associate Dean, College of Engineering and Computer Science, The University of Texas Rio Grande Valley (UTRGV), TX
- 2021-Present (1 year), Founding Director, NSF CREST Center for Multidisciplinary Research Excellence in Cyber-Physical Infrastructure Systems (MECIS), UTRGV
- 2016-2021 (6 years), Associate Dean for Research and Graduate Programs, College of Engineering & Computer Science, University of Texas Rio Grande Valley (UTRGV)
- 2014-Present (8 years), Tenured Full Professor, University of Texas Rio Grande Valley (UTRGV) – formerly The University of Texas-Pan American (UTPA), Mechanical Engineering Department
- 2013-Present (10 years), Founding Director, University Transportation Center for Railway Safety (UTCRS), University of Texas Rio Grande Valley (UTRGV)
- 2009-2014 (5 years), Tenured Associate Professor, University of Texas-Pan American (UTPA), Mechanical Engineering Department
- 2005-2009 (4 years), Tenure-Track Assistant Professor, University of Texas-Pan American (UTPA), Mechanical Engineering Department
- 2003-2005 (2 years), Lecturer, University of Texas-Pan American (UTPA), Mechanical Engineering Department

Relevant External Grants and Contracts as Principal Investigator (PI):

- “CREST Center for Multidisciplinary Research Excellence in Cyber-Physical Infrastructure Systems (MECIS),” NSF, Centers for Research Excellence in Science and Technology, Award No. 2112650, **\$5,000,000. (Sep. 1, 2021 – Aug. 31, 2026)**
- “Proposal to Establish a USDOT University Transportation Center for Railway Safety (UTCRS),” USDOT, UTC Program, **\$4,500,000. (Oct. 1, 2013 – Dec. 31, 2018)**
- “Assessing the Efficacy of Railroad Bearing Reconditioning through Service Life Performance Testing,” Transportation Technology Center, Inc. (TTCI), **\$431,862. (Jul. 1, 2018 – Aug. 31, 2023)**
- “Condition Monitoring Sensor Prototype Evaluation, Testing, and Field Implementation,” HUM Industrial Technology, Inc., **\$352,362. (Jun. 1, 2020 – Aug. 31, 2023)**
- “2022 UTCRS STEM Summer Camps for K-12 Students,” Funded by the Local School Districts in the Lower Rio Grande Valley, **\$150,000. (2022)**
- “2019 UTCRS STEM Summer Camps for K-12 Students,” Funded by the Local School Districts in the Lower Rio Grande Valley, **\$135,000. (2019)**
- “2018 UTCRS STEM Summer Camps for K-12 Students,” Funded by the Local School Districts in the Lower Rio Grande Valley, **\$120,000. (2018)**

- “2017 UTCRS STEM Summer Camps Program for K-12 Students,” Funded by the Local School Districts in the Lower Rio Grande Valley, **\$110,000. (2017)**
- “Bearing Condition Monitoring Technologies, Product Validation, Field Testing, and Implementation,” Amsted Rail, **\$693,070. (Sep. 1, 2013 – Aug. 31, 2016)**

Relevant Publications: * Graduate Co-Authors; ** Undergraduate Co-Authors

- **C. Tarawneh**, J. Montalvo*, and B. Wilson. Defect detection in freight railcar tapered-roller bearings using vibration techniques. *Railway Engineering Science*, 29(1): 42-58, 2021. <https://doi.org/10.1007/s40534-020-00230-x>
- **C. Tarawneh**, J. Aranda*, V. Hernandez**, S. Crown, and J. Montalvo*. An investigation into wayside hot-box detector efficacy and optimization. *International Journal of Rail Transportation*, 8(3): 264-284, 2020. <https://doi.org/10.1080/23248378.2019.1636721>
- **C. Tarawneh**, J. Lima*, N. De Los Santos*, and R. Jones. Prognostics models for railroad tapered-roller bearings with spall defects on inner or outer rings. *Tribology Transactions*, 62(5): 897-906, 2019. <https://doi.org/10.1080/10402004.2019.1634228>
- **C. Tarawneh**, J. Ley, D. Blackwell*, S. Crown, and B. M. Wilson. Onboard load sensor for use in freight railcar applications. *Int. J. of Railway Technology*, 6(1): 41-67, 2017. [doi:10.4203/ijrt.6.1.3](https://doi.org/10.4203/ijrt.6.1.3)
- **C. Tarawneh**, R. Maldonado*, A. A. Fuentes, and J. A. Kypuros. A vibration energy approach used to identify temperature trending in railroad tapered-roller bearings. *Int. J. of Acoustics and Vibrations*, 20(2): 69-80, 2015.
- L. Villafranca*, M. Noruzoliaee, **C. Tarawneh**, and A. Sanchez-Trinida**, “Predicting the remaining service life of railroad bearings: Leveraging machine learning and onboard sensor data,” *2022 ASME Joint Rail Conference*, Online, Virtual, April 20-21.
- M. Barrera*, L. Cantu*, **C. Tarawneh**, H. Foltz, B. Wilson, and B. Porter, “Pilot field test of an onboard wireless health monitoring system for railroad rolling stock,” *2022 ASME Joint Rail Conference*, Online, Virtual, April 20-21.
- M. Amaro*, **C. Tarawneh**, H. Foltz, and R. Aguilera-Toro*, “Performance of a thermoelectric-based energy harvesting device on a realistic railroad route,” *2022 ASME Joint Rail Conference*, Online, Virtual, April 20-21.
- J. Aguilera*, **C. Tarawneh**, H. Siegel**, R. Jones, and S. Gutierrez**, “Conductive polymer pad for use in freight railcar bearing adapters,” *2022 ASME Joint Rail Conference*, Online, Virtual, April 20-21. **[Won Best Paper Award]**
- J. Arroyo*, **C. Tarawneh**, A. Fuentes, R. Garcia*, and C. Peña**, “Transient thermal analysis of a railroad bearing adapter for optimal placement of onboard sensors,” *2022 ASME Joint Rail Conference*, Online, Virtual, April 20-21.

Relevant External Service:

- (2022-Present) Member of the Executive Committee of CUTC
- (2022-Present) Member of the TRB Railroad Operating Technologies Committee
- (2020-Present) One of the four Directors of the Research and Education Division (RED) within the American Road and Transportation Builders Association (ARTBA)
- (2018-Present) Campus Manager for the US DOT DDETFP Local Competition