

# Jeffrey Weidner

500 W. University Ave, A-222  
Department of Civil Engineering  
The University of Texas at El Paso  
El Paso, Texas 79968  
(915) 747-6913

Permanent Address:  
14221 Nobel Rock Ct.  
El Paso, TX 79938  
(215) 292-4830  
www.jeffreyweidner.com

## EDUCATION

*Doctor of Philosophy, Civil Engineering*  
Drexel University, Philadelphia, PA June 2012  
Dissertation: Structural Identification of a Complex Structure using both Conventional and Multiple Model Approaches  
Advisor: Franklin L. Moon

*Master of Science, Structural Engineering*  
Lehigh University, Bethlehem, PA May 2012  
Thesis: Analytical Design and Experimental Validation of a Plate-Confined, Unbonded, Post-Tensioned Precast Concrete Wall Panel  
Advisor: Richard Sause

*Bachelor of Science, Architectural Engineering*  
Drexel University, Philadelphia, PA June 2005

## PROFESSIONAL EXPERIENCE

*Assistant Professor* August 2016 – Present  
The University of Texas at El Paso — Department of Civil Engineering, El Paso, TX

- Built a diverse, extramurally funded research program that leverages interdisciplinary collaborations within the department, college, university as well as externally
- Instructor of record for a total of seven courses, including Structural Analysis, Senior Design, and four cross-listed graduate courses, averaging evaluations of 4.6 /5.0
- Academic advisor for a rolling cohort of approximately 80 undergraduate students
- Faculty mentor for AISC Steel Bridge and SEAoT Student Chapters
- Community-engaged scholar serving the El Paso region and beyond through various service activities

*Practice Lead - Research* June 2012 – July 2016  
Intelligent Infrastructure Systems — Philadelphia, PA

- Led internal proposal development from a technical content perspective for local and federal research-focused grant opportunities.

- Designed and executed field testing activities, structural health monitoring systems, and model-experiment correlation analyses for aged and deteriorated bridges across the mid-Atlantic region.
- Co-authored the Long-Term Bridge Performance Data Collection Protocols

*Adjunct Professor* June 2013 – September 2013  
 Drexel University — CAEE Department, Philadelphia, PA

- Developed and taught a Structural Analysis II course to a cohort of approximately 30 undergraduate students in Civil Engineering.

*Research Engineer and Ph.D. Student* September 2007 – June 2012  
 Drexel University — CAEE Department, Philadelphia, PA

- Executed the International Bridge Study, a collaborative field testing effort which brought researchers from around the world to test a single bridge in New Jersey using their preferred technology and techniques in order to conduct a round robin analysis of results and approaches.
- Designed and executed field testing and model experiment correlation analyses for other bridges in New York City, West Virginia, Pennsylvania and New Jersey.
- Acted as the ad hoc lab manager, maintaining space and equipment, allotting desk and research space, and working with faculty, facilities, and the University to procure equipment and execute laboratory improvements.

*Teaching and Research Assistant* August 2005 – September 2007  
 Lehigh University — CEE Department, Bethlehem, PA

- Teaching assistant for structural analysis, reinforced concrete design, surveying, probability and statistics, and construction management.
- Led a scaled, unbonded, post-tensioned precast concrete wall panel test to determine energy dissipation and self-centering behavior under seismic loading as a Research Assistant.

## PUBLICATIONS

### Refereed Journal Articles

1. Collins, J. and **Weidner, J.** (In Review) "Assessment of the State-of-the-Art in Markovian-Based Deterioration Models for Bridges", *Journal of Bridge Engineering*
2. Ballard, S. and **Weidner, J.** (In Review) "Development of a Consistent Quantitative Risk Assessment Methodology for the Bridges of Route 66 Considering Historic Preservation", *Journal of Bridge Engineering*
3. Benitez, M. and **Weidner, J.** (In Preparation) "Developing a Building Inventory for Low Probability-High Consequence Seismic Events in Urban Areas", *Photogrammetric*

## Engineering and Remote Sensing

4. Golecki, T., Yarnold, M., and **Weidner, J.** (2021) “Pinned-end moments in simple span multi-girder bridges,” *Eng. Struct.*, vol. 240, no. January 2021, p. 112398,
5. Chang, C., Ortega, O., and **Weidner, J.** (2021) “Integrating the Risk of Climate Change into Transportation Asset Management to Support Bridge Network-Level Decision-Making,” *Journal of Infrastructure Systems*, 27(1)
6. Yarnold, M.T. and **Weidner, J.**, (2019) “Truck Platoon Impacts on Steel Girder Bridges”. *Journal of Bridge Engineering*, 24(7).
7. Yarnold, M., Golecki, T. and **Weidner, J.** (2018). “Identification of Composite Action through Truck Load Testing.” *Frontiers in Built Environment* 4(74).
8. **Weidner, J.**, Prader, J., Dubbs, N., Moon, F., Aktan, A. E., Taylor, J., and Skeens, C. J. (2018). “Extending the Life of Aged, Reinforced Concrete Arch Bridges through Load Testing and Monitoring”. *ACI Special Publication - Evaluation of Concrete Bridge Behavior through Load Testing - International Perspectives*, SP-323.
9. Aktan, A. E., Moon, F. L., and **Weidner, J.** (2016). “Leveraging Technology for Infrastructure Condition and Performance Assessment”. *Frontiers in Built Environment: Structural Sensing*, (December 2016), 1–20.
10. Yarnold, M.T. and **Weidner, J.** (2016). ”Monitoring of a Bascule Bridge during Rehabilitation,” *Bridge Structures Journal*, 12(1-2), 33-40.
11. Zhou, Y., Prader, J., **Weidner, J.**, Dubbs, N., Moon, F., and Aktan, E. (2012) “Structural Identification of a Deteriorated Reinforced Concrete Bridge,” *ASCE Journal of Bridge Engineering*, Vol. 17, No. 5, pp 774-787

