

# Ivan D. Damnjanovic

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CONTACT INFORMATION      Texas A&M University  
Zachry Department of Civil Engineering  
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APPOINTMENTS      **Texas A&M University**, College Station, TX

Zachry Department of Civil Engineering

*J.L. Corky Frank/Marathon Ashland Petroleum Fellow*      2015 to Present

*The Beavers/Urban '41 Fellow in Construction*      2011 to 2014

*Associate Professor*      2012 to Present

*Assistant Professor*      2006 to 2012

Texas A&M University Energy Institute

*Researcher*      2006 to Present

Texas A&M University Transportation Institute

*Researcher*      2006 to Present

**University of Stavanger**, Norway

*Visiting Professor*      2014 to 2015

**Eltor, S.A.**, Greece

*Project Engineer*      1999, 2000

EDUCATION      **University of Texas at Austin**, Austin, TX

Ph.D., Department of Civil Engineering, May 2006

Dissertation Topic: *Quantification of risks associated with performance-based warranty specifications*

**University of Niš**, Serbia

Dipl-Ing., Faculty of Civil and Architectural Engineering, May 2000

Thesis Topic: *Determining Optimal Roadway Realignment and Reconstruction Strategies with Consideration of Roadway Geometry and Speed in Free Traffic Flow*

## SCHOLARLY ACCOMPLISHMENTS

### JOURNAL PUBLICATIONS

Damnjanovic, I., Ford, D. and Johnson, S. (2016). Feedback Loop Dynamics in Stress Testing of Toll Road Projects. To appear in *Journal of Structured Finance*.

\*Govan, P. and Damnjanovic, I. (2016). Resource-based View on Project Risk Management. To appear in *ASCE Journal on Construction Engineering and Managements*.

Damnjanovic, I. and Rispoli, J. (2014). Case Study Narrative in Teaching Construction Project Management: Earned Value Method Examples. *ASCE Pract. Period. Struct. Des. Constr.* Volume 19, SPECIAL ISSUE: Construction Engineering: Leveraging Project and Career Success, ASCE, Reston, VA, pp. 41-49.

Damnjanovic, I., \*Faghihi, V., Scott, C., McTigue, E., and Reinschmidt, K. (2013). Educational Prediction Markets: A Construction Project Management Case Study. *ASCE Journal of Professional Issues in Engineering Education and Practice* Volume 139(2), ASCE, Reston, VA, pp. 134-138

\*Gunby, M, Damnjanovic, I, Anderson, S., Joyce, J., and Nuccio, J. (2013). A Standardized Approach to Define and Identify Owners Value Interests and Align E&C Response. *ASCE Journal of Management in Engineering* Volume 29(1), pp. 50-59.

\*Zhou, X. and Damnjanovic, I. (2013). Accounting for Correlations: Price Adjustments in Unit-Cost Construction Contracts. *Journal of Transportation Research Board* Volume 2297, Washington, DC, pp. 137-144.

\*Nejat, A. and Damnjanovic, I. (2012). Agent-based Modeling of Post-Disaster Behavior in Housing Recovery. *Journal of Computer-aided Civil and Infrastructure Engineering* Volume 27, Issue 10, pp. 748-763.

\*Gunby, M, Damnjanovic, I, and Anderson, S. (2012). Identifying Project Value Interests: A Logit Model. *International Journal of Architecture, Engineering and Construction* Volume 3 (1), International Association for Sustainable Development and Management, pp. 121-133.

\*Kim, S. and Damnjanovic, I. (2012). Smart Garage Development Problem: Model Formulation and Solution Approach. *ASCE Journal of Infrastructure System*, Volume 17(2), ASCE, Reston, VA, pp. 130-138.

Damnjanovic, I and \*Vajdic, N. (2012). Roadway Network Externalities in Project Finance Loan Arrangements. *Public Works Management & Policy* , Volume 17 (4), Sage, pp. 328-347.

Mander, J., Sircar, J., and Damnjanovic, I. (2012). Theoretical Direct Loss Model for Seismically Damaged Structures. *Journal of Earthquake Engineering and Structural Dynamics*, Volume 41, Issue 3, Wiley, pp. 355-592.

\*Zhou, X. and Damnjanovic, I. (2011). Optimal Hedging of Commodity Price Risks in Highway Contracts. *Journal of Transportation Research Board*, Volume 2228, TRB, Washington, DC, pp. 19-25.

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\* indicates a student under supervision of Dr.Damnjanovic