## Conference Papers

1. Brown, L, **Weidner, J.**, Raheem, A. and Cheu, R.L. (2022) “Using Vision-Based Methodology to Create a Traffic Network Asset Inventory for a University Campus for Integration in a Digital Twin” *ASCE International Conference on Transportation and Development*
2. Lugo, J., Gallegos, **J.**, **Weidner, J.**, Raheem, A. and Cheu, R.L. (2022) “Evaluation of 3D Reconstruction Methods from Terrestrial LiDAR Point Cloud Data to Create Digital Twins of Civil Infrastructure Projects” *ASCE International Conference on Transportation and Development*
3. De la Garza, X. **J.**, **Weidner, J.** and Cheu, R. L. (2021). “Locations and Length of Entrances and Exits of an Automated Truck Lane on a U.S. Freeway.” *IEEE Smart City Symposium in Prague (SCSP2021)*
4. Briones, F., **Weidner, J.**, and Cheu, R. L. (2021). “Smart Parking Garage: Concept of Operations and User Benefits.” *IEEE Smart City Symposium in Prague (SCSP2021)*
5. Yarnold, M. and **Weidner, J.** (2018). “Truck Platoon Impacts on Steel Girder Bridges,” *Transportation Research Board*, Washington, DC.

6. Golecki, T. F., and **Weidner, J.** (2018). "Automating Refined Load Ratings for Girder Bridges". In Structures Congress 2018: Bridges, Transportation Structures, and Nonbuilding Structures - Selected Papers from the Structures Congress 2018 (Vol. 2018-April).
7. Yarnold, M.T. and **Weidner, J.** (2016). "Monitoring of a Bascule Bridge during Construction," Transportation Research Board, Washington, DC.
8. Khan, F., Mazzotti, M., Bartoli, I., **Weidner, J.**, Aktan, E., and Moon, F. (2015) "Validation and Integration of Nondestructive Evaluation Data for the Assessment of Bridge Decks" International Symposium on Nondestructive Testing in Civil Engineering, Berlin, Germany
9. **Weidner, J.**, Yarnold, M., Dubbs, N. (2014). "Challenges to Successful Implementation of Structural Health Monitoring," NDE/NDT for Highways and Bridges Conference, American Society for Non-Destructive Testing (ASNT), Washington, DC.
10. Moon, F.L., **Weidner, J.**, and Dubbs, N. (2012) "Extracting Knowledge from Structural Response Data," International Association for Bridge Management and Safety, Stresa, Italy
11. **Weidner, J.**, Prader, J., Moon, F., and Aktan, E. (2012) "Limitations of Structural Identification: Case Studies," NDE/NDT for Highways and Bridges Conference, American Society for Non-Destructive Testing (ASNT) New York, NY
12. Zhou, Y., **Weidner, J.**, Prader, J., Dubbs, N., Moon, F., and Aktan, E. (2010) "Parameter identification of a reinforced concrete T-beam bridge," International Association for Bridge Management and Safety, Philadelphia, PA
13. **Weidner, J.**, Prader, J., Dubbs, N., Moon, F., and Aktan, E. (2010) "The role of structural identification in asset management," International Association for Bridge Management and Safety, Fifth International Conference on Bridge Maintenance, Safety and Management, Philadelphia, PA
14. **Weidner J.** (2010) "Structural Health Monitoring of the Tacony-Palmyra Bridge" International Association for Bridge Management and Safety, Fifth International Conference on Bridge Maintenance, Safety and Management, Philadelphia, PA

## Technical Reports and Other Publications

1. **Weidner, J.**, Castrejon, L., Cheu, R.L., Meyer, A. (2022) Green Transportation Infrastructure in Desert Cities, Research Report for CTECH UTC, Cornell University (in development - due 7/31/22)
2. **Weidner, J.**, Cheu, R.L., Raheem, A., Brown, L., Lugo, J. and Gallegos, J. (2022) Digital Twin Technologies Towards Understanding the Interactions between Transportation and other Civil Infrastructure Systems: Phase I, Research Report for C2SMART Center, New York University (in review)
3. Benitez, M., **Weidner, J.**, and Kreinovich, V., (2022) How to Select Typical Objects, Chapter in "Decision Making under Uncertainty and Constraints: A Why-Book"

4. Cheu, R.L., **Weidner, J.**, Briones, F., Madrid, D. and Gurbuz, O. (2021) Development of LOS Analysis Procedures and Performance Measurement Systems for Parking, Research Report for C2SMART Center, New York University
5. **Weidner, J.** and Ballard, S., (2019) Historic Preservation of Bridges on Route 66, Research Report submitted to National Park Service
6. Cheu, R.L., **Weidner, J.**, Jauregui, X., Gurbuz, O., and Vizcaino, J., (2019) Automated Truck Lanes in Urban Area for Through and Cross-Border Traffic, Research Report for C2SMART Center, New York University
7. **Weidner, J.**, Collins, J., Benitez, M., Adesina, M., and Lozoya, C. (2019) Development of a Robust Framework for Assessing Bridge Performance using a Multiple Model Approach, Research Report for CAIT, Rutgers University
8. Hooks, J. M., and **Weidner, J.** (2016). Long-Term Bridge Performance ( LTBP ) Program Protocols , Version 1.