- \*Vajdic, N., Damnjanovic, I., Suescun, D., and Waller, S.T. (2011). Impact of Network Improvement Actions on Toll Roads Revenue Performance and Bonding Costs. *Journal of Transportation Research Record*. Volume 2187, TRB, Washington, DC, pp. 8-15.
- Suescun, D., Lin, D.-Y., \*Vajdic, N., Waller, S.T., and Damnjanovic, I. (2011). Identification of Competing and Feeder Links and Routes in a Toll Road Context. *Journal of Transportation Research Record*. Volume 2196, TRB, Washington, DC, pp. 120-130.
- Damnjanovic, I., \*Aslan, Z., and Mander, J. (2010). Determining Market-implied Spread for CAT Bonds: Financial Implications of Engineering Decisions. *Risk Analysis*, Volume 30, Issue 12, Wiley-Blackwell, MA, pp. 1753-1770.
- \*Nejat, A., Damnjanovic, I., and Anderson S. (2010). Effects of Cost Reduction Methods in Highway Construction Sector. *Journal of Transportation Research Record*, Volume 2151, TRB, Washington, DC, pp. 28-35.
- \*Deshpande, V., Damnjanovic, I., and Gardoni, P. (2010). Effects of Overlay Design on the Reliability of Flexible Pavements. *Structural and Infrastructure Engineering: Maintenance, Management, Life-Cycle Design and Performance*, Volume 25, Issue 4, Taylor & Francis, UK, pp. 227-237.
- \*Seyedshohadaie, R., Damnjanovic, I., and Butenko, S. (2010). Risk-based Maintenance and Rehabilitation Decisions for Transportation Infrastructure Networks. *Transportation Research Part A: Policy and Practice*, Volume 44, Issue 4, Elsevier, Netherlands, pp. 236-248.
- \*Deshpande, V., Damnjanovic, I., and Gardoni, P. (2010). Reliability-Based Optimization Models for Scheduling Pavement Rehabilitation. *Journal of Computer-aided Civil and Infrastructure Engineering*, Volume 25, Number 4, Wiley-Blackwell, MA, pp. 227-237.
- \*Deshpande, V., Damnjanovic, I., and Gardoni, P. (2010). Modeling Pavement Fragility. *ASCE Journal of Transportation Engineering*, Volume 136, No. 6, ASCE, Reston, VA, pp. 592-596.
- \*Kim, S., Damnjanovic, I. and \*Gunby M. (2010). Effects of Pavement Spatial Variability on Contractor's Management Strategies. *ASCE Journal of Infrastructure Systems*, Volume 16, Issue 4, ASCE, Reston, VA, pp. 231-240.
- Damnjanovic, I. and \*Zhou, X. (2009). Impact of Crude Oil Market Behavior on Unit Bid Items: The Evidence from Highway Construction Sector. *Construction Management and Economics*. Volume 27, Issue 9, Taylor & Francis, UK, pp. 881-890.
- Sircar, J., Damnjanovic, I, Mander, J., and \*Aslan, Z. (2009). Catastrophe Bonds for Transportation Assets: A Feasibility Analysis. *Journal of Transportation Research Record* 2115, TRB, Washington, DC, pp. 12-19.
- Unnikrishnan, A., Damnjanovic, I., Valsaraj, V. and Waller, S. T. (2009). Design and Management Strategies for Mixed Public-Private Transportation Networks: A Meta-Heuristic approach. *Journal of Computer-aided Civil and Infrastructure Engineering*. Volume 24, Issue 4, Wiley-Blackwell, MA, pp. 266-279.

Damnjanovic, I., Duthie, J. and Waller, S. T. (2008). Valuation of Strategic Network Flexibility in Development of Toll Road Projects. *Construction Management and Economics*. Volume 26, Issue 9, Taylor & Francis, UK, pp. 979-990.

Damnjanovic, I. and Zhang, Z. (2008). A Risk-Based Model for Valuation of Performance-Specified Pavement Maintenance Contracts. *ASCE Journal of Construction Engineering and Management*, Volume 134, Issue 7, ASCE, Reston, VA, pp. 492-500.

Zhang, Z. and Damnjanovic, I. (2006). Quantification of Risk Cost Associated with Short-Term Warranty-Based Specifications for Pavements. *Journal of Transportation Research Record* 1946, TRB, Washington, DC, pp. 3-11.

Zhang, Z. and Damnjanovic, I. (2006). Applying Method of Moments to Model Reliability of Pavements Infrastructure. *ASCE Journal of Transportation Engineering*, Volume 132, Issue 5, ASCE, Reston, VA, pp. 416-424.

Damnjanovic, I. and Zhang, Z. (2006). Determination of Required FWD Testing Frequency for Pavement Structural Evaluation at the Network Level. *ASCE Journal of Transportation Engineering*, Volume 132, Issue 1, ASCE, Reston, VA, pp. 76-85.

Zhang, Z., Claros, G., Manuel, L. and Damnjanovic, I. (2003). Development of a Structural Condition Index to Support Pavement Rehabilitation and Maintenance Decisions at the Network Level. *Journal of Transportation Research Record* 1827, TRB, Washington, DC, pp. 10-17.

PAPERS UNDER  
REVIEW

\*Aslan, Z, Damnjanovic, I., and Mander, J. Pricing Catastrophe Equity Put Options for Critical Assets. Submitted to *The Engineering Economist*.

Damnjanovic, I. and Aven, T. Critical Transitioning Framework for Monitoring Early Warning Signs of Surprise and Unforeseen Events in Complex Systems. Submitted to *Journal on Risk and Reliability*.

REFEREED  
CONFERENCE  
PROCEEDINGS

Walewski, J. and Damnjanovic, I. (2016). Engineering Project Management: Industry Need and Curriculum Development Alignment. The ASEE Annual Conference and Exposition, New Orleans, LA.

\*Cobanoglu, M., Kermanshachi, S., and Damnjanovic I. (2016). Statistical Modeling and Optimization of Corrosion Failures in Natural Gas Transmission Pipelines. 2016 Pipelines Conference. ASCE Utility Engineering and Surveying Institute, Kanas City, MO.

Nagib, M., Nejat\*, A., Damnjanovic, I., Anderson, S., Scott, S., and Konrath L. (2013). Highway Construction and Performance-based Contracting. Proceedings of Transportation Research Board, Washington, DC.

Damnjanovic, I, Ford, D. and Johnson, S. (2013). Feedback Loop Dynamics in Stress Testing of Toll Road Projects Proceedings of Transportation Research Board Washington, DC.