## PRESENTATIONS

1. C2SMART Webinar: Parking for Smart Cities: Level of Service and Performance Measurements Systems for Parking – Fall 2021
2. UTEP Civil Engineering Introductory Course – Fall 2020 – Structural Engineering
3. UTEP Civil Engineering PhD Seminar Course – Fall 2020 – The Future of Sustainability and Resilience in El Paso and Beyond (an also Smart Cities)
4. Global Sustainable Engineering and Leadership Infrastructure Practices – UTEP/UDEP Study Abroad – Summer 2020 – City of El Paso: Towards a Smart, Sustainable, and Resilient Desert City
5. Boy Scouts of America – Palmetto Council – Summer 2020 – Building Bridges
6. MiniCAST 2019 – Keynote Lightning Talk – Community Resilience in Low Probability High Consequence Hazard Areas
7. MiniCAST 2018 – Night at the Museum – Physical Models in the Classroom
8. ASCE Structures Congress (2018) - Session Chair – The Versatility of Structural Monitoring
9. Structural Engineers Association of Texas – El Paso Chapter (2018) – Our Infrastructure is Crumbling?
10. Engineers without Borders – UTEP Chapter (2017) – Our Infrastructure is Crumbling?
11. University of New Mexico – EERI Student Chapter (2017) – Our Infrastructure is Crumbling: What are we going to do about it?

## RESEARCH PROJECTS AND PROPOSALS

### Current Funded Research Project Awards

1. Track 1: Center for Collective Impact in Earthquake Science (C-CIES): Building Inclusive Excellence, Diversity, Equity, and Community into Earthquake Science
  - Total Award Amount Requested: \$500,000
  - Investigators: A. Velasco (PI), **J. Weidner (Co-PI)**, and M. Karplus (Co-PI)
  - Agency: National Science Foundation
  - Proposed Period of Performance: August 2022 - July 2024
2. Development of a framework to estimate crashes involving pedestrian in urban area using parking, transit and infrastructure factors
  - Total Award Amount: \$138,627
    - External Contribution: \$95,358
    - Internal Matching: \$43,269
  - Investigators: K. Cheu (PI), **J. Weidner (Co-PI)**, and O. Gurbuz (Co-PI - TTI)
  - Agency: USDOT UTC with Cornell University (CTECH)
  - Period of Performance: April 2022 - March 2023
  - Role:
    - Contribute to data collection and surveying
    - Contributor to all other tasks as required
  - Students Advised:
    - Contribute to all student advising
  - Anticipated Products:
    - Technical report for CTECH
    - One journal publication
    - One conference manuscript
3. A Prototype Data Dashboard for Transportation, Environment, and Community Health
  - Total Award Amount: \$86,764
    - External Contribution: \$57,696
    - Internal Matching: \$29,068
  - Investigators: R. Ke (PI), **J. Weidner (Co-PI)**, and K. Cheu (Co-PI)
  - Agency: USDOT UTC with Cornell University (CTECH)
  - Period of Performance: March 2022 - February 2023
  - Role:
    - Contributor to all tasks as required
  - Students Advised:
    - Contribute to all student advising - Unknown (starting in Summer 2022)
  - Anticipated Products:

- Technical report for CTECH
  - One journal publication
  - One conference manuscript
4. Digital Twin Technologies Towards Understanding the Interactions between Transportation and other Civil Infrastructure Systems: Phase II
- Award Amount: \$210,000
    - External Contribution: \$140,000
    - Internal Matching: \$70,000
  - Investigators: R. Ke (PI), **J. Weidner (Co-PI)**, A. Raheem (Co-PI) and K. Cheu (Co-PI)
  - Agency: USDOT UTC with New York University (C2SMART)
  - Period of Performance: March 2022 - February 2023
  - Role:
    - Lead the effort to create a digital twin of a bridge on the UTEP campus
    - Contributor to all other tasks as required
  - Students Advised:
    - M.S. - Unknown (starting in Summer 2022)
  - Anticipated Products:
    - Technical report for C2SMART UTC
    - One journal publication
    - Two conference manuscripts
5. EP Water - Research and Collaboration Pipeline
- Total Award Amount: \$894,139
  - Investigators: W. Walker (PI), **J. Weidner (Co-PI)**, and J. Feuille (Co-PI)
  - Agency: El Paso Water Utilities
  - Period of Performance: February 2022 - January 2027
  - Role:
    - Contribute to the development of a Research Library for past and current EP Water-sponsored research
    - Help to lay a course for research and collaboration between EP Water and UTEP
    - Contributor to all other tasks as required
  - Students Advised:
    - M.S. - Unknown (starting in Summer 2022)
    - Additional student support not yet allocated
  - Anticipated Products:
    - Technical reports for EP Water
    - Research database
    - Numerous journal publications
    - Numerous conference manuscripts

6. Development of a Continuous for Live Load Prefabricated Steel Accelerated Bridge Construction (ABC) Unit for Texas Bridges

- Award Amount: \$689,995 (UTEP Portion - \$119,619)
- Investigators: **J. Weidner (PI - UTEP)**, M. Yarnold (Lead PI - Texas A&M), J. Mander (Co-PI - Texas A&M), S. Hurlebaus (Co-PI - Texas A&M), P. Sideris (Co-PI - Texas A&M), and K. Skillen (Co-PI - Texas A&M)
- Agency: Texas Department of Transportation
- Period of Performance: September 2021 - August 2024
- Role:
  - Supervisor for activities occurring at UTEP
  - Task lead for analytical modeling
  - Contributor to all other tasks
- Students Advised:
  - Ph.D. - Gibran Cano Gutierrez (starting in Fall 2022)
- Anticipated Products:
  - Technical report for TXDOT
  - Three journal publications (2 - Led by Texas A&M; 1 - Led by UTEP)
  - One conference manuscript

7. Digital Twin Technologies Towards Understanding the Interactions between Transportation and other Civil Infrastructure Systems: Phase I

- Total Award Amount: \$210,000
  - External Contribution: \$140,000
  - Internal Matching: \$70,000
- Investigators: **J. Weidner (PI)**, A. Raheem (Co-PI), and K. Cheu (Co-PI)
- Agency: USDOT UTC with New York University (C2SMART)
- Period of Performance: March 2021 - June 2022
- Role:
  - Responsible for all project administration and execution
  - Provide technical guidance and leadership on project
  - Organize and execute the stakeholder engagement workshop
- Students Advised:
  - M.S. - Jose Lugo (primarily supervised by PI Weidner)
  - M.S. - Lauren Brown (primarily supervised by Co-PI Cheu)
  - M.S.C.M. - Julio Gallego Reyes (primarily supervised by Co-PI Raheem)
- Anticipated Products:
  - Technical report for C2SMART (in review - Item 27 above)
  - One journal publication (in preparation)
  - Two conference manuscripts (Items 12 and 12 above)
  - C2SMART project webinar

8. Green Transportation Infrastructure in Desert Cities

- Total Award Amount: \$128,147



- External Contribution: \$85,431
- Internal Matching: \$42,716
- Investigators: **J. Weidner (PI)**, A. Meyer (Co-PI), and K. Cheu (Co-PI)
- Agency: USDOT UTC with Cornell University (CTECH)
- Period of Performance: March 2021 - August 2022
- Role:
  - Responsible for all project administration and execution
  - Provide technical guidance and leadership on project
  - Organize and execute the stakeholder engagement workshop
  - Primary advisor for graduate students
- Students Advised:
  - M.S. - Luisa Castrejon
- Anticipated Products:
  - Technical report for CTECH (in preparation)
  - One journal publication
  - One conference manuscript

## Current Research Support Awards

1. Frontera Intraplate Earthquake Research Collaborative (FRONTIER)
  - Investigators: **J. Weidner (PI)** and A. Velasco (Co-PI)
  - Award: Laboratory space in Interdisciplinary Research Building at UTEP
  - Period of occupation: September 2020 - August 2022 with possible extension
  - Funding: No funding associated with award
2. Engineering + Art + Sciences = Social Impact (EASSI)
  - Role: Support Personnel
  - Award: Research collaboration space in Interdisciplinary Research Building at UTEP
  - Period of occupation: September 2020 - August 2022 with possible extension
  - Funding: \$20,000 seed funding to PIs
3. Request to Acquire Multispectral Camera and Associated Accessories for UAV Platform
  - Total Award Amount: \$10,000
  - Investigators: A. Raheem (PI), R. Aldouri (Co-PI), I. Santiago (Co-PI), and **J. Weidner (Co-PI)**
  - Agency: UTEP College of Engineering Accelerator Fund
  - Period of Performance: Equipment Grant
4. STEM Accelerator Proposal for Structural Analysis
  - Total Award Amount: \$8,500

- Investigator: **J. Weidner (PI)**
- Agency: Educate Texas
- Period of Performance: October 2017 - March 2018
- Role:
  - Developed revamped course materials for structural analysis
  - Participated in professional development workshops
- Products:
  - Revamped course materials

## Past Funded Research Project Awards

1. Development of Level of Service Analysis Procedures and Performance Measurement Systems for Parking
  - Total Award Amount: \$210,000
    - External Contribution: \$139,988
    - Internal Matching: \$70,012
  - Investigators: K. Cheu (PI) and **J. Weidner (Co-PI)**
  - Agency: USDOT UTC with New York University (C2SMART)
  - Period of Performance: March 2020 - February 2021
  - Role:
    - Responsible for coordinating with public agencies for data collection
    - Provide technical guidance throughout the project
    - Contribute heavily to the report development
    - Committee member for graduate students
  - Students Advised:
    - M.S. - Fernie Briones (primarily supervised by PI Cheu)
    - U.G. - Lauren Brown (primarily supervised by PI Cheu)
    - U.G. - Danielle Madrid (primarily supervised by PI Cheu)
  - Products:
    - Technical report for C2SMART
    - One conference manuscript
  