\*Seyedshohadaie, R., and Damnjanovic, I. (2012). Pricing Risk in Public-Private Partnerships. *Proceedings of the Transportation Research Board*. Washington, DC.

Ghorawat, S., Mander J., and Damnjanovic I. (2011). Rapid Modeling of Direct and Indirect Losses for Seismically Damaged Structures. *Proceedings of the Ninth Pacific Conference on Earthquake Engineering*. Auckland, New Zealand.

\*Aslan, Z., Damnjanovic, I., and Mander J. (2011). Engineering the Finance of Earthquake Risk. *Proceedings of the Ninth Pacific Conference on Earthquake Engineering*. Auckland, New Zealand.

\*Vajdic, N, and Damnjanovic, I. (2011). Risk Management in Public-Private Partnership Highway Projects using Real Options Theory. *First International Symposium in Engineering Management And Competitiveness*. Zrenjanin, Serbia

\*Kim, S. and Damnjanovic, I. (2010). Smart Garage Projects: Optimizing for Vehicle-to-Grid Operations. *Proceedings of the Transportation Research Board*. Washington, DC.

Pang, C., Dutta, P., \*Kim, S. Kezunovic, M. and Damnjanovic, I. (2010). PHEVs as Dynamically Configurable Dispersed Energy Storage for V2B Uses in the Smart Grid. *Proceedings of 7th Mediterranean Conference on Power Generation, Transmission, Distribution and Energy Conversion*, Cyprus.

Kezunovic, M. Waller, S.T. and Damnjanovic, I. (2010). Framework for Studying Emerging Policy Issues Associated with PHEVs in Managing Coupled Power and Transportation Systems. *Proceedings of 2nd Annual IEEE Green Technologies Conference*, Grapevine, TX.

\*Deshpande, V., Damnjanovic, I., and Gardoni, P. (2009). Reliability-based Optimization of Flexible Pavements: Accounting for Deterioration and the Effects of Rehabilitation Actions. *Proceedings of 10th International Conference on Structural Safety and Reliability*. Osaka, Japan.

\*Zhou, X., Damnjanovic, I., and Anderson, S. (2009). Impact of Crude Oil Market Volatility on Cost of Highway Construction Unit Bid Items. *Proceedings of the Transportation Research Board Meeting*, Washington DC.

\*Seyedshohadaie, R, Damnjanovic, I., and Butenko, S. (2009). Risk-Based Rehabilitation Decisions for Network of Pavement Facilities *Proceedings of the Transportation Research Board Meeting*, Washington DC.

\*Nejat, A., Anderson, S., Damnjanovic, I. and Gunby, M. (2009). Alternative Contracting Methods to Accelerate Project Completion: Lessons Learned By State Transportation Agencies. *Proceedings of 1st International Conference on Transportation Construction Management*, Orlando, FL.

Pandit, D., Anderson, S., Damnjanovic, I. and \*Nejat, A. (2009). Assessment Of Strategies And Methods To Reduce Construction Costs While Maintaining Quality. *Proceedings of 1st International Conference on Transportation Construction Management*, Orlando, FL.

\*Kim, S., Damnjanovic, I., and \*Gunby, M. (2008). Determining Management Sections to Minimize Cost in Performance-based Pavement Maintenance Contracts. *Proceedings of the 10th International Conference on Applications of Advanced Technologies in Transportation*, Athens, Greece.

\*Deshpande, V., Damnjanovic, I., and Gardoni, P. (2008). Modeling the Effects of Rehabilitation Actions on the Reliability of Flexible Pavements. *Proceedings of the Transportation Research Board Meeting*, Washington, DC.

\*Nejat, A., and Damnjanovic, I. (2008). The Value of Performance Warranties for Toll Road Projects: Developer's Dilemma in Transferring Pavement Performance Risk. *Proceedings of the Transportation Research Board Meeting*, Washington, DC.

Unnikrishnan, A., Damnjanovic, I., Valsaraj, V., and Waller, S. T. (2008). Determining Optimal Maintenance Strategies for Mixed Public-Private Transportation Networks. *Proceedings of the Transportation Research Board Meeting*, Washington, DC.

Damnjanovic, I. and Zhang, Z. (2006). A Risk Cost Model for Analysis of Performance-Specified Pavement Maintenance Contracts. *Proceedings of the Transportation Research Board Meeting*, Washington DC.

Damnjanovic, I. and Zhang, Z. (2005). Applying Method of Moments to Model Reliability of Pavements. *Proceedings of the Transportation Research Board Meeting*, Washington, DC.

Damnjanovic, I. and Zhang, Z. (2004). Determination of Required FWD Testing Frequency for Pavement Structural Evaluation at the Network Level. *Proceedings of the Transportation Research Board Meeting*, Washington, DC.

Zhang, Z., Claros, G., Manuel, L. and Damnjanovic, I. (2003). Development of a Structural Condition Index to Support Pavement Rehabilitation and Maintenance Decisions at the Network Level. *Proceedings of the Transportation Research Board Meeting*, Washington, DC.

REPORTS TO  
SPONSORS

Kezunovic, M., Baldick, R., Damnjanovic, I., Pang, C., Kim, S., Tuttle, D., and Peydaayesh, M. (2011). PHEVs as Dynamically Configurable Dispersed Energy Storage. Power Systems Engineering Research Center, PSERC Report 11-03.

Hard, E., Bochner, B., Li, Y., Qi, Y., Damnjanovic, I. and Frawley, W. (2010). Preserving the Functionality/Asset Value of the State Highway System. TXDOT 0-6208-1.