2. Engineering Route 66: Development of an Engineering History Course Focused on Route 66
  - Total Award Amount: \$35,688
    - External Contribution: \$17,844
    - Internal Matching: \$17,844
  - Investigator: **J. Weidner (PI)**
  - Agency: National Park Service
  - Period of Performance: September 2019 - June 2021
  - Role:

- Responsible for project administration
  - Led the development of course materials
  - Executed the course in Spring 2021 at UTEP
  - Advisor for undergraduate and graduate students
  - Students Advised:
    - M.S. - Paola Santillao
    - U.G. - Jazmin Hernandez
  - Products:
    - Technical report for National Park Service
    - Course Materials
3. Development of a Risk Reduction Strategy for Historically Valuable Bridges on Route 66
- Total Award Amount: \$34,209
    - External Contribution: \$13,181
    - Internal Matching: \$21,028
  - Investigator: **J. Weidner (PI)**
  - Agency: National Park Service
  - Period of Performance: August 2018 - September 2019
  - Role:
    - Responsible for project administration
    - Led the technical efforts of the project
    - Produced final deliverables
    - Advisor for undergraduate and graduate students
  - Students Advised:
    - M.S. - Sarah Ballard
    - U.G. - Paola Santillano
  - Products:
    - Technical report for National Park Service
    - One journal article (in review)
4. Automated Truck Lanes in Urban Area for Through and Cross Border Traffic
- Total Award Amount: \$135,000
    - External Contribution: \$90,000
    - Internal Matching: \$45,000
  - Investigators: K. Cheu (PI) and **J. Weidner (Co-PI)**
  - Agency: USDOT UTC with New York University (C2SMART)
  - Period of Performance: March 2018 - February 2019
  - Role:
    - Responsible for coordinating with public agencies for data collection
    - Provide technical guidance throughout the project related to bridge performance and truck platoons
    - Contribute heavily to the report development

- Committee member for graduate students
- Students Advised:
  - M.S. - Ximena de la Garza (primarily supervised by PI Cheu)
  - M.E. - Jesus Vizcaino (primarily supervised by Co-PI Weidner)
- Products:
  - Technical report for C2SMART
  - One conference manuscript

#### 5. Bridge Preservation and Prioritization on Route 66

- Total Award Amount: \$32,334
  - External Contribution: \$7,550
  - Internal Matching: \$24,784
- Investigator: **J. Weidner (PI)**
- Agency: National Park Service
- Period of Performance: July 2017 - June 2018
- Role:
  - Responsible for project administration
  - Led the technical efforts of the project
  - Produced final deliverables
  - Advisor for graduate students
- Students Advised:
  - M.S. - Sarah Ballard
- Products:
  - Technical report for National Park Service

#### 6. Development of a Robust Framework for Assessing Bridge Performance using a Multiple Model Approach

- Total Award Amount: \$144,673
  - External Contribution: \$96,449
  - Internal Matching: \$48,224
- Investigators: **J. Weidner (PI)**
- Agency: USDOT UTC with Rutgers University
- Period of Performance: August 2016 - July 2018
- Role:
  - Responsible for all project administration and execution
  - Provide technical guidance and leadership on project
  - Primary advisor for graduate students
- Students Advised:
  - M.S. - Bryan Stephens
  - Ph.D. - Mariana Benitez
  - Ph.D. - Mubarak Adesina (did not remain at UTEP)
  - Ph.D. - Jin Collins

- Products:
  - Technical report for Rutgers UTC
  - One conference manuscript

#### Evaluate Bridge Deck Condition and Replacement Methods

- Total Award Amount Requested: \$688,982
- Investigators: A. Du (PI - UTSA), W. Ghannoum (SP - UTSA), A. Matamoros (SP - UTSA), M. Diaz (SP-UTSA), **J. Weidner (PI-UTEP)**, S. Nazarian (SP - UTEP), and S. Rocha (SP - UTEP)
- Agency: Texas Department of Transportation
- Proposed Period of Performance: September 2022 - August 2025

## Unfunded Research Project Proposals

1. Evaluate Bridge Deck Condition and Replacement Methods
  - Investigators: A. Du (PI - UTSA), W. Ghannoum (SP - UTSA), A. Matamoros (SP - UTSA), M. Diaz (SP-UTSA), **J. Weidner (PI-UTEP)**, S. Nazarian (SP - UTEP), and S. Rocha (SP - UTEP)
  - Agency: Texas Department of Transportation
  - Submitted 2022
2. Synthesis: Develop Guidance for Local Government Building Codes for Bridges
  - Investigator: **J. Weidner (PI-UTEP)**
  - Agency: Texas Department of Transportation
  - Submitted: 2022
3. Develop and Calibrate Bridge Performance Models Using Element Data
  - Investigator: **J. Weidner (PI-UTEP)**
  - Agency: Texas Department of Transportation
  - Submitted: 2022
4. EAGER: SAI-E. Disaster Impact on Human Interaction with Integrated Infrastructures in Cross-Border Settings
  - Investigators: E. Jones (PI - UT Health Sciences), **J. Weidner (PI - UTEP)**, and I. Tien (PI - Georgia Tech)
  - Agency: National Science Foundation
  - Submitted: 2021
5. Working with Autonomous Trucks to Improve Routine Maintenance Operations
  - Investigators: M. Souliman (PI - UT Tyler), M. Vechione (Co-PI - UT Tyler), M. Shirvaikar (Co-PI - UT Tyler), Y. Li (Co-PI - UT Tyler), **J. Weidner (PI - UTEP)**, and R.L. Cheu (Co-PI - UTEP)
  - Agency: Texas Department of Transportation

- Submitted: 2021
6. Innovative Practices to Educate Bridge Engineering Practitioners
    - Investigators: M. Yarnold (PI - Texas A&M) and **J. Weidner (PI - UTEP)**
    - Agency: Federal Highway Administration
    - Submitted: 2021
  7. AccelNet-Implementation: HimLink: Linking networks to understand natural hazards in the Himalaya and their impacts
    - Role: Senior Personnel
    - Agency: National Science Foundation
    - Submitted: 2021
  8. Analyzing the Effects of Infrastructure Adequacy on Social Cohesion and Community Resilience
    - Investigators: **J. Weidner (PI)** and J. Chakraborty (Co-PI)
    - Agency: National Science Foundation
    - Submitted: 2021
  9. Collaborative Research: Quantifying the Effect of Community Resilience of Improving Local Building Inventory in Areas of Low Probability Hazard
    - Investigators: **J. Weidner (PI)**, A. Velasco (Co-PI), and E. Jones (Co-PI - UT Health Sciences)
    - Agency: National Science Foundation
    - Submitted: 2020
  10. Refining Earthquake Hazard Estimation and Building Community Partners in El Paso, TX
    - Investigators: A. Velasco (PI), **J. Weidner (Co-PI)**, M. Karplus (Co-PI), and J. Hurtado (Co-PI)
    - Agency: United States Geological Survey
    - Submitted: 2020
  11. Collaborative Research: Modeling and Mitigating Disaster Impact on Infrastructure in Cross-Border Regions
    - Investigators: E. Jones (PI - UT Health Sciences), **J. Weidner (PI - UTEP)**, J. Heyman (Co-PI - UTEP) and I. Tien (PI - Georgia Tech)
    - Agency: National Science Foundation
    - Submitted: 2020
  12. SCC-CIVIC-PG Track B: Building Resilience to Earthquakes Along the US-Mexico Border
    - Investigators: A. Velasco (PI-UTEP), **J. Weidner (Co-PI - UTEP)**, J. Heyman (Co-PI - UTEP) and E. Jones (PI - UT Health Sciences)
    - Agency: National Science Foundation

- Submitted: 2020
13. Establish TXDOT Transportation Resilience Planning Scorecard and Best Practices
    - Investigators: V. Tandon (PI), **J. Weidner (Co-PI)**, and R. Aldouri (Co-PI)
    - Agency: Texas Department of Transportation
    - Submitted: 2020
  14. SCC-PG: Mutli-Scale Context and Impact of Smart Community Projects
    - Investigators: **J. Weidner (PI)**, J. Chakraborty (Co-PI) and R.L. Cheu (Co-PI)
    - Agency: National Science Foundation
    - Submitted: 2019
  15. Evaluation of Corrosion Prevention and Mitigation Approaches for Texas Bridges
    - Investigators: **J. Weidner (PI)**, S. Nazarian (Co-PI) and A. Bronson (Co-PI)
    - Agency: Texas Department of Transportation
    - Submitted: 2019
  16. Evaluation and Improvement of Texas Poor Boy Joint Detail
    - Investigators: **J. Weidner (PI)**, S. Nazarian (Co-PI) and C. Tirado (Co-PI)
    - Agency: Texas Department of Transportation
    - Submitted: 2019
  17. Calibration of Bridge Element Based Deterioration Models
    - Investigators: **J. Weidner (PI)**, and C. Chang (Co-PI)
    - Agency: Texas Department of Transportation
    - Submitted: 2018
  18. Evaluate Potential Impacts, Benefits, Impediments, and Solutions of Autonomous Trucks and Truck Platooning on Texas Highway Infrastructure
    - Investigators: R.L. Cheu (PI), S. Nazarian (Co-PI), **J. Weidner (Co-PI)**, R. Aldouri (Co-PI), C. Tirado (Co-PI), E. Balal (Co-PI) and P. Schaefer (Co-PI)
    - Agency: Texas Department of Transportation
    - Submitted: 2018
  19. Collaborative Research: Failure Mechanism Isolation Pedagogy
    - Investigators: M. Kendall (PI - UTEP), **J. Weidner (Co-PI - UTEP)**, M. Yarnold (PI - Texas A&M), and L. Barroso (Co-PI - Texas A&M)
    - Agency: National Science Foundation
    - Submitted: 2018
  20. A Decision Support System TMDL Development
    - Investigators: S. Kumar (PI) and **J. Weidner (Co-PI)**
    - Agency: Water Environment and Reuse Foundation
    - Submitted: 2017

21. Development of a Strategy to Address Load Rating-Critical Bridges in Texas
  - Investigators: **J. Weidner (PI)**
  - Agency: Texas Department of Transportation
  - Submitted: 2017
22. Evaluating Digital Image Correlation for Bridge Assessment and Management
  - Investigators: **J. Weidner (PI)**, C. Stewart (Co-PI) and M. McGinnis (Co-PI - UT Tyler)
  - Agency: Texas Department of Transportation
  - Submitted: 2017
23. Evaluation of High-Mast Illumination Poles with Pre-existing Cracks
  - Investigators: **J. Weidner (PI)**, V. Kumar (Co-PI), I. Abdallah (Co-PI), S. Nazarian (Co-PI), and S. Rocha (Co-PI)
  - Agency: Texas Department of Transportation
  - Submitted: 2017

## Unfunded Research Support Proposals

1. VISTA: Visualization of Infrastructure Systems with Digital Twin and Augmented Reality
  - Investigators: **J. Weidner (PI - UTEP)**, T. Horak (Co-PI - CTU), R.L. Cheu (SP-UTEP), C. Ferregut (SP - UTEP), A. Raheem (SP - UTEP), L. Ochoa (SP - UTEP), N. Villanueva-Rosales (SP - UTEP), E. Villa (SP - UTEP), J. Chakraborty (SP - UTEP), M. Svitek (SP - CTU)
  - Target Award: Research collaboration space in Interdisciplinary Research Building at UTEP
  - Submitted: 2020
2. BIRCH: Bhutan Interdisciplinary Research Community for Himalayan Studies
  - Investigators: M. Karplus (PI), P. Basu (Co-PI), O. Fuentes (Co-PI), J. Hurtado (Co-PI), I. Ivanova (Co-PI), S. Sowards (Co-PI), A. Velasco (Co-PI), **J. Weidner (Co-PI)**, E. Fraser Wilson (Co-PI), S. Wilson (Co-PI), C. McCorry Andales (SP), D. Brandford-Calvo (SP), D. Carey-Whalen (SP), A. Horak (SP), C. Ley (SP)
  - Target Award: Research collaboration space in Interdisciplinary Research Building at UTEP
  - Submitted: 2020
3. IMAGINE: Grant Application for Structural Engineering at UTEP
  - Investigators: **J. Weidner (PI)**
  - Agency: Campbell Scientific
  - Submitted: 2018
  - Target Award: Data acquisition equipment to support engineering education



## STUDENT ADVISING

### Dissertation and Thesis Advising

1. Mariana Benitez
  - Degree: Doctor of Philosophy in Civil Engineering
  - Dissertation: Development of Local Building Inventory in Low Probability-High Consequence Regions for Seismic Risk Performance Assessment
  - Expected Graduation: Summer 2022
2. Jin Collins
  - Degree: Doctor of Philosophy in Civil Engineering
  - Dissertation: Multiple Model Bridge Deterioration Modeling
  - Expected Graduation: Spring 2023
3. Sebastian Lopez
  - Degree: Master of Science in Civil Engineering
  - Thesis: Evaluation of Civil Engineering Undergraduate Students During and Post Completion of Capstone Project
  - Expected Graduation: Spring 2023
4. Luisa Castrejon
  - Degree: Master of Science in Engineering
  - Thesis: Maximizing Utility of Green Infrastructure via Geospatial Analysis
  - Expected Graduation: Spring 2023
5. Jose Luis Lugo
  - Degree: Master of Science in Civil Engineering
  - Thesis: Reconstruction of As-Built Civil Infrastructure Using LIDAR to Support Digital Twin Visualization
  - Expected Graduation: Spring 2022
6. Paola Santillano
  - Degree: Master of Science in Civil Engineering
  - Thesis: Building Energy Modeling - Simulation of a Single Building in Comparison to a Broader Building Stock
  - Graduation: Summer 2022
7. Sarah Ballard
  - Degree: Master of Science in Civil Engineering
  - Thesis: Historic Preservation of Bridges on Route 66
  - Graduation: Spring 2021
8. Jin Collins
  - Degree: Master of Science in Civil Engineering

- Thesis: Towards a Multiple Model Approach to Bridge Deterioration Modeling
- Graduation: Spring 2021

9. Bryan K. Stephens

- Degree: Master of Science in Civil Engineering
- Thesis: Load Rating Mobility: A refined Numerical Rating Factor Analysis for Bridges Susceptible to Posting
- Graduation: Spring 2021

## Dissertation and Thesis Committee Participation

1. Fernie Briones

- Degree: Master of Science in Civil Engineering
- Institution: The University of Texas at El Paso
- Graduated: 2021

2. Adriana Trias

- Degree: Doctor of Philosophy in Civil Engineering
- Institution: Rutgers University
- Graduated: 2020

3. Armando Ochoa

- Degree: Master of Science in Mechanical Engineering
- Institution: The University of Texas at El Paso
- Graduated: 2019

4. Ximena de la Garza

- Degree: Master of Science in Civil Engineering
- Institution: The University of Texas at El Paso
- Graduated: 2019

5. Evan Wolf

- Degree: Doctor of Philosophy in Civil Engineering
- Institution: The University of Texas at El Paso
- Graduated: 2018

6. Oscar Ortega

- Degree: Master of Science in Civil Engineering
- Institution: The University of Texas at El Paso
- Graduated: 2018

## Undergraduates Supervised

1. Daniel Hernandez
  - Project: Local Governmental Bridge Documentation Practices
  - Funding: Unfunded high impact experience for honor's students
2. Brianna Lucero
  - Project: Identification of Nuisance Flooding from Aerial Images
  - Funding: Competitive through MERITUS Program
3. Jasmine Hernandez
  - Project: Engineering Route 66 Course Development
  - Funding: Unfunded
4. Isabel Gonzalez (co-advise with V. Tandon)
  - Project: Titanium Dioxide Concrete to Improve Air Quality
  - Funding: Competitive through SURPASS Program
5. Paola Santillano
  - Project: Bridge Preservation on Route 66
  - Funding: Project funded
6. Jeremiah Llanes
  - Project: Data Acquisition with Campbell Scientific Equipment
  - Funding: Unfunded
7. Jacob Blasch
  - Project: 3D Printed Physical Models for Structural Engineering Education
  - Funding: Unfunded
8. Christian Lozoya
  - Project: Bridge Deterioration Modeling
  - Funding: Project funded
9. Carolina Osegueda
  - Project: Bridge Preservation on Route 66
  - Funding: Project funded
10. Sarah Ballard
  - Project: Bridge Preservation on Route 66
  - Funding: Competitive through MERITUS Program
11. Daniella Mora
  - Project: Wireless Sensing for Infrastructure Monitoring
  - Funding: Competitive through SURPASS Program

12. Mariana Benitez

- Project: Exploring BIM for Bridges
- Funding: Project funded

### TEACHING ACCOMPLISHMENTS

1. CE 2343: Structural Analysis
  - Terms Taught: F16, S17, F17, S18, F18
  - Average Evaluation: 4.71/5.0
2. CE 4188: Senior Design I
  - Terms Taught: S20, F20, S21, F21, S22
  - Average Evaluation: 4.73/5.0
3. CE 4288: Senior Design II
  - Terms Taught: F19, S20, F20, S21, F21, S22
  - Average Evaluation: 4.66/5.0
4. CE 5304: Advanced Design of Structural Systems
  - Terms Taught: F17, S19, F20
  - Average Evaluation: 4.76/5.0
5. CE 5305: Advanced Structural Analysis
  - Terms Taught: F18, S20, S22
  - Average Evaluation: 4.58/5.0
6. CE 5318: Bridge Engineering
  - Terms Taught: S18, F19, F21
  - Average Evaluation: 4.27/5.0
7. CE 5380: History of Engineering on Route 66
  - Terms Taught: S21
  - Average Evaluation: 4.90/5.0
8. CE 5323: Prestressed Concrete (new course development)
  - Terms Taught: F22
  - Average Evaluation: NA/5.0

## SERVICE ACTIVITIES

### The University of Texas at El Paso

1. Faculty Senator for Department of Civil Engineering (2016 to present)
2. Faculty Advisor for Structural Engineer Association of Texas (2017 to present)
3. Faculty Advisor for AISC Steel Bridge Team (2016 to present)
4. State Employee Charitable Campaign Coordinator - Civil Engineering (2017-2021)
5. Invited judge for SunCity Hackathon (Fall 2019)
6. Invited Judge for Engineering Leadership Capstone (Fall 2019)
7. Invited judge for COURI Undergraduate Research Symposium (2017; 2018, 2022)

### Local in El Paso, TX

1. Next Mission Nonprofit - Housing Homeless Veterans
2. Team Leader for El Paso - Texas Innovation Alliance (2018 to present)
3. Faculty Fellow in Smart Cities - City of El Paso Performance Office (2019)
4. Member of International Bridge Steering Committee - City of El Paso (2018 to present)
5. Member of Parking Committee - City of El Paso (2020 to present)
6. Member of Regional Emergency Management Committee - El Paso Office of Emergency Management (2018 to present)
7. Member of Sun Metro Crossfunctional Improvement Team - City of El Paso (2019)

### National and International

1. NSF Panel Reviewer - IUSE Program
2. Member of TRB AKT60 Bridge Preservation Committee (current)
3. Member of TRB AFF40 Field Testing and Nondestructive Evaluation of Transportation Structures (past)
4. Member of American Society of Nondestructive Testing (past)
5. Guest lecturer for Boy Scouts of America (2020)
6. Journal Reviewer
  - (a) ASCE Journal of Bridge Engineering
  - (b) ASCE Journal of Transportation Engineering
  - (c) ASCE Journal of Risk and Uncertainty Analysis in Engineering Systems
  - (d) Structural Engineering International

- (e) Transportation Research Record
- (f) Transportation Research Board Annual Meeting
- (g) Frontiers of the Built Environment
- (h) International Journal of Structural Health Monitoring
- (i) Structural Health Monitoring
- (j) Journal of Computing in Civil Engineering

## **PROFESSIONAL DEVELOPMENT**

1. UTEP AWARE 30th Cohort (2021-2022)
2. NHERI Summer Institute (2021)
3. ASCUE Effective Online Teaching Practices (2020-2021)
4. Teaching Online Academy at UTEP (2020)
5. UTEP Teaching Online with Blackboard Series (2020)
6. NSF CAREER Workshop - UTEP Office of Research and Sponsored Projects (2020)
7. NHERI SimCenter DesignSafe Training - Software Suite (2019)
8. NSF CAREER Workshop - College of Engineering (2019)
9. UTEP Grant Writing Workshop (2018)
10. Texas STEM Accelerator Participant (2017)

## **PROFESSION AFFILIATIONS**

1. American Society of Civil Engineers (ASCE)
2. American Concrete Institute (ACI)
3. American Institute of Steel Construction (AISC)
4. Transportation Research Board (TRB)
5. Structural Engineers Association of Texas (SEAoT)
6. American Society of Nondestructive Testing (ASNT)