\*Zhou, X., and Damnjanovic, I. (2010). Valuing Real Estate Externality-Based Option in Development of Transit System Projects. The Southwest Region University Transportation Center (SWUTC).

Damnjanovic, I., Waller, S.T., \*Vajdic, N. and Suescun, D. (2010). Quantifying the Effects of Network Improvement Actions on the Value of New and Existing Toll Road Projects. TXDOT 0-5881-1.

Anderson, S. Damnjanovic, I., \*Nejat, A., Ramesh, S. (2009). Synthesis on Construction Unit Cost Development. TXDOT 0-6023-1.

Damnjanovic, I., Anderson, S., Wimsatt, A., Reinschmidt, K., and Pandit, D. (2008). Evaluations of Ways and Procedures to Reduce Construction Costs and Increase Competition. TXDOT 0-6011-1.

Damnjanovic, I., Wimsatt, A., Butenko, S., and \*Seyedshohadaie, R. (2008). Impact of Reconstruction Strategies on System Performance Measures - Maximizing Safety and

Mobility while Minimizing Life-cycle Costs. The University Transportation Center for Mobility (UTCM).

Damnjanovic, I., Sircar, J., Mander, J., and \*Aslan, Z. (2008). Increasing Resilience by Effective Management of Transportation Infrastructure: Estimating Fair Market Value of Insurance-linked Securities. The Southwest Region University Transportation Center (SWUTC).

Anderson, S. and Damnjanovic, I. (2008). Selection and Evaluation of Alternate Contracting Methods to Accelerate Project Completion. Synthesis 20-05, National Cooperative Highway Research Program (NCHRP), TRB, National Academy Press, Washington, DC.

\*Deshpande, V., Kim, S., and Damnjanovic, I. (2008). Developing Specifications for Performance-Based Maintenance Contracts. The Southwest Region University Transportation Center (SWUTC).

Anderson, S. and Damnjanovic, I. (2007). Technical Analysis of the HCI for the Construction Division. TxDOT Interagency Technical Assistance 46-7CSIA002 Report.

Zhang, Z., Manuel, L. Damnjanovic, I., Li, Z. (2003). Development of a New Methodology for Characterizing Pavement Structural Condition for Network-Level Applications. TXDOT 0-4322-1.

OTHER  
SIGNIFICANT  
PUBLICATIONS

Ford D., Damnjanovic, I., and Johnson, S. (2015). Public-Private Partnerships: A Study of Risk Allocation Design Envelopes. A book chapter in *Governance in the Information Era*, pp. 119-143. Routledge, New York, NY

Damnjanovic, I., and Ford D. (2014). Social Impact Bonds for Sustainability. White paper.

Damnjanovic, I. (2012). The Case for Energy-saving Technologies. *Facility Management Journal*, International Facility Management Association, Jan/Feb Special Edition on Sustainability Advances, pp. 68-69. (opinion editorial)

National Research Council (2012). *Predicting Outcomes from Investments in Maintenance and Repair for Federal Facilities*. Board on Infrastructure and the Constructed Environment (BICE), National Academies Press, Washington, DC. (member of the committee and co-author)

Damnjanovic, I., Anderson, S., \*Gunby, M., Joyce, J., and Nuccio, J. (2010). A User's Guide to the CII ValueShare Tool: Value Interest Identification Module and E&C Focus Points & Alignment Module. Construction Industry Institute (CII), Implementation Resource 266-2, TX. (software implementation guide)

Damnjanovic, I., Figliozzi, M., Mladenovic, G. and Majzelj, T. (2005). Business Operations, Information Technologies and Highway Concessions: Bratstvo Jedinstvo on Life-Support. *Ekonomist* 268, Serbia and Montenegro. (opinion editorial).

INVITED TALKS  
AND CONFERENCE  
PRESENTATIONS

Damnjanovic, I. (2015). Challenges and Best Strategies for Planning and Managing Writing Projects. P.O.W.E.R. Workshop, College Station, TX

Damnjanovic, I. (2015). Design of Early Warning Systems based on Critical Transition Metrics. Society of Risk Analysis Annual Conference, Washington, DC

Damnjanovic, I. (2015). Risk-transfer Options for Natural Hazards: Capital Markets, Reinsurance, or your Facebook Friends? IBK-Seminar, ETH Zurich, Switzerland

Damnjanovic, I. (2015). Modeling Complex Urban Systems: Implications on Planning and Development. UiS Seminar, Stavanger

Damnjanovic, I. (2014). Unknown (Un)Knowns: System Signals as Early Warning Signs. Society of Risk Analysis Annual Conference, Denver, CO

\*Govan, P., and Damnjanovic, I. (2014). Causal Network Methods for Project Risk-Based Decision Analysis. Presented at the INFORMS Annual Meeting, San Francisco, CA

Damnjanovic, I. (2014). Project Risk Management and Asset Integrity. Genesis Technip. Houston, TX

Damnjanovic, I. (2014). Risk and Reliability in Asset Management. AISIM Bootcamp, Virginia Tech, Blacksburg, VA

Damnjanovic, I. (2014). Value of Information. SPE Workshop on Uncertainty and Decision Making, Moscow, Russia

Damnjanovic, I. (2014). Project Risk Analysis. SPE Workshop on Uncertainty and Decision Making, Moscow, Russia

Damnjanovic I. (2012). The Project Management Environment. 2012 Transportation Short Course, College Station, TX

Damnjanovic, I. (2012). Managing Project Value Interests. Performance Improvement Workshop, Construction Industry Institute (CII), Houston, TX

Damnjanovic, I. (2011). Capital Project Value Propositions, Part I and II. Construction Industry Institute (CII) Web Seminars Series.

Damnjanovic, I. (2010). Pricing Risks in Delivery and Management of Transportation Assets. Northwestern University, Transportation Center Seminar Series, Evanston

Damnjanovic, I. (2010). Managing Project Development. Invited Talk at the Universidad de Los Andes, Bogota, Colombia.

\*Seyedshohadaie R., Butenko, S., and Damnjanovic, I. (2010). A Coherent Valuation Approach for Valuing Risky Projects. Presented at the INFORMS Annual Meeting, Austin, TX

Damnjanovic, I. (2010). Risk Allocation in Performance-based Contracting. Performance-based Specifications. IRF Executive Workshop: Performance-based Contracts and Evaluating Asset Condition, Austin, TX

Butenko, S., Damnjanovic, I. and \*Seyedshohadaie R. (2009). On optimal betting strategies for multiple sporting events. Economics, Management and Optimization in



Sports. Royal Academy of Economic and Financial Sciences of Spain, Barcelona

Damnjanovic I. (2009) Managing Reconstruction Projects. Presented at the Engineering Without Borders Student Chapter Annual Meeting, College Station, TX

\*Seyedshohadaie, R, Damnjanovic, I., and Butenko, S. (2009). Financial Viability of Transportation Infrastructure Public-private Partnerships. Presented at the INFORMS Annual Meeting, San Diego, CA

\*Kim. S. and Damnjanovic I. (2009). Parking Garage Infrastructure Problem: Optimizing for PHEVs V2G Operations. Presented at the INFORMS Annual Meeting, San Diego, CA

Damnjanovic, I. (2009). Risk Assessment in Construction Project Development. Industry Cluster "Dundjer", Nis, Serbia

Damnjanovic, I. (2008). Evaluations of Ways and Procedures to Reduce Construction Costs and Increase Competition. Presented at the Annual TXDOT RMC1 Meeting, San Antonio, TX

\*Seyedshohadaie, R, Damnjanovic, I., and Butenko, S. Risk-Based Rehabilitation Decisions for Network of Pavement Facilities. Presented at the INFORMS Annual Meeting at the Interactive Session, Washington, DC, October 2008.

Damnjanovic, I. (2008). Valuation and Planning of Support Infrastructure. The Role of Plug-in Hybrid Electric Vehicles (PHEVs) in Interfacing Electricity and Transportation Networks, Austin, TX

McNeil, S. and Damnjanovic, I. (2008). Preparing for an Academic Position. 4th Annual Inter-University Symposium on Infrastructure Management (AISIM), Austin, TX

Damnjanovic, I, and Anderson, S. (2008). Selection and Evaluation of Alternative Contracting Methods to Accelerate Project Completion, American Association of State Highway Officials (AASHTO), Subcommittee on Construction, San Antonio, TX

Nicholas, C., Damnjanovic, I., Harding, N., and Puffer, W. (2007). Asset Management and Public-Private Partnerships. 7th National Conference on Transportation Asset Management, TRB, New Orleans, LA

Unnikrishnan, A., Damnjanovic, I., Valsaraj, V., and Waller, S. T. (2007). Determining Optimal Maintenance Strategies for Mixed Public-private Transportation Networks. Presented at the INFORMS Annual Meeting at the Development and Management of Transportation Infrastructure I Session, Seattle, WA

Duthie, J., Damnjanovic, I., and Waller, S. T. (2007). Valuing Strategic Network Improvements for Highway BOT Projects Under User Equilibrium. Presented at the INFORMS Annual Meeting at the Development and Management of Transportation Infrastructure I Session, Seattle, WA

Damnjanovic, I. and Anderson, S. (2007). Evaluation of Ways and Procedures to Reduce Construction Costs and Increase Competition. 81st Annual Transportation Short Course, College Station, TX

Damnjanovic, I. (2006). Modeling Warranty Servicing Costs Associated with Performance Warranty Specifications for Transportation Infrastructure. Seminars in Reliability, Texas A&M University, College Station, TX

Damnjanovic, I. (2006). ITS as PPP Projects: Regional Perspective Presented at the World Bank Regional Workshop on Public-Private Partnerships (PPP) in Highways, Belgrade, Serbia

Damnjanovic, I. (2006). Uncertainty and Options in PPP Projects Presented at the World Bank Regional Workshop on Public-Private Partnerships (PPP) in Highways, Belgrade, Serbia

Damnjanovic, I. (2006). Trends in Modeling Behavior of Transportation Infrastructure. Invited Lecture at the University of Nis, Serbia and Montenegro

Damnjanovic, I. (2006). Innovative Approaches to Development and Management of Transportation Infrastructure. Invited Lecture at the University of Belgrade, Serbia and Montenegro

Damnjanovic, I. (2006). Estimating Time-dependent Higher-order Moments to Model Reliability Functions for Transportation Infrastructure Facilities. Invited Lectures at the University of Texas at Austin, CE397 Reliability, Maintainability, and Availability, Austin, TX

Damnjanovic, I. and Zhang, Z. (2003). Determining FWD Testing Frequency for Structural Evaluation of Pavements. Presented at the Civil Engineering Centennial Celebrations at UT Austin, Austin, TX

FUNDED  
RESEARCH  
PROJECTS

*Develop New Methods for Material Acceptance on Design-Build Projects*  
Texas Department of Transportation 01/2016 to 01/2018  
Role: Co-PI  
Collaborators: John Walewski (PI), Nasir Gharaibeh, and David Ford  
Total Funding: \$305,433

*Realtime Drilling Risk Prediction Platform*  
Prekubator Plogen, Norway 09/2014 to 01/2015  
Role: PI  
Total Funding: 50,000 NOK

*Modeling Instantaneous Risk for Major Accident Prevention*  
Norwegian Research Council 09/2014 to 05/2015  
Role: Researcher  
Collaborators: Stein Haugan and Jan Erik Vinnem (NTNU)  
Total Funding: 70,000 NOK

*Flipping a Course CVEN Project Risk Management*  
Texas A&M University 07/2014  
Role: PI  
Total Funding: \$2,000

*Strategic Research Project - Innovative Finance*  
Texas Department of Transportation 03/2012 to 12/2012  
Role: Co-PI

Collaborators: David Ellis (PI), John Mander, Sharada Vadali, Brianne Glover, and Nicolas Norboge  
Total Funding: \$75,000

*Effectiveness of Performance Based Pavement Marking Maintenance Contracts*  
Texas Department of Transportation 09/2011 to 08/2013  
Role: Co-PI  
Collaborators: Adam Pike (PI), Praprut Songchitruksa, Srinivas R. Geedipally, Dong Hun "Don" Kang, and Paul Carlson  
Total Funding: \$256,935

*Highway Planning and Operations for the Receiving Agency's Fort Worth District - Support to Historical Bridges*  
Texas Department of Transportation 09/2011 to 08/2012  
Role: Co-PI  
Collaborators: Mary Beth Hueste (PI) and Stefan Hurlebaus  
Total Funding: \$150,000

*Opportunities for Government Incentives to Support PEV Utilization*  
NSF Center for Transportation and Electricity Convergence 02/2011 to 01/2013  
Role: Principal Investigator  
Collaborators: Arnold Vedlitz and Eric Lindquist  
Total Funding: \$40,000

*Managing Program-Level Risks in Delivery of Transportation Infrastructure*  
The Southwest Region University Transportation Center 09/2010 to 09/2011  
Role: Principal Investigator  
Total Funding: \$45,000

*Developing a New Course in Transportation Infrastructure Finance*  
University Transportation Center for Mobility 01/2010 to 01/2011  
Role: Principal Investigator  
Collaborators: Sharada Vadali and Erin McTigue  
Total Funding: \$60,000

*Managing Infrastructure Externalities*  
Innovative Research Funding Competition 01/2010 to 08/2010  
Role: Principal Investigator  
Total Funding: \$20,000

*Planning Tools to Assess Real Estate Leveraging Potential for Roadways and Transit*  
Texas Department of Transportation 09/2009 to 08/2010  
Role: Co-PI  
Collaborators: Sharada Vadali (PI), Rafael Aldrete-Sanchez, Yinfeng Li, Tina Geiselbrecht, Nick Koncz, Swapnil Samant, Arturo Bujanda, and Beverly Kuhn  
Total Funding: \$148,266

*Developing Infrastructure for Interconnecting Transportation Network and Electric Grid*  
The Southwest Region University Transportation Center 09/2009 to 08/2010  
Role: Principal Investigator  
Collaborators: Mladen Kezunovic  
Total Funding: \$50,000

*The Learning Bridge*  
NSF 09/2009 to 08/2011  
Role: Co-PI  
Collaborators: Stefan Hurlebaus (PI) and Jose Roesset  
Total Funding: \$75,000

*PHEVs as Dynamically Configurable Dispersed Energy Storage*  
NSF I/UCRC: Power Systems Engineering Research Center 06/2009 to 08/2011  
Role: Co-PI  
Collaborators: Mladen Kezunovic (PI) and Ross Baldick (University of Texas at Austin)  
Total Funding: \$220,000

*Performance-based Roadside Maintenance Specifications*  
Texas Department of Transportation 09/2008 to 08/2009  
Role: Co-PI  
Collaborators: Nasir Gharaibeh (PI), Roger Smith, Jett McFalls, Beverly Storey, and Wei Fan (University of Texas at Tyler)  
Total Funding: \$138,048

*Preserving Functionality/Asset Value of the State Highway System*  
Texas Department of Transportation 09/2008 to 08/2010  
Role: Co-PI  
Collaborators: Ed Hard (PI), Brian Bochner, Bill Frawley, Cesar Quiroga, and Yi Qi (Texas State University)  
Total Funding: \$194,323

*A Standardized Approach to Identify and Define Owner Value Interests*  
Construction Industry Institute 09/2008 to 08/2010  
Role: Principal Investigator  
Collaborators: Stu Anderson (Co-PI)  
Total Funding: \$174,000

*Performance Specifications for Rapid Renewal - Tasks 4 and 7*  
Strategic Highway Research Program (SHRP) 2 09/2008 to 08/2009  
Role: Co-PI  
Collaborators: Trauner Consulting Service (Lead), Stu Anderson (PI)  
Total Funding: \$160,000

*Accounting for Real Estate Externalities in Valuation of Transit System Projects*  
The Southwest Region University Transportation Center 09/2008 to 09/2009  
Role: Principal Investigator  
Total Funding: \$50,000

*Developing a Methodological Framework to Value Public Sectors Risk Exposure in PPPs Agreements*  
University Transportation Center for Mobility 09/2008 to 09/2010  
Role: Co-PI  
Collaborators: Rafael Aldrete (PI)  
Total Funding: \$100,000

*Impact of Reconstruction Strategies on System's Performance Measures: Maximizing Safety and Mobility while Minimizing Life-cycle Costs*  
University Transportation Center for Mobility 09/2007 to 09/2008  
Role: Principal Investigator

Collaborators: Andrew Wimsatt, and Sergiy Butenko  
Total Funding: \$60,000.

*Increasing Resilience by Effective Management of Transportation Infrastructure: Estimating Fair Market Value of Insurance-linked Securities*  
The Southwest Region University Transportation Center 09/2007 to 09/2008  
Role: Principal Investigator  
Collaborators: John Mander  
Total Funding: \$45,000

*Synthesis on Cost Unit Cost Development*  
Texas Department of Transportation 09/2007 to 09/2008  
Role: Co-PI  
Collaborators: Stu Anderson (PI)  
Total Funding: \$62,902

*Quantifying the Effects of Network Improvement Actions on the Value of New and Existing Toll Road Projects*  
Texas Department of Transportation 09/2007 to 09/2009  
Role: Principal Investigator  
Collaborators: S. Travis Waller (University of Texas at Austin)  
Total Funding: \$148,000

*Evaluation of Ways and Procedures to Reduce Construction Costs and Increase Competition*  
Texas Department of Transportation 02/2007 to 03/2008  
Role: Principal Investigator  
Collaborators: Stu Anderson, Andrew Wimsatt, and Kenneth Reinschmidt  
Total Funding: \$150,000

*Review and Analyze Current Methodology for Developing Highway Cost Index*  
Texas Department of Transportation 05/2007 to 10/2007  
Role: Co-PI  
Collaborators: Stu Anderson (PI)  
Total Funding: \$15,000

*Selection and Evaluation of Alternative Contracting Methods to Accelerate Project Completion*  
National Cooperative Highway Research Program 20-5 12/2006 to 12/2007  
Role: Co-PI  
Collaborators: Stu Anderson (PI)  
Total Funding: \$30,000

*Developing Specifications for Performance-Based Maintenance Contracts*  
The Southwest Region University Transportation Center 09/2006 to 09/2007  
Role: Principal Investigator  
Total Funding: \$30,000

## TEACHING AND STUDENT ADVISING

### TEACHING

#### **CVEN349 Civil Engineering Project Management**

Introduction to construction project management. Principals of project development and management. Cost estimation and network scheduling. Critical Path

Method (CPM) and PERT. Earned Value Management (EVM). Recourse leveling and constrained problems. Equipment productivity and safety.

### **CVEN333/MEEN333/ISEN333 Project Management for Engineers**

Basic project management for engineering undergraduates; project development and economic justification; estimating; scheduling; network methods; critical path analysis; earned value management; recycling and rework; project organizational structures; project risk assessment; resource allocation; ethics; characteristics of project managers.

### **CVEN322 Civil Engineering Systems**

Introduction to Operations Research (OR) methods and engineering economics. Time value of money, Net Present Value (NPV) method, and benefit-cost analysis. Linear and nonlinear programming; model formulation and solution approaches. SIMPLEX method and Discrete-event simulation.

### **CVEN640 Project Development: Methods and Models**

Methods and models for management of project development. Investment under uncertainty. Identification and valuation of embedded real options. American, European, and Exotic options. Stochastic processes. Binomial pricing method and risk-neutral valuation. Monte Carlo simulation.

### **CVEN710 Civil Engineering Project Finance**

Principals of project finance. Project cash flows, equity, and debt markets. Loans and bonds. Engineering due diligence. Risk identification, assessment, and management.

### **CVEN644 Project Risk Management**

Identifies causes of risks in projects; discusses probabilistic description of risks and formulation of risk models; Bayesian methods for revising probabilities; qualitative and quantitative risk assessment; setting contingencies on budgets and schedules; risk mitigation and risk management; handling technological risk; Utility theory and game theory in management of risks.

STUDENT  
ADVISING

### **Master of Science (MS)**

*Vighnesh Deshpande*, CVEN, "Modeling Effects of Rehabilitation Actions on Reliability of Flexible Pavements," May 2008.

*Nevena Vajdic*, CVEN, "Accounting for Network Externalities in Toll Road Project Valuation," August 2009.

*Molly Gunby*, CVEN, "Identifying and Defining Value Interests," August 2010.

*Murat Cobanoglu*, CVEN, "Statistical Modeling of Corrosion Failures in Natural Gas Transmission Pipelines," May 2014.

### **Doctor of Philosophy (Ph.D)**

*Ali Nejat*, CVEN, "Multi-agent Approach to Modeling Recovery," August 2011.  
*Reza Seyedshohadaie*, ISEN, "Modeling Risk in Valuation of Infrastructure Projects," August 2011.  
*Xue Zhou*, CVEN, "Managing Commodity Price Risk in Highway Contracts," December 2011.  
*Kim Seok*, CVEN, "Smart Garage Projects and Coupling of Transportation and Electric Power Networks," December 2011.  
*Zafer Aslan*, CVEN, "Financial Implications of Engineering Decisions," May 2012.  
*Paul Govan*, CVEN, "Project Risk Networks," August 2014.  
*Craig Rocco*, CVEN, tbd.  
*Deog Bae*, CVEN, tbd.

### **Doctor of Engineering (DE)**

*Craig Rocco*, CVEN, May 2009.

## COMMITTEES

### **Master of Science (MS)**

Napon Boonchanta (MS-CVEN), Eren Ulusoy (MS-CVEN), Minsoo Kim (MS-CVEN), Oleksandra Yezerska (MS-ISEN), William Hart (MS-CVEN), Debora Shelton (MS-CVEN), Oleksandra Yezerska (MS-ISEN), Sandeep Ghorawat (MS-CVEN), Jubair Ahmed (MS-CVEN), Suchayita Bhattacharjee (MS-COMG), Suketu Guhya (MS-COMG), Shreyas Bedekar (MS-COMG), Jyotirmoy Sircar (MS-CVEN), Le Luo (MS-ISEN), Sushanth Ramesh (MS-CVEN), Adeniyi Olumide (MS-CVEN), Zhuting Mao (MS-COMG), Autumn Leveridge (MS-CVEN), Guido A. Lamus (MS-SENG), Bilkis Islam (MS-SENG), Rajeshkumar Boovaragamoorthy (MS-ISEN), Eric Puls (MS-CVEN).

### **Doctor of Philosophy (Ph.D)**

Jennifer Duthie, UT-Austin, December 2008.  
Lauren Gardner, UT-Austin, May 2011.  
Meena R. Nageeb, TAMU, December 2011.  
Jian Nan, UT-Austin, August 2012.  
Amy Kim, TAMU, August 2013.  
Amin Tohidi Vahdat, TAMU, August 2013.  
Robert J. White, TAMU, December 2013.  
Jose Rafael Menendez Acurio, TAMU, May 2014.  
Bac P. Dao, TAMU, tbd.  
Sharareh Kermanshachi, TAMU, tbd.  
Yasaman Jalili Khiabani, TAMU, tbd.  
Zohreh Soltani, TAMU, tbd.  
Nevena Vajdic, University of Belgrade, Serbia, tbd.

## NATIONAL APPOINTMENTS

Executive Committee of the NSF I/UCRC Transportation Electricity Convergence Center, (2010 - Present).

National Research Council (NRC), The National Academies, Committee on Predicting Outcomes of Investments in Maintenance and Repair for Federal Facilities, (2009 - 2010).

## AWARDS

Birdwell Excellence in Teaching Award (2010)

University of Texas at Austin Professional Development Award (2004)

## SERVICE ACTIVITIES

### UNIVERSITY SERVICE

Coordinator of Engineering Project Management Certificate Program, Dwight Look College of Engineering, (2007 - 2015).

Director of Engineering Project Management Education, Dwight Look College of Engineering, (2015 - Present).

Engineering Faculty Advisory Council (EFAC), Dwight Look College of Engineering, (2013 - 2015).

Chair of Engineering Faculty Advisory Council (EFAC), Dwight Look College of Engineering, (2015 - Present).

Differential Tuition Oversight Advisory Committee, Dwight Look College of Engineering, (2015 - Present).

Construction Engineering and Management Undergraduate Student Academic and Research Experience Advisor, (2007 - Present).

Infrastructure Management and Security Graduate Program Academic and Research Advisor, (2007 - Present).

Faculty Leader Summer Study Abroad Program - Trieste Italy, Zachary Department of Civil Engineering, (2015 - Present).

### PROFESSIONAL SERVICE

2nd International Conference on Public Private Partnerships, Member of the International Scientific Committee, Austin, TX, May 2015.

2014 ASCE Transportation and Development Congress, Member of the Scientific Committee, Orlando FL, May 2014.

ASCE Journal of Infrastructure Systems, Member of the Editorial Board, (2010 - Present).

10th International Conference on Applications of Advanced Technologies in Transportation, Session Chair, Athens, Greece, May 2008.

Toward Sustainable Critical Infrastructure Systems – Framing the Challenges: A Workshop. Board on Infrastructure and the Constructed Environment (BICE), National Research Council (NRC), DC, May 2008.

INFORMS Annual Meeting, Session Chair: Development and Management of Transportation Infrastructure I and II, Seattle, WA, November 2007.

Review/Referee of Journal Publications



*ASCE Journal of Infrastructure Systems*  
*ASCE Journal of Construction Engineering and Management*  
*ASCE Journal of Professional Issues in Engineering Education and Practice*  
*ASCE Journal of Computing in Civil Engineering*  
*Structural and Infrastructure Engineering*  
*Computer-aided Civil and Infrastructure Engineering*  
*Transportation Research, Part A*  
*Transportation Research, Part C*  
*Construction Management and Economics*  
*System Dynamics Review*

Review of Awards/Grant Proposals

National Science Foundation (NSF)  
Oregon Transportation Research and Education Consortium (OTREC)  
Mountain-Plains Consortium (MPC)  
Council of University Transportation Centers (CUTC)  
Qatar National Research Fund (QNRF)  
Swiss National Science Foundation (SNF)

Construction Industry Institute (CII). Academic Committee, Member of the Committee, (2010 - Present).

Transportation Research Board (TRB), Construction Management Committee, Member of the Committee, (2008 - Present).

Transportation Research Board (TRB), Taxation and Finance Committee, Member of the Research Subcommittee, (2007 - Present).

PROFESSIONAL  
AFFILIATIONS

Society of Risk Analysis (SRA). Foundational Issues in Risk Analysis, , (2013 - Present).

Society of Petroleum Engineers (SPE), (2013 - Present).

American Society of Civil Engineers (ASCE), Transportation & Development Institute, Infrastructure Systems, (2008 - Present).

Institute for Operations Research and the Management Sciences (INFORMS), TSL and Decision Analysis Society, (2004 - Present).

The National Academies, Transportation Research Board (TRB), (2002 - Present